

Influenza, or Epidemic catarrhal fever : an historical survey of past epidemics in Great Britain from 1510-1890 / by E. Symes Thompson.

Contributors

Thompson, E. Symes 1837-1906.
Thompson, Theophilus, 1807-1860. Annals of influenza.
Augustus Long Health Sciences Library

Publication/Creation

London : Percival and Co., 1890.

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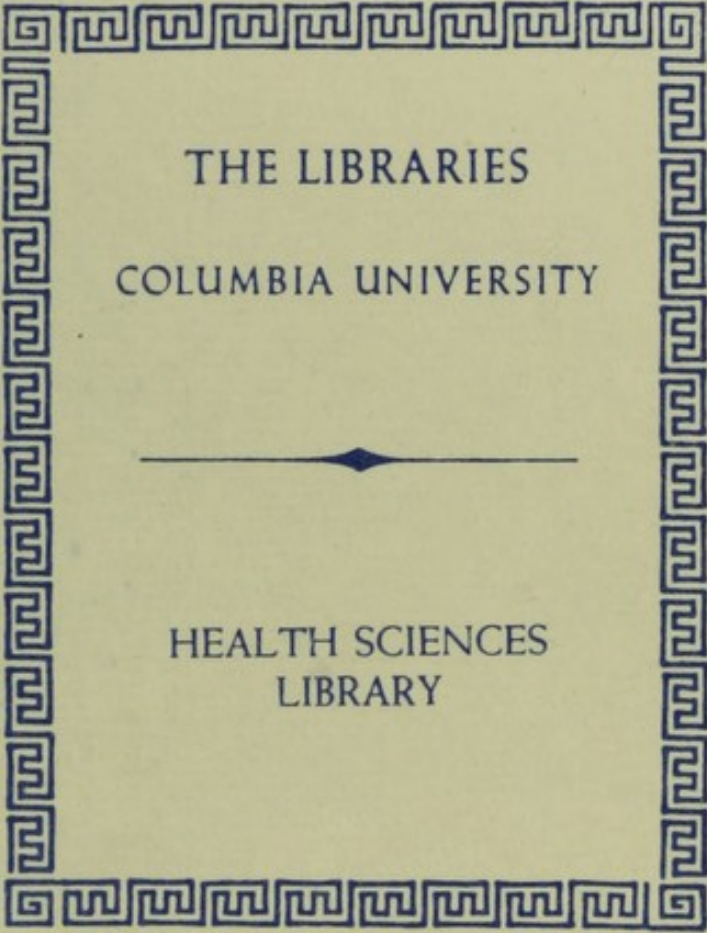


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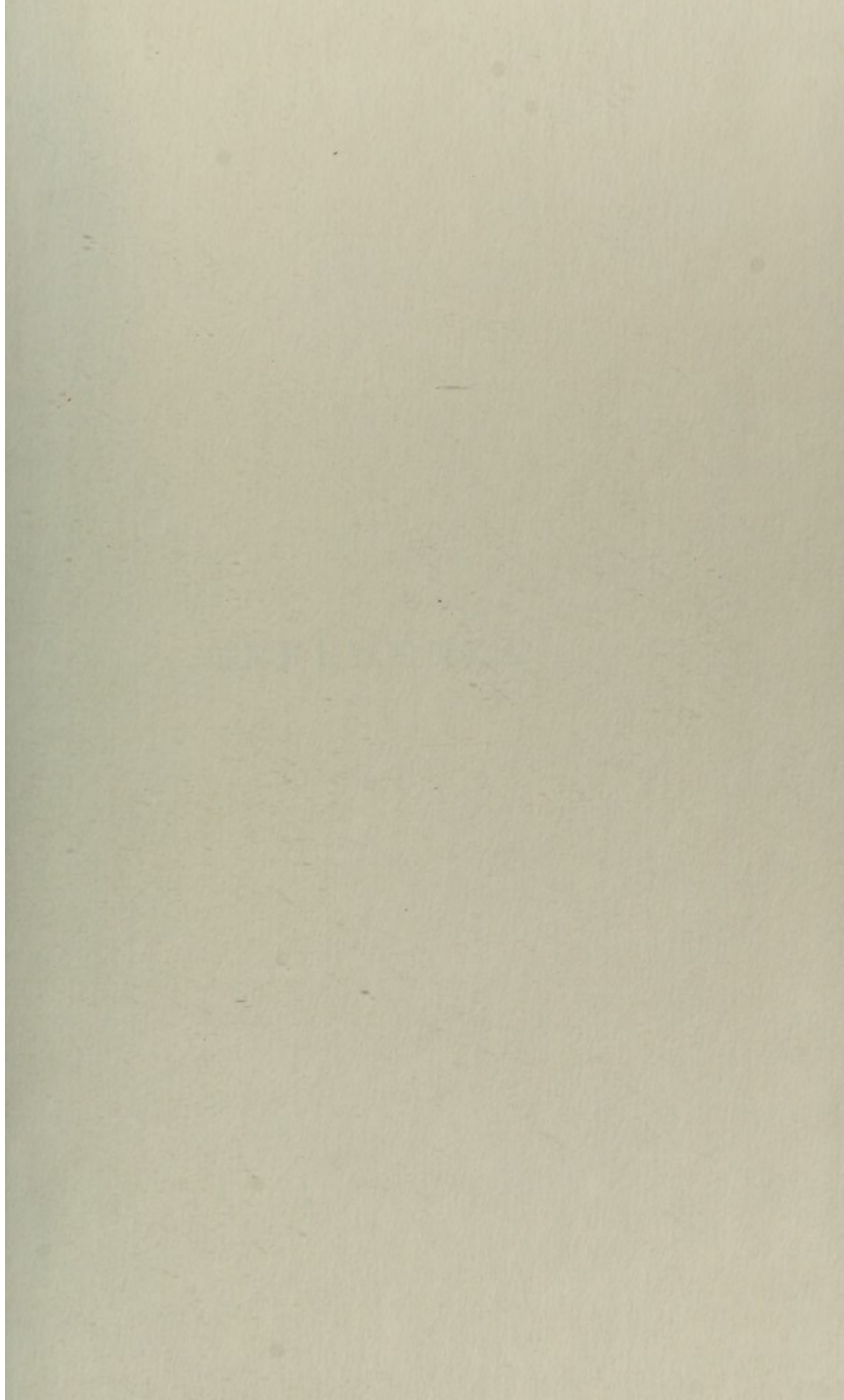
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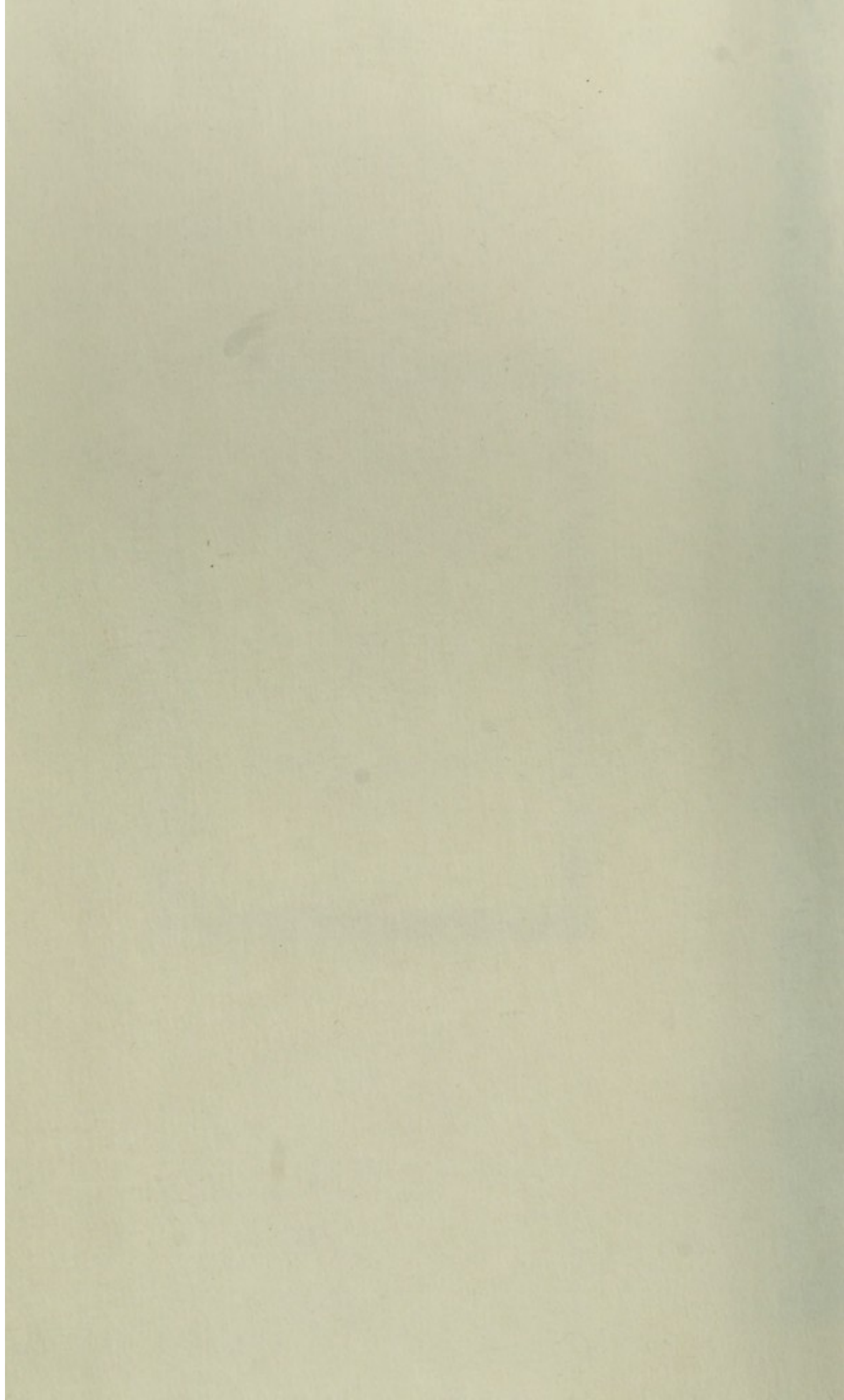
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INFLUENZA

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INFLUENZA

OR

EPIDEMIC CATARRHAL FEVER

AN HISTORICAL SURVEY
OF PAST EPIDEMICS IN GREAT BRITAIN
FROM 1510 TO 1890

BEING A NEW AND REVISED EDITION OF 'ANNALS OF INFLUENZA'
BY THEOPHILUS THOMPSON, M.D., F.R.C.P., F.R.S.

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PERCIVAL AND CO.
KING STREET, COVENT GARDEN

London

1890

ANNUAL

REPORT OF THE

COMMISSIONER OF THE

LAND OFFICE

FOR THE YEAR

1880

WASHINGTON

1881

GOVERNMENT PRINTING OFFICE

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PREFACE

THE disorder which it is the object of this work to illustrate has spared no part of the world in its circuit, visiting the British Isles with great severity, and has of late returned. A complete chronological history of its visitations was regarded by the Council of the Sydenham Society as calculated to be of value, in various ways, to medical practitioners ; enabling them to compare the disorder, on any occasion of its recurrence, with those previous epidemics which it may most resemble, and suggesting particulars requiring further investigation, whenever such an opportunity is renewed. The information extant on the subject was not readily accessible, being sometimes, as it were, concealed in volumes devoted chiefly to other topics, or otherwise scattered through the pages of periodicals long since discontinued. My father, in endeavouring to fulfil the difficult but honourable task with which he had been entrusted by the Council, spared no pains in the search, or care in the selection, of materials ; and he shared with the Council a desire to present the facts which are recorded, as far as possible, in the words of the original observers, although, especially as respects the visitation of 1803, the miscellaneous character of the communications has rendered such an attempt by no means easy.

He had much satisfaction in being the first to put into an English form the classical production of Sir George Baker.

The epidemic of 1889-90 is too recent—indeed, it cannot yet be considered to have entirely left us—to allow of so com-

prehensive a description as we could desire. It has been my aim to collect data and give the detailed information on a similar plan to that adopted in the earlier part of the work.

Dr. Peacock's book on the epidemic of 1847-48, and the Registrar-General's valuable Report, have furnished the chief sources of information with regard to that very extensive and severe epidemic.

E. S. T.

LONDON, W., *June* 1890.

INTRODUCTION

THE laws which regulate epidemic diseases are well entitled to careful investigation. The variations of the same disease on different occasions of its epidemic prevalence are so considerable as to have elicited from the observant and judicious Sydenham the remark, that on each fresh visit of such disease he had to work out for himself a fresh knowledge of the appropriate plan of treatment. But the advantages which the inquiry presents extend further than its practical relation to individual instances of such disease. They spread throughout the whole compass of etiology, and tend to illustrate the causes which affect human life in the aggregate. Influenza possesses, in this point of view, a special interest, being of all epidemics the most extensively diffused, and apparently the least liable to essential modification, either by appreciable atmospheric changes, or by hygienic conditions under the control of man. It is not, like smallpox, communicable by inoculation; and, however its fatality may be influenced by defective drainage, it is not, like typhus, traceable to this neglect as its cause. Unlike cholera, it often outstrips in its course the speed of human intercourse. It does not, like plague, desert for ages a country which it has once afflicted, nor is it accustomed, like the sweating-sickness, in any marked manner to limit its attack to particular nations or races of mankind, or, like dengue fever, to confine itself to tropical or sub-tropical regions. There is a grandeur in its constancy and immuta-

bility superior to the influence of national habits. The changes in our national system of diet during the period which this volume embraces, have been of a nature to effect remarkable modifications in the condition of the people in reference to disease, yet, as respects influenza, they are not proved to have exerted any manifest influence. The disease, moreover, exhibits in the well-ordered mansions of modern days, phenomena similar to those which it presented in the time when rushes strewn the ground in the presence-chamber of our monarchs, and decaying animal and vegetable matter obstructed the porticoes of palaces.

The importance of the subject cannot be estimated simply by the number of deaths recorded as directly attributable to the disease; indeed we frequently find visitations of Influenza represented as by no means fatal. It is necessary to extend our consideration to the fact, that during the prevalence of epidemic catarrhal fever the mortality is usually increased, often to a very remarkable degree; the cause of influenza, independently of its agency in producing characteristic symptoms, appearing to exert a power to modify any pre-existing disease with which it may coincide; to impair extensively the vital energy, so as to increase, in the population of an affected district, the liability to contract other diseases; and also to lessen the ability to resist any degree of fatal tendency which such concurrent diseases may possess. Even when complete recovery takes place, the period of convalescence is often prolonged for three or four months.

The analogies traceable between influenza and other disorders, and its seeming relation to them in the way of transition or succession, are so remarkable as to encourage the hope that the study of this malady may help us to distinguish between the essential circumstances and the modifying influences concerned in producing the phenomena of epidemic disease in general. It is by explaining the laws obeyed by the most simple affections of this class, that we may most reasonably

expect to elucidate those which are apparently dependent on more complicated conditions.

No single generation of medical practitioners can be expected to possess a sufficient range of observation, or to accumulate adequate materials of information on the subject, to enable them to detect the clue by which to thread the intricacies of this inquiry. The past must be scrutinised, and its reflected light brought to our aid; old and new facts when collated, by the harmony which they exhibit, become mutually illustrative, and acquire a value previously unknown. It is true that medical records abound in fallacious and imperfect observations, transmitted from one generation to another, and that popular prejudices have exercised an influence in disseminating error which the obstinacy engendered by the evidence of imperfectly observed facts has tended to confirm and perpetuate; but it is possible to manifest too indiscriminate a contempt for statements which partake of popular superstition. Popular opinion is not always or necessarily incorrect, because inconsistent with the views of contemporary philosophers. The "fiery tears" recorded in old Church Calendars as having fallen from meteors owed their appearance to something more than the superstitious fancies of the narrators, and the days of their recorded appearance harmonise in an interesting manner with those on which the observations of modern astronomers would lead us to expect them. It would be presumptuous to set aside as absurd, frivolous, or erroneous, observations given in this volume on the testimony of honest observers, merely because such observations may not be consistent with our preconceived opinions, or explicable by our schemes of philosophy. Signacula, "blood rains," "bloody springs," wheat similarly coloured, and such like phenomena, noticed in recent history, and in the annals of the sixteenth century, although in the intermediate period rarely recorded, perhaps from the fear of seeming superstitious, are brought by modern research within the limits of explanation and belief.

The copiousness and variety of observation admitted into this treatise will not be without value, if, as respects theoretical opinion, they serve only to establish such negative conclusions as often prove the first and most secure steps in true philosophy, and convince the most confident theorists that they still have something to unlearn. The Editor of this volume has endeavoured to present the picture of influenza exactly as it was delineated by the original observers, for he is convinced that it is expedient to avoid the colouring which the existence of any bias in his own mind might impart, since narratives free from all preconceived impressions contribute far more effectually than commentaries to the formation of clear and independent opinion.

Authentic information has been incorporated regarding epidemic disease among the lower animals, occurring contemporaneously with the prevalence of Influenza amongst man, presenting analogous appearances.

In the First Edition of this work many observations were made upon the relations which epidemics among the lower animals bear to disease among man. This inquiry still needs more full elucidation.

Many suggestive hints were thrown out as to the influence exerted by insects in the development of disease.

The relation which various fungi and mildews bore to diseases among plants, as well as animals, was sketched out as having a possible bearing upon epidemic prevalence.

The knowledge of the life history of very many of the microscopic fungi, and especially of bacteria, has been so greatly extended, and the fact that some diseases are caused by or associated with the presence of such organisms is so conclusively proved, that the spirit of speculation as to the possible influences at work to cause Influenza, which found their place very appropriately in 1852, has not now the same cause for expression.

It is improbable that the diseases of plants have anything in common with Influenza, except that similar atmospheric

conditions may affect them. There is no conclusive evidence to show that there has been any widespread or extensive disease among plants during the recent epidemic of 1889-90. Mr. G. T. Brown, of the Board of Agriculture, writes (10th February 1890): "I have made inquiry, and find that there are no reports of any special disease of food plants, the usual parasitic affections of cereals, *e.g.* ergot, smut, and ravages of insects, were not noticed to any great extent, except in the case of ergot, which was very abundant in some districts."

The parasitic diseases of plants have been so fully investigated in recent years that it would not be possible to do justice to the subject here.

This is indeed a tempting field of inquiry, the more so as the life history of the parasites of plants is better understood than that of the parasitic diseases of man. A parasite, whose natural function is to flourish only in the presence of decay and death, may gain access to the tissues of living plants, if those plants are aquatic in their habits and waterlogged in texture. It is not so much the diseased plants that are accessible to the parasite as the plants that, by living in water, have diluted their juices and lessened their powers of resistance.

Such observations as these have a direct bearing on the accessibility of the body to the action of the micro-organisms in consequence, not of disease, but of modification in the environment.

Who shall say whether the greater accessibility to tuberculous diseases known to prevail among the residents in humid or undrained districts may not bear an analogous interpretation?

If our own countrymen had followed up the hints given in the First Edition of this work—the suggestion, for instance, that epidemics are produced by vegetable germs borne on the wings of the wind—they might have been credited with many

of the more important discoveries with the microscope which have been recently made by German investigators. The diseases of plants have now a literature of their own, which is becoming every year more full and more interesting, and which it would be impossible as well as out of place to attempt to summarise here.¹

The comprehensive accumulation of facts now presented to the profession, by affording materials to those who would aim to interpret their meaning, may be held to render unnecessary any attempt on the part of the author to describe at large his own opinion regarding the essential nature of the malady. He would venture to invite attention to the evidence which these Annals afford, that the disease is dependent on the introduction of a micro-organism into the system, the febrile symptoms thus induced being modified by the amount and virulence of the poison, as well as by the power of reaction, and by the constitutional peculiarities of the individual attacked.

¹ The following works may be studied by those who are anxious to pursue the investigation: 'Timber, and some of its Diseases,' by Marshall Ward, 1889; 'On Diseases of Field and Garden Crops,' by G. Worthington Smith, 1884; 'British Uredinea and Ustilaginea,' by C. B. Plowright, F.R.S., M.R.C.S., 1889; 'Comparative Morphology and Biology of Fungi, Mycetozoa, and Bacteria,' by De Bary; 'British Discomycetes,' by W. Phillips; 'Microscopic Fungi,' by M. C. Cooke; also works by R. Hartig, Nordlinger, Gamble, Frank, Soraner, Willkomm, Hesse, etc. Of Bacteria, which are probably answerable for many diseases of plants, the literature is even more extensive, including works by Klein, Crookshank, etc.

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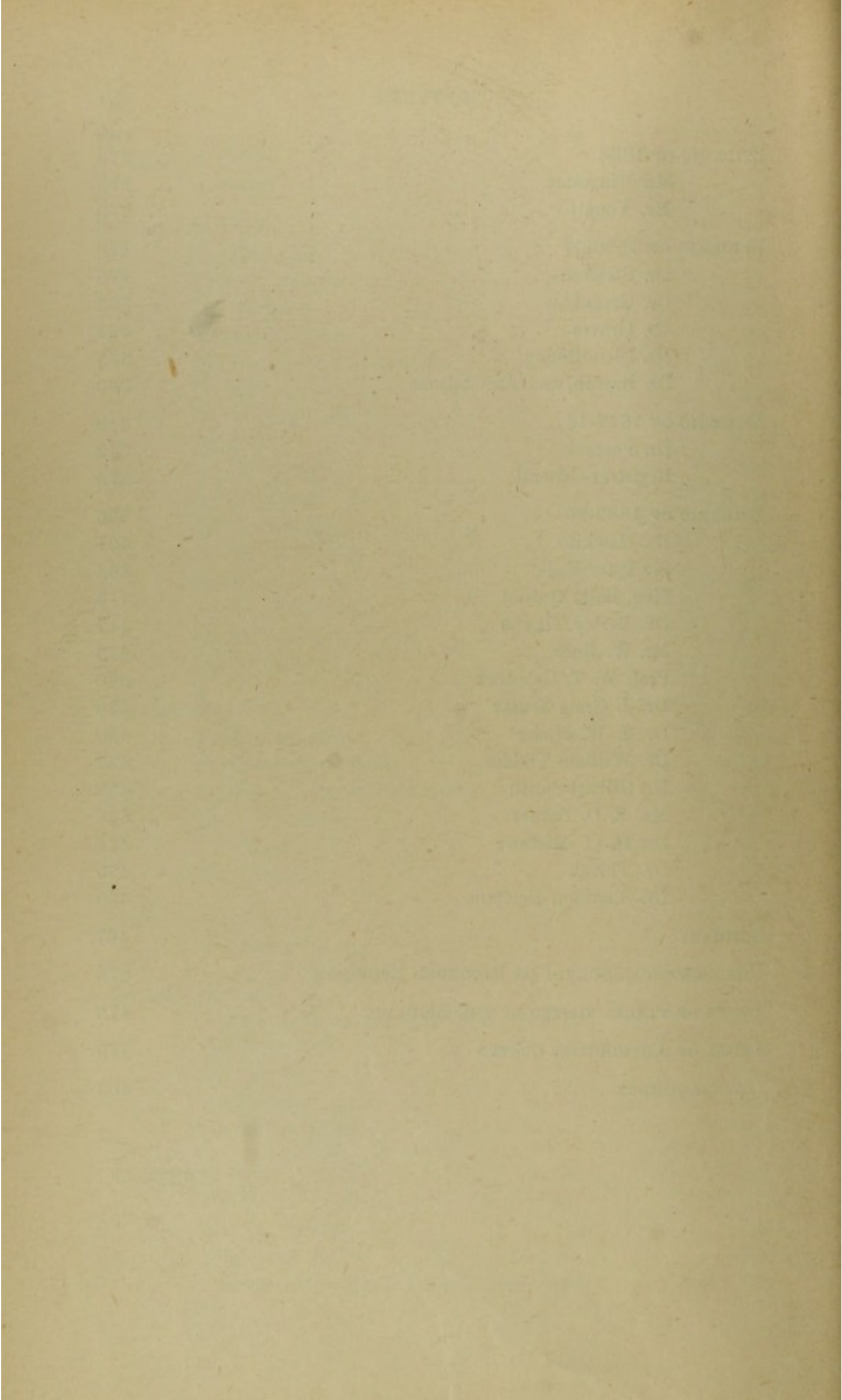
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ANNALS OF INFLUENZA

IN

GREAT BRITAIN

THE malady which forms the subject of this volume, is described, in an Irish manuscript of the fifteenth century, under the names of *Fuacht* and *Slaodan*; and it is mentioned in the 'Annals of the Four Masters' as epidemic in Ireland in the fourteenth century. A disease, the symptoms of which answer to those of influenza, is also alluded to in our early Gaelic manuscripts under the term "creatan," probably from "creat," the chest; but the first visitation of the disease in the British islands, of which we possess an accurate description, is that of the year 1510.¹

The sixteenth century, the great transition period from feudal tyranny to liberty and order, was ushered in with much commotion of the elements, and marked with destructive pestilence. A severe winter followed the wet summer of 1505. In 1506 a comet appeared, and an eruption of Vesuvius occurred.² In January the violent storm arose which drove Philip of Austria, with his consort Johanna, from the Netherlands to Weymouth.³

¹ Dublin Quarterly Journal of Medicine, Feb. 1848, p. 256.

² Spangenberg (Cyriacus), 'Mansfeldische Chronica,' 1572; Webster (Noah), 'A Brief History of Epidemic Diseases.'

³ "The tempest that he suffered on the sea was huge and wonderfull, also upon the lande, insomuch that the violence of the wynde blew downe an eagle of brasse, being set to shewe on which part the wynde blew from pynacle or spire of Paule's Church; and in the falling, the same eagle broke and battered another eagle that was set uppe for a signe at a taverne doore in Cheapeside. And here-upon many men that were given to gesse things that shoulde happen, by marking

The secret influences which affect animal life, gradually produced sensible manifestations. The unusual combination of circumstances requisite for the exuberant production of locusts, occurring in Europe, occasioned great swarms of that insect in Seville in the years 1507, 1508, and 1510. About the same period, a great murrain amongst cattle at Meissen led to the execution of some "böse Buben" (wicked knaves), suspected of poisoning the pastures. A very considerable blight of caterpillars in the north of Germany stripped the gardens and woods of their foliage; and signacula, or blood-spots, supposed by Agricola, an ingenious writer of that century, to be lichens, so abounded on linen, the veils of women, the food in larders, and even in the atmosphere in the form of blood-rain,¹ as to fill the popular mind with superstitious dread.² Sweating-sickness ravaged England in 1506; and for several subsequent years various fevers prevailed in Europe. In 1510, the first well-described and widely-prevalent epidemic of influenza appeared. The best account which can now be obtained of this epidemic is here presented in the words of Dr. Short, in whose accuracy the

of stronge tokens, decined that the Emperour Maximilian, which gave the eagle, should suffer some greate mysfortune; and hee did shortly after, by the losse of hys sonne, the sayde King Philip." (Stow's 'Annals.')

¹ These miraculous blood-spots have, at various periods, excited the alarm of the superstitious; they awakened, for instance, the apprehensions of Alexander's soldiers at the siege of Tyre; they constituted one of the prodigies which preceded the successes of Hannibal in Italy (Plutarch, in 'Fabius'); and have been frequently recorded by authors of different countries and periods: but their nature does not appear to have been made an object of strict scientific scrutiny before the year 1819, when a farmer, of Padua, being alarmed by seeing spots of a vivid red colour, closely resembling drops of blood, upon his porridge, which was made of the maize which grew in the neighbourhood, a commission was appointed to investigate the phenomenon. M. Sette supposed them to be formed of microscopical fungi, to which he gave the name of *zoogalactina imetrofa*. Ehrenberg, however, considers these red spots to consist not of fungi, but of a species of animalcule, which, on account of its extreme smallness, he names *monas prodigiosa*. These little beings are transparent, when separately examined, but, when in a mass, appear the colour of blood. They are from a three-thousandth to an eight-thousandth part of a line in length, so that, as calculated by Ehrenberg, the space of a cubic inch may contain from 46,656,000,000,000 to 884,836,000,000,000 of these monads. (Ehrenberg, 'Passat Staub und Blut-regen,' Berlin, 1849; Bericht der Berliner Akademie, 1848, p. 353).

This subject is more fully noticed at a later period of this volume. (See Epidemics of 1803, 1830, 1833, 1837; and also concluding remarks.)

² Mézéray (Comte de), 'Histoire de France' (Paris), 1685, t. ii. p. 819.

Editor has reason to place confidence, although he has not been able, in his endeavours to verify the quotations, to obtain access to all the works to which Dr. Short refers.

EPIDEMICS OF 1510-1581

SHORT¹

1510. "The disease called *Coccoluche*, or *Coccolucio* (because the sick wore a cap or covering close all over their heads), came from the island *Melite* in *Africa*, into Sicily; so into *Spain* and *Italy*, from that over the *Alps* into *Portugal*, *Hungary*, and a great part of *Germany*, even to the *Baltic Sea*; every month shifting its situation with the wind from East to West, so into *France*, *Britain*, &c., *Valeriola*, *Pechlin*, &c. It attacked at once, and raged all over *Europe*, not missing a family, and scarce a person. A grievous pain of the head, heaviness, difficulty of breathing, hoarseness, loss of strength and appetite, restlessness, watchings, from a terrible taring cough. Presently, succeeded a chilness, and so a violent cough, that many were in danger of suffocation. The first days it was without spitting; but about the seventh or eighth day, much viscid phlegm was spit up. Others (though fewer) spit only water and froth. When they began to spit, cough and shortness of breath were easier. None died, except some children. In some, it went off with a looseness; in others, by sweating. Bleeding and purging did hurt. Bole armoniac was chiefly useful, with oily lintus's, pectoral troches, and decoctions. Where blood was let, the disease proved malignant and pestilential, being attended with a violent, cruel, and unheard of malignity, and made bad work. It was preceded by a long, moist air. We shall find it again in '57, '80, and '97, &c. June 20th, at *Gulick* and *Juliers*, such extraordinary thunder and lightning, as struck all with a pannick. A thunderbolt fired the magazine, and did great damage." (*Hist. of the Iron Age.*)

¹ A General Chronological History of the Air, Weather, Seasons, Meteors, &c. By Dr. Thomas Short. London, 1749.

Stones, varying in weight from 60 to 120 pounds, fell from the heavens in Lombardy. (*Surius, Cardanus de Rerum Varietate.*)

During this year, there also occurred great earthquakes, and a volcanic eruption in Iceland. The air was humid. In the following year a comet appeared.¹

During the prevalence of influenza in Britain, Spain was afflicted with sweating-sickness.²

"In the previous year, September 14th, was an earthquake at Constantinople, and the countries thereabouts; it demolished a great part of the city walls and stately buildings, and slew 13,000 people. It lasted a month with very little intermission; after it came a plague, which almost depopulated the city." (*Turk's History.*)

1513. "This year a great mortality prevailed in *England*, say our historians; they call it (as indeed all diseases) the plague; but to know what it was, we must consult foreigners. Says *Cole*, when dearth, scarcity of corn, famine, rainy seasons, and severe cold ones, had afflicted *Italy* for two years, and people were forced to eat uncommon and unwholesome food, arose an epidemic contagious fever, with a dysentery, and black spots over the whole body. And from this want of food, great weakness, and unhealthy juices, they had a pale cacco-chimic and depraved countenance, a swelling of their feet, and difficulty of breathing."

The following account of the habits of our countrymen at this period, in a letter from *Erasmus* to the *Physician* of *Cardinal Wolsey*, may here be appropriately introduced.³

"I often grieve and wonder how it happens, that Britain has now, for so many years, been afflicted with a continual plague, and chiefly with the sweating-sickness, which is a malady that seems almost peculiar to the country. We have read of a state being delivered from a long-continued pestilence by changing the style of building, upon the advice of a philosopher. If I am not deceived, England may be freed in a similar manner. In the first place, the English have no

¹ Webster (op. cit.)

² Villalba (Don Joaquin de), 'Epidemiologia Española,' 2 tom., Madrid, 1803.

³ Des Erasmi. Epist. (Lugdun. Batav.), tom. iii. epist. 432 (as translated in 'Retrospective Review,' vol. v. p. 24, 1703).

regard to what quarter of the heavens their windows or doors are turned; in the next, their sitting-rooms are generally so constructed as to be incapable of being ventilated, which is a thing that Galen particularly recommends. Furthermore, a great part of the wall is made transparent by glass plates (or squares), which admit the light, but exclude the wind: and yet, through the small crevices, they admit the air to be strained, which becomes somewhat more pestilent by staying there a long time. The streets, too, are generally covered with clay and rushes, which are so seldom renewed, that the covering sometimes remains twenty years, concealing beneath a mass of all descriptions of filth, not fit to mention. Hence, upon a change in the atmosphere, a certain vapour is exhaled, in my opinion, not at all wholesome for the human body. Added to this, England is not only surrounded by the sea on every side, but it is also, in many places, marshy, and intersected by salt streams, to say nothing at present of the salt food, of which the common people are amazingly fond.

“It is my firm opinion that the island would become much more wholesome if the spreading of rushes on the ground were not used, and if the chambers were so built as to be exposed to the heavens on two or three sides, the windows of glass being so made as to open altogether, and close in the same way, and to shut so as not to admit noxious winds through the crevices. Since, as it is sometimes wholesome to admit the air, so it is sometimes as much so to keep it out. The common people laugh, if a person complain of the cloudy sky. If, even twenty years ago, I had entered into a chamber which had been uninhabited for some months, I was immediately seized with a fever. It would contribute to this object (to render the island more healthy) if more sparing diet could be more generally recommended, and a more moderate use of salt provisions; and if certain public officers were commissioned to keep the roads more free from nuisances. Those parts, too, should be looked to more particularly, which are in the neighbourhood of a town. You will laugh at my having time to trouble myself about these matters. I love the country which has for so long a time given me an hospitable abode, and in it, should circumstances allow, I would willingly spend what remains of life.

"I have no doubt from your character for wisdom, that you know these matters better than myself; I resolved, however, to mention them to you, that you may, if my opinion coincides with yours, recommend these hints to the notice of the great. For, in former days, kings were wont to interest themselves in such things," &c. &c.

In 1566 there were showers of blood, and an eruption of Etna. The season was mostly wet; but in some countries dry. In the subsequent year a comet appeared.

1557. "This year and last (proceeds Dr. Short) was a great scarcity of corn from the past great rains. It was a very unseasonable year in *England*, all the corn was choaked and blasted, the harvest excessive wet and rainy; before harvest this year, wheat was sold at 4 marks per quarter; malt, at 44s. per quarter; pease, at 46s. 8d. After harvest, wheat was sold at 5s. per quarter in *London*, 4s. in the country. Malt, at 6s. 8d., and in the country at 4s. 8d. Rye, at 3s. 4d. per quarter in *London*, and in some places at 4d. per bushel (*Clark's Ex.*) Quartan agues still reigned fatally. In some more remote countries, *July*, *August*, and *September*, were excessive hot and dry. In the end of *September*, came a very strong cold north wind; presently after were many catarrhs, quickly followed by a most severe cough, pain of the side, difficulty of breathing, and a fever. The pain was neither violent nor pricking, but mild. The third day they expectorated freely. The sixth, seventh, or, at the farthest, the eighth day, all who had that pain of the side died; but such as were blooded the first or second day, recovered on the fourth or fifth; but bleeding on the last two days, did no service. Slippery, thickening linctuses, were found of most service. Broths, or spoon-meats, or moist foods, were good. But where the season continued still rainy, the case was very different; for at *Mantua Carpentaria*, three miles from *Madrid*, the epidemic began in *August*, and bleeding or purging was so dangerous, that in the small town 2000 were let blood of, and all died. There it began with a roughness of the jaws, small cough, then a strong fever, with a pain of the head, back, and legs; some felt as though they were corded over the breast, and had a weight at the stomach; all which continued to the third day at farthest; then the fever went off with a sweat, or

bleeding at the nose. In some few, it turned to a pleurisy, or fatal peripneumony.—At *Alcmaria*, this year in *October*, raged such an epidemic, as seized whole families at once. In that small place, died in three weeks 200 persons of this mortal peripneumony. It attacked like a catarrh, with a very slow and malignant fever, bringing, as it were, a sudden suffocation along with it; then seized the breast with so great a difficulty of breathing, that the sick seemed dying. Presently it laid hold of the precordia and stomach, and with a violent cough, which either caused abortion, or killed gravid women. Some, but very few, had continual fevers along with it; others simple slight intermittents. All were worse by night than by day; such as recovered were long valetudinary, had a weak stomach, and hypped. This disease seized most countries very suddenly when it entered, catching thousands the same moment. Thick, ill-smelling fogs preceded it some days. In some places, few recovered who had it accompanied with a violent fever. Semitertians were next dangerous. If intermittents accompanied the pain of the throat (which was neither a quinzy, nor scarce a slight inflammation, but only from a meer defluxion, of which the sick seemed choaked), they were better off, even without bleeding. But if the fever supervened, and was not well managed, it was often fatal. Gentle bleeding the first day was useful. For the throat, gargles of plantin, scabious, and red rose waters, quinces, mulberries, and sealed earth, were used. For the cough and hoarseness, pectoral and oily mixtures. Scarification with cupping succeeded better than bleeding. The year 1555 had been most excessively rainy, and 1556, as great a drought.”

This year, the season was mostly wet, but in some countries dry. The influenza set in about the time when a cold north wind succeeded intense heat. In the previous year was an eruption of Etna.¹

“A sudden and terrible plague broke out between Delft and the Hague, in a small village, and spread over the whole country in June before the rising of the Dog star. In children it was attended with spots. This plague was presaged by stars and fire falling to the ground on the streets of Delft. Children in their play digged graves and carried dead coffins

¹ Webster (op. cit.)

on their shoulders; sung funeral hymns like their priests, and pretended to bury living children, their play-fellows. So great was this mortality, that the poor fought for coffins for their dead relations. Abortions and death of child-bed women were common. This plague continued till May, 1558, and killed 5000 of the poor of Delft only. (*Dodoneus, Schinckius, Platerus Stow, &c.*) A dearth afflicted England; wheat sold at 55s. per quarter; but a good and plentiful crop this harvest brought it to 4s. or 5s. September the 7th, seven o'clock at night, in a black rainy cloud in the west, was seen a rainbow, the moon in the east shining bright, and at full the day before. In September excessive rains and a great death, chiefly of priests (*Baker's 'Chron.'*). At Numigen, in July, raged an epidemic, which spared none, and so cruel, that it carried off many the fourth, seventh, or fourteenth day. It seized with a fever, roughness or burning inflammation of the throat, and the fever continual. The sick were afflicted with a grievous pain of the head, taring cough, and constant severe pain of the loins that they could not walk; and so large a discharge by the nose as would scarce suffer them to breathe. Such as escaped by bleeding, pectorals, and a stinking sweat supervening, had their entire strength in all parts continued. But such as sunk under the fever and want of eating becoming weak, all died. Wherefore the cure turned on the use of speedy universals, recalling the appetite, keeping the vessels of the throat open. Lenitives only were used, strong purges being fatal. In harvest, a pestilential fever raged in France, and carried off many. Dysenteries, with a slight fever, prevailed at the same time; but by the early use of rhubarb, all had their gripes appeased and recovered. (*Rever, Holer, &c.*) This year there was a great flood in the South of Languedoc, with so dreadful a tempest, that the people imagined it was the last day. (*Vignier*). The rapid descent of the waters about Nismes, removed divers heaps and mountains of ground, and rent and tore up many other places; by which was discovered much gold and silver coins, plate, and other valuable vessels, supposed to be hid in the Gothish invasion."

1580. "In 1578, and on *April* the 6th, this year, and *May* the 12th, were general earthquakes over all *England*. *October* the 10th, a comet in the south bushing

toward the east; it continued from *October* to *January*, full two months. (*Stow*.) The weather for some years past having been extraordinary moist, wet, and rainy, wind south, at the rising of the Dog star came a cold, dry north wind. From the middle of *August* to the end of *September* raged a malignant epidemic catarrh; it began with a pain of the head, and feverish heat: some were disposed to sleep, others to watching: presently followed a dry cough, pain of the breast, harkness and roughness of the throat, weakness of the stomach; at last a terrible panting for breath, like dying persons. Though the cough lasted not long, yet the panting for breath continued to the fourteenth day; some sweated,¹ such recovered the thirtieth or fortieth day; they did not expectorate much. With some the disease went off by stool, in others by urine. Though all had it, few died in these countries, except such as were let blood of, or had unsound viscera. Of the first, died in *Rome* at this time 2000. The cure consisted in repeated lenitives, cooling incisers, and pectorals. In other places it appeared somewhat different, according to the varying constitution of the season.

“In sundry places it begun with a weariness, heaviness, and painful sensation; heat and horrors seized the whole body, chiefly the breast and head, with a dry cough, hoarseness, roughness of the jaws, difficulty of breathing, weakness and languor of the stomach, vomiting green bile, like juice of leeks; which symptoms increased with the disease, as the fever, cough, weight and pain of the head, pricking pain of the extremes, watching, dryness and roughness of the tongue, and shortness of breath. At the state of the disease all these were heightened, catarrh, cough, spitting. Some had swellings on the glands of the throat. In some it went off by stool; in others by urine or sweat, or bleeding at the nose. Some had spots. With some it ended in a pleurisy, peripneumony, or consumption; all recovered very slowly. This disease raged over all *Europe* at least, and prevailed for six weeks. Yet, if in any place it was preceded by a drought, bleeding gave the speediest and greatest relief; as at *Montpelier*, so as not one of a thousand died of it. The same epidemic returned in *October*

¹ The violent perspirations which occasionally occurred led some physicians to apprehend that the sweating-sickness was about to return.

and *November* that year; then bleeding even in these places was hurtful, except when a spitting of blood, pleurisy, or peripneumony attended it. At the same time a Fever of the same kind prevailed, which, *Sennertus* says, reigned all over the world; and was the same with that of 1551, as the catarrh and disorders of the breast were the same with those of 1510, 1591, 1597, 1610, &c., over all *Europe*, with a rheum and distillation from the head, either with or without a fever, pain of the head, heaviness, hoarseness, weakness. To those symptoms this year were joined a cough, pain of the jaws and neck. (*Sennertus, Forest, &c.*) Says *Riverius*, after a prodigious plague of Insects in *April* and *May*, the like epidemic broke out and strangled many; but where proper means were used, all recovered. It began with a fever and cough, then followed again a pain of the head, and loins; then the fever intermitted a few days, and returned with fresh vigour. Some had no rest, but the heat increasing, they died; as some did of a phrenzy, and others of a consumption; but speedy proper means secured them, viz. bleeding, laxatives, and pectorals, cuppings, cooling clysters, cordial opiates, and epithems."

1581. "At six o'clock in the evening, in *April*, was an earthquake not far from York, which in some places shook the stones out of the buildings, and made the church bells jangle; the next night the earth trembled once or twice in Kent, as it did also May the 1st following. *November* the 1st, in *Kent* and the marshes of *Essex*, was a sore plague of strange mice suddenly covering the earth, and gnawing the grass roots; this poisoned all field herbage, for it raised the plague of murrain among cattle grazing on it. No wit nor art of man could destroy these mice, till another strange flight of owls came, and killed them all. A great earthquake in Peru."

The great mortality during this epidemic at Rome, was attributed to the too frequent adoption of bloodletting.¹

In April and May a prodigious number of insects, supposed to rise out of the earth, obscured the air, and were crushed by millions on the roads.² Birds felt the influence of the bad air, for they abandoned the countries where the epidemic

¹ I. Wiervs, 'Opera Omnia,' Amstel. 1660, lib. ii. p. 979.

² Riverius, 'Opera Omnia Medica,' Lugd. 1669, p. 585.

appeared. Birds of passage migrated before the usual time, and those accustomed to build on trees and in elevated localities, rested during the night in low situations, and on the ground. Even animals which feed on herbs and leaves, took a dislike to their pastures, which were apparently influenced by some virus in the air.¹

Malignant fever or plague, measles, and smallpox, also raged with considerable virulence during the year 1580.

Catarrh is said to have prevailed throughout Europe in 1610; but, with this exception, is scarcely noticed by authors between 1580 and 1658, a worse constitution, namely, that of plague, superseding it during the greater part of that period.

EPIDEMIC OF 1658

WILLIS²

“An equally intense frost followed, the next winter, the immoderate heat of the foregoing summer, so that no one living could remember such a year, for either excess both of heat and cold. From the ides of *December*, almost to the vernal equinox, the earth was covered with snow, and the north wind constantly blowing, all things without doors were frozen; also, afterwards, from the beginning of the spring, almost to the beginning of *June*, the same wind still blowing, the season was more like winter than spring; unless now and then a hot day came between. During the winter (unless that a quartan fever contracted in autumn infested some) among our countrymen, there was a moderate state of health, and freedom from all popular diseases. The spring coming on, an intermitting tertian (as used to do every year before) fell upon some. About the end of *April*, suddenly a distemper arose, as if sent by some blast of the stars, which laid hold on very many together: that in some towns, in the space of a week, above a

¹ Salius Diversus de Febre Pestilente, Francof. 1586, p. 62.

² The description of a catarrhal fever epidemical in the middle of the spring, in the year 1658, taken the 4th June. Dr. Willis's 'Practice of Physic; being the Whole Works of that renowned and famous Physician.' London, 1684. Part I. on Fevers.

thousand people fell sick together. The particular symptom of this disease, and which first invaded the sick, was a troublesome cough, with great spitting, also a catarrh falling down on the palat, throat, and nostrils; also it was accompanied with a feaverish distemper, joyned with heat and thirst, want of appetite, a spontaneous weariness, and a grievous pain in the back and limbs: which feaver, however, was more remiss in some, that they could go abroad, and follow their affairs in the time of their sickness, but complaining, in the mean time, of want of strength and of languishing, a loathing of food, a cough, and a catarrh. But in some a very hot distemper plainly appeared, that being thrown into bed they were troubled with burning thirst, waking, hoarseness, and coughing, almost continual; sometimes there came upon this a bleeding at the nose, and in some a bloody spittle, and frequently a bloody flux; such as were indued with an infirm body, or men of a more declining age, that were taken with this disease, not a few died of it; but the more strong, and almost all of a healthful constitution, recovered: those who falling sick of this disease, and died, for the most part died by reason of the strength being leisurely wasted, and a serous heap more and more gathered together in the breast, with the feaver being increased, and a difficulty of breath, like those sick of an hectic feaver. Concerning this disease, we are to inquire, what procatartie cause it had, that it should arise in the middle of the spring suddenly, and that the third part of mankind, almost, should be distempered with the same, in the space of a month: then the signs and symptoms being carefully collated, the formal reason of this disease, also its crisis and way of cure, ought to be assigned.

“That the northern wind is most apt to produce catarrhs, besides the testimony of *Hippocrates* common experience doth make known: but why catarrhs did not spread, at least in some peculiar places, all the winter and spring, but only in one month's space, and then joyned with a feaver, this distemper should become epidemical, doth not so plainly appear. I know many deduce the cause from the unequal temper of the air, at that time; which, although for the most part very cold, yet the north wind sometimes lessening, there would be a day or two very hot between: wherefore, from this occasion,

as from cold taken after the heat, men should commonly fall sick. But indeed, for the exciting the distemper, so suddenly rising, and commonly spreading, there is required, besides such an occasion, a great foregoing cause or predisposition, though the other might suffice, perhaps, for an evident cause for to distemper them with this sickness; for we ought to suppose, that almost all men were prone to the receiving this disease, otherwise no evident cause could have exercised its power so potently on so many, wherefore, it seems very likely, that this disease had its origine from the intemperance and great inordination of the year: and as the autumnal intermitting feaver before described, was the product of the preceding immoderate heat, so this catarrhal feaver depended altogether upon the following part of the year, being so extremely cold; for the blood being now thoroughly roasted by the very hot summer, and prone to the feaver before described, then being made more sourish by the autumn urging it, and apt for a quartan feaver, afterwards being a little eventilated by reason of the strong cold of the winter, and hindred from its due perspiration, retained yet its dyscrasie or evil disposition, and readily broke forth on the first occasion given: wherefore, when the blood, in the middle of the spring (as the juice of vegetables), being made more lively, and also begun to flower and grow rank, by reason of the stoppage being still continued, was strained in its circulation, and easily made prone to a feaverish effervescency: and as the serous water redounding in the blood, could not evaporate outwardly, because of the pores being still straitned by the cold, restagnating within, and chiefly falling upon the lungs (where it might be moved about, instead of an outward breathing forth), excited the so frequent and troublesome cough.

“The original therefore, and formal reason of this disease, are founded chiefly on two things, to wit, that there together hapned a greater effervescency of the blood than usual, from the coming of the spring season, and also a stoppage or great constriction of the pores, excited by the too great cold of the foregoing season; that therefore there was not a free space granted to the blood, flowring or luxuriating in the vessels. The business being after the same manner, as if wine begun to grow hot, should be put up into close shut vessels, for

by this means either the vessels or the liquor were in danger to be lost.

“Wherefore, that we may contract the thing in short, the cause that this disease begun in the middle of the spring, having presently spread largely, seized very many, was not the blast of a malignant air, whereby the sick were distempered, as if struck with a blasting, but that at this time, the blood being inspired by the constitution of the spring, and so luxuriating, and apt to grow hot, was contracted or straitened in its motion, and the effluvias being constrained inwardly, could not be sufficiently eventilated or cooled. In every year, though temperate, it is usual in the spring and autumn for some epidemical diseases to reign, because at this time, the blood being, as it were, restored, flowers anew; and therefore, intermitting feavers, and sometimes the smallpox, ordinarily spread in this season; wherefore, 'tis no wonder, after a great unequal constitution of the year, and not natural, when in this spring, the blood boyling up more lively within the vessels, by reason of transpiration being hindred, could not be freely circulated and sufficiently eventilated, if for that cause great disorders follow, and from this most common cause, a distemper greatly epidemical should be excited.

“As to the symptoms joyned with this disease, a feaverish intemperature, and whatsoever belongs to this, the heat of the *Præcordia*, thirst, a spontaneous weariness, pain in the head, loyns, and limbs, were induced from the blood growing hot, and not sufficiently eventilated: hence in many, a part of the thinner blood being heated, and the rest of the liquor being only driven into confusion, a simple synochus, or of more days, was induced, and this, for the most part, ceased within a few days; but in some endued with a vitious disposition of blood, or evil habit of body, this kind of feaver, arising by reason of the same cause, quickly passed into a very dangerous putrid feaver, and often mortal.

“The cough accompanying this feaver with a catarrh, draws its origine from a serous humor heaped up together in the blood, by reason of transpiration being hindred for a long time, and then an effervescency being risen, dropping forth more from the little arteries gaping within; for when the pores are constrained, the superfluous serosities in the blood, being wont

to evaporate outwardly, are poured forth on the lungs, by a proper castration or cleansing of the blood, wherefore, by taking cold (as they commonly term it), that is from transpiration outwardly being hindered, the cough for the most part, is stirred up; and for a foregoing cause to this distemper, the flowing forth of the serum into the mass of blood, hath, for the most part, the chief place; for from the long cold hindring the scorching of the blood, or the provision of the bile, and prohibiting the breathing forth of the watry humor, there was a necessity, that very much of the serous humor should be heaped up in the blood: wherefore, when the blood flowing in the spring conceived an heat, the flowing forth of the serum, and a pouring of it on the interior parts, was wont to cause first the cough, as the proper symptom of this disease; and those, whose blood was more diluted by the mixtion of the serum, and who were greatly obnoxious to the cough and a rheumatic distemper, were cured with less trouble of the feaverish distemper.

“The prognostick of this disease, concerning private persons, is, for the most part, easie, that one may deliver the event from the first assault; for if this sickness be excited in a strong body, and healthful before, and that the feaverish distemper be moderate, and without any grievous and horrid symptom, the business is free from danger, and the distemper is to be accounted but of light moment, as that commonly is of catching cold, neither needs a physician be consulted, nor remedies, unless trivial and ordinary, be administred. But if this distemper happens in a weak and sickly body, with an evil provision, or that the feaver being carried into a putrid feaver, or the cough growing grievous, induces difficult breathing, and as it were a rabid or consumptive disposition, the event of the disease is much to be suspected, and often terminates in death. The common prognostic, that was taken from hence, concerning the future state of the year, contains nothing to be feared, or ominates any great ill; by reason of the unequal intemperance of the year, the great heats, and then excessive cold, we might fear diseases to arise from the dyscrasie of the blood, yet from the present condition we need neither suspect any noted depravation of the air, or infection with poysonous breaths, that from thence may be had any judgment of the plague, or malignant disease to be at hand.

“As to what belongs to the cure, when this disease is more lightly inflicted, its cure, for the most part, is left to nature; for this feaver, when it is only a simple synochus, is wont to be cured within a few days by sweat: wherefore, by a copious sweating for the most part about the third or fourth day, the heat and thirst, the weariness, and heavy pains are allayed; then the cough being somewhat longer protracted, by little and little, afterwards remits, and at length the sick leisurely grow well; if this disease hath rooted itself more deeply, there is need of fit remedies, and an exact method of curing; the feaver growing worse is to be healed, according to the rules to be observed in a putrid feaver: but, nevertheless, with this difference, that, because transpiration being hindred, and the suffusion of the serous humor on the lungs, are chiefly in fault; therefore diaphoretic remedies, and those called pectoral, are of more frequent use, for these restrain the flowing forth of the serum from the vessels within, or by opening the pores convey it forth of doors; or precipitating it from the bosom of the blood, send it forth by the urinary passages; therefore the method of medicine for this disease being brought into the worser state, respects both the feaverish intemperance, for the sake of curing which you are to be directed, according to the intentions shown in the putrid feaver, and also the rheumatic distemper, which however, let it be secondary, and not every expectorating remedy, or those used against a cough are to be admitted, but of that kind only which do not increase the feaver: the forms of these, and the means of curing, are to be sought from the precepts, delivered generally for the cure of the putrid feaver and of the cough; the helps, which now, by frequent experience, are commonly said to bring cure chiefly in this disease, are sweating, or the provoking of sweat, and letting of blood; for the vessels being emptied by this or that means, both the immoderate heat of the blood, and the abundance of the serum, are restrained.

“The vernal feaver, but now described, did not last longer than six weeks, that it plainly was seen that it was only a more light flowering of the blood, which swelling up in the spring, and at the same time streightened in space, for want of ventilation most impetuously boyled up, like new wine close shut up in bottles, and then ceased of itself. Yet from thence,

as neither the year, so neither our blood did recover its due temperature, and so another tinder or nest for a new feaver was quickly gathered together. Because after the summer solstice, the north wind still blowing, a cold season remained for a long time; so that the fruit and corn this year was feared by the husbandmen would scarce be thoroughly ripened; but after this, a little before the beginning of July, a most fierce heat followed for several days; and when the dog days were begun, the air grew most cruelly hot, that one could scarce endure the open air. By reason of this heat and cold in excess, the temperature of this year was very unequal; wherefore there was a necessity for our blood to be now fixed, and as it were congealed, now too much roasted, and so perverted from its natural disposition, to a scorched and melancholy temper; also it came to pass that the pores of the skin were much altered from their right constitution, that by that means an insensible transpiration could not be performed after the wonted manner.

“From the time that the former feaver ceased, almost to the end of the dog days there was a state of health and free from all popular diseases; but then a few here and there among the villages, and in lesser places, first fell sick, but afterwards, about the end of *August*, a new feaver suddenly arising, began to spread through whole regions everywhere round about us; also this, as the other which spread the last autumn, raged chiefly in country houses and villages; but, in the mean time, few of the inhabitants of the greater towns and cities fell sick.”

EPIDEMIC OF 1675

SYDENHAM¹

“1. In the year 1675, warm and mild weather (indeed summer weather) lasted longer than usual, even to the end of October. However, it was succeeded by weather very different, viz. sudden cold and moisture. Then it was that coughs pre-

¹ The Epidemic Coughs of the year 1675, with the Pleurisy and Peripneumony that supervened. From the works of Thomas Sydenham, M.D. (Syd. Soc.'s edition, vol. i. p. 226.)

ailed in greater number than at any other time within my remembrance. No one escaped them, whatever might be his age or temperament; and they ran through whole families at once. Nor were they only remarkable for their frequency; this being the case every winter. They were remarkable on account of the accidental dangers which they brought upon those they affected. The constitution of both the present time, and the whole of the previous autumn, exerted itself to the utmost in the production of the epidemic fever already described; and besides this, there was no other epidemic disease by the antagonism whereof the activity of the present one might be traversed in even the least degree. Hence the coughs paved the way to fever, and passed, without difficulty, into it. Meanwhile, just as the coughs helped the constitution in producing the fever, so also was the fever determined by the cough to the lungs and pleura. These it attacked, just as a week before it had attacked the head. This sudden change inclined the unthinking to consider the fever as either an essential pleurisy, or an essential peripneumony. Yet it was neither more nor less than what it had been throughout.

“ 2. Now, as before, it attacked with pain in the head, back, and limbs; and this was the symptom of the fever of the constitution. Doubtless, the febrile matter fell heavily on the lungs and pleura; but this was the stimulus of the cough. That the fever, however, was the fever that committed all the previous havoc, is proved by the effects of the remedies. Both forms yielded to the same. Bad as might be the stitch of the side, or the difficulty of breathing—and pleuritic as might be the character of the blood, the treatment was the treatment which squared with pleuritic fever, and not the treatment which squared with true pleurisy. This will be seen in the sequel. Then as to the season, primary and essential pleurisy is a disease that comes between the spring and the summer, and links the two divisions of the year. The secondary pleurisy in question was born under another star, and was nothing beyond the symptom of the proper fever of the year, and an accidental offspring of the cough that accompanied it.

“ 3. In order that I may proceed to the method which had been dictated by experience for the treatment of the coughs on

this year, and of other years, where the cause is the same, I must start with a remark upon those effluvia which are usually got rid of by the means of insensible perspiration. Now, these may be checked by the effects of cold, for cold contracts the pores of the skin and throws the transpiration inwards. So thrown in, it falls upon the lungs. These it irritates; and hence cough is speedily excited. Furthermore, when the hot and recrementitious exhalations of the blood are prevented from escaping from the skin, fever is lit up, for so great may be such abundance of these same vapours, that the lungs may be insufficient for their elimination. Or the natural heat may be increased by the adventitious heat of either the regimen or the remedies, so that fuel may be added to the flame, and the patient, who was already inclined towards fever, may be thrown into it at once. Now, whatever may be the character of the stationary fever which rages during the year in question, the same will be the character of this secondary fever, that originates in the cough. Dependent upon this cough, it may present certain peculiar symptoms. Its general character, however, will be that of the family into which it is adopted. Now, it is clear, that whatever may be the origin of the cough, it is not the cough alone that must be attended to. The fever must be looked to as well.

“4. On this principle, I treated my patients as follows:—If the cough had not yet brought on the usually concomitant fever, I was satisfied with forbidding animal food and fermented liquors. I recommended moderate exercise, fresh air, and occasional draughts of a cooling pectoral ptisan. This was sufficient for checking the cough and anticipating the fever. The abstinence from meat and wine, and the refrigerant draught, tempered the blood, and made it less ready for the febrile impressions, whilst the exercise opened the pores of the skin, and supplied the natural and genuine passage for the exhalations. These were dispersed, and the patient was the better for their dispersion.

“5. As to the allaying of the cough, the application of narcotics and anodynes was not wholly safe. And just as dangerous was the use of spirituous liquors and hot cordials. Both modes acted alike. They entangled and hardened the matter of the cough, so that those exhalations which, by

departing quietly and gradually from the blood, should vanish into the atmosphere at large, were now denied an exit, corked up in the mass of the blood, and became, thereby, sources of fever. This was most frequently the case with such of the common people as thought, by means of burnt brandy and other hot liquors to check the cough. Instead of this, they brought on pleurisies and peripneumonies, and by their unwise wisdom transformed a disease which, in and of itself, was unimportant and curable, into a disease both dangerous and deadly. Just as insensible (although with a greater show of sense) were they who would force a sweat, and so think to exterminate the cause of the disease.

“Nevertheless, it must be owned that *spontaneous* sweats often did good—more, indeed, than aught else. These, however, are very different things from forced ones. The latter can only be extorted by incensing the blood, and by endangering the patient that we would save.

“6. Sometimes, however, there supervene upon the cough the following symptoms:—a succession of chill and flushes; pains in the head, back, and limbs; an occasional tendency to sweats (especially night sweats); sometimes the addition of pain in the side; sometimes a constriction and tightness at the chest; and, as the result of this last, difficulty of breathing, tightness in the cough, and violent fever. Now all this might happen, not only after the disease had been badly treated, but spontaneously; and this was really the case, more especially with infants and children. Sometimes it began immediately, sometimes a day or two after the cough had left.

“7. As far as very careful observation has informed me, the best treatment for the fever and its worst symptoms were, —bleeding at the arm, a blister to the nape of the neck, and a daily clyster. The patient, meanwhile, was ordered to be out of bed a few hours every day, to abstain from animal food, and to take, as his drink, small beer, milk and water, or a cooling lenitive ptisan, as the case might be. If by the end of two or three days the stitch in the side were not removed, I repeated the bleeding, and went on with the clysters. In respect to these last I must remark that (in this fever, as in others), when by their use, the neck of the disease has been broken, and its edge taken off, they should not be too con-

tinuously repeated, especially in the case of women who are hysterical, or men who are hypochondriacs. The blood and humours of such patients are endowed with great mobility. A little makes them boil and ferment. This disturbs the economy; and febrile symptoms extended beyond their due time, harass the patient.

“8. To return to our subject. By this method we allow time to the disease, and this time allows the blood to throw off, by degrees, those hot particles which had fixed themselves upon the lungs and pleura. Hence, all the symptoms will quietly disappear. If, on the other hand, you attack the disease fiercely and with a hostile hand, waging war against it with a whole armament of remedies, you will either lose your patient, or else have to redeem his life by bleeding him beyond both the genius of the disease and the bounds of safety. I say the *genius of the disease*, because, in the true pleurisy, repeated venesections are right and proper; and provided that overheating remedies and regimen have not stood in the way, cure the complaint single handed; whereas, with the symptom in question, it is quite sufficient to bleed once only—twice at most; provided always, that the patient be allowed to leave his bed, and use cool drinks. There is no need to bleed oftener, unless the fever be increased by heat from without. Even then a repetition is not always safe.

“9. I will now take occasion to say a few words concerning a very current opinion, viz. that in some years pleurisy is found so malignant as not to bear its usual bleedings. My own doctrine is that the true and essential pleurisy, which, as will be stated hereafter, runs rife under all constitutions of all years, will tolerate a repetition of venesections. When, however, it happens, as it sometimes does, that the proper epidemic fever of the year, from some sudden alteration in the manifest qualities of the atmosphere, deposits the morbid matter of the lungs or pleura (the fever, nevertheless, remaining the same),—in such a case, I say, that although venesection may be allowed in an extreme form of the symptom in question, the general rule must be, that the bleeding be apportioned to the fever that generates the symptom, rather than to the symptom itself. Hence, if the fever require bloodletting, the pleuritic symptom will require it also; if not, bleeding will be either

unnecessary or mischievous ; since it is with the fever that the pleurisy either stands or falls. In my mind, this was the case with the symptomatic pleurisy accompanying the fever that prevailed at the time when the coughs came in, viz. the winter of 1675. And here I must again remark, that in the treatment of fevers, the physician who does not keep continually before his eyes the constitution of the year, the extent to which it favours the epidemic production of this or that disease, and the power it has of twisting to its own proper shape and likeness all the other concurrent diseases of the time, wanders wildly in a maze without a clue.

“10. In the November of the aforesaid year, I attended Mr. Thomas Windham, the eldest son of Sir Francis Windham, knight. The patient was sick of the fever in question, and complained of pain in the side, and the other symptoms of the malady. I bled once (and no oftener), blistered the nape of the neck, threw up daily clysters, ordered, one day, ptisan and refrigerant emulsions, another, milk and water (sometimes thin small beer), and recommended him to be out of bed a few hours every day. This set him up within a few days, and after a free purge he was thoroughly cured.

“11. I must remark that although these symptoms, which were wont to supervene upon the cough, were nearly those that did so much mischief during the winter in question, the cough itself, single and unaccompanied, was, at the same time, particularly predominant. In treating this, there was occasion for neither bleeding nor clysters, provided that the fever was not increased by heating diet. It was sufficient to recommend fresh air, and to forbid meat and wine. Furthermore, I ordered the following lozenges, the best I know for checking such coughs as arise from cold :—

R Sugar-candy, lb. ijss.

Boil in a sufficiency of pump-water, until it stick to the ends of the fingers.

Then add—

Liquorice-powder,
Elecampane,
Aniseed,
Angelica-seed, āā ʒss;
Orris-powder,
Flowers of brimstone, āā ʒij;
Essential oil of anise, ʒij.

Fiant tabellæ s. art.

“These the patient should always have about him, and take frequently.”

Influenza prevailed during the same year, in France, after a very thick and pungent fog. The disease was accompanied with violent cough, which was very fatal to pregnant women. In many abortion occurred, and extreme menorrhagia, inducing great inanition.¹ Etna was active this year.²

The condition of London about this period has been thus described by an eloquent historian. “If the most fashionable parts of the capital could be placed before us, such as they were in the reign of Charles II, we should be disgusted with their squalid appearance, and poisoned by their noisome atmosphere. In Covent Garden, a filthy and noisy market was held close to the dwellings of the great. Fruit women screamed, carters fought, cabbage stalks and rotten apples accumulated in heaps at the thresholds of the Countess of Berkshire and of the Bishop of Durham. St. James’s Square was a receptacle for all the offal and cinders, for all the dead cats and dead dogs of Westminster. At one time a cudgel player kept the ring there; at another time an impudent squatter settled himself there, and built a shed for rubbish under the windows of the gilded saloons, in which the first magnates of the realm—Norfolk, Ormond, Kent, and Pembroke—gave banquets and balls. It was not till these nuisances had lasted a whole generation, and till much had been written about them that the inhabitants applied to Parliament for permission to put up rails and to plant trees.”³

1688. An influenza or “short fever” visited Dublin, in the year 1688, preceded by a distemper attended with nasal defluxion (probably glanders) among horses, especially those belonging to the army, then encamped on the Curragh of Kildare.

1693. “About the beginning of November 1693 (observes Molyneux), after a constant course of moderately warm weather for the season, upon some snow falling in the mountains and countries about the time, of a sudden it grew extremely cold, and soon after succeeded some few days of

¹ Peu, ‘Pratique des Accouchemens.’

² Webster (op. cit.)

³ Macaulay’s ‘History of England.’

very hard frost, whereupon rheums of all kinds, such as violent coughs that chiefly affected in the night, great defluxion of thin rheum at the nose and eyes, immoderate discharge of the saliva by spitting, hoarseness in the voice, sore throats with some trouble in swallowing, wheezings, stuffings, and soreness in the breast; a dull heaviness and stoppage in the head, with such like disorders, the usual effect of cold, seized great numbers of all sorts of people in Dublin. In some of the persons so affected the symptoms were more severe, and attended with somewhat more fever, headache, and intolerance of light. This epidemic, as it then appeared, was not attended with many fatal results, and in general the persons recovered without any treatment; the disease usually terminating in a critical diaphoresis. The duration of the distemper was in the mild cases from eight to ten days, and in the more obstinate ones, about a fortnight. So very general did this influenza rage, that few or none escaped. It spared neither rank, age, sex, nor condition; but it rather favoured the very old, who seldom were attacked with it. This disease ran its course in about a month, but it was not confined to Dublin alone; London and Oxford were visited by it. It appeared in London about a month sooner than in Ireland; and it likewise progressed through France, Holland, and Flanders."¹

For several successive years after 1675 fevers prevailed in England, and there was much disturbance in atmospheric conditions. The winter of 1680 was intensely cold, the subsequent summer excessively hot. In the spring and summer of 1681 herbs and grass were burnt up for want of moisture in the air. The frost of 1683 was almost unprecedented, that of 1684 almost equally severe. In the spring of 1685 an immense flight of grasshoppers in Languedoc laid waste the corn, then attacked vines, pulse, willows, and hemp. In 1686 was a terrific hailstorm. 1687 was characterised by rain, inundations, abundant fruit, and great swarms of gnats and other insects. Diarrhoea was remarkably fatal, first in the suburbs of London, especially amongst children. On the 10th of October occurred the earthquake which overthrew the city of Lima.

¹ Dr. Molyneux, 'Philos. Trans. Dub.,' March 1694.

In 1688 there was an earthquake in Jamaica, and a hurricane at sea.

"We find (resuming the narrative of Dr. Short)¹ that at the middle of May began a fever in London, all over England and all over Ireland in July. The symptoms were the same in all. It began and ended its course in seven weeks. It seldom held the sick above two or three days, except they were let blood, then it lasted seven or eight before the sweat (which was the general crisis) began. Though not one of fifteen escaped it, yet not one of a thousand that had it died. It was generally observed, both in England and Ireland, that sometimes before the fever begun, a slight but universal disease seized horses, viz. a great defluxion of rheum from their noses. This fever spread all over Europe from E. to W. At Jena was an epidemic dysentery, with blackish-red spots, tossings, restlessness, anxiety, and hiccup. It resisted the common methods of cure; but yielded to bolus's of conserve of roses, red powder, and japan earth, with opiates. (Miscel. Curios.) The preceding season having been very unequal, one while excessively hot, another time severely cold, and great swarms of insects, in August reigned, at Augsburg, an epidemic dysentery, seizing infants with convulsions from their first attack, which killed many the first day. And adults were tormented night and day with terrible defluxions."

In the year 1708 a comet appeared, and volcanic eruptions.²

1709. "The weather, at the close of the year 1708, in four days' time, froze over the *Thames*, notwithstanding the motion of the water by tides and stormy winds; many booths were built on it. The thermometer, December the 31st, was lower than it had been in eighteen years before; little less next day. It was much the same from *February* the 12th to the 15th. Several thermometers sank within the bubble; others at 90, or colder than the middle state of the air under the pole. Urine froze under the bed, though there was a good fire in the room. Bread and meal were all ice. Bottled beer in deep cellars froze. A nine gallon barrel of small beer set in the chimney corner to thaw, afforded a gallon of ale; all the rest was dead water. Ships in great numbers

¹ Op. cit. vol. i. p. 455.

² Webster (op. cit.)

came ashore in *Yarmouth Roads*, not merely by the violence of the wind, but from the impotence of the sailors to find their hands, and from the impossibility of sening the cables, which were thick cased with ice. . . . The latter end of the second week, and beginning of the third, countless thousands of bra geese, by flights of five or seven minutes' distance, were continually making to the southward to find open waters, creeping low and slowly along the shore, as the weakest among them were able to fly, some of which they were often dropping. But the moment they came to the mouth of any river they ascended strongly and swiftly into the air, whence they might take a view of the waters many miles into the land; and when they observed they were all ice, descending and creeping again as before; though the farther south the severer the winter; for this extreme cold reached not only the northern countries, but over *France* also, and fiercer by their accounts than here; even *Portugal* itself felt the severity of it. Ink froze in my pen, though by a good fire, that I could not write a line at once. The ice was said to be a foot thick at land, but on the coast, where it never freezes so hard, it was eight inches.

"The year 1710 was very temperate in the general, only in the end of *March* were three insufferably hot days. From *April* the 7th to the 11th, north wind, sleet and cold; then six days of excessive heat, with east wind cooled by after-rains. In *June* several unseasonable sharp and cold storms, from which vicissitudes of weather catarrhs and arthritics were not unfashionable. The harvest was less changeable, the year was fruitful and healthy, the winter late. In the latter end of *October* and *November* were great floods. The winds after were very variable, but mostly south; the air foggy, thick, moist, vapid, often stagnant, long without sun, and very unwholesome in *Carniola* and *Augsburg*. *March* the 1st began and reigned two months, an epidemic which missed few, and raged fatally like a plague in *France* and the Low Countries, and was brought by disbanded soldiers into *England*, viz. a catarrhous fever, called the *Dunkirk* rant, or *Dunkirk* ague; it lasted eight, ten, or twelve days. Its symptoms were a severe, short, dry cough, quick pulse, great pain of the head, and over the whole body, moderate thirst; sweating and diuretics were the

cure. Bleeding very pernicious or fatal. This was a very moist, southerly, and unsettled constitution in *England*.”¹

Influenza prevailed in Dublin in the previous year, after a sudden transition of atmospheric temperature from heat to cold.²

EPIDEMICS OF 1729-43

HUXHAM³

1729 “The following observations were made exactly
to after the manner described by the celebrated Dr.
1743. Jurin, in the ‘Philosophical Transactions,’ No. 379,
and which has been followed by almost every
physical body, particularly that eminent one of Edinburgh.
My barometer consisting of a pretty large tube, to which is
fitted a wide cistern, the quicksilver with which these are
filled I had first of all carefully purified by distillation. The
thermometer, which is one of Hauksbee’s, is fixed in a con-
venient place. The barometer in the month of July, anno
1733, at low water mark, stood at about forty-six feet; but
from that time to this it has not exceeded thirty feet. I
determined the degree of humidity of the air by several
hygrosopes; the principal one is of the same form with
that of Dr. Molyneux’s, in the ‘Philosophical Transactions,’
No. 172.

“When I have occasion to take notice of the force or
direction of the wind, I make use of the common characters
on the mariner’s compass, viz. E., W., N., S., for the four
cardinal points, and for the other compound ones, N.E., N.W.,
S.E., S.W., and so on.

“The town of Plymouth (where I chiefly made these obser-
vations) is situated at the very bottom of a large bay (called
the Sound), which is wholly exposed to the southerly winds.
It is sheltered, indeed, towards the east and west, by a ridge

¹ Dr. Short (op. cit.), vol. i. p. 455.

² Dr. Molyneux, *Philosophical Transactions*, Dublin, March 1694.

³ *Observations on the Air and Epidemical Diseases*, by John Huxham. Trans-
lated from the Latin. Vol. I. London, 1758.

of very high hills. The bottom of this bay is shut up by large rocks of free-stone, and it stretches forth on each side a considerable arm of the sea; at the back of it arises a chain of hills, which runs to the Devonshire and Cornwall mountains, at about ten miles' distance. I have been thus particular in the description of this town, as we may from hence, with some degree of certainty, account for the excessive quantities of rain which fall here every year. For the bay lying so open to the main ocean, the vapors and clouds coming from thence have a free access between its two high promontories; where, being closely pressed by the surrounding cliffs, they are all driven to the bottom of the harbour, and there rushing against the rocks and hills which obstruct their further passage, they become condensed, and at length fall down in the form of rain. Besides, I should observe, as no small addition to this article, that this part of the coast of Great Britain runs a long way out in the form of an isthmus between two very large seas.

"I was the more readily induced to publish this meteorologic history of observations, from the consideration of its great usefulness, and that nothing of the kind had to my knowledge been attempted in this western part of our island. The reason of my compiling these observations in Latin, rather than our mother tongue, was the greater facility of communicating them to foreigners, from whom we receive the like advantages. Many learned men of almost all nations have made a great figure in this study; but it is still to be wished that some time or other, from a long course and number of accurate experiments made in all parts of the world, we may see a general and perfect history of the atmosphere—a work which, as it is of the greatest use, so has it been a long while wanted. I have, for my part, thrown this my mite into the public treasury, in which I have, indeed, used all the care and exactness in my power, being little solicitous about the elegance of it; my business being to write as a physician and not as an orator.

“ ‘Non nobis licet esse tam disertis
Qui musas colimus severiores,’—MARTIAL.

"The smallpox continues epidemical still. A small catarrhal fever prevails now, attended with a troublesome cough, a slight dyspnœ, loss of appetite, and rheumatic pains of the limbs

and if more violent than ordinary, is very apt to end in a pleurisy or peripneumony; but it is easily got the better of by bleeding, a gentle vomit, a blister or two, and the exhibition of proper diluents, gentle sudorifics, anodynes now and then between whiles, giving the spt. volat. oleos., &c., as likewise spt. c. c. and the elixir asthmat. in a draught of small sack whey, a little warm."

In December the coughs, fever, and smallpox continued epidemic, and maniacal disorders more frequent than usual.

In January smallpox prevailed although less fatally, but catarrhal fevers invaded many, and severe fits of asthma were frequent. In March and April coughs and peripneumony and rheumatic fevers of a pleuritic kind. In June the only prevalent complaint was languor from the heat of the weather.

"The measles were fatal to many infants and children, who at the going off of the disorder were in a manner strangled by a violent *peripneumony*, nothing did any good here but large and repeated bleedings.

"About this time a disease invaded these parts, which was the most compleatly *epidemic* of any I remember to have met with; not a house was free from it; the beggar's hut and the nobleman's palace were alike subject to its attacks, scarce a person escaping either in town or country; old and young, strong and infirm, shared the same fate. Finding it to prevail so much and with so great force, insomuch that sooner or later it had spread almost all over the country, I resolved to commit a succinct history of the disease and its appearances to writing, with which I now present the reader.

"This distemper had raged in Cornwall and the western parts of Devonshire, from the first coming in of this month (February); but did not reach us at Plymouth till about the 10th, which was on a Saturday, and that day numbers were suddenly seized: the day afterwards they fell down in multitudes, and by the 18th or 20th of March scarce any one had escaped it.

"The disorder began at first with a slight shivering; this was presently followed by a transient *erratic* heat, an headache, and a violent and troublesome sneezing; then the back and lungs were seized with flying pains, which sometimes attacked

the breast likewise, and though they did not long remain there, yet were very troublesome, being greatly irritated by the violent cough which accompanied the disorder; in the fits, of which a great quantity of a thin sharp mucus was thrown out from the nose and mouth. These complaints were like those arising from what is called *catching cold*, but presently a slight fever came on, which afterwards grew more violent; the pulse was now very quick, but not in the least hard and tense like that in a pleurisy; nor was the urine remarkably red, but very thick and inclining to a whitish colour; the tongue instead of being dry was thick covered with a whitish mucus or slime; there was an universal complaint of want of rest, and a great giddiness. Several likewise were seized with a most racking pain in the head, often accompanied with a slight delirium. Many were troubled with a *tinnitus aurium*, or singing in the ears; and numbers suffered from violent earachs or pains in the *meatus auditorius*, which in some turned to an abscess; exulcerations and swellings of the *fauces* were likewise very common. The sick were in general very much given to sweat, which, when it broke out of its own accord, was very plentiful, and continued without striking in again, did often in the space of two or three days wholly carry off the fever; the urine depositing a copious, whitish, or yellowish coloured sediment, but very seldom a redish one; numbers, however, had great difficulty in making water, whether from their blisters, or from their profuse sweats, I will not take upon me to determine. The disorder often terminated with a discharge of bilious matter by stool, and sometimes by the breaking forth of fiery pimples.

“You have here a description of this *epidemic* disease, such as it prevailed hereabouts, attacking every one more or less; but still, considering the great multitude that were seized by it, it was fatal to but few, and that chiefly infants and consumptive old people.

“It generally went off about the fourth day, leaving behind a troublesome cough, which was very often of long duration; and such a dejection of strength as one would hardly have suspected from the shortness of the time; but this chiefly happened where there had been an imprudent and untimely use of the lancet. Bleeding was of the most benefit to such

as laboured under a great pain and weight at the breast, and that at the beginning, not decline of the fever. In all, the blood taken away was covered with a thin whitish pellicle, but not very tough; unless in those where bloodletting had been too long neglected, and the fever had thereby turned to a pleurisy and peripneumony, which was the case with not a few, especially where there had been a preposterous use of hot volatiles and cordial medicines.

"A *nausea* or vomiting indicated a gentle *emetic*, which always remarkably relieved the sickness of the stomach and weight of the breast; and did likewise in some sort excite a *diaphoresis*, to promote which it was absolutely necessary to pour down quantities of warm diluting drinks, whether drought required them or not. White-wine whey drank a little warm was in general found the best diluter, and such quantities of it were used at this time that the country round could scarce supply milk enough to make it.

"Blisters to the back and behind the ears were of eminent service in this disorder, nor were they on any account to be omitted, for they were a certain relief to the violent pains of the head, as well as to the exulceration and swelling of the jaws; add to this, that by diverting the course of the acrid humours they prevented its falling upon the lungs.

"The medicines I used to prescribe were chiefly these:—Lap. contrajerv., sp. volat. oleos., sp. e. c., sp. lavend. c., elixir asthmat. le mort., with draughts made of spermaceti, dissolved in some small pectoral decoction, or else very weak milk-whey, which generally eased the cough, and promoted the salutary sweats. If the difficulty of breathing and expectoration remained after the bleeding, I generally found it necessary to give a solution of gum ammoniac with oxymel scillitic.; for the disease was much in the nature of a *peripneumonia notha*, and seemed to require the same method of cure,—such as the sharper pectorals, to cut the tough, viscid phlegm, blisters to the legs, and sometimes *emetics*, or the more lenient *cathartics*.

"The cough was very violent during the whole course of the disease, insomuch that it was often a hard matter to keep it under, even by the use of anodynes; nay, after the fever was gone off, this symptom would sometimes remain so extraordinarily vehement, that it threw several into consumptions,

which carried them off within a month or two, especially such as had been formerly subject to disorders of the breast and lungs. Having frequently observed that if a looseness came on, the cough was commonly carried off by it, following nature as the best guide, I used to give *eccoprotics* of rhubarb, manna, *tartar solubile*, &c., about the decline of the fever, and generally found a happy effect from it; for the appetite, which had, during the whole course of the disease, been greatly impaired, if not wholly destroyed, was by this method happily restored.

"On the whole, this disorder was rarely mortal, unless by some very great error arising in the treatment of it; however, this very circumstance proved fatal to some, who, making too slight of it, either on account of its being so common, or not thinking it very dangerous, often found asthmas, *hectics*, or even consumptions themselves, the forfeitures of their inconsiderate rashness."

ARBUTHNOT¹

1732-3. "There have been of late two remarkable instances of the influence of the air in producing an epidemical disease, perhaps over the greatest part of the surface of the earth; the first happened in the year 1728, the last in the latter end of the year 1732 and beginning of 1733, which being the more recent and remarkable, I shall give a short description of it, till a more particular one can be procured from the collected memoirs of the several countries which it invaded, of which I have seen only a few.

"The previous constitution of the air was, in England and in the greatest part of Europe, a great drought, which may be inferred from the failure of the springs, in the abatement of the fresh water in all its usual currents and reservoirs, which are the best measure of the quantity of moisture falling from the clouds. What is most generally taken notice of, in the accounts I have seen from Germany, France, and some other places, was, that the air in the beginning of winter, especially in November, was more than usually filled with thick and requent fogs, the matter of which was not precipitated upon

¹ An Essay concerning the Effects of Air on Human Bodies, by John Arbuthnot, M.D. Lond. 1751, p. 193.

the earth in rain, snow, or any other fruits of the air. Fogs are so usual in this country in November, that there was nothing particular observed about them that I know. But there was hardly anything fell from the clouds during the month of November, except a very small quantity of snow, attended with a frost of no long duration; and this was all the winter we had. In the northern parts of France, there was a very small quantity of snow, which lasted from their 15th and our 4th of November, till after Christmas. This was succeeded by southerly winds and stinking fogs, during which there was observed, by some chirurgeons, a great disposition in wounds to mortify. Both before and during the continuance of the disease in England, the air was warm, beyond the usual temper of the season, with great quantities of sulphurous vapours, producing great storms of wind from the south-west, and sometimes lightning without thunder.

“As to the time of invasion of the disease, they were different in different countries. It invaded Saxony and the neighbouring countries in Germany about the 15th of November, and lasted in its vigour till the 29th of the same month. It was earlier in Holland than in England; earlier in Edinburgh than in London. It was in New England before it attacked Britain; in London before it reached some other places westward, as Oxford, Bath, etc.; and, as far as I can collect from accounts, it invaded the northerly parts of Europe before the southerly. It lasted in its vigour in London from about the middle of January 1732-3, for about three weeks; the bill of mortality, from Tuesday the 23d to Tuesday the 30th of January, contained in all 1588, being higher than any time since the plague. It began in Paris about the beginning of their February, or the 21st of our January, and lasted till the beginning of their April, or the 21st of our March; and I think its duration was longest in the southerly countries. It raged in Naples and the southern parts of Italy in our March. The disease, in travelling from place to place, did not observe the direction, but went often contrary to the course, of the winds.

“The uniformity of the symptoms of the disease in every place was most remarkable. A small rigor or chilliness, succeeded with a fever, of a duration (in such as recovered) seldom

above three days. This fever was attended with a headache, sometimes pains in the back, thirst in no great degree, a catarrh or thin defluxion, occasioning sneezing, a coryza, or running at the nose; a cough with expectoration of a thin pituite at first, and afterwards of a viscous matter, in which, if there was observed a clear oily matter, it proved generally the case to be mortal; for this clear matter was purulent. These were the most common symptoms; but a great many, during that season, were affected with spitting of blood, pleurisies, and inflammations of the lungs, dangerous and often mortal; in some places, particularly in France, the fever, after six or seven days, ended in miliary eruptions; in Holland, often in imposthumations of the throat; in all, the blood was sizy; and everywhere the disease was particularly fatal to aged people. What was observable was, that the fever left a debility and dejection of appetite and spirits, much more than in proportion to its strength or duration; and the cough outlasted the fever in some more than six weeks or two months.

“There was, during the whole season, a great run of hysterical, hypochondriacal, and nervous distempers; in short, all the symptoms of relaxation. These symptoms were so high in some, as to produce a sort of fatuity or madness, in which, for some hours together, they would be seized with a wandering of their senses, mistaking their common affairs; at the same time, they had not any great degree of fever to confine them to their beds; but in several who were thus affected, the urine was observed often to change from pale to turbid, alternately, so that there was some fever; though I did not observe nor hear that the bark was effectual, but the saline febrifuge draughts had generally a most surprising good effect. Since this disease has been over, the air has continued to be particularly noxious in diseases which affect the lungs, and, for that reason, occasioning a great and unusual mortality of the measles, at the rate of 40 in a week, from which one has reason to expect some specialities in the diseases of the succeeding season.

“The remedies commonly successful in this epidemical catarrhus fever were bleeding, sweating, promoted by watery diaphoretics, blisters, and the common pectoral medicines, and what I observed before, febrifuge draughts of salt of worm-

wood, juice of lemon, etc. I have not particulars enough to enable me to enter into the ætiology of this distemper.

“It was matter of fact, that there was a previous ill-constitution of the air, noxious to animal bodies. In autumn, and long afterwards, a madness among dogs; the horses were seized with the catarrh before mankind; and a gentleman averred to me, that some birds, particularly the sparrows, left the place where he was during the sickness.

“The previous great drought, as has been observed before, must have been particularly hurtful to mankind. Great droughts exert their effects after the surface of the earth is again opened by moisture, and the perspiration of the ground, which was long suppressed, is suddenly restored. It is probable that the earth then emits several new effluvia, hurtful to human bodies; that this appeared to be the case by the thick and stinking fogs which preceded the rain that had fallen before. It is likewise evident, that these effluvia were not of any particular or mineral nature, because they were of a substance that was common to every part of the surface of the earth; and therefore one may conclude that they were watery exhalations, or at least such mixed with other exhalable substances that are common to every spot of ground.

“Lastly, it is agreeable to experience, that watery effluvia are hurtful to the glands of the windpipe and the lungs, and productive of catarrhs.”

MEDICAL OBSERVATIONS IN EDINBURGH¹

1732-3. “The tertian agues, which were mentioned in the close of our preceding year, continued likewise through June and part of July 1732. Towards the end of June, this disease did not form into regular paroxysms and perfect intermissions, but appeared more in the shape of a remitting fever. During the remissions, the pulse was much sunk; but as the sweat came on, the pulse became fuller and stronger. When the sweat did not break out, the patients became delirious, and some continued quite deaf for some days.

¹ Medical Essays and Observations, published by a Society in Edinburgh, 3d edit. vol. ii. p. 26.

The urine was pale, and without sediment, till the disease was going off.

"Some were cured of this disease after two or three paroxysms, after a vomit or two; but with others, the disease lasted much longer. Bleeding was not found of use, although some symptoms seemed to require it; but vomiting and blistering succeeded much better, either of them bringing out the sweat when untimely stopped or prevented.

"In July, some few tertian agues remained; they were then more regular and gentle than before. Towards the end of this month, the cholera began to appear, but it was neither very frequent nor violent.

"In August, many among the poorer sort of people in the suburbs and villages near Edinburgh were taken with slow fevers, generally attended with a violent headach and ravings; some with a diarrhoea; others with pains of the rheumatic kind all over the body. As few of the sick had access to timely assistance, several died in this distemper.

"The same fever continued among the poorer people through September and October, and proved mortal the eighth or ninth day. Besides the symptoms before mentioned, many complained of great weight of their heads and drowsiness, loathing and vomiting; others had pains of the breast, and difficult breathing. Children in this fever, beside the headache and drowsiness, had pain and tense swelling of the belly. Most of them passed worms, some the teretes, others the ascarides, and recovered.

"In November, several children were seized with slight aguish fits, returning every other day, but lasting only a few hours, and going off without sweating. Between the paroxysms, the children were pretty easy, and their pulses calm. These fits were carried off by a vomit or two.

"About the same time, several people were taken with a cholera, which did not prove very obstinate.

"In this month, likewise, the effects of cold appeared in different shapes, as coughs, quinseys, rheumatic pains, colic-pains, diarrhoeas, etc.

"From the beginning till the middle of December, slow fevers were very rife among young people; they continued long, and were attended with pains in the breast, and a symptomatic diarrhoea, but were not deadly. About the same

time, others were seized with fevers of the nervous kind, with a very frequent, but low pulse.

"On the 17th December, several people were suddenly attacked with fevers of cold. The numbers increased, but insensibly, till the 25th; after which, these fevers became greatly epidemic, very few escaping them, and continued universal in this city and neighbourhood till the middle of January 1733, when they began to decrease, and diminished daily till the end of that month.

"This fever began with a coldness, shivering, swimming of the head, pains of the head, breast, and back; the pulse was very frequent; the appetite quite lost, and remained palled some time after the disease was removed. With a great many, it began with a running of lymph at the eyes and nose, which continued for a day; then they complained of pain and swelling about their throats before the cough began; and not a few were suddenly seized with the cough, which, after the third day, was incessant and constant in all, by which they discharged great quantities of mucus, and had their pains greatly increased. Some complained of sharp pains in their bellies, and had a diarrhoea, sometimes with bloody stools, especially if they were not sufficiently blooded in the beginning. Several passed their urine in very small quantity, of a high colour, without sediment, and continued to do so some time after the fever was gone off. Among the children, along with the cough, many had violent vomitings, and some a gentle diarrhoea, which carried off the disease.

"The fever commonly left the sick in two or three days but after the third day, scarce any escaped the constant tickling cough. Generally, all of them inclined to sweat, and were thereby considerably relieved. Some had profuse sweats, with copious reddish or brown, but not lateritious, sediment in their urine, without any previous coldness, shiverings, etc. These soon did well, if the sweating was not discouraged by some other evacuation. Bleeding in the beginning gave relief to the pains, and weakened the fever, and required to be plentiful to many who had violent headaches, and a feeling in their eyes as if they would have started out, or to those who had an universal oppression of the thorax, with stitches and cramps of the muscles employed in breathing; such in this condition,

who delayed venæsection too long, were seized with a hæmoptoe. Some bled a little at the nose, and were quickly well, without any medicine or other evacuation. A few were at once seized with ugly faintings; when bled they recovered more slowly; but, when supported with cordials, they were soon well. Vesicatories were of service to the cough; and opiates were of great use, curing several. When the phlegm began to thicken, mixtures, in which gum-ammoniac and oxymel scilliticum were the principal ingredients, opened the belly, and did remarkable service. The ordinary pectorals and balsamics were not observed to do any good.

“This disease was not of itself mortal, but it swept away a great number of poor old and consumptive people, and of those who were much wasted by other distempers. As a proof on whom it fell heaviest, we may remark, that, though the number of burials in the Grayfriars churchyard (where all the dead of Edinburgh are buried) was double of what it uses to be in the month of January, yet the number of those who were buried at the public charge was so great, that the fees of the burials scarce did amount to the sum commonly received in any other month.

“It was very remarkable that, notwithstanding this disease was so universal here, the people in our prison, and the boys, who are numerous, in Heriot’s Hospital, which is contiguous to the west side of the Grayfriars churchyard, and the inhabitants of the houses near to that hospital, escaped this fever and cough.

“This epidemic disease, which was felt sooner at Edinburgh than any other part of this island, spread itself gradually over all Scotland. It did not reach the most northern and western parts till about fifteen days after the time above mentioned, of its attacking this city. The ship *Anne and Agnes*, David Littlejohn master, having made a voyage to Holland, with one sick sailor on board, returned with the other ten in perfect good health till they made Flamborough Head, where, on the 15th of January, six sailors were taken ill; next day, two more were in the same condition; and the day thereafter, one more fell sick; so that, when the vessel came to the road of Leith, none on board were in health, except one, who was seized the day after he came on shore with the same disease which his

comrades had, whose symptoms were the common ones of the raging epidemic distemper.

"We believe it will not be improper here to mention, the horses in and about this place being universally attacked with a running of the nose and coughs, towards the end of October and beginning of November, before the appearance of this fever of cold among men.

"This epidemic distemper, above described, spread itself over all Europe, and also infested the inhabitants of America; so that it was, perhaps, the most universal disease upon record. The first accounts we have of anything like it this last year in Europe, was in the middle of November, from Saxony, Hanover, and other neighbouring countries in Germany. It raged at one time in Edinburgh, and Basil in Switzerland. It appeared in London and Flanders after the first week in January; toward the middle of which it reached Paris; and, about the end of the same month, Ireland began to suffer. In the middle of February, Leghorn was attacked; and near the end of it, the people of Naples and Madrid were seized with it. In America, it began in New England about the middle of October, and travelled southward to Barbadoes, Jamaica, Peru, and Mexico, much at the same rate as it did in Europe.

"There were also some people in Edinburgh labouring under the fevers of the pleuritic kind, and others under slow, tedious ones, in the month of January.

"In February, rheumatic and pleuritic fevers succeeded to the colds; several who had passed through these were seized with those and died. The management of the sick was no other than what is common in pleurisies.

"About this time, also, several people died suddenly.

"The pleuritic or peripneumonic fevers, which began in February, continued through March.

"At the same time, slow fevers were likewise frequent, without any topical inflammation. In most patients, these fevers did not appear with any violent symptoms, though some had ravings, but they were neither constant nor high. These fevers often lasted till the 30th or 40th day, and in some to the 60th; and at length the patients gradually wrestled out of them, without any remarkable crisis. The common remedies

in such cases availed little here ; blistering was found of much more service than bleeding.

"Tertian agues began to appear in March, and continued through April and part of May, though not very frequent ; many of them were off easily after four or five fits, without much assistance from medicine ; others took the common course.

"Some short but sharp fevers were frequent in April, with an erysipelas, for the most part on the face, and sometimes on the body or extremities.

"Some few children had the smallpox all the spring, and there were rather more in May ; they were generally of the distinct kind ; and several had an eruption like the bastard or chicken-pox. It was attended with very little fever, and very slight symptoms ; for, after a little heaviness and loss of appetite the pustules appeared. They were pretty large and red ; they did not suppurate, but had a little vesicle of clear lymph on the top. Some new pustules appeared for four or five days successively, like the first ; and about the ninth day all went off."

In France, during the years 1731 and 1732, the *Arctia phæorrhæa*, a moth allied to the brown-tailed moth, was so numerous as to occasion a general alarm. The oaks, elms, and whitethorn hedges looked as if some burning wind had passed over them and dried up their leaves ; for the insect devouring only one surface of them, that which is left becomes brown and dry. They also laid waste the fruit-trees, and devoured the fruit ; so that the Parliament published an edict to compel people to collect and destroy them ; but this would, in a great measure, have been ineffectual, had not some cold rains fallen, which so completely annihilated them, that it was difficult to meet with a single individual.¹

¹ Reaumur, vol. ii. p. 122 ; as quoted in Kirby and Spence's Entomology, vol. i. p. 206.

EPIDEMIC OF 1737

HUXHAM¹

"NOVEMBER.—Though the N.E. and N.W. winds kept the barometer up through the first part of this month, yet did they not in the least dry the air; a southerly wind indeed damped the middle of the month.

"Almost every place, but chiefly this town, was invaded this month by a disorder which spared no constitution or age. It was not unlike in its attack to the epidemic *catarrhal* fever of the year 1733, but much more violent.

"The sick were taken with a violent cough and pain in the back, sickness at the stomach, and continual sneezings; violent defluxions, and very often a cough, which was extremely troublesome. It attacked several at first with a severe pain of the back and the loins, which was commonly a bad symptom; for this was generally accompanied with a great oppression about the *præcordia* and a pretty high fever, which was often evidently peripneumonic; liquids were rejected immediately, but seldom anything boiled. But it was generally over with these, especially if a phrensy came on.

"The defluxion upon the fauces was so violent that it often occasioned a kind of quinsey, and that no inconsiderable one; there was likewise a violent swelling of the face, parotid and maxillary glands, followed with an immense discharge of an exceeding acrid *pituita* from the mouth and nose. Numbers were now miserably tortured with the toothach, who had never had a bad tooth in their head; and this was confined mostly to one side, and terminating exactly between the *dentes incisores*. In some, one-half of the head was affected as if by an exquisite *hemicrania*.

"A great many persons were much distressed by a fever which lasted them a considerable time, attended with a great heaviness in the head, a catarrh, troublesome pains of the teeth, generally preceded by a swelling and excoriation of the fauces. In the younger and more robust, a delirium generally came on as the disorder increased. Multitudes were cruelly

¹ Op. cit. vol. i. p. 164.

infested with wandering rheumatic pains, others with violent sciatics, which used to last a considerable time; and not a few had most excruciating gripes and pains in the bowels, which was followed by a critical diarrhœa. The tongue of those in this distemper was generally white, seldom dry or scurfy, nor was there any great thirst. The urine was a little turbid, and of reddish colour. The blood was like that of pleurisies.

"This catarrhal fever has prevailed, more or less, for several winters past; it put on various forms indeed, according to different constitutions of those it attacked. Some were only taken with a slight fever, which easily gave way to a gentle sweat. Others, and not a few, were troubled with a severe peripneumony; but, in general, the disorder raged much more severely this year than ever it had done and required a much larger effusion of blood.

"The chief cause appears to me to lie in the thick, damp, chilly disposition which closes up the *spiracula* or pores of the skin; for it is certain that a moist quality of the atmosphere did always precede and accompany this disorder, which never made its attack but during the winter time, and, indeed, appeared in many respects of the same genus with the winter-fever described by Sydenham.

"DECEMBER.—The disposition of the air was very various this month; sometimes very cold with a north wind, at others a great deal warmer when at south-west, or south-east. The barometer was kept up surprisingly by the immense quantity of vapours diffused through the atmosphere, and yet we had a considerable deal of rain.

"The 5th of this month, early in the evening, the sky, which was then a little cloudy, on a sudden began to shine and glitter extremely, as if from the reflexion of a very large bonfire; and the light it cast forth at times was not much less than that of the full moon when hid by a few clouds. This wonderful phenomenon lasted till near midnight, but was much brighter between the hours of five and seven than at any other time. The ignorant people were dreadfully frightened, some holding it portentous of some dire dreadful event, others fearful of immediate danger from the bloody colour the sky put on at times. The air had all that day been very thick,

foggy, and close, with frequent small showers of rain, especially about noon. There was hardly any wind all the time; in the evening there was a very offensive fog, and chancing to go by some hedges I tasted the drops of rain that hung upon them, and found them of a disagreeable sweetness.

"This light was seen in most of the northern parts of Europe; but at Kilkenny, in Ireland, there was, the same evening, for the space of an hour, a large globe of fire suspended in the air, which afterwards broke with a dreadful explosion, scattering a great quantity of flames round it.

"The *epidemic* disorders lasted most part of the month, but towards the end it disappeared; but numbers complained afterwards of great prostration of strength. Some fell into jaundices, many into consumptions, and numbers were afflicted with severe and obstinate pains of the gout and rheumatism.

"In the cure of this disorder we departed a little from the method established for that in the year 1733, which we have above described; for here there was a much greater call for the lancet, and to have it often repeated, too, if we meant to do good with it, in the urgency of the fever, and violent pains of the back and breast. But certainly there is a great mistake in ordering, as is usually done, venesection in disorders of this nature, which proceed from a sharp pituitous humour, as in a true pleurisy or peripneumony; and this has been taken notice of before me by that worthy and candid physician Dr. Sydenham, who was otherwise no niggard in phlebotomy. See sect. 5, chap. v, which I would have the reader consult.

"After bleeding I ordered the frequent application of epispastics, which drew off a surprising quantity of sharp serum.

"Nothing did so much service in this disorder as a mild, gentle, and equal sweat of the whole body; and nothing so safely and effectually procured this as thin, white-wine whey, a weak decoction of eryngo-root, or the like, drank warm. I likewise found very good effects from giving now and then a mixture of sal. c. c. with lemon-juice, in mint or hyssop water. This helped greatly to bring out the sweats, or, if it failed in that, it increased the urinary discharge, and, moreover, kept the belly properly lax; in short it every way answered the purpose of expelling the pituitous *colluvies*, and making the sick breath easier, especially with the addition of

a little oxymel scillitic. The elixir asthmat. of Le Mort was excellent to allay the vehemence of the cough, and would at the same time encourage the sweats.

"The belly was not only to be kept lax during the *impetus* of the disorder, but it was necessary, at its going off, to give a gentle purge or two, to prevent the morbid relicts from creating new disturbances.

"After the fever was totally gone, there often remained obstinate rheumatic pains, which were best conquered by the *mercurial cathartics*. But I never found anything of so much benefit as the following preparation of antimony, which does, indeed, possess every quality of that useful mineral; for which reason allow me to call it the *essence* of antimony.

"I had for a considerable time bent all my thoughts and endeavours towards discovering some useful medicine among the antimonial preparations; for this purpose I not only turned over all the processes of the most celebrated chemists and alchymists, but tried them on the sick in various cases, and often (be it acknowledged) found many of great virtue; but, on the whole, I solemnly declare that I never met with any one preparation amongst them all, so good, so safe, and efficacious, as the simple infusion of the powder of *glass of antimony* in a generous white-wine, guarded with some suitable stomachic spice.

"This possesses, *experto crede!* this alone possesses the whole virtues of antimony. It is a rough emetic in a large dose; given in a few drops, twenty or thirty for example, it will just excite a breathing sweat: increase the dose a little, you have a mild and safe purge. What will any other preparation of antimony do more? Besides, notwithstanding the great powers this antimonial wine appears possessed of, yet the particles of that mineral are but as it were in *effluvia* in the menstruum; so that from their extreme minuteness, they with the greatest ease pervade the most intricate meanders of the vascular system, and at the same time are so powerful as to stimulate even the great alimentary canal itself (much more the smaller ones of the human body), while the tenuity of their parts prevent them from doing any injury to either the one or the other.

"Here, worthy reader, I present you with a medicine,

simple in its preparation, indeed, but noble in its virtues, since with it you may safely remove most obstructions of the *vascular* system, whether you aim only at cleansing the *primæ viæ*, or thoroughly scouring the minuter canals. It is at once the surest and the safest sweat, for it heats sufficiently without overdoing it; hence it is particularly beneficial in all fevers of the slow and intermitting kind, and in most chronical diseases, but above all in an old obstinate rheumatism. In short, I take upon me to affirm, that this medicine does not want one virtue that is to be found in any other preparation of antimony, however dignified by pomp of language or elaborate composition.

“The whole quantity of rain this year = 27·36.”

Coincident with this visitation were earthquakes, a comet, and an eruption of Vesuvius.¹

In February 1738, coughs and anginas were very common amongst horses, by which numbers of them were suffocated.

Although the season was not unhealthy, yet very many persons dwindled away in a pulmonary consumption, occasioned by the catarrhal fever improperly treated, which was rife in the latter end of November and December. In May, apoplexies and palsies were common.

EPIDEMIC OF 1743

HUXHAM²

“Towards the end of April, a kind of fever, in general slight, but sometimes not a little fatal to old men and children who had weak lungs, raged through all this country. At once, and at the same time, innumerable persons were seized with a wandering kind of shiver and heaviness in the head; presently also came on a pain therein, and also in the joints and back; several, however, were troubled with a universal lassitude. Immediately a very great and acrid defluxion from the eyes, nostrils, and fauces, and very often falling upon the lungs, which occasion almost perpetual

¹ Webster, *op. cit.*

² *Op. cit.* vol. ii. p. 142.

sneezings, and commonly a violent cough. They all likewise laboured under a great straitness, and very great load upon the breast. On the second day, the fever grew so strong, that the pulse became very much quicker, and the difficulty of breathing was very greatly increased, especially if bleeding had been neglected. There was no very urgent thirst, but the tongue was very white, and looked as if rubbed over with cream. The eyes were slightly inflamed; and being violently painful in the bottom of the orbit, shunned the light.

“This slight fever did not proceed in one and the same tenour; but at one time a shivering, then presently a burning heat came on, without any manner of regularity, except that it frequently terminated at length in a tertian or semi-tertian. However, a peripneumony, or a pleuropneumony, which sometimes was occasioned by a too large quantity of blood, and the violence of the cough (particularly to such persons who had used a warmer regimen and course of medicines) was of far worse omen. Nor was a pleurisy or a sharp rheumatism uncommonly produced from the same cause, especially if bleeding had been omitted in the beginning of the disease. The blood drawn off was sometimes very sily, but nevertheless generally florid, but not abounding in serum: it was various, however, in different people, yet the higher the fever ran, so much the more tenacious. Indeed, whatsoever the state of the blood appeared to be, this disease would not admit of any great loss of blood; nay, if there was anything of a peripneumony which came on, it would by no means bear plentiful bleeding without the greatest ruin of the strength, and seldom more than barely once. Nor, indeed, did I only make this remark in this fever alone, but it was always so in every catarrhal epidemic fever; for by weakening the powers of nature, the perspiration was too much checked, and from thence the acrid colluvies increased. Notwithstanding, some bleeding in the beginning of the disorder, as to robust grown persons, and those who lived luxuriously and were plethoric, was always beneficial. Throughout the whole course of this *feveret*, the patients expectorated largely, which was a very great relief to the breast. However, the violence of the cough very much exasperated the trachea and the lungs. It required,

therefore, such medicines as oil of almonds, spermaceti, and something of the poppy kind, as diacodium tinct. thebaic, or elix. paregoric.; the last of which, moreover, excited easy and kindly sweats, and at the same time sat easy on the breast. Frequently, indeed, the load upon the lungs, and the oppression of the præcordia, demanded oxymel scillitic., lac ammoniac., syrup. croc., or something of that kind. In this case, nevertheless, a gentle emetic served instead of all, which indeed, after bleeding, very often presently removed everything, and was beneficial in all respects.

“The greater part by far of the sick had easy, equal, and kindly sweats, the second or third day, which, together with a large spitting which attended them, removed the fever on the fifth day, frequently even sooner; in general, however, there remained after it a very great loss of strength. Nothing, however, was more effectual in recovering this, than diluting, demulcent, and warm liquors, such as very thin milk, barley, or oatmeal whey, or a decoction of preserved eryngo; an infusion of ground-ivy, colt's-foot, or liquorice; nay coffee, with the addition of a little sweet milk, was very serviceable to numbers. Away, however, with your volatile salts and spirits, as they are called; your hot alexipharmacs, and all other things of that kind, which unquestionably very greatly disturb nature, but are of exceeding little service in expelling the disease. Indeed, if the fever became more violent, and continued longer, I moderated it with a common saline draught.

“Frequently, indeed, towards the end of this feveret, several red angry pustules broke out, often likewise a sudden, nay, a profuse diarrhoea, with violent gripings, came on, there being a translation of the morbid matter upon the intestines. Hence, probably, arose several dysenteries, which at this very time were rife up and down here; I confess that they were mucous, and seldom bloody. Nevertheless, so little was this effort of nature's to relieve herself to be restrained, that very often the disease terminated by a looseness; and therefore it was to be encouraged by manna, rhubarb, tartar solub., tamarinds, etc. The stronger purgatives, however, generally occasioned terrible gripings, and entirely destroyed the strength.

“This fever, although exceedingly common far and near, was fatal to few, since, provided that the sick kept within doors in

season when they were seized with it, it generally went off on the third or fourth day. Indeed, this was a matter more commonly requiring an accurate course of diet, and a proper regimen, than a studied heap of medicines, not but at some times it required much more care and attention. Equal and moderate sweats, plentiful spitting, large discharges of urine, and that turbid, easily removed this disorder. Frequently I was astonished at the vast sediment which the urine threw down, than which there could not be a more favorable symptom. This fever seemed to have been exactly the same with that which, in the spring, was rife all over Europe, termed the 'influenza.' Nevertheless, it was much more destructive in the southerly nations than it was here; nay, even in London it increased very greatly the number of burials, rising them, in one week only, to at least a thousand."

This year was remarkable for meteors, earthquakes, and a comet.¹

During the three months preceding this attack of influenza, the atmosphere for the most part was dense and moist.

On the 22d of January there was a very stinking fog.

In January, rheumatism, quinsy, and low fever raged; there was much mortality amongst deer, and mange prevailed much amongst horses, many of which in March died emaciated, or were suffocated with glanders and cough.

In April, many persons suffered from dysentery, and old and young were unusually troubled with round worms. Dr. Huxham inquires: "Was not this owing to an immense quantity of all kinds of fruit which the summer and autumn of 1742 everywhere abounded with?"

¹ Webster, op. cit.

EPIDEMIC OF 1758

1. WHYTT¹

“EDINBURGH, Nov. 10, 1758.

“The month of May, this year, was remarkably dry and hot. June was cold and dry. In July and August we had but just as much rain as was sufficient to bring forward the fruits of the earth; the air was temperate, or perhaps a little warmer than is common in Scotland during those months. Towards the end of August and for the first week of September, the weather was warmer than usual in that season; but less so than at the same time in the preceding year. From the 8th to the 16th of September was mild. From the 16th to the 20th, we had a strong easterly wind, which, though not extremely cold, yet cooled the air considerably. During the whole month of September, and till the 8th of October, we had scarce a shower sufficient to lay the dust. On the 8th of that month, we had a violent wind from the north-east with rain, which continued thirty hours. From the 8th to the 26th, the weather was mostly clear and frosty, with some gentle breezes. From the 28th of October to the 8th of this month, the winds have been southerly, and accompanied with wet.

“During the months of July, August, September, and October, the wind blew more from the east than ever had been known before in this country, at that time of the year. In August and September, we had seldom any strong winds from the west as usual; from whatever point they came, they were moderate; and, although it was calm weather for many days together, yet, as far as I can recollect, there was not one foggy day during the autumn. The barometer was higher throughout September, and the greatest part of October, than ordinary.

¹ Medical Observations and Enquiries by a Society of Physicians in London vol. ii. pp. 187-202. An Account of an Epidemic Distemper at Edinburgh and several other parts in the South of Scotland, in Autumn 1758. By Robert Whytt, M.D., F.R.S., and Professor of Medicine in the University of Edinburgh; in a letter to Dr. Pringle, and by him communicated to the Society. Read Feb. 12, 1759.

“I thought it proper to lay before you this account of the weather, in order to judge how far any of the sensible changes of the air might influence the health of the people here. But for my part, considering how remarkably mild and dry our season was, I can hardly ascribe the rise of our epidemic to any of the known qualities of the air.

“Before I proceed to the description of that distemper, it may be proper to take notice, that during the months of July and August, a fever, with a bloody flux, raged in Lorn, and other parts of Argyleshire; and was not only mortal among the common people, but carried off several persons of a higher rank. The same disease prevailed no less at Newcastle upon Tyne, in August and September; and likewise at Haddington,¹ about the same time, and in a less degree. In the months of September and October, we had a bad sort of smallpox at Edinburgh, and in other parts of this country. In some parishes near Cupar in Fife, eight died out of twenty-eight; and in some parts of Teviotdale, three or four died for one that recovered.

“As for what I call the epidemic, it was first taken notice of in this city, soon after the change of the weather, upon the easterly winds, that blew from the 16th to the 20th of September; several children began then to be affected with a slight degree of fever, attended with the common symptoms of a cold; but this was not thought extraordinary at that season of the year. About the end of September, the distemper grew much more general, both here and in the neighbourhood; and in the last week of that month, in the space of two or three days, thirty boys out of sixty, at the Grammar School of Dalkeith,² were seized with it. In the beginning of October, the sickness became still more frequent at Edinburgh, Dalkeith, and throughout a great part of the Lothians.³ Old as well as young were taken ill; nay, even women in childbed, who were not exposed to the cold air, were affected; and in particular, I knew one, who had but just recovered of a dangerous fever, after her delivery.

“The sickness continued to increase in all the places above

¹ A town within eighteen computed miles of Edinburgh.

² A town six miles from Edinburgh.

³ The shire of Edinburgh, and the two adjacent shires, so called.

mentioned, till about the 24th of October, when it began to abate; but whether the decline was owing to any alteration in the air, or because the distemper had already seized most people, I cannot determine; though the latter seems more probable, as I am persuaded, that in Edinburgh and the neighbourhood, not one out of six or seven escaped; and I am assured that, in some places, it was still more general.

“Hitherto I have only mentioned the rise and progress of this epidemic here and in the places adjacent. I shall now, as far as I have been able to learn, inform you of the time of its appearance in other parts of the country. In Fife, about Kirkaldy, it was not observed till the first week of October. At St. Andrews, not till the 10th or 12th of that month. In Angus, it began sooner. In Perthshire, it raged most between the middle and end of October; and many died of it. In the shire of Air, and at Glasgow, it was at the worst after the middle of October. In Teviotdale, it began later. At Ormiston, a village only four miles from Dalkeith, it did not appear before the 15th of October. And at Whitburn, about half-way between Edinburgh and Glasgow, it was little taken notice of, till towards the end of that month. I have been informed that the same kind of illness prevailed through Aberdeenshire, and other parts in the north; but that, at the end of October, it had not reached the shire of Ross. A gentleman told me, that in the Carse of Gowrie,¹ in the month of September, before this disease was perceived, the horses were observed to be more than usually affected with a cold and a cough.

“Having given you this summary account of the epidemic, I shall now more particularly describe the symptoms. In general, people were differently affected. Some complained first of a slight sore throat, with a feverishness; and, after a few days, they were seized with a cough. Many had a heavy, dull pain in their forehead, with watery eyes; either a sneezing or discharge at the nose; but with little fever. Some, all at once, felt a soreness in the inside of the *trachea*, as if that part had been excoriated. Others had a hard, dry cough, without this soreness; but generally with a quick pulse. Several were attacked with a slight *diarrhœa*; and others with

¹ The name of a large vale, on the north side of the river Tay, in Perthshire.

bleedings at the nose, sometimes profuse, and continuing for several days; till either by the hæmorrhage, or by opening a vein, the pulse returned to its natural state; for, in all those who had this symptom, the pulse was not only quick, but, for the most part, remarkably full. Two of my patients were troubled with a severe pain over their whole head but had little or no fever. In one, the headach becoming periodical, went off, upon lying a-bed, encouraging perspiration, and taking an electuary of the bark, with some glasses of claret: this person having weak nerves could not bear evacuations. The other had his whole head blistered; leeches applied to the temples; took camphire, *Tinctura Sacra*, and *Laudanum*; but with little benefit. Sudorific boluses of *Gum Guaiac*, with *Sal Ammoniac. volat.*, seemed to do him most service. After taking a few doses of this medicine, the pain left his head and seized the loins and right thigh, but more slightly, and then went off gradually; from whence it appears, that those pains were of the rheumatic kind. Some complained of pains only in the cheek-bones, teeth, and sides of their head. Others had a fever without a headach, sore throat, or cough; or, indeed, any other symptom in the beginning; but when the fever began to abate, as it usually did in a few days, if the patient lay a-bed, more or less of a cough succeeded. In two patients the cough seemed to be critical; for it no sooner took place, than the pulse returned almost to its natural state. One of them, a married lady, aged about thirty, had been feverish for four days; a rash of scarlet eruption appeared, but did not come fully out; and as she was restless and uneasy, I was sent for about ten at night. Her pulse then beat 120 times in a minute, and was full; but as she had a moisture on her skin, I delayed ordering her any medicine till I should see her again in the morning. About midnight she was seized with a troublesome tickling cough, which hindered her from sleeping. At half an hour past four, being called upon to see her, I found her skin cooler, her pulse less full, and beating only 96 times in a minute. After this she slept; and at eight in the morning I found her pulse down at 80. Here it should seem that the morbid matter, not thrown off by the skin, had fallen upon the *trachea*; so that the cough might be said to have been truly critical. Few, upon being taken ill, complained

of any coldness or shivering, commonly the first feverish symptoms; however, there were some who were seized in a more violent manner, and with the *horror febrilis*; especially when, from want of care, they had a relapse, which was often much more severe than the first attack.

“In regard to your question, whether the distemper was infectious or not? As far as I have observed myself, or been informed by others, our epidemic did not spread by contagion, from one person to another, like the plague, smallpox, or measles, but seemed to be owing to some particular quality of the air. Those who attended the sick were not more liable to be affected than others; and I myself escaped, notwithstanding my visiting many of the sick, and being obliged to travel frequently into the country, and sometimes in the night. I had no opportunity to observe, whether nurses infected the children they suckled, or the infants their nurses; but I do not believe they did, from what I remarked in other cases.

“As to the cure. In the beginning, when the disease was mildest, it generally yielded to lying in bed, keeping the body open with clysters, and promoting sweat by warm diluent liquors. Afterwards, a higher degree of fever, which many had, required bleeding; and then the blood was almost always sizzly, even in those who had no fixed pain, nor any considerable symptom, except heat, and a quick pulse. In some, especially among the country people, the coat of the blood, instead of being tough, thick, and sizzly, was transparent like a jelly; the *crassamentum* was of a loose texture, and separated but little *serum*. For the cough and soreness of the *trachea*, the usual medicines were ordered; but when the patients only complained of a dry tickling cough, attended with little or no fever, a dose of *Laudanum* at bed-time was the best remedy.

“Those who exposed themselves too soon to the cold, before they had perfectly recovered, frequently relapsed; were often worse than at the first attack; and generally required more bleeding. Many were so slightly affected as to need no medicine at all.

“Few died of the disease, especially when it first appeared, except some old people; or those whose lungs had been greatly obstructed, or long pressed with phlegm. In such cases, besides bleeding, when the pulse required it, blisters and

boluses of *Gum Ammoniac.*, with *Sal Ammoniac. vol.*, were the chief remedies I used, with a slight pectoral decoction, or infusion, acidulated with vinegar.

"Towards the end of October, and in the beginning of November, the distemper, especially if neglected at first, became more dangerous, by falling on the lungs, *pleura*, or muscles of the *thorax*. Then, repeated bleedings were requisite; and afterwards, blisters to the parts affected had remarkable good success.

"In some parts of the country, when the disease was not taken care of in the beginning, as being attended with no alarming symptoms, it assumed the form of a slow fever, which sometimes proved mortal."

2. ALVES¹

"INVERNESS, Dec. 22, 1758.

"SIR,—The epidemic disease you enquire about, appeared here in the middle of October, and continued to rage, with great violence, till towards the end of November; since which time it has been on the decline, and is now almost quite over. It was attended with all the symptoms you mention to have been common at Edinburgh, the *diarrhœa* excepted, which I think I only observed in one or two cases. It was the most universal epidemic I ever saw; and am persuaded, that more people were seized with it than escaped; but it was not at all mortal here. Bleeding in the beginning, when the degree of fever and violence of the cough required it, moderate sweating, camphorated oil applied to the throat, with *Spermaceti* linctuses, and *Elix. Paregoricum* to quiet the cough, commonly carried off the disease in a few days. Many people had it in so slight a degree, that they got free of it by keeping warm, and by gentle sweating for a day or too, without taking any medicine.

"So far as my correspondence goes to the northward, *i.e.* about twenty miles, I find this distemper was common there about the same time we had it; and I am told it has been likewise in the shires of Sutherland and Caithness."

¹ Extract of a letter from Dr. John Alves, Physician at Inverness, to Dr. Robert Whytt, Professor of Medicine in the University of Edinburgh. Read Feb. 12, 1759.

3. MILLAR¹

"Last summer, which was uncommonly dry and warm, was succeeded, in the beginning of October, by very cold and moist weather. On the eighth and ninth of that month a great quantity of rain fell, and the air was then very cold. This change was great and sudden, and its effects were no less remarkable. Slight colds generally come on after the autumnal equinox, but there are few instances of any that have prevailed so universally as the epidemic cold which has raged here for these two months past. It did not seem to be produced by any other contagion than that of the air, because all in the same family that were seized with it generally fell down at once, and those who escaped, at its first entrance into the family, were not afterwards affected; nor did it spread, as might have been expected, were it infectious; since, it has rather been upon the decline from within a fortnight of its first appearance.

"It came on at first with a listlessness and lassitude all over the body, which was soon followed with coldness and shuddering; acute pains in the head and temples; violent sneezing; a discharge of a thin, watery rheum from the eyes, nose, and mouth; a dry heat and some thirst; the pulse was generally frequent, and the urine high coloured; the body was, for the most part, loose; and many had gentle *diarrhœa*, which to some proved critical.

"The hale and strong easily recovered of the disease, many without medicine, or any sort of regimen or confinement; others, especially the old, the weak, infirm, or sickly, escaped with difficulty; and some died unexpectedly.

"If the constitution had a disposition to any particular ailment,—such as the gout, rheumatism, nervous, hysteric, or hypochondriac disorders, the epidemic cold would frequently introduce them.

"As to the cure. Lying in bed, and promoting perspiration by drinking warm, diluting liquors, was generally sufficient to

¹ An account of the Epidemic. By John Millar, M.D., Physician at Kelso, in the shire of Roxburgh; in a letter to Dr. Pringle, dated Kelso, Dec. 8, 1758, and by him communicated to the Society. Read Feb. 12, 1759.

remove the distemper in the beginning; but if it was more obstinate, or of a longer standing, mild diaphoretics, with small doses of an opiate (which, at the same time that it assisted the operation of the diaphoretics, removed the pains and violent irritation), were used with success. Blisters, likewise, had good effects, in removing an obtuse pain of the head, which sometimes remained after the disease was otherwise mostly subdued."

In 1757, the small beetle denominated *Bostrichos typographicus* appeared in the Hartz forests; and between that year and 1783, is calculated to have destroyed a million and a half of trees, so as to threaten the inhabitants with a total suspension of the working of their mines, when a succession of cold and moist seasons happily diminished their numbers.¹ A meteor is recorded by Webster in 1758.

THE EPIDEMIC OF 1762

1. BAKER²

Of two memorable diseases which occurred in the same year, the one the offspring of the spring, the other of the autumn, a simple and unadorned history, recommended neither by the colouring of rhetoric nor by the fascinations of theory, is here presented.

Little solicitous respecting the causes, which for the most part are latent, my only desire and effort is to show the nature of these diseases, and the means by which they may be subdued; for I am fully persuaded, that conjectural and hypothetical views, so far from rendering any real service to rational medicine, have, from the infancy of the art to the present day, proved its greatest impediment and disgrace; and those medical authors must be considered entitled to the highest credit who, without wandering into such bye-paths, but devoted to the

¹ Latreille, 'Hist. Nat.' xi. 194.

² 'De Catarrho et de Dysenteriâ Londinensi Epidemicis utrisque an. 1762, Libellus. Auctore Georgio Baker, Coll. Reg. Med. Lond. et Cantab. Soc., et Reg. Soc. Sod., Lond. 1764. Translated for this work by the Editor.

observation and treatment of diseases themselves, have faithfully recorded their experience, and regarded nothing but the truth itself and the evident nature of things distinctly obvious to the senses and to sound reason. With such determination I have ventured on this treatise; and should it give satisfaction, and opportunity is afforded, I may occasionally publish other papers of a similar kind.

ON THE EPIDEMIC CATARRH OF THE YEAR 1762

The summer of the year 1761 was unusually dry and warm. Rains and southerly winds so much prevailed during the following autumn and early winter, that there was neither frost nor snow before the end of January. From that time to the middle of March there was frequent frost, but not sharp and severe, except about the end of February, at which time winds, frosts, snow, and rain, all inordinately vehement, succeeded one another by turns in an unusual manner. At the end of March the weather was wet and stormy, with much rain and hail, but at the beginning of April dry weather set in. The heat of the atmosphere was now considerable during the day, but the nights were cold and frosty. In the middle of the month, before the leaves appeared on the trees, suddenly the sun shone forth fervently, and the heat became unseasonable and intolerable. Thenceforth there was almost constant warm weather, and a clear sky, which for many days during the month of May was scarcely obscured by the slightest cloud. During the greater part of the month an east wind, sometimes veering towards the north, prevailed. By these alternations the air suffered sudden changes from heat to cold and from cold to heat, and we were sometimes liable on the same day to be scorched in the sun and to shiver in the shade.

I have chosen to premise these brief remarks on the state of the atmosphere, however crudely and imperfectly, almost in the style of the journals, lest I should entirely depart from the custom and manner usually adopted by other authors in works of this kind; but I think it would be superfluous to treat the subject more minutely, for I never could be persuaded that it was reasonable to attribute the origin of epidemic diseases to changeable winds, or to measure their

nature and character by the barometer. We seem, in fact, chiefly concerned with effects, and not with causes, which, for the most part, are hidden. If, indeed, the disease now under consideration owed its origin to those properties of the atmosphere which are obvious to our senses, how did it happen that persons who resided near to each other did not sicken at nearly the same time? How did it happen that those who lived only two miles from town were attacked by the disease much later than the Londoners themselves? To what cause are we to attribute the fact, that although the disease visited Edinburgh at the beginning of May, it did not reach some parts of the neighbouring county of Cumberland till the end of June? Our knowledge on the whole of this question is assuredly restricted to very narrow limits, and after much labour sustained in vain, we are obliged to acknowledge with the excellent Sydenham, 'Concerning the nature and quality of that disposition of the air on which the disease depends, as well as of many other things on which the dotting and arrogant crowd of philosophers trifle, we are totally ignorant.' It is not, indeed, unbecoming a philosopher when he is ignorant, to acknowledge his ignorance, if he has used all diligence in searching for the truth; but it is highly unbecoming to pass off the unknown for the known, and the doubtful for the certain.

But to proceed:—On the 4th of April, three persons in the same house were attacked with the disease which, on the 24th of that month, pervaded the whole city far and wide, scarcely sparing any one. Persons of all ranks and constitutions, with scarcely any distinction, sickened, and the robust and healthy as much as the weak and delicate. The disease affected most severely the aged, especially those who were asthmatical. It fared ill with those who were in too plethoric a state, and with women whose catamenia were interrupted. Children suffered lightly, and were easily relieved. Men servants were, for the most part, affected severely, either because they were unwilling to restrict themselves to a moderate diet, or because, owing to the necessity of working, they could not easily obtain the necessary rest. After the expiration of about a fortnight, few remained whom the disease had not in some degree assailed. The symptoms were,—cold and

heat alternately pervading the body ; a constant teasing cough, which attacked some from the commencement, others not for two days, sometimes raising a scanty thin secretion, sometimes dry and without expectoration ; lassitude, heaviness, and great pain about the temples and forehead ; inflamed, watery eyes, intolerant of light, swollen eyelids, frequent sneezing, flat voice ; all, without exception, complained of a very acute sensation of heat, as though the lining membrane were abraded, extending through the whole course of the windpipe to the ensiform cartilage. Some complained of a similar sensation of heat from the fauces to the stomach, as if the œsophagus, as well as the windpipe, was inflamed. Some were almost suffocated with a true angina. Many were troubled with oppression at the middle of the sternum, and difficulty of breathing, also with a tearing sensation between the shoulders when the cough was troublesome. To this were added variable and erratic pricklings in the arms, legs, and sides. Sometimes the frequent cough was accompanied with expectoration of blood ; and not unfrequently drops of blood issued from the nostrils. With these symptoms, a smart fever was sometimes associated, which usually remitted during the day, and had exacerbations at night, but was sometimes so slight as scarcely to occasion thirst, impair the appetite, or interrupt sleep. Perspiration was a constant symptom, which, breaking forth copiously, sometimes carried off, or at least mitigated the disorder. The thirst was not urgent, but the tongue was invariably coated with an extremely white mucus, as if it had been covered with cream.¹ The colour and appearance of the blood drawn from a vein varied according to the constitution of the sick. The urine was generally bilious at the commencement, but as the disease advanced, deposited a furfuraceous or lateritious sediment. Depression of mind and failure of strength were in all cases much greater than was proportionate to the amount of disease.

A great number of those affected were very slowly restored to health, languishing for months, and some even for a whole year with cough and feverishness ; relics of the disease which it was difficult to shake off. Some, after struggling long with

¹ J. Huxham formerly observed the same circumstance in two epidemics resembling this. See *supra*.

impaired health, fell victims to pulmonary consumption. Many after they had, in other respects, recovered, were for a long time affected with a very troublesome pain in one of the sides, or in some part of the abdomen. It was observed in London, that many women, suffering from the disease or its consequences, miscarried, or were prematurely delivered.

Others were attacked suddenly at the commencement, with severe pain of all the joints and of the head, with a sensation of lassitude and vehement fever; but the accompanying symptoms of catarrh or peripneumony were slight. These patients, more than others, suffered as much anxiety and precordial oppression as if some eruptive disease were about to appear; but as far as I observed, or could ascertain from others, this rarely occurred in London.¹ In this manner did the disease manifest itself, and for the most part yielded to treatment within four days. The phlegm expectorated becoming thicker, there was more trouble and danger when, in consequence of the fever and cough increasing, the violence of the disease kindled a true peripneumony, with which many were attacked. Those most liable to this complication were persons devoted to the indulgence of the palate, or of a full or cachetic habit, old men long afflicted with difficulty of breathing,² and lastly, those who, neglecting the first indications of the malady, rashly exposed themselves to cold and fatigue. True peripneumony attacked some at the very onset of the disease; but this was observable to occur more frequently in the country than in the city. I was informed by letters, that this was a property of the epidemic in some places distant from London. Not only peripneumony, but angina also prevailed, and so extensively, as to spare neither age nor sex. Those persons suffered most

¹ The following case was communicated to me by William Duncan, a man as experienced in treating disease as sedulous in observing it. "A man-servant, fifty years of age, and of robust habit, laboured under the disease. After he had been four times bled, a miliary eruption, as it is termed, broke out on the whole body; nevertheless the pain, cough, difficulty of breathing, and hardness of pulse, remained unabated. It was therefore necessary, without paying regard to the eruption, to bleed him again and again, even to the eighth time, on which the fever became intermittent, and very easily yielded to Peruvian bark; but if this man, even now, after the lapse of two years, catches cold, he has a violent pain between the ribs near the spine of the back, which first originated in his attack of the epidemic."

² If those labouring under asthma are attacked with pleurisy or peripneumony, they almost always die. See G. Baglivi, '*Praxeos Med.*' lib. i.

severely who could not obtain a respite from labour; more especially those who worked daily in the open air. Among this class the pestilence was so violent, that it destroyed many of them within four days in spite of remedies.¹ The disease did not, however, invariably show an inflammatory character, for sometimes, although rarely, it assumed the aspect of slow fever, and approximated to that form of malady which the ancients denominated "cardiac."

Sometimes it proved periodical and of the tertian type; nor is this wonderful, for as human constitutions are so various, they are almost necessarily affected in different manners by the same cause. Do smallpox, measles, or other contagious diseases, always produce the same effects or observe any invariable conditions? Are not fevers sometimes inflammatory, sometimes nervous, sometimes putrid, although differing exceedingly from each other, often derived from the same source?

In reference to the treatment of this disease, I will now relate in order whatever I have either learnt from my own experience or derived from others. Often, indeed, the treatment was of no great difficulty; for, at the onset of the disease, many persons were cured by confining themselves to the house, avoiding cold and fatigue, abstaining from active business, and refraining from rich food, calculated to load the system with noxious matter. But whenever there was violent fever or pain of the sides, or difficulty of breathing, it was necessary to take away blood without delay, always in proportion to the strength. If the strength was not equal to the loss of blood by venesection, recourse was had to the milder remedy of cupping. Some abstraction of blood at the beginning was almost always useful, and it sometimes happened that, in order to preserve life, very free bloodletting was necessary; for internal suppurations sometimes unexpectedly befel the patient, and exposed

¹ Whilst in the little towns situated on high ground near the city of London, the epidemic catarrh, above described, proved, during the month of May, very mild and tractable, in the lower neighbouring villages, anginas, pleurisies, and peripneumonies, occasioned incredible mortality. The pre-eminent remedy was prompt and copious bleeding; if this was neglected, alvine fluxes and colic occasioned quick and certain destruction, even to the strongest. Of these facts I am assured by a most ingenious physician, my friend Robert Petrie, of Lincoln.

him to rapid danger. This I particularly observed, that some unwary practitioners were unhappily deceived by those pathognomonic symptoms of the disease, which I have mentioned,—anxiety and languor; and hence were too sparing of evacuations, and too liberal of heating remedies. After bleeding, it was expedient to act on the bowels with clysters,—a kind of remedy which, throughout the whole course of the malady, gave much relief; for the motions were effectual in removing the redundant bile, occasioned by the frequent cough and the efforts at vomiting; and thus the heat and restlessness accompanying the fever were diminished. For whatever might be the cause, there is no doubt that laxatives were of more utility in this disease than any other remedies, bloodletting alone excepted. Nature herself, indeed, pointed out this mode of treatment, by sometimes relieving the patients through the aid of bilious vomiting or dejections. Medicines, given with a view to elicit perspiration, were scarcely ever salutary; sometimes, indeed, they were worse than useless; for they increased the heat of the body, which was too great of itself. It was far better that the patient should rest in bed and make a free use of tepid diluents. It was also appropriate to swallow oil gradually, and to use other demulcents, calculated to soften the cough and to promote expectoration. Little advantage, however, accrued from such means, or from nitre, or from that very common remedy, salt of wormwood mixed with lemon-juice; nevertheless, it is sometimes better to try feeble remedies rather than none. The cough, also, usually more troublesome by night than by day, required to be restrained by a small evening dose of opium; but when difficulty of expectorating or breathing, or pain of the chest or head, were troublesome, blisters afforded the most prompt relief. The same remedy, applied to the sides when they were painful, remarkably relieved the pain and cough; but the irritating phlegm which oppressed the lungs was more quickly removed if cupping-glasses were previously applied.

A very different treatment was requisite when the disease had degenerated into a slow fever, of a continued type, with occasional exacerbations; for it was now necessary to relieve the debility of the patient; to sustain his appetite, to give strength to the arteries, and support to the body. In these

cases Peruvian bark, given freely and frequently, rarely deceived our hope; for the weak, small pulse, cough, precordial anxiety, sighings, tremors, giddiness, and faintings yielded rapidly to this noble antidote. It was necessary, however, to maintain the health by the same remedies by which it was restored.

This disease pervaded almost all Europe during the same spring,¹ being especially virulent in the city of Venice.

It showed itself in one region earlier, in another later; but in no country, as far as I know, either before ² February or after June. But, whilst it raged everywhere else, it did not reach Paris or its vicinity,—a fact which I learned from trustworthy persons. I thought it worth while to inquire, whether this epidemic catarrh pursued any regular course in passing from one part of the island to another, as, for instance, from east to

¹ The disease began at Breslau about the end of February, and so raged there for about two months, that the average weekly burials, as stated by Jackwitz, a celebrated physician of that place, increased from 30 or 40 to 150. It invaded Vienna about the end of March, according to the testimony of Charles Mertins, private physician to the Russian Ambassador residing in that city, and it there exhibited the same character as in London. Cothenius, chief physician of the King of Prussia, mentions that the same disease first manifested itself in the Duchy of Magdeburg during the month of April, but in that region was not often fatal. I state these facts on the authority of that highly experienced man John Pringle, who obligingly communicated to me all that he had observed or learnt from correspondence regarding this subject. I am assured by the letters of two excellent men, C. Rose and J. H. H. Reimer, that the people of Hamburg also were affected at the beginning of April; but among the British sailors in the Mediterranean Sea, the disease did not appear till the month of July.

² In a paper which the French call 'La Gazette de France,' a sufficiently accurate account is given of the disease which is said to have afflicted, not, indeed, any part of France, but Strasburg and the whole of Alsace. "During the last month, a sickness, that has been almost universal, prevailed at Strasburg as well as in other parts of Alsace. Its symptoms were shiverings over the whole body, great loss of strength, severe sore throat, acute pain in the head, dry and frequent cough, and difficulty of breathing. All the persons who were attacked by it had fever more or less severely, and the accidental circumstances varied according to peculiar constitutions; but all the patients complained of pain in the limbs. The greater number were cured by profuse perspirations. Bleeding in the arms and feet was necessary for some. The indisposition has sometimes ended with copious expectoration, and was generally cut short by one or two purgatives. In some persons it passed into pleurisy or peripneumony; but this was their own fault, from unwillingness to take to their bed early enough. Some soldiers belonging to the garrison, who were afraid to go to the hospital, were also the victims of their reluctance.—Du 5 Juillet, 1762." (*Gazette de France.*)

west, or from north to south, or in a contrary direction, but learnt that it nowhere observed any fixed law, but pursued its uncertain course in a desultory manner, yet infesting cities and the larger towns, crowded with inhabitants, earlier than the surrounding villages. Whether it was infectious or not I cannot positively affirm: this at least appears, that the disease was altogether unknown in Britain before it invaded London; and that, in many towns, those who were first affected had recently arrived from the metropolis.¹ In this city, if the public records can be trusted, the burials during the prevalence of the disease did not much exceed the average. It is remarkable, that at Manchester² fewer than usual died when it prevailed in that place. At Norwich, on the contrary, according to the testimony of the distinguished physician, William Offley, who treated the disease on the three occasions when it raged in that city, a much greater number fell victims than were destroyed by a similar pestilence in 1733,³ or by the more severe visitation, called influenza, in 1743.⁴

In the whole of this narration, I have not laboured to produce anything abstruse or elaborate, but have thought it sufficient lucidly and faithfully to describe the matter as it occurred, and, if I may be allowed to say so, that a correct record of the disease and of its ordinary treatment might be preserved.

2. WATSON⁵

“LONDON, Dec. 9, 1762.

“In the beginning of May, there was, at London and in its neighbourhood, a disease very epidemic, though not fatal, which had some time before been very prevalent both in Italy and Germany. It continued during the course of the month, and some part of June. In it the breast was very much affected,

¹ This was formerly observed at Norwich, Lincoln, Leicester, and Exeter.

² This I learnt from the letters of the very skilful surgeon C. White.

³ J. Huxham, ‘*Observ. de Aere et Morb. Epidem.*;

v. supra.—‘*Medical Essays published at Edinburgh,*’ vol. ii. p. 28; *v. supra.*

⁴ J. Huxham, *op. cit.*, *v. supra.*

⁵ Extract of a letter from W. Watson, M.D., F.R.S., to John Huxham, M.D., F.R.S., containing some remarks upon the catarrhal disorder, which was very frequent at London and in its neighbourhood in May 1762, and upon the dysentery which prevailed the following autumn.

and it was very frequently attended with a fever. It is nearly the same disease which was at London in April and May 1743, and then called *Influenza*, the name applied to it in Italy. You have very well described it in your second volume 'De Aere et Morbis Epidemicis,' page 101. Though of the same catarrhal kind, it was by no means so severe or so fatal as the disease of February 1733, of which you have likewise given us the history in your first volume, page 80. The disorder, though very general, seemed to attack the women more severely than the men. Much bleeding did harm; and where there was no fever, which was frequently the case, the patients recovered equally well without it. Even without bleeding, or other evacuations, some, more especially women and lax-fibred men, were much debilitated during its whole continuance. The blood in most was not sizey; but the crassamentum was tender, and the serum bilious. Where the heat was great, gentle emetics brought up much bile, and very much lessened the inflammatory state of the disease. The rest was to be left to blisters, if the cough was very troublesome and the stricture upon the breast severe, balsamic medicines, gentle opiates, and light broths; carefully avoiding cordials of every denomination and volatiles. Towards the end of the disorder, after gentle evacuations by stool, decoctions of *Cort. Peruv.* were of signal service, both in recruiting the strength, and carrying off the remaining cough.

"In the disorder of 1743, the skin was very frequently inflamed, when the fever ran high; and it afterwards peeled off in most parts of the body; but this was not observed to happen in the present disorder.

"We have had here, this autumn, a disease, which has not been, in my remembrance, epidemic at London. Very few of our physicians have seen this disorder as it has appeared of late. You mention it as frequent at Plymouth in the year 1743, in your treatise 'De Morbis Epidemicis,' vol. i., page 90. As you then observed, many of the children which fell under my care voided the *vermes teretes*. In the course of my practice, I found many of your observations exceedingly well founded, and collected from them very useful remarks. Dr. Sydenham has left us an admirable history of this disease, as it appeared at London in the year 1669, and the three subsequent years.

To this work, as well as to what you have given us upon this subject, I am very much obliged.

"As the dysentery is most frequently an autumnal disease, and, as I have not seen any person afflicted with it this fortnight past, I flatter myself that the late cold and frosty weather has put a stop to its progress.

"This disorder, though very general, most frequently attacked weak persons, and those recovering from other diseases, women during their lying-in, and children.

"The dysentery in some was attended with a fever, in a high degree inflammatory ; in others it was without any fever. When it was attended with a fever, bleeding, and gentle evacuations by stool, with liberal dilution, did great service. When there was no fever, as well as in those whose fever had been relieved by the methods before mentioned, if the irritating pain in the bowels, bloody or mucous discharges with the tenesmus continued, after the excrementitious *Sordes* had been carried off, nothing relieved more than drinking large quantities of very small mutton broth, without salt, so as to be discharged but little altered. This not only warmed and nourished the patient, but diluted the acrimony, and served as a most comfortable fomentation to the whole intestinal canal.

"Clysters of this with *Tinct. Thebaica* I directed to be given three, or even, if the symptoms were urgent, four times a day. When these symptoms were abated, as most persons were exceedingly debilitated, and their appetite almost gone, light decoctions of *Cort. Peruv.* greatly hastened the recovery.

"I had the misfortune to see three children die of four or five years old, after the severity of the disease was over. Their bowels had for a week or more been free from pain. They were without fever. Their discharges by stool, both bloody and mucous, were in a manner gone ; nevertheless they were so much debilitated, and their stomachs so languid, that they obstinately refused every species of nourishment by the mouth ; nor would they retain nutritious clysters ; so that, in the end, they sunk from absolute inanition. In two of these, which, by my direction, were opened, I found their gall-bladders turgid with high-coloured viscid bile. In both, the stomach and bowels were perfectly empty, and their bodies emaciated to a great degree. In one, neither the stomach nor bowels were in

the least degree inflamed or discoloured ; except that a very few of the veins were preternaturally enlarged upon the surface of the *cæcum* and *colon*. In the other, there had been an inflammation upon about ten inches of the *jejunum* ; but that had been resolved ; as the bowel was almost restored to its natural colour, and was not in its texture, even after death, more tender than the rest. The other viscera had not the least change of their colour, but exhibited a sound and natural appearance.

“ Another child, which I saw, was seized with a dysentery, attended with a very ardent fever ; which, notwithstanding my utmost endeavours to relieve it, carried off the poor infant on the third day. Several, almost the whole, of this child's discharges by stool were nothing but blood. Upon opening the body after death, the whole of the intestines were in a very great degree inflamed, and of an intensely deep red colour, and the contents of the abdomen were inexpressibly fetid.

“ Throughout the whole course of the disease, keeping the patient moderately warm and promoting his perspiration, was of great importance ; and the not sufficiently attending to this, I more than once saw followed by fatal effects.”

3. RUTTY¹

“ The yearly bill of Dublin this year, 1762, was 2292, viz. much larger than in the two preceding years, which agrees to some former observations of the unwholesomeness of dry seasons.

“ *Spring, 1762*

“ MARCH ²		“ March was a wet month, not many days free from snow, sleet, or rain ; more snow and colder than for several years past. The principal winds N.W. Some brisk gales now and then. The 15th a storm.
N.E.	4	
S.E.	7	
N.W.	13	
E.	1	
N.	3	
W.	4	
S.W.	4	

¹ A Chronological History of the Weather and Seasons, and of the prevailing Diseases in Dublin. By John Ratty, M.D. London, 1770.

² The figures indicate the number of days on which the specified winds prevailed.

"APRIL	
S.E.	9
S.W.	6
W.	4
S.	2
N.E.	4
E.	5
N.	2

"April was dry for the season, only a few showers now and then; cool and calm, yet a few warm days. The principal wind S.E.

"MAY	
N.	2
E.	12
S.E.	4
W.	5
N.E.	8
S.W.	5
N.W.	1

"May was an excessively dry month, and the wind hotter at some point of the east than for some years past, though with a cold wind at the same time, till near the end, when it was very warm.

"A cold, and for the most part dry, spring, succeeding an open and somewhat warm winter, the catarrhs, which had infested the winter, prevailed greatly to the end of March; and in the months of March and April, various disorders of the lungs, pleurisies, pleuro-peripneumonies, pulmonary consumptions, coughs, chin-coughs, and quinzies, greatly prevailed, and often proved fatal. Also inflammatory feverish colds, often attended with pleuritic symptoms, were frequent. Some of these terminated by sweat about the fifth or seventh day; when they ran out beyond the seventh day, they were often attended with miliary eruptions; but some other feverish disorders were carried off, partly by diarrhoea and partly by sweat, in eight or nine days.

"Rheumatisms and rheumatic fevers were also very frequent in March and April; and to the above-mentioned disorders in April, add the scarlet fever, with ulcerated tonsils, ophthalmies, inflammations of the gums and ears, and toothache.

"Several children recovered of their fever the sixth, seventh, and eighth days, by a critical sweat; in some others, more advanced in age, the fever terminated in fourteen, sixteen, and eighteen days.

"Some mild intermittents appeared in April; but in May, intermitting fevers were very frequent, particularly the tertian, and pleurisies and chin-coughs still continued to be epidemical.

"In the beginning of May, a fever was common, which resembled the scarlet fever in every circumstance, except the eruption. In the beginning, after the shivering, the face was much flushed, with a severe headach, dry, burning skin, quick pulse, and soreness in the throat; sometimes attended with

superficial ulcerations in the tonsils, and often a crick in the neck. In some, it disappeared in three or four days; in many, after running out to the fourteenth day or longer, the skin peeled off in branny scales, as in the scarlet fever, though no eruption had appeared.

"About the middle of May began in Dublin the catarrhal fever or feverish cold, scarce sparing a family, or any age, sex, or condition, except that it rather spared children. It was plainly a disease of foreign extraction, having visited Copenhagen a month before it reached London, and London about a month before it arrived here; and it gradually extended itself over every province of the kingdom. In London, it seldom proved fatal, though their weekly bills once rose to 700; but in the country it was more fatal.

"It generally began here with a lassitude, a pain and heaviness of the head, and particularly a pain across the eyebrows; a severe cough, a soreness or rawness in the throat and breast, excited by coughing; generally a great defluxion from the nose, and sometimes eyes; the heat a little greater than natural, and a loss of appetite.

"Such was the attack in general; but in many the symptoms advanced to a feverish state, and were very distressing, so that the patients were forced to betake themselves to their beds; in these it began with a shivering pain of the head and back, soreness of the bones, a burning heat, and, in some, a slight delirium and oppression in breathing. In some, the pulse was quick and low; but in general the pulse was not quick, and, even when the feverish symptoms were very high, it was often observed to be not more quick than in health, and generally more low and depressed.

"There was generally a disposition to sweat, which usually returned every night with an aggravation of the feverish symptoms; and the promotion of the sweat, by drinking wine whey and spirit of hartshorn, carried it off in a day or two, in those more slightly affected.

"Some had a great oppression in breathing, who were relieved by bleeding; the blood was not often sizzly, but the serum was muddy and yellow; and when it had an inflammatory crust, this was of a saffron hue.

"Those who, after taking a puke, threw up much bile,

generally found great relief from the symptoms, and in some they were totally removed. A smart diarrhoea attended some few with relief, but in the greater number a sweat about the third day proved critical; yet in several there was observed an efflorescence on the skin, like the measles, or a red rash, with violent itching, which was observed to carry off the disorder more completely than the sweating.

"Without proper care and regimen, the symptoms continued for a week or longer, and a remarkable languor continued, in most, for several days after; and others, especially valetudinarians, the weakly and aged, and those of bad lungs, did not recover for a much longer time.

"The languor yielded to the *Cortex Peruvianus*.

"Compare the years 1729, 1732-3, 1737, and 1743.

"Summer

"JUNE
N.W. . 13
E. . . 3
W. . . 8
S.E. . 5
S.W. . 4
N.E. . 1
N. . . 1

"In June the weather was generally dry and fair, and warmer than the same month for several years past; frequently windy, but not much rain. The principal winds N.W. and W.

"JULY
N.W. . 6
W. . . 10
S.E. . 8
S.W. . 15
E. . . 1
N.E. . 1
S. . . 1

"The dry weather of the two preceding months continued, in a manner somewhat extraordinary, through July; and even the S.W. winds were not attended with much rain, except on the 8th. From the 9th to the 15th it was hot, yet not one day so sultry as in July 1760, by one and a half degree of the thermometer. The winds variable, chiefly S.W. and W.

"AUGUST
W. . . 10
N.W. . 11
E. . . 8
S.W. . 5
S. . . 1
N.E. . 9
S.E. . 2

"August was alternately fair, gloomy, and cloudy; there were some great gluts of rain after the long drought. It was not so warm as this month usually is. The winds chiefly N.W. and W. It concluded fair and cold, with N.E. and E. winds.

"In June and July appeared several instances of pernicious relics of the late epidemic catarrhal fever in valetudinarians and infirm persons, some of whom died, and their deaths were apparently hastened by it.

"In June appeared a bilious, putrid fever, sometimes attended with petechiæ, but the miliary type was more frequent. In many it appeared in the beginning with inflammatory symptoms, and was generally attended with a violent fixed pain in the forehead. The miliary pustules appeared from the seventh day to the eleventh; and some of the fevers in July were attended with much the like appearances, and they proved frequently fatal in both months. Among these, one terminated happily by a critical sweat on the sixth or seventh day; a second proved fatal the fourteenth day; and a third, the patient did not survive the 11th day.

"In August, also, fevers, partly petechial and partly miliary, were frequent, but moreover attended with a bilious purging, and not often fatal; they ran out to the seventeenth or twenty-first day. They fell into a lethargic dozing, and recovered gradually, without any other evacuation.

"Intermittent fevers, principally tertian, continued frequent in June, and there were some few in July, in one of which the type was singular, viz. seven or more paroxysms in a day; and these fits grew daily stronger, until the seventh day, when a large critical sweat terminated the disease.

"In August intermittent fevers became frequent, and particularly epidemical among children from one to three years of age.

"In July pleuritic fevers and peripneumonies of a malignant and fatal kind prevailed much, and were seldom relieved by repeated large bleedings. Among these, one young man recovered the seventh day, but not without a blister applied on the spot, after repeated large bleedings; another, more advanced in years, died the eighth day. The blood was covered with a thick saffron-coloured size, and the serum of a bilious colour.

"Towards the end of July, disorders of the bowels, with bilious purging and vomiting, were observed, which in August prevailed much, and dysenteries were common and fatal to some; also some dysenteric fevers attended.

"In July the measles were very frequent and dangerous; and the smallpox, of an unfavourable kind, not tending to suppuration, attended the months of July and August.

"The disorders of the bowels mentioned in August, viz. diarrhœas, dysenteries, and a dysenteric fever, continued through September and the beginning of October.

"Some of the low kind of fevers were observed in September, among which were fatal instances in two girls, aged about 15, one of whom died the nineteenth, the other the twenty-third day.

"Many of the fevers in October were of the petechial, or at least eruptive, kind, yet no remarkable fatality attended them, many recovering from very bad and alarming symptoms; the time of their termination was various, most frequently in fourteen days, others in six, seven, eight, or ten days; a few ran out to twenty-one days, and one to six weeks.

"In November there was a remarkable increase of fevers, both as to numbers and malignity; they were mostly of the low kind, often petechial, and some miliary, though neither of these eruptions were essential. Several of them were attended with hæmorrhages, and other marks of colliquation; also several of them had a more remarkable exacerbation than usual in the evening.

"Many, both young and old, were carried off by them; and in several of these the change proved sudden and unexpected, who died soon, viz. the fifth, sixth, eighth, and tenth days; whilst others, in whom the fever was longer protracted, as to fourteen and about twenty-one days, more frequently recovered."

1762 was long called the "wormy year," in consequence of the great prevalence of the caterpillar of a very destructive species of lepidopterous insect. The whole herbage on the hills near the sources of the Ettrick and Yarrow was destroyed by it. This plague reappeared in 1802.¹

EPIDEMIC OF 1767

HEBERDEN ²

"In the very beginning of June, if not sooner, a few persons in London were affected with several symptoms of a cold, which

¹ Farmer's Magazine, vol. i. p. 124.

² Medical Transactions, vol. i. 3d ed. 1785, p. 437. The Epidemical Cold in June and July 1767. By Dr. William Heberden. Read at the College, August 11, 1767.

of their own accord they, in two or three days, observed to differ from a common cold, and to resemble the epidemical one of the year 1762, on account of its being attended with a greater languor, feverishness, and loss of appetite than what the same degree of such a complaint usually brings on.

"About the middle of June the same disorder began to be much more common in London, and was manifestly epidemical. It was at its height about the last week in June and beginning of July, and before the end of July had entirely ceased.

"The peculiar symptoms were :—A shivering, which returned frequently for the first two or three days ; a troublesome and almost unceasing cough, at least for the first day or two ; very acute pains in the head and back, and abdomen, particularly just under the left ribs, piercing from them to the back, occasioning want of sleep. All these symptoms did not attend the same person, but most had, at least, one of them ; lassitude, loss of appetite, and fever belonged, in some degree, to all.

"In some, this disorder began like something worse than a common fever, and in a day or two seemed slighter than a common cold ; but many of the symptoms hung upon several at least for a week, and sometimes lasted a month. Where its attack was most violent, it brought on anginas, pleurisies, and peripneumonies, with a continual fever. Where it was a little gentler, the fever, though great enough at its height to bring on deliriousness, yet had plain remissions or intermissions.

"It attacked equally both sexes and all ages ; I saw some infants ill of it ; and it appeared to be fatal to a very few old and infirm persons ; but in general, it was less epidemical and far less dangerous than the cold of 1762.

"This epidemical illness bore bleeding very well, for it was plainly of the inflammatory kind, by bringing on, where it was excessive, inflammations of the throat and pleura, and lungs, and such as sometimes required bleeding to be repeated ; when after bleeding, or of itself, it turned to an intermittent, the bark took place and made an effectual cure. These two remedies, together with a few others for the relief of some incidental symptoms, were all which it seemed to want where it was bad ; but in the generality of people it was left to nature, and cured itself.

"The season preceding this disorder was only remarkable for being unusually cold ; but then, it is observable, that the similar epidemic cold of the year 1762 was preceded by weather as uncommonly warm.

"As the same disorder was reported to be common about the same time in many other parts of England, and more fatal than it was in London, it is very desirable that the physicians of those places would favour the college with what they observed relating to its history and cure.

"Though this epidemical illness be but just over, yet there seems no reason to apprehend any of those lasting ill consequences from it which attended the sufferers in 1762, many of whom continued in a languishing state for several months, and then died ; and others complained for two or three years that its ill effects still hung upon them, and that they had not, in all this time, recovered perfectly from the hurt which it had done their constitution."

EPIDEMIC OF 1775¹

"The late Dr. Fothergill having drawn up a sketch of the epidemic disease which appeared at London and various parts of the nation towards the end of the year 1775, and having sent printed copies thereof to several physicians, both in town and the country, in order to obtain a more complete history of the disease ; this sketch, and also the communications of several of his ingenious correspondents on the same subject, are here inserted, being thought well worthy a place in this collection."

1. FOTHERGILL

"A sketch of the Epidemic Disease which appeared in London towards the end of the year 1775.

"LONDON, Dec. 6, 1775.

"1. About the beginning of the last month, it was mentioned to me in many families, that most of the servants were sick ;

¹ Medical Observations and Inquiries, by a Society of Physicians in London, vol. vi., 1784, pp. 340-406.

that they had colds, coughs, sore throats, and various other complaints.

" 2. In the space of a week these complaints became more general ; few servants escaped them, especially the men, who were most abroad : many of the other sex, likewise, and people of higher condition, were attacked ; nor were children exempted.

" 3. The disease, which had hitherto been either left entirely to itself, or had been treated with the usual domestic medicines appropriated to colds, now claimed the attention of the faculty, and, for the space of near three weeks, kept them, for the most part, universally employed.

" 4. Most of those whom I saw were seized (and often so suddenly as to be sensible of the attack) with a swimming or slight pain in the head, a soreness of the throat, and all over the body with a sense of coldness, particularly in the extremities. A cough soon followed, a running of the nose, watery eyes, slight nausea, frequent calls to make water, and some were seized with a diarrhœa.

" 5. More or less of feverish heat, inquietude, pain about the breast, præcordia, and in the limbs, soon succeeded, but in various degrees. Many were capable of continuing in their usual occupations under these symptoms ; others were obliged to submit to confinement ; and not a few to their beds.

" 6. The tongue was always moist ; the skin seldom remarkably hot or dry ; the pulse often full, quick and harder than one would have expected for such a temperature of the skin.

" 7. Several were seized with diarrhœa : the stools were always black, or of a deep yellow colour ; and so were those, for the most part, which were procured by purgative medicines.

" 8. In a few days every complaint abated except the cough ; this continued the longest of all the symptoms, and, in the fore part of the night, was exceedingly troublesome and vexatious ; towards morning generally came on a sweat and easy expectoration.

" 9. Those who were seized at first with very copious defluxions from the nose and the fauces ; or had a plentiful and spontaneous discharge of black bilious stools ; or made large quantities of a high-coloured urine ; or sweated profusely, of their own accord, a night or two after the seizure, soonest grew well.

" 10. In many cases it was necessary to take away some blood,

the condition of the pulse and vehemence of the cough requiring it. The blood was almost universally sizy, representing a flat cake of yellowish tallow, floating in a deep yellow serum. Very few instances occurred where the size formed that cup-like appearance, which occurs in most of the genuine inflammatory disorders.

" 11. By warmth, diluting, cooling liquids, mild diaphoretics, gentle and repeated purgatives, the disease, for the most part, soon gave way, in subjects otherwise healthy. Sometimes it was necessary to repeat the bleeding; sometimes blisters became necessary, and were serviceable in abating the cough, which was the last of all the symptoms that gave way; after the proper evacuations, anodynes, for the most part, had very salutary effects.

" 12. In many instances the disease assumed the type of an intermittent towards its decline; the bark, however, did not generally succeed in curing it. The symptoms, as often happens in bilious disorders, were sometimes aggravated by this medicine. A few doses of some mild cathartic most commonly removed it effectually.

" 13. Many who neglected themselves and went abroad with the distemper upon them, frequently got additional colds, and brought on a fever of the most dangerous kind; a few died phrenetic.

" 14. Ancient, asthmatic persons were likewise great sufferers for the most part; a peripneumonic fever came gradually on, which often terminated fatally. And of those that did recover, their amendment was slow, and treatment difficult.

" 15. And, indeed, it appeared that very few persons wholly escaped the influence of this morbid constitution; for it seemed to aggravate every present malady.

" 16. It proved fatal, likewise, to several very young children, disposing them to violent coughs or diarrhoeas.

" 17. Perhaps, however, there is scarcely an instance to be met with, of any epidemic disease in this city, where so many persons were seized, and in so short a time, and with so little comparative mortality.

" 18. Though attempts to ascertain the causes of epidemics are, for the most part, more specious than substantial, it may not be improper to mention a few facts that gained my attention;

to others many more may have occurred, and worthy to be recorded. During the greatest part of the summer, in that part of the country where I then was (Cheshire), the air was of the most equal temperature I ever knew. In the space of two months the quicksilver in the thermometer once rose to 68, once fell to 56 ; but for six weeks together, it kept between 60 and 66 continually, day and night.

“ 19. The barometer did not vary much more. The weather was, during this time, very changeable, much inclining to wet ; and, though it rained more or less every other day for six weeks, yet, upon the whole, no unusual quantity of rain fell ; it sunk into the ground as it fell, and made the earth very soft and miry ; but seldom swelled the brooks, or occasioned floods.

“ 20. During this time, horses and dogs were much affected ; those especially that were well kept. The horses had severe coughs, were hot, forbore eating, and were long in recovering. Not many of them died that I heard of ; but several dogs.

“ 21. To the consideration of the faculty in this city is this sketch of the late epidemic submitted, with all due deference ; and with a request that, if the observations they have made do not correspond with this recital, they will be pleased to communicate their remarks while the remembrance of the facts is recent ; in order, that as exact an account of this disease as possible may be transmitted to our successors.

“ 22. If those physicians in the country, into whose hands this essay may come, will be so obliging as to mention the time when this epidemic made its appearance in their neighbourhood, and wherein it differed from the preceding sketch, either in the symptoms or the method of cure, they will likewise contribute to the same good purpose. The united observations of the faculty at large, must greatly exceed the utmost efforts of any individual, however warmly he may be disposed to promote the utility of his profession.”

2. SIR JOHN PRINGLE, BART.

“ The species that I had of the influenza was a sore throat, with fever and shooting pains through the back part of my head ; but these symptoms were never followed by a cough.

I heard of several others who, like me, had never been troubled with a cough, and only with this inflammatory angina.

“I think you do well to record the state of the weather; but I think the conclusion ought to be, that the sensible qualities of the air had, most probably, no share in producing this epidemic. I should be tempted to say that they had evidently no part; for we hear of the same distemper having been in Italy, France, and in the Low Countries, and, I doubt not, in other parts of Europe, had we inquired. But it cannot be supposed that the state of the atmosphere, either as to weight, heat, or moisture, was the same everywhere. And in the same country have we not seen it rage in one district or city, whilst others, at no great distance, were totally free? Yet between the sound and the sickly there could be no considerable meteorological difference. My conclusion, therefore, should be, that such epidemics (of which there have been four in my remembrance) do not depend on any principles we are yet acquainted with, but upon some others, to be investigated, and by such means as Dr. Fothergill very properly and most commendably proposes to be done, by the united inquiries of his brethren.”

3. DR. HEBERDEN

“Dec. 16, 1775.

“The 28th of October was the first day on which the late epidemic cold seized upon any one whom I had an opportunity of observing; and at the end of three weeks the cause, whatever it was, of this distemper was so far weakened, as to be incapable of infecting those who had escaped it until that time, though many who had suffered before continued to complain of the cough and hoarseness much longer. The violence of this distemper usually began to abate in five or six days.

“In some it began with a sickness and perpetual vomiting, which were the forerunners of a severe degree of this illness; in others the first symptoms were sneezing, and a copious defluxion from the nose and eyes, and these suffered much less, and were sooner recovered. Many complained of a hoarseness and sore throat, and of a tightness, oppression, and heat of their breasts, and of feeling pains in various parts, particularly

in their heads, sides, and backs. Almost every one of these patients was afflicted with a racking cough; with a sense of coldness, frequently returning upon them; with a failure of appetite and of sleep, and with a languor and weakness much greater than might have been expected from the effects of any of the other symptoms. The degree of fever was seldom great. I saw two persons in this distemper who had eruptions upon their skins resembling that of a scarlet fever. In two or three young men this disorder was increased to a dangerous height, and became a true peripneumony, attended with bloody phlegm, and manifestly requiring frequent bleedings, by which they were much relieved. Towards the middle or end of this illness, a few were attacked with intolerable stitches in their sides or loins, so that for two or three days they were confined almost to the same posture, and if they were necessitated to change it, they shewed all the marks of exquisite pain. Lighter cramps in the legs and arms were not uncommon at the going off of this malady.

"I know none who could properly be said to die of it; but it seemed to hasten the death of two or three persons, whom it found dying of age, and of other diseases.

"The keeping quiet within doors, together with an abstinence from the grosser foods, and from heating liquors, was all which the generality of patients required. Small quantities of an opiate were very serviceable in allaying the incessant teasing of the cough, and in quieting the restlessness. Where the fever or any of the symptoms were considerable, it appeared to me that bleeding was unquestionably useful, and lessened rather than increased the languor. In a few it was necessary, besides bleeding, to employ blisters, with the other usual remedies for inflammations of the lungs."

4. SIR GEORGE BAKER, BART.

"January 1776.

"It is certain that many people, both in this town and its neighbourhood, were attacked by the epidemic disease some days preceding the 20th of October. As to the precise day when I first heard of it, I cannot speak of it with accuracy.

“Men, confined by their business at home, suffered much less than those who were exposed to the air; and women, in general, less than men. Very young children were not much affected by this disease. Boys at school were almost universally disordered. Girls at school (I suppose on account of their greater confinement) were remarkably free from the influence of this constitution, at least, were not generally so attacked.

“Many were suddenly seized with *great* giddiness and *intense* pain in the head; some with a considerable nausea, which sometimes continued several days; some few had, in the beginning, successive rigours. An uncommon languor, restlessness, and anxiety seemed to be the general characteristics of this disease.

“I saw none whose first indisposition was a *diarrhœa*. Those who had a *diarrhœa* had first complained of the common symptoms of a cold, which ceasing, a *diarrhœa* followed. This, in some, arose even to a dysentery. They had almost constant pains a little above the navel, and a very frequent evacuation of thin excrement, mixed with mucus. This was my case in particular, and that of several whom I visited, and many others, a relation of whose cases has been communicated to me.

“Dr. Fothergill says, *the tongue was always white*. This seems too general an assertion; at least the contrary happened in several instances which fell under my notice.

“The blood, in the beginning, was not always *sizy*; nor did I, in general, observe *the deep-yellow serum* mentioned by Dr. Fothergill; likewise, *the cup-like appearance of the crassamentum* was remarkable in several cases.

“In many cases it was necessary to take away blood, even three or four times, on account of the violence of the pleuritic and peripneumonic symptoms.

“Clysters frequently injected were of singular service.

“The fever having sensibly remitted, according to my experience, the Peruvian bark was used with advantage; and, likewise, when a languor and debility (as frequently happened) continued after the vehemence of the disease was subdued, this proved an useful remedy.

“Many persons even now feel the effects of this disease; and I know several who are likely to die tabid.

"Accounts received from France, Holland, and Germany, give us reason to conclude that this epidemic was much more fatal in other countries than in this island. And I believe it will appear, that it was more fatal in several distant countries than in this metropolis and its neighbourhood."

5. DR. HENRY REVELL REYNOLDS

"Jan. 29, 1776.

"My wife had this complaint on the 23d of October, and on the 2d of November I visited several patients who had laboured under it for some days.

"All my children had it. The order in which the symptoms appeared is as follows:—watery eyes, swelling of the eyelids, running from the nose, cough, diarrhœa; so that every part of the mucous membrane seemed to be progressively attacked. I saw two others affected in the same way.

"In two instances I saw the tongue very dry, parched, and chopped. The patients were both corpulent women, aged between 30 and 40. At the time I was called in to them they laboured under a true peripneumony; but I learned that they were first attacked with the catarrhal symptoms. Blood drawn from both these patients, even at the third bleeding, had a very thick buff coat, and exhibited the cup-like appearance.

"Several whom I attended had this kind of diarrhœa; but I did not find it of any service to any; on the contrary, I thought it prejudicial to some, as it seemed to prevent a free expectoration, which to my apprehension was the most critical and most salutary evacuation. Neither did warm copious sweats, though universal (unless they happened before the seventh day), give that relief which one might have expected from them.

"With respect to the method of cure, mine was nearly the same as yours, and in the same order. Permit me only to mention that I found the Kermes mineral to answer my purpose exceedingly well, both as a diaphoretic and an expectorant. After several trials I preferred it to any other preparation of antimony.

"In those cases where the diarrhoea was troublesome, I had recourse to the ipecacuanha in small doses ; a grain of the powder for instance, once in six hours ; and it succeeded to my utmost wish, checking the diarrhoea, and promoting a free perspiration."

6. DR. WILLIAM CUMING¹

"DORCHESTER, Dec. 25, 1775.

"Dear Doctor—I received your printed history of the epidemic disorder that has been of late so generally felt, not only over all this island, but in several other parts of Europe : and probably, its influence has been far more extensive. I honour you highly for your exerting yourself in this manner, to obtain as accurate an account as possible of this disorder, and hope that none will be found so perverse and malevolent as to attempt to detract from your merit with your contemporaries, and with posterity.

"The account you have given of the state of the atmosphere, in respect of *warmth* and *gravity* during the preceding autumn, is, I believe, very just, as far as I can recollect. I often, during that time, examined both the barometer and thermometer ; but finding the variation of the mercury confined within such narrow limits, I made no minutes of its height ; indeed, I never do now, unless it verges towards one or other of the extremes. It was otherwise in respect to the *moisture* of the air, as to which I can speak with precision. The autumn here was very wet, as the quantity of rain that fell here during the months of August, September, October, and November, was exactly fourteen inches and twenty-seven hundred parts. This circumstance, joined to the mild temperature of the air, made me to expect diseases of the putrid class ; but in this I was happily disappointed. We had also here many moist, warm, foggy days, in which no sensible quantity of rain fell, when the quicksilver in the barometer stood so high as 30·2.

"After the middle of August, I have heard from good authority, that a disorder amongst the horses prevailed very generally in Yorkshire. It has not been so general here as to

¹ Extract of a Letter from Dr. William Cuming to Dr. Fothergill.

become the subject of conversation. About the latter end of October, I remember to have heard that one gentleman had lost six dogs, in the usual manner that these animals are seized—a giddiness in the head, an inability to eat, with a paralytic affection of the hinder extremities.

“From the middle of October (to which time Dr. Pulteney fixes the commencement of this disorder, when he himself was seized, though he was never confined by it) several individuals complained of colds, which were considered as accidental, and but little attended to; but it was not, I think, till after the 10th of November that the malady became general. On the 15th I first visited a patient labouring under it. The manner of seizure and the symptoms were similar here to your description of them; several complained of a heavy, dull pain in the head, and many had fixed pains in the side. The appearance of the tongue, the feel of the skin, were as you describe; and, though the pulse was generally full and quick, yet I was not sensible of that hardness in it that you mentioned; so that the violence of the cough, with the pains in the breast, and the difficulty of expectoration, indicated the necessity of taking off blood rather than the state of the pulse. The blood always had the appearance which you describe. I never once saw it cupped or pursed up. In general it was necessary to draw off blood, and many times oftener than once; but I never once ordered it without the patient's being sensibly relieved by it, and the benefit was commonly felt immediately. I usually directed blisters, too, on account of the pain in the head, the incessant cough, or the fixed pains in the breast, and their salutary effects were, I think, as constantly perceived.

“Besides these I ordered the neutral salts, pectoral linctuses, soft lubricating drinks, which, with a suitable diet, universally succeeded, for I lost none; and I have hardly heard of any that died of this disorder. The medicines and diet directed kept the bowels properly lax, so that I hardly ever ordered any purgative. None of my patients were seized with a diarrhoea, so that I never observed the colour of the stools; though I have since heard that several young people were attacked in this way, and had the disorder lightly. Towards the decline of the disorder, forty or fifty drops of the elix. paregor., in a draught with oxym. scill., one scruple or one scruple and a

half, taken at bed-time, abated the violence of the cough, procured rest, and occasioned a gentle moisture on the skin. In two cases which I saw, the disorder shifted to the putrid class. A gentleman's coachman was seized with the common symptoms, was blooded, etc., got better, went abroad, got well; the same complaints returned, was blooded again, was relieved, but, in a few days, I was sent for, when I found him labouring under a great dejection of spirits despairing of his recovery; a stupefying pain in the head, oppression of the præcordia, moderate warmth of the skin, with a quick rather than low pulse, and a great general debility. I had the curiosity to examine his throat, of which he did not complain, when I found thin white sloughs in the uvula and tonsils. Blisters, a warm regimen, and the bark with gargles, in about ten days restored him.

"The other was butler to a gentleman, six of whose servants I had prescribed for in the reigning disorder, and who had been recovered by bleeding, and the usual regimen. This man, believing himself seized with the common complaint, sent for the apothecary to bleed him; but four ounces only were taken off, as he was faintish. I saw him by accident next day; the blood was florid and of a weak texture; his pulse quick and feeble; some ulcers appeared on the tonsils. By the bark and a warm regimen he got well in a few days. In many gentlemen's families in this county not one servant free from this disorder; in others but one or two infected. I think it raged chiefly in the western and northern parts of this county. Many persons in Dorchester complained of coughs and colds, but a few only confined to the house.

"You may remember that, in the spring of the year 1762, a disorder somewhat similar to this, but not so general, was very frequent in most parts of this kingdom; but what corresponded with it in almost every particular, was the fever and cold that appeared in the winter of the year 1732, in most parts of Europe, America, and the West Indies, of which a particular account is given in the second volume of the 'Edinburgh Medical Essays.'"

7. DR. THOMAS GLASS, OF EXETER

"In the city of Exeter, and the country about it, colds and coughs were not more frequent than usual, during the latter part of the past autumn. But from the 8th of November the number of people who were continually coughing increased so fast, that it was soon evident the epidemical colds, which began in London, as we were informed by the public papers, more than a week before, had reached us. This disease appeared to be at its height here from the 18th to the 24th of the same month, and attacked very few after the 4th of December; but by this time almost every one had felt more or less of its effects.

"On the 11th or 12th of November it made its appearance in the Devon and Exeter Hospital, and within a week seized 173 persons, being all the servants and patients then in the house, except two children; 162 of them were coughing together. Is it not remarkable that such a number of hospital patients, afflicted with so various and different kinds of distempers, and under the operations of the most opposite qualities, should have been all affected, almost at the same time and in the same manner, by the cause of these epidemical coughs?

"Two or three days after the hospital had been attacked, the city workhouse was visited by them; of near 200 poor people, who are in this house, but few escaped; all the others were complaining at the same time.

"From Exeter the disease travelled towards Cornwall; about the 13th of November it arrived at Okehampton and Ashburton, and about the 15th at Plymouth. I have no certain intelligence when or where it passed from Devonshire into Cornwall; but by the 20th it had reached Truro; and, before the end of the first week in December, had spread to all parts of that county.

"The constitution, productive of this epidemic, very seldom, I believe, continued to exert its influence with much force in any place more than three weeks or a month, so that, after this time, a few only were attacked by it; and it was generally observed, that in the churches, for two Sundays following,

nothing was to be heard but coughing ; and that, on the third Sunday, this disturbance was much less. I cannot find that there is any part of these two counties but what was visited by it.

“ Its appearance in this city was the same as in London ; except only, that it was here much more favorable, and attended with some symptoms besides those you have mentioned in your sketch ; for many of our patients, especially such as had a considerable degree of fever, complained of great lowness of spirits, and sudden weakness ; several of them of a perfect inappetency both to meat and drink (most of these had severe coughs without much fever), and some of them a soreness throughout the windpipe and œsophagus, with a great pain in swallowing even liquids, others of a violent pain in their ears. A few had sloughs of the malignant kind on their tonsils ; swellings of these, and of the sub-maxillary glands, were not unfrequent, but occurred oftener in some towns than others. One of my patients had a large parotid, which suppurated slowly and broke at the end of three weeks. Eruptions on the lips, towards the crisis, were a common and very salutary symptom. Many felt no feverish heat, but almost all, if not all, had more or less of a cough.

“ This circumstance, probably, induced Sydenham to give the name of *Tussis Epidemica* to the disease which had been called *Febris Catarrhalis Epidemica* by his predecessors, who seem to have been of opinion that a cough, without a fever, was nothing more than a symptom of common cold. The impropriety of calling a cough, without any feverish heat, a catarrhal fever being obvious.

“ Most people in this part of the kingdom, who had coughs and colds during the late epidemical constitution, took no more notice of them than they would have taken of common colds, and got well, when they were without a fever, sooner than those who, in the like circumstances, submitted to confinement. Nor needed such persons any other treatment than that which Sydenham recommended to his patients, who had epidemical coughs, but no fever, in the year 1675.

“ But those who appeared to be feverish, and had pains in their head, breast, back, or limbs, were advised by the faculty in this city to confine themselves to their beds, and to drink

frequently barley-water, water-gruel, linseed-tea, and other soft diluting liquors, which were sometimes sweetened with honey, very hot. Saline draughts, with spermaceti, were often prescribed; to which, if the patient felt himself low, and inclined to be faint, was added cordial confection; or if he was not disposed to sweat freely, emetic tartar, but not enough to excite a nausea. A plentiful and easy sweat, continued for a sufficient space of time, carried off the catarrhus fever and pains on the first, second, third, or fourth day of the disease. This fever, which has been called a diary and decreasing fever, because it either ends or begins to decline within twenty-four hours, and never exceeds the fourth day, was accounted an essential part of the catarrhus epidemic, and seems, indeed, to be an immediate effect of its cause. But the cough generally remained after the fever was subdued, until an easy expectoration of concocted matter put an end to it. The soft diluting liquors, and the medicines above mentioned, were designed to bring on this critical expectoration, as well as to promote a sweat. And to answer that end, paregoric elixir was likewise given, if the cough was very troublesome, and the matter brought up by it crude and thin, after the fever was gone off or considerably abated.

“In a certain town, many persons to whom, as soon as they applied for assistance, wine-whey with spirits of hartshorn was freely given to force out a sweat, and paregoric elixir to quiet their cough, became delirious.

“Sometimes a violent cough, with considerable, but not inflammatory, pains about the breast, seemed to require bleeding on the second or third day of the disease; but this evacuation weakened the patient, without removing his pains or mitigating his cough in any considerable degree, and seemed to retard his recovery. In several instances, as I am well informed, the loss of blood at this early period of the disease was followed, not immediately, but within a few days, by severe paroxysms, resembling those of an intermittent. And I apprehend that bleeding is then only necessary in this distemper, when it is accompanied with real inflammatory symptoms; and that purging is also improper, unless a fever, which requires this evacuation, is complicated with the catarrhus complaints; a spontaneous sweat being the natural remedy of the fever, which

is most essential to them. Mercatus has very judiciously remarked, that this epidemical catarrhus disease is to be treated according to the nature and disposition of the fever with which it happens to be associated; so that in some cases bleeding is necessary, in others purging; but in most a proper regimen only is required. This judgment of the Spanish physician is confirmed by the experience of our sagacious Sydenham, who cured the stationary fever of 1675, when it was united with the epidemical cough of that year, in the same manner, and with the same success, as he had done before these coughs made their appearance.

“If the feverish disorder, accompanying the catarrhus complaints, continues increasing for two or three days, it is certain that another fever, besides the diary or decreasing fever, is complicated with them. This adventitious fever has been most commonly found to produce either symptoms peculiar to fevers of the inflammatory kind, or those which were the distinguishing marks of the fever of the season.

“Before we were visited by the late epidemic, the atrabilious constitution, which, according to Dr. Grant’s accurate observations, begins some time in October or the beginning of November, had taken place; and, on this account, a plentiful discharge of black, bilious stools, coming on of its own accord, or procured by gentle and repeated purging medicines, when there were pains or uneasiness in the bowels, or a distension of the belly and præcordia, with inquietude or other signs of turgid matter in the intestines, soon freed the patient from the fever of the season, and all the complaints arising from it.

“But when any danger was apprehended from inflammatory complaints, which did not often happen in this part of the country, more or less blood was taken away. This was always sizy, and the size, for the most part, formed a cup-like appearance. We had, likewise, recourse to antiphlogistic medicines and occasionally to blisters, which more sensibly abated pleuritic pains, being applied to the part affected, than the previous bleeding.

“Peripneumonic complaints, the most alarming symptom of all, were gradually carried off by a free and easy expectoration of digested matter. Such remedies were therefore administered,

as have been found, by experience, to promote the digestion of thick, viscid humours, collected and retained in the lungs, and to facilitate their discharge.

“This disease proved fatal to exceeding few in this city or country, and those who died of it were ancient persons, or pulmonics. Such as these have been the principal sufferers in every epidemical catarrhus constitution, of which I have read any description. Children, both in Devonshire and Cornwall, were less subject to the distemper than adults; their complaints, when they had taken it, were slighter; and they sooner got well. Almost all of them had watery eyes and a running nose.

“From the accounts and descriptions given us by physicians of the *Febris Catarrhalis Epidemica*, of *Tussis Epidemica*, which since the year 1557 have made their appearance in Europe, at least a dozen times, it is sufficiently evident that they are the same disease, diversified only as the smallpox are, by the influence of the climate, the seasons of the year, and the constitution of the air.

“Whilst it was the general opinion of philosophers, that all things upon earth were governed by the heavens, physicians imputed the epidemical catarrhus semi-pestilential fever, to the influence of the stars; whence the Italians gave it the name of *influenza*.

“Wintringham and others, who attribute this general epidemic to moist, cold weather, coming on suddenly after a lasting, warm, dry season, seem not enough to have apprehended that it is a disease of all seasons and climates, which I think it most certainly is. For we are informed by Willis, in cap. xvii. ‘*De Febribus*,’ that it visited this kingdom in April 1658; and that the whole spring and the beginning of the summer this year were uncommonly cold, and the preceding winter excessively hard. And Mercatus relates, in lib. ii. ‘*De Intern. Morb. Curat.*,’ that it was raging in some part or other of Spain during the whole summer of the year 1580, and destroyed not a few. It is recorded by Fonseca, in ‘*Disputat. de Garotillo*,’ that in the year 1557 it infested Asia, came from thence to Constantinople, then spread itself over all Europe, and afterwards attacked America. And by a society of physicians at Edinburgh, in the second volume of their *Medical Essays*, that about the middle

of November 1732, it made its appearance in the northern parts of Germany, and reached Naples and Spain before the end of February 1733, having, in the mean time, overrun all Europe. That about the middle of the following October, it arrived in New England, and travelled southward to Barbadoes, Jamaica, Peru, and Mexico, much at the same rate as it had done in Europe. Now these historical facts being inconsistent with the conjectures of these gentlemen, who would persuade us that this uncommon and most universal disease is produced by the same constitution of the air, as that which produces our common autumnal colds and coughs, if we believe the historians, we must necessarily conclude that this notion of the theorists is false.

“Nor does this distemper seem to arise, which is, I think, at present, the more general opinion, from contagion. For in this city, in the year 1729, it was conjectured, that two thousand persons at least were seized with it in one night. But what is more extraordinary, before the beginning of autumn, in the year 1557, it attacked all parts of Spain at once, so that the greatest part of the people in that kingdom were seized with it almost on the same day. This very singular circumstance is related by Mercatus, who says that it happened in his own time.

“And after all the attempts that have been made to ascertain the causes of general epidemical diseases, not arising from the sensible qualities of the air, we seem to have as little real knowledge of them as the ancient Greek physicians had, who referred these distempers to something in the air, which is not the object of sense, but which, like the Supreme Cause of all things, only manifests its existence and power to us by its effects. This something, therefore, though different, in different epidemical constitutions, was not improperly called by Hippocrates τὸ θεῖον.

“I have only to add, that in this part of the country, in the month of September, many horses and dogs were severely afflicted with colds and coughs. Which circumstance, it should seem, was not merely accidental; since it has been observed that horses were infected before men, in three general epidemical constitutions that have happened in our time. And I am inclined to think that the pestilence mentioned by Homer,

which, within the space of nine days, spread itself over all the Grecian quarters, and a little while after disappeared, was an epidemic of the same kind; because neither the true plague, nor any other epidemical disease, with whose history I am acquainted, has been known to make so rapid a progress, or to end so soon, as that pestilence did."

8. DR. ASH

"BIRMINGHAM, Dec. 2, 1775.

"The epidemic, of which we had accounts in the public papers from London, made its appearance in this place about the middle of November; and no fresh subjects were attacked with it after the 7th or 8th of December. The period of it did not exceed a month; there was no distinction of the sexes amongst grown persons; those who were most in the air were, in general, least affected; few children diseased.

"In the town many were suddenly seized, especially in the morning early, with universal rigours, and pains in the limbs and back part of the head, a roughness rather than soreness in the throat, great lassitude and dejection of spirits, great oppression on the præcordia, and some few with pleuritic pains. Many complained of a nausea, and an inclination to vomit. The tongue was generally moist in the beginning, with a whiteness and sometimes a darker crust toward the back part of it. The skin was seldom hot or dry, and the general temperature of the habit moderate. The appetite, except in the subjects who complained of nausea, was not much affected, but the patients in general complained of a total loss of a distinction of taste of one kind of food from another. The cough was incessant, especially on lying down in bed. In no patient, whom I attended, any hardness or tension in the pulse; and it never appeared necessary to take any blood away. In some few who had been bled, on account of the hæmorrhage from the nose, through the violence of the cough, the blood appeared florid, and of a tender texture; the urine was secreted generally in small quantities, and, of course, high-coloured; the state of the bowels uncertain. Where a tendency to a diarrhœa came on, it generally removed

the disease; and where a want of stools indicated an aperient in the beginning of the disease, it had, in general, the same happy effects.

"An early attention to administer and repeat some mild cathartics, with diluting, cooling liquors and mild diaphoretics, soon brought on an easy expectoration, and removed all the other symptoms except the cough, which generally continued, in some degree, ten or twelve days, but was much relieved by small doses of anodynes. The aged and diseased patients, especially asthmatics, suffered most, and to some few it proved fatal. In the progress of the disease, when not immediately relieved by the first intentions, many difficult and perplexing symptoms arose that were not easily removed, and often appeared alarming. Gentle and repeated purgatives were of the most certain use; and, if not early administered, or neglected to be repeated, an obstinate costiveness sometimes came on, that was to be relieved only by clysters frequently repeated; and, in one case, all efforts of that kind were ineffectual; and although the heat was moderate the whole time, the disease proved fatal, and terminated in a mortification of the bowels.

"In these aggravated symptoms of the disorder the nights were, in general, disquiet, the cough continued violent, although the expectoration was plentiful; and the head was affected. Blisters were generally of good effect, and fomentations and sinapisms to the feet gave great relief. The disease was particularly troublesome to women in the latter part of their pregnancy. A healthy young woman, very near her time, was seized with this disease; the symptoms were more violent than common; but no assistance was called to her, on a supposition that medicines were improper in her present situation; after her delivery all assistance was in vain, and she died phrenetic on the fifth day. Her child was born, to all appearance, in a healthful state, but was seized with convulsions the second day after its birth, and died the evening preceding the mother's death. I was called upon to attend two other women in the same situation, and directed for them the usual methods of treatment; they had both a happy delivery, and the cough and all other symptoms ceased soon after, except the dejection of spirits, with some slight palpitations of the heart, which soon gave way to fetid medicines.

"The disease, in its decline, often assumed the form of an intermittent; and the Peruvian bark seemed immediately indicated, but it never had its wished-for or expected success: it seemed to aggravate the disease, and threatened to bring on a relapse, and was never of use except it acted as a brisk purgative on its being first given, which was often its immediate effect; if not, it was highly prejudicial. Besides, the gentle and mild cathartics frequently repeated, with diluting liquors, mild diaphoretics, with small doses of emetic tartar in every form of medicine. Emetics were given with the greatest success, especially when the nausea immediately indicated them; but if not immediately indicated, were, in general, found to abate the progress of the disease.

"The different state of the blood in this place from what you found it in London, deserves our peculiar attention. In a workhouse in a neighbouring town, *three* died of the epidemic, who were all blooded; all the rest recovered who were not bled, but took the repeated purgatives only and the *Decoctum Nitrosum*."

9. DR. W. WHITE

"YORK, Dec. 22, 1775.

"This epidemic disease seems to have appeared rather earlier with us than in London: it was observed before the end of October, became general in the beginning of November, at which time many whole families were indisposed. Not one dwelling house escaped. I was myself seized with it on the 2d of that month; and in a very short time, it became the most universal disease that hath been remembered with us. It was much abated by the first week of December, and seems now to have entirely left us.

"The attack was generally sudden, with a sense of severe coldness, especially in the back and lower extremities. This, in many, was attended with a giddiness; in a few with nausea and abhorrence of food, generally uneasiness about the præcordia, great anxiety and weariness. The pulse small and contracted, from ten to twenty above the natural rate; urine pale; body generally costive. Some had more or less soreness in the throat, and what is called a stuffing in the head, and sneezing

violently ; all had a very bad tickling cough, which soon caused stitches and soreness in the breast.

“ These symptoms, as they were more or less violent, were sooner or later followed by feverish heat, but seldom to any high degree ; remarkable soreness all over the body, and slight pains in the head, limbs, loins, and breast. The urine, now seldom high-coloured, forming a cloud when cold ; a diarrhoea uncommon here, the contrary state common. Pulse in most one hundred in a minute, in several much quicker, seldom full or strong. Tongue whitish, but moist ; little remarkable thirst ; a complaint of a bad taste in the mouth was general, and the breath offensive.

“ No regular crisis was observable ; the fever was of the remittent kind, and gradually subsided in general. All became much worse in the afternoon, and so continued till three or four o'clock the following morning, about which time a moderate sweating relieved the patient, who, after a few hours of quiet sleep, awoke much easier. The disease thus went on several days, without any intervening cold fit. For four days together my pulse was 90 (15 above the natural rate) in the morning ; in the evening 115 : the same I observed in several others.

“ In all, the nervous system was much disordered ; various affections of the spasmodic kind occurred, and the anxiety, despondency, and restlessness were much more remarkable than the general mildness of the vascular irritation gave room to expect.

“ Regarding the prognosis :—A quick recovery followed such urine as quickly turned milky after making, soon after depositing a copious sediment ; it was always attended with moist skin, an abatement of the cough, the quickness of the pulse, and anxiety. Some had more considerable sweats ; I saw no crisis by a spontaneous diarrhoea, nor any recovery without the urine above mentioned.

“ This epidemic was, with us in general, so mild, as seldom to engage the attention of a physician : yet it brought some aged asthmatics, and young people of a consumptive habit, into imminent danger. Of such, a few died in this city, especially the former.

“ As to the curative part, it was seldom necessary here to take away blood : some were relieved by it, but, in general, it

did hurt by depressing the patients. An ingenious apothecary, who, from his extensive practice, had a very great number of the sick under his care, informed me that this evacuation seemed to relieve some immediately, but that he never saw in any other disease so many bad symptoms follow bleeding as in this epidemic. Gentle cooling purgatives were universally beneficial in abating the anxiety and raising the spirits. Emetics were seldom indicated; nor were blisters often required, but were useful in abating the cough and stitches.

"The disease was seldom so violent as to call for antimonials; but when used, as I did in several cases, they never failed in their febrifuge effects. I never gave an anodyne until the pulse was considerably reduced, to about 80, then they had every desirable effect; when given without this rule they often disagreed with the patient, acting as a stimulant.

"The appearance of the urine above mentioned, which was always attended with other signs of an apyrexia, was my rule for giving the cortex; and it never failed in quickly restoring the patient. Without its assistance several continued for some time in a weak and irritable condition, so as to alarm their friends with the apprehension of a consumption. I was called to one patient who had been a month in this situation, weak, languid, dispirited, and worn out with a violent cough and want of sleep; his urine was as above described: the cortex and an anodyne at night, with riding upon horseback, soon cured him.

"But, in general, a few days' confinement, abstinence from flesh meat, and frequent sippings of some tepid pectoral drink, sufficed for the cure. But it was universally found necessary to allow a nutritious diet; and such as had been accustomed to liquors of the more stimulating kind became worse if debarred their use; the anxiety, inquietude, and other nervous affections being increased by such procedure.

"Although I kept a journal of weather, I think it unnecessary to relate it; it agrees pretty much with Dr. Fothergill's account. I shall just observe, that the epidemic was probably checked here by a sudden severe frost and snow. The thermometer, which had been for some time between 40 and 50, fell in one night's time to 22, and continued for some days below the freezing point. It is one of Fahrenheit's, and hangs in a

garden behind my house, having an open exposure to the south-west.

"The above account of the epidemic, as it appeared at York, may be depended upon for its exactness, being the result of my own and the joint observations of the faculty here, and it will give me pleasure to find it acceptable to Dr. Fothergill."

10. DR. HAYGARTH, OF CHESTER

"The epidemical catarrh of 1775 seized, in general, the inhabitants of Chester about the middle of November. From the 15th till the 25th of that month the distemper spread most universally; yet very few were attacked so late as December. Indeed I saw one case on the 2d of November, of a lady who had suffered manifest symptoms of this epidemic six days before; but I heard of no other instance of its appearing here so early, and the disorder did not become general till near a fortnight later. This epidemic pervaded all North Wales within three or five days after its general seizure of the inhabitants in Chester; that is, on the 18th or 20th of November, as I have had authentic information from every town and every considerable village, and their neighbourhood. I was curious to know how those were affected who were most secluded from the intercourse of society; an intelligent practitioner informs me that in Llyn, the most western and remote corner of Carnarvonshire, this epidemic began about the 20th of November, was general through every part of this peninsula, and affected all classes of people; that one in a family now and then escaped it, but that he knew no family, however small, among whom it did not make its appearance. My medical correspondents mention that some cases occurred in one part of Wales so early as October the 27th, and in another the beginning of November. In the western part of Cheshire, and that part of Shropshire which borders on Cheshire, I observed that this disease began soon after the middle of November. However, I am certain that in some Cheshire villages the epidemic had not appeared till more than ten days later, though it afterwards visited these places. These facts, compared with the general seizure, make the theory of this epidemic very difficult. On the whole, I

believe people in the country were attacked rather later than in the towns they surrounded, less severely, and less generally; however, not only the inhabitants of villages, but of solitary houses, were seized with this disease. I could not discover that high or low, dry or moist situations, the neighbourhood of mountains, or of the sea, or any other particular exposure, rendered the epidemic either later or milder; though I made very circumstantial inquiries to ascertain these facts.

"In this epidemic at Chester, the catarrhal and feverish symptoms were most general; yet I saw a few cases of fever without cough, and more of cough without fever. The *catarrhal* symptoms were a frequent cough, which generally brought up pellucid phlegm, and in old people a plentiful yellow discharge: but in some cases was dry, hard, and violent; a copious watery defluxion from the eyes and nose, frequent sneezing, hoarseness, and sore throat. The *feverish* symptoms commenced sometimes before and sometimes after the cough, and began with chilly and hot fits, irregular and alternate, followed by lassitude, inquietude, uncommon loss of strength and spirits, want of sleep and appetite, giddiness, acute pain in the head, chest, or a particular point of the belly, all increased by coughing; also an aching pain in the head, back, hips, and limbs. The pulse was seldom very full or strong, except in peripneumonic cases; the skin had often no unusual heat, the tongue was generally white and moist, sometimes yellowish and furred; the urine appeared variously, but was commonly high-coloured during the fever. Unless an inflammation attacked the lungs, which was a frequent and a dangerous termination of the disease, the fever usually ceased in a few days. The cough continued longer, and was of more uncertain duration. The preceding symptoms were by far the most universal, and exhibit the regular appearance of the disease.

"The most common anomalous complaint was a diarrhoea, with blackish stools: sickness and vomiting occurred less frequently. I saw five patients who had fallen down in a swoon, preceded by a violent headache; three of these were young women, who had the other symptoms very mildly; the fourth was a gentleman of an athletic habit, who was never confined by the disease; and the fifth was a married lady, who, without a preceding cough, had a very violent looseness, succeeded by

a phrenitic delirium, and then by a very urgent cough; the looseness, delirium, and cough succeeded alternately to each other twice over in a regular manner, but never existed together; at last a red, rough itching rash covered the whole body, after which no symptom but the cough remained. In a young girl, a smooth redness of the skin covered a great part of her body, exactly like the appearance in scarlet fevers. One case differed entirely from the usual inflammatory type of the disease. A young lady at a boarding-school was seized at the same time, and with like symptoms, as twenty-six of her school-fellows. Two days after her first indisposition, a diarrhoea, with black stools, began, and continued above three weeks, attended with a putrid fever, black dry tongue, fauces, and lips; sordid teeth, total deafness, and an idiotic delirium; yet she recovered. Her mother and two other attendants were infected by this fever, in which their heads were principally affected with violent pain and a wild delirium: the fever was fatal to one of the attendants, who died phrenitic. The proof of infection, in this putrid fever, was most evident; but I saw no instance of the epidemical catarrh that appeared to be communicated by infection. A very large proportion of the inhabitants of Chester were seized with this epidemic; but, as far as may be concluded from one observation, it appears that there were fewer in the higher than in the lower ranks of society. In the Abbey Square, inhabited by persons who live in ease and affluence, only 73 were attacked out of 97 neighbours; that is, scarcely more than 3 in 4: at the Cross, inhabited by people in trade that compose the middle rank, 109 had the disease out of 114; that is, nearly 18 in 19: whereas in the House of Industry not one person escaped the disorder out of 175. Other diseases did not preclude this: I saw it accompany measles, consumption, mortification, gout, scurvy, dropsy, jaundice, etc. It attacked many who were confined to their houses, and even to their beds, with other ailments. Young children in general recovered soonest, and had fewest violent complaints; however, I was informed by a person of skill, that he saw one child of two, and another of three, months old, with evident symptoms of this distemper. It was most fatal to the aged, the asthmatic, and those who were debilitated by other disorders.

"A slight degree of the disease soon went off without confinement, any particular diet, or medicines; but many aggravated both the fever and cough by exposing themselves to cold. With a large number the symptoms were so violent as to confine them to the house, and even to bed. In these cases plenty of cooling and diluting liquids, drank warm, by encouraging sweats which came on spontaneously, seemed greatly to abate the fever. When the cough was very violent, during or after the fever, bleeding in general manifestly alleviated it, though the blood had seldom a thick sizzly crust, and often none at all. In one case, even at so advanced an age as seventy-five, the breathing was so laborious, from a suppression of the cough, and the relief from bleeding was so manifest, and so immediate, that it convinced both my patient and myself that this remedy snatched her out of the very jaws of death. In some cases, antimonials manifestly abated both the fever and cough; in some, blisters were of service; in general, cooling purgatives and other antiphlogistic remedies and regimen, which it is unnecessary to specify, had a salutary effect.

"At Chester, the spring of 1775 (March, April, May, and beginning of June) was remarkably dry, and the three last of these months unusually warm; on April the 28th, at two p.m., the thermometer was 72° in the shade. July, August, and September, were wet and warm. On the 19th and 20th of October, for forty-eight hours, was a storm of wind from the west, attended with rain. The storm was remarkable both for violence and duration, which wrecked many ships on our coast. The newspapers did not show that it extended to any great distance; but different storms are mentioned to have happened at different times: their history connected with that of the catarrh may illustrate the question, whether epidemics have any dependence on storms. During November the wind was generally from the east: the air was hazy for an unusual number of days in this month. About August and September, in North Wales, almost all the horses were seized with coughs."

11. DR. R. PULTENEY

“BLANDFORD, DORSETSHIRE, Dec. 18, 1775.

“This disorder was heard of earlier here than at London. Some were so teased with the cough, as to be obliged to get out of bed and sit by the fire in the night-time: by this method they gained a truce, and thought themselves much relieved. Nothing relieved the patients so much as bleeding. I have not remarked for several years past the same general necessity for bleeding, or the same good effects from it. In several instances I repeated it to the third time, and did not think I ever had reason to repent of it.

“It seems to me that it was by no means so universally felt with us as in *Town*; and I do not know of one person that died of it.

“I heard much of horses and dogs having been affected, before we heard of it among the human race.”

12. DR. WILLIAM THOMPSON, OF WORCESTER

“Dec. 20, 1775.

“This distemper became general here about the middle of November, and spread gradually in the country around.

“In some the head was affected to a degree of stupor and delirium, which was relieved as soon as the chest was affected.

“A diarrhoea frequently happened, and always moderated the other symptoms.

“In most symptoms where the symptoms were violent, bleeding was necessary, even to the third time; nor did I observe any inconvenience from it.

“The fatal consequences of the disorder to old asthmatic people were frequent hereabouts.

“People in general recovered slowly, and, for a good while, suffered great weakness and dejection.”

13. G. SKENE, OF ABERDEEN

“It began here near the end of November, and continued for four or five weeks; the second and third week it was very

general. It went regularly northward, but was not universal to the north of this city. It did not visit Fraserburgh, though there was a putrid fever there very fatal at that time.

"The disease never assumed the type of an intermittent here; but it is to be observed, that the intermittent fever is not known in Aberdeen. We never see a regular intermittent, except the patients bring it from other climates immediately, or have been great sufferers by it formerly in other countries; and our fevers very rarely assume that form in their decline."

14. DR. D. CAMPBELL, OF LANCASTER

"Feb. 18, 1776.

"When the disorder became so universal here, I think its nature, as a *contagious* complaint, might (besides its running so generally through whole families) be fairly proved by its progress from London to the North. Every account showed the prevalence of this epidemic in *London*, for near three weeks before it extended to *Lancaster*. Even when almost every person at *Liverpool* was attacked by it, I scarcely remember to have heard, upon the most diligent inquiry, that a greater number of persons were affected with catarrhus symptoms than usual. But I think in about three days after we had been informed of the frequency of the complaint at *Liverpool*, there was scarcely a family in this town but had one or more persons seized. About this time, I remember to have seen a gentleman from *Kirkby Lonsdale*, which lies about fourteen miles hence in a north-east direction, who informed me, not a person he then knew of was, at that time, affected there; but the next week he informed me it was then equally universal as with us; at the same time he told me, that *Kirkby Steven* (which lies about the same distance from *Kirkby Lonsdale* in a similar direction) had yet escaped. In a few days, however, I understood the complaint was equally general there.

"These complaints, which in a manner disappeared on the setting in of the frost in the beginning of January, have, since the thaw, which took place the 1st of February, again become rife, though not with the same frequency and violence as in December."

15. DR. C. J. FLEURY¹

"Of the weather I shall only say, that it was, for the season, extremely close, warm, and moist; accordingly, this epidemic cold (which made its appearance here about the middle of last October) was less of an inflammatory nature, and affected the nervous system more sensibly than any I ever remember; that of May, 1762, was the first which occurred since I began the practice of physic in this city.

"Exclusive of the common feverish symptoms, a great and sudden languor, dejection of spirits, and prostration of strength, was evident in most of the sick; many complained of a troublesome pain between the shoulders, a very uneasy sensation of heat from the top of the larynx down through the whole chest; a hard, dry, and frequent cough, in the night-time especially, was a very common symptom; a short, quick, and laborious breathing; a small, quick pulse, of a deceitful, wiry hardness; the last two symptoms occurred chiefly in those who were subject to asthma or winter coughs. In most families the servants and children were first attacked; in the latter the cough was almost incessant.

"This epidemic cold set in at the tail, I may say, of a bilious fever, which had been prevalent here during the autumnal season; accordingly the inflammatory stage was, as from this combination and the state of the air might well be expected, but short, and soon yielded to moderate antiphlogistic treatment; indeed the great point on which the cure seemed principally to turn, was to carry the bilious saburra down through the great cloaca, without debilitating or irritating the nervous system. This eased the breathing, lessened the fever, and relieved the cough. Plentiful dilution too, and saline draughts, with elix-paragoricum, appeared to me to be amongst the best pectorals. In a city such as this, where the situation, as well as the manner of life of its inhabitants, often differ widely, and where the apothecary is so generally applied to in the first instance, no method can be laid down for the cure of any

¹ Observations on the Epidemic Cold of 1775. By J. C. Fleury, M.D. Read before the Dublin Medico-Philosophical Society, February 1776. (Dublin Quarterly Medical Journal, February 1848.)

disease from which it will not at times be proper to deviate; I may venture, however, I think, to affirm that this epidemic did not require repeated bleeding; numbers recovered, and recovered speedily, who were not bled at all, and those who had been much evacuated that way were evidently the worse of it. Long abstinence from generous diet was injurious to some; their cough increased thereby, and their nights were rendered worse. Emetics, I think, in general, were not indicated."

On the 8th of September 1776 the following communication was made to the Dublin Medico-Philosophical Society, by

DR. DANIEL RAINEY

"*Remarks upon the Treatment of the Epidemic Cold of 1775.*
—This trifle having been mislaid for several months, I thought it might prove of some use, and therefore give it to the Society in its present imperfect dress. Whilst the epidemic cold of last year affected such a number of the inhabitants of this city, it is not to be wondered at that it found its way into the House of Industry,—an institution founded for the suppression of beggars and sturdy vagabonds, situated to the north-west of the city, in an elevated situation, with nothing but gardens and orchards in its rear. At this time the house contained about 367 paupers, of different ages, from 12 to 90, of different constitutions and temperaments, as may well be supposed among such a collection of people.

"Above 200 of these were attacked with the prevailing disorder, and as it manifested *in general* no violent symptoms among the inhabitants at large, except that several of the lower classes fell victims to their own folly in endeavouring to procure relief by making use of heated, spirituous and malt liquors, I was determined to seize such a favourable opportunity of acting the part of a mere spectator of the operation of nature; as I could act unrestrained by vulgar prejudices, where the patients had no idea that the physician did nothing for them if he did not drench their stomachs with nauseous medicines, I believe too often the case in general practice. And to my entire satisfaction, I found that warm, diluting, sub-acid drink, *nothing more than scalded buttermilk*, and confinement to bed, brought

the whole number through the complaint, without either the aid of medicine or even the lancet, and yet not one fell a sacrifice. In the infirmary, which is set apart from the other buildings, in which was contained above 51 patients, medical and surgical, with several under a course of mercury, not one was affected, owing, as I at first supposed, to their living in smaller apartments, well warmed, and being unable to go about in the open air; but even this exemption could not be relied on as the cause of their escaping, when I observed that several, occupied in the necessary business of the house, and through the whole day exposed to the action of the air, yet never were attacked with any of the symptoms. Nay, so healthy in other respects were the poor at this period, that the governors bore testimony in the public papers, that fewer died during the prevalence of this disorder than during the same space of time since the opening of the house. Some had it so very slightly, nothing more than a sort of languor, with a trifling, tickling cough, that it was scarce necessary to confine them; others more severely, as with lassitude, and, as they called it, pain through their bones, very severe cough, headach, and running from the eyes. Those who were subject to the *tussis senilis* did not appear to suffer more than any of the rest."

THE EPIDEMIC CATARRH OF 1782

1. EDWARD GRAY, M.D., F.R.S.¹

"In the account of an epidemic disease, it may be expected that it should be compared with those of the same species,

¹ Medical Communications, vol. i. p. 1. London, 1784. An Account of the Epidemic Catarrh of the Year 1782; compiled at the request of a Society for promoting Medical Knowledge. By Edward Gray, M.D., F.R.S.

"The compiler of the following account thinks it an acknowledgment due to the gentlemen who favoured the Society with letters on the late epidemic catarrh, to observe, that though many of them would have done honour to the present publication, had they been inserted at full length, yet, when it is considered that great part of their contents were necessarily similar, and that the repetition, which would have been the consequence of that method of publishing them, would have considerably enlarged the account of the disorder, it is hoped the authors of them will excuse the liberty that has been taken to omit, in general,

which have already been described ; and that their analogies and distinctions should be pointed out ; but the great number of them upon record is, it is presumed, a sufficient excuse for the omission of such an investigation ; especially when it is considered that it will be in the power of any person, by comparing the description of the late epidemic with that of any former one, to find wherein those analogies and distinctions consist. They who may be inclined to do so will find a very ample catalogue of them, ranged in chronological order, in Dr. Cullen's '*Synopsis Nosologiæ Methodicæ*,' under the article "*Catarrhus a Contagio*," to which species the late influenza belongs ; and when the various forms, which in different persons and places it put on, are taken into consideration, it will, no doubt, be found, that some of them were the same as some of those in which it formerly appeared ; but, when the more general character of it be considered, it will probably appear to have differed, in some respects, from all the former disorders of the same species ; and with regard to the number of persons affected by it, and the great space of the earth over which it spread its influence, to have been equalled by few of them, perhaps exceeded by none.¹ In particular places, indeed, some of the former epidemics may have been more general ; in one place that of 1775 was thought to have been so,² but upon the whole there will perhaps be found no reason to alter the above opinion.

"Very little authentic information has been procured, respecting the history of the disorder, before the time of its appearance in London ; all that can upon good authority be related, is, that it prevailed at Moscow, in the months of whatever was not immediately connected with the disease, and to select and transcribe that which served to establish or elucidate particular facts or opinions, and, consequently, to render its history more complete ; for the same reason he has not thought it necessary to produce authorities for those parts of the account, which, by being conformable to general observation, seemed to him not to require them."

¹ " ' With regard to the number affected, it was the most universal disease ever remembered.'—Dr. Anderson, Alnwick.

" ' No disease was ever more general.'—Dr. Murray, Norwich.

" ' I believe no disease was ever known to be more general.'—Dr. Kirkland, Ashby."

² " ' The inhabitants of Dumfries, and the environs, were pretty generally affected by the disorder, yet, I think, not so generally as by the catarrhal fever of 1775.'—Dr. Gilchrist, Dumfries."

December 1781 and January 1782, and at St. Petersburg in February 1782; it was traced from Tobolski, to which place it was supposed to have been brought from China.

"In confirmation of this opinion it may be observed, that several accounts from different parts of the East Indies, mention that a disorder, similar in its symptoms, prevailed in those parts in the months of October and November 1781. It was in Denmark, the latter end of April, or the beginning of May; and many people were said to have died of it at Copenhagen, before the 11th of May. It is not easy to determine with precision the time of its first appearance in London; that it was here the second week in May seems very certain; and though it was thought by some to have been here long before that time,¹ the more general opinion is, that the cases then observed did not belong to the disorder in question. But whatever difference of sentiment there may be respecting the time of its arrival in this metropolis, the fourth week in May is very well known to have been the period of its most universal prevalence here, which circumstance may surely be considered as a strong argument that the cases observed so early as March, or even April, were common catarrhs; for it seems very improbable that a disorder, which in every other place reached its highest pitch of general prevalence in a week or two after its appearance, should in London be two months before it arrived at that period.

"According to the accounts received from the different parts of England, it seems that in most of them the influenza did not begin to appear until after its prevalence in London, as in every letter, except two,² its appearance is dated either from the latter end of May or the beginning of June. In Scotland and in Ireland it seems to have been rather later. It prevailed in France in the months of June and July; in Italy, in July

¹ " 'Such was the epidemic constitution in the month of March 1782, when the *febris epidemica catarrhalis* first appeared; and by the middle of April it was spread all over London and its environs.'—Observations on the late Influenza, by Dr. Grant, p. 18."

² " 'The late epidemic disease made its appearance in this part of Yorkshire about the beginning of May, but in Thirsk and Northallerton it began some days sooner.'—Dr. Bisset, Knayton.

" 'The time that I can name with most certainty of its coming to Greenwich, is the first week in May; and I think the first patient I saw ill of it was at Deptford, on the first of that month.'—Dr. Leith, Greenwich."

and August ; and in Portugal and Spain, in August and September. It is said that it was afterwards observed in America ; but no authentic information on that head having been obtained, it is mentioned only as common report.

"It must here be remarked that a complaint, similar to the influenza, was taken notice of in some parts of the kingdom several months before that disorder made its progress through it. Mr. Mortimer, surgeon to the North Devonshire regiment of militia, was seized on the 24th of March, at Great Torrington, with a disorder, the symptoms of which were perfectly similar to those of the influenza ; after him his family had it, and it then became general in that town. It did not extend to the neighbouring villages, nor could Mr. Mortimer, upon enquiry, find that any such disorder had been observed at any other place in that part of England. At Barnstaple, which is only twelve miles from Torrington, the influenza was common in the beginning of June, when it went through that part of Devonshire ; but the inhabitants of Torrington were not then affected by it.¹ This last circumstance seems to show that the disorder observed in March was of the same species with the influenza ; but admitting it to have been so, it is very extraordinary that its activity should, at that time, have been confined to so small a space.

"The fourth week in May was (as is before mentioned) the period at which the disease prevailed most generally in London. From that time it began to decline, and in the space of two or three weeks ceased to exist as a general disorder. It did not, however, leave the city till the month of September. A family from Portugal landed at Harwich in the beginning of that month, and came directly to London ; the day after their arrival there, the lady, two children, and two maid servants, were seized with evident and unquestionable symptoms of the influenza. No certain instance of it in London, after that time, can be adduced.

"In most parts of England it does not appear to have remained so long ; but in several places it is said to have continued till the month of August,² and in some till the month

¹ "These facts, and those mentioned at p. 132, were communicated by Mr. Mortimer to Dr. Blagden, and by him to Dr. Gray."

² " 'In the second week in August it began to disappear.'—Dr. Scott, Stamfordham.

" 'It continued till the month of August.'—Dr. Kirkland, Ashby.

" 'This disorder is still (August 26) in this country.'—Dr. Paterson, Margam."

of September.¹ In the 'London Medical Journal' it is related, that 'the Convert and Lizard ships-of-war, upon their arrival at Gravesend, from the West Indies, in the beginning of September, had three Custom-house officers put on board them, and in a few hours after, the crews of both ships, till then in good health, were seized with symptoms of the influenza; hardly a man in either ship escaped, and some had it very severely.'²

"It does not appear that any attempt was made to ascertain the proportional numbers of persons affected by this disorder. In different places that number was very different, and in some it seems to have been very great."³

"Most of the accounts received from the various parts of the kingdom, say only, that it was very general, etc. At Dover Castle, 390 privates of the 59th regiment; and at Dublin, upwards of 700 of the 36th and 77th regiments of foot, were ill of it at the same time.

"At London it was also very general; and though a want of proper observation on that head renders it impossible to

¹ "The disorder continued till September, when it gradually disappeared."—Dr. Scott, Isle of Man."

² "This circumstance was communicated to Dr. Simmons by Captain Harvey, of the Convert, who at the time he mentioned it (the third week in September) was not quite recovered from the disease."

³ "Hardly one escaped, old or young."—Mr. Jacob, Feversham.

"Scarce a family in the town or neighbourhood free."—Dr. Anderson, Alnwick.

"Scarcely one adult in a hundred, under fifty years, escaped. About a seventh part of old persons and children escaped."—Dr. Bisset, Knayton.

"It was so universal that it may rather be said to have ceased for want of subjects, than to have lost the power of exerting its deleterious effects."—Dr. Ruston, Exeter.

"It prevailed almost universally among the inhabitants of this town; very few families remained totally free from it, but some few escaped it entirely. More than 930 persons affected with it applied to the dispensary in the course of three weeks."—Dr. Houlston, Liverpool.

"Whole families were affected with it at the same time, so that none remained well to nurse the sick; and it was extremely difficult to get any assistance, as none remained free from the disease."—Dr. Binns, Liverpool.

"Very general, particularly among the soldiers quartered here. In the infirmary, few or none of the patients escaped."—Dr. Livingston, Aberdeen.

"At St. Albans, out of three companies quartered in that town, scarcely a single man was fit to do duty; the officers suffered in like proportion, for only one escaped the complaint."—Description of the Influenza, by Dr. Hamilton, p. 9."

determine the proportion of persons affected by the disease, it may be safely asserted, that the number of those attacked by it was much greater than that of those who escaped it. With respect to sex, there seemed little or no difference; though in some places it was thought, that the number of men affected by it was greater than that of women.¹

"Dr. Simmons observed, that of ninety-six patients who were admitted under his care at the Westminster Dispensary, on account of the influenza, fifty were females, and forty-six males. But though, upon the whole, it seemed to show no distinction worth remarking, with regard to sex, this was far from being the case with regard to age. Old persons were certainly less subject to the disorder than those of a middle age; but when attacked, they generally had it very violently.² Children were still less subject to it than old persons, and infants considerably less than either.³ In the Hospice de Vaugirard, near Paris, where there were upwards of forty children, all under two years of age, it was observed that not one of them was affected, though the epidemic was common in the village. (*Journal de Médecine*.) Of the ninety-six persons above mentioned, who applied to the Westminster Dispensary, thirteen were under the age of twenty, sixty-three between twenty and forty, and twenty above forty years of age. But notwithstanding young persons were less liable to the disorder than adults,

¹ " 'Very few escaped, and those chiefly females.'—Dr. Murray, Norwich."

² " 'Old age appeared, next to infancy, the least susceptible of the disease; many of those who escaped were advanced in life, but the aged persons who did suffer had the disorder to a greater degree, and for a longer time.'—Dr. Macqueen, Great Yarmouth.

" 'Some old persons, from sixty upwards, escaped; but such as took the disease, generally suffered severely by it.'—Dr. Mease, Strabane.

" 'The old and valetudinary suffered most severely.'—Dr. Livingston, Aberdeen.

" 'The aged, especially those of a corpulent and full habit of body, were most violently affected.'—Dr. Ruston, Exeter."

³ " 'Children for the most part escaped the complaint.'—Dr. Campbell, Lancaster.

" 'I have heard of no child at the breast having it.'—Dr. Mease, Strabane.

" 'Children in general escaped its fury.'—Dr. Kirkland, Ashby.

" 'Les enfans du premier age en ont paru à peu près exempts.'—Letter from M. Vicq d'Azyr to Dr. Simmons.

" 'I do not recollect a single instance of an infant at the breast being affected with symptoms of influenza, either in the British Lying-in Hospital or in my private practice.'—Dr. Garthshore."

and when affected, commonly had it in a less degree,¹ yet even infants were not entirely exempt from it, and some of them had it very severely.²

“General as it was in London, some whole families escaped it; one for instance, residing near Red Lion Square, which at that time (including children and servants) consisted of thirteen persons, remained entirely free from its attack. It was also remarked that many persons who escaped the epidemic of 1775 were affected by that of 1782, and many who escaped the latter were affected by the former.

“It would be an endless task to describe, minutely, the various forms which, in different persons, the disorder put on; in general, it began with some of the following symptoms, of which those first mentioned seem to have been most common and most characteristic of the disease; but the order in which they followed each other, and their duration, varied exceedingly.

“Chilliness and shivering, sometimes succeeded by a hot fit, and alternating with it for some hours; languor and lassitude; sneezing; discharge from the nose and eyes; pain in the head (particularly between or over the eyes); cough, sometimes dry, sometimes accompanied with expectoration; inflammation of one or both eyes; oppression and tightness about the præcordia; difficulty of breathing; pain in the breast or side; pain in the loins, neck, shoulders, or limbs; sense of heat and soreness in the throat and trachea; hoarseness; bleeding from the nose; spitting of blood; loss of smell or taste; nausea; flatulence.

“Watery blisters about the upper parts of the body;

¹ “‘Children, and persons of a weak and delicate habit, were less violently affected than strong robust persons arrived at the years of maturity.’—Dr. Ruston, Exeter.

“‘Young persons, and especially children, were commonly attacked in an easy and slight degree.’—Dr. Livingston, Aberdeen.”

² “‘The state of infancy seems to have been almost universally exempted; I have been able to ascertain but one instance to the contrary in this town. Mr. Assey, of Beccles, says the disease exerted much violence on a child eighteen months old.’—Dr. Macqueen, Yarmouth.

“‘Children were not wholly exempted, many at the time being affected with sneezing, running at the nose, and cough.’—Dr. Anderson, Alnwick.

“‘An infant, two hours after it was born, was affected with sneezing, cough, and other symptoms of the disorder.’—Mr. Wilmer, Coventry.”

swellings in the face and other parts, attended with considerable soreness, apparently erysipelatous; and others of a different nature, forming abscesses in various parts, were sometimes observed.¹ In a few instances, a very painful swelling of the abdomen seemed to constitute the most disagreeable symptom of the disorder.² An eruption about the nose and lips was not uncommon; and in some cases a miliary one, or one like the chicken-pox, was remarked at the close of the disorder.³

"Abscesses in the ears, which, according to Huxham, were a common symptom in the epidemic of 1733, were seldom seen in that of 1782; but they did sometimes occur."⁴

¹ "In the last form of the disorder (*vide* note 1, p. 116) some, besides several of the more common symptoms, had abscesses suddenly forming in different parts of the body, particularly in the parotid and axillary glands; and large watery blisters, which rose about the back, breast, shoulders,' etc.—Dr. Scott, Isle of Man.

"Some had tumors, which ended in painful ulcers, discharging a thin ichor.'—Dr. Paterson, Margam.

"Some had erysipelatous swellings in the face, others had them in different parts of the body, attended with an intolerable itching.'—Sir Robert Scott, Dublin."

² "Some weeks after the disorder began, some who had the more usual symptoms were suddenly left free from all appearance of catarrhal affection, and in exchange there followed violent pain all over the abdomen, which appeared as if distended by wind, and was very tender to the touch; the thirst and heat were considerable, without any great quickness in the pulse; this complaint lasted from eight to fourteen days. Some were seized with this pain in the abdomen, without having any catarrhal attack, and all of them had no other appearance of the disorder; several of these were bled early in the disease, but I cannot say it removed or even relieved the symptoms.'—Dr. Leith, Greenwich.

"Some had their bodies swelled all over, with considerable inflammation and so painful they would not suffer you to touch them.'—Dr. Paterson, Margam."

³ "After perspiration, the most frequent crisis, if it may be called one, was a scabby eruption about the nose and lips.'—Dr. Mease, Strabane.

"Small angry pimples often appeared about the upper lip, and filled with pus; these, however, did not appear to be critical, but merely the effect of the heat and acrimony of the matter discharged from the nose.'—Dr. Campbell, Lancaster.

"In one or two cases the disorder terminated with a miliary eruption.'—Dr. Livingston, Aberdeen.

"When nature was interrupted in the beginning, by bleeding, or other improper management, the patient was thrown into a fever, which had for its crisis an eruption not unlike the chicken-pox.'—Dr. Paterson, Margam."

⁴ "One patient had abscesses formed in both ears.'—Description of the Influenza, by Dr. Hamilton, p. 14.

"In some, the catarrhal symptoms were very slight, or entirely wanting; the disorder in those cases being like a common fever.¹

"The pain in the breast and side, which, in most cases, seemed symptomatic, was in some the principal complaint; and had the appearance of genuine peripneumony or pleurisy, with every mark of inflammatory diathesis; in a few of these cases the pleuritic symptoms were preceded by those of inflammatory angina;² and there were observed some instances of the last-mentioned disorder which terminated in suppuration of the tonsils.³

"In others these were remarked as evident signs of a

" "I saw a remarkable instance of this symptom (a discharge of matter from the ears) occurring in the influenza.'—Account of the Epidemic Catarrhal Fever, by Dr. Falconer, p. 10."

¹ " "Though there was no doubt of its being a fever of the catarrhal kind, it was not attended with so many catarrhal symptoms as the epidemic of 1775. In many of the cases of this year there was no cough, no sneezing, nor any defluxion shewing a particular affection of the membrana schneideriana, so that the disease might have been mistaken for the ordinary kind of fever frequently occurring in this country (in which there is often a tendency to rheumatic or pleuritic symptoms), if it had not been attended with the unusual sickness and oppression observed in the catarrhal fever, and frequently with considerable disorder in the primæ viæ.'—Dr. Gilchrist, Dumfries.

" "In some instances the headach, coryza, and cough, appeared more early, and constituted the principal symptoms. In others they appeared in the slightest form, and scarcely deserving regard; while the febrile symptoms, accompanied with unusual languor and sluggishness, were chiefly remarkable.'—Dr. Anderson, Alnwick."

² " "In some few the fever was acute, the pulse hard and full, the cough incessant, producing bloody expectoration; and the inflammation fixing in the side or the lungs, produced pleurisy or peripneumony.'—Mr. Wilmer, Coventry.

" "I saw some patients where the symptoms were highly pleuritic; and in a small village not far from this place, four or five persons died under the usual symptoms of pleurisy, when that disorder terminates fatally. I visited a family in which there were three persons at the same time in this situation; two of them, before the pleuritic symptoms came on, had all the symptoms of an inflammatory angina, which disappeared in a day or two, and were succeeded by those of pleurisy; they were relieved by copious and repeated bleeding. It was certainly more inflammatory in that little village than in any place where I have attended.'—Dr. Daniel, Crewkerne."

³ " "In some the throat was much swelled, both within and without; and there were some instances of suppuration of the tonsils.'—Dr. Murray, Norwich."

tendency to putrefaction;¹ and in one case, the disease seems to have put on the form of nervous fever.²

"In the less violent attacks of the disorder, the thirst was not very great, nor was the appetite in general very much impaired.

"The tongue was generally white, but moist; and the skin hot and dry in the beginning of the disease; but a perspiration usually came on before many hours were passed, even where no means were used to excite it.

"The nights were passed in disturbed and unrefreshing sleep, frequently with delirium, which, in general, did not continue long; in some cases, however, it appears to have been the most alarming symptom of the disorder.³

"The pulse was always quickened, but in various degrees; in the milder forms of the disease it did not in general exceed 100; but in the more violent ones it was frequently 120, and in some cases more.⁴ In the beginning of the complaint it

¹ "A gentleman from the University of Cambridge assures me, that in the opinion of many the disease had there put on more or less of a putrid type; for, besides the extreme debility, the mouth and fauces were generally covered with black viscid fordes."—Dr. Macqueen, Great Yarmouth.

"In some instances there seemed evidently a strong tendency to putrefaction, the fauces and throat were excoriated, the tongue was very foul, having that kind of foulness common in ulcerated sore throat; and in several patients in the hospital who had foul ulcers, or were of a bad habit of body, this epidemic proved of the putrid kind."—Dr. Ruston, Exeter."

² "I feared I should have lost one young patient, and you may be surprised at my mentioning him as an instance of the disease, when I tell you that his symptoms were those of a nervous fever; yet I think I am justifiable in so doing from its happening at the same time, being the only instance of the kind, and beginning with one of the symptoms with which the influenza was sometimes accompanied, viz., an epistaxis."—Dr. Mease, Strabane."

³ "At the time the disease was amongst us, it either shewed itself in a different form, or another disease attacked the people; for the patient was seized with a violent pain in his head, and presently became delirious, his lungs being unaffected, for he breathed freely, and had no cough; the pulse seldom exceeded 100. I saw five thus affected who all recovered: great debility and tremors followed the complaint."—Dr. Kirkland, Ashby."

⁴ "At Eltham it raged with uncommon severity, at first in the more common form; but soon after, the attack was very different. The patients were in general seized with a pain across the lower parts of the thorax, which produced a quick and laborious respiration, great thirst, and a white but not dry tongue; the pulse from the first moment small and quick, rarely less than 120, more frequently 140, in a minute, and the least effort quickened it so that it could not be reckoned. Bleeding was in many cases tried, but it was of no use, and, indeed, many found no benefit from any means used to relieve them, but sunk gradually

was often full, but very seldom hard, and sometimes was observed to be intermittent.¹

"The blood taken away, commonly had the coagulable lymph separated, forming what is called a buffy surface; but in some forms of the disorder, this appearance was not perceived.

"The state of the intestines and kidneys did not in general differ so much from that of health, as to require any remark.

"Various, and even contradictory, as the forementioned symptoms appear, their right to be considered as belonging to the influenza, or at least as having been caused by it, will, perhaps, be admitted, when it is observed, that this disorder (as has been remarked of former epidemics) excited, and became complicated with, those complaints to which the persons affected were, from local situation, or constitution, most pre-disposed.²

without much change of symptoms about the fifth or sixth day, and some died suddenly. In a few a delirium came on; others remained sensible through the whole of the disorder. Some recovered, seemingly from a plentiful expectoration of a viscid semi-pellucid matter; others died after the expectoration came on; and many recovered without any such evacuation, though they all seemed disposed to it in the beginning. But at this very time some few cases occurred where the pulse was firm and hard, and where bleeding was borne well, and repeated with advantage to the amount of forty ounces or more.'—Dr. Leith, Greenwich."

¹ "I was called to a patient whose case was very alarming and singular. She had the common symptoms of the disorder, with fever and pain in the head; had got no sleep, was harassed with a dry cough; had pains in her bowels and diarrhoea. Upon feeling her pulse I found they were full and somewhat hard, and that they intermitted sometimes every third stroke, at others every eighth, ninth, or tenth, and very frequently they were regular for more than a quarter of a minute; she had great anxiety, palpitation of the heart, and syncope. I could not attribute these symptoms to any cause but inflammation about the heart or its membranes: she was accordingly bled; the blood was covered with a buff, and she was somewhat relieved by the operation; but as the alarming state of the pulse continued, it was repeated, and in two or three days the pulse became more regular; the anxiety and syncope, with extreme weakness, continued, but she recovered gradually.'—Dr. Daniel, Crewkerne."

² "Invalids suffered more than others; three of them died; one of them had been subject to a pleurisy, a pleuroperipneumony finished his life; and, indeed, all disorders to which people were subject, were more or less stirred up by this Asiatic malady.'—Dr. Kirkland, Ashby.

"Few people subject to the gout have escaped some attack of it, in consequence of this complaint. Consumptions, asthmas, and rheumatisms bear the same date; it seems to have had the power of exciting into action those disorders which lay dormant before.'—Dr. Ruston, Exeter.

"Very small distances seemed sometimes to make great alteration, both in the character and universality of the disease, even where there was no apparent difference with respect to situation; and it was observed by several, that the inhabitants of low situations, were more generally and more violently affected than the inhabitants of high ones.¹

"It was also remarked, that those who were attacked later from the time of the appearance of the disorder, commonly had it more severely, and were longer ill:² but this remark must not be applied to those who suffered relapses; as, in that case, it was frequently observed, that the latter attacks were milder than the former ones:³ and that they were not always so, was perhaps owing to some change in the state of the patient, or of the weather; for, it is very certain, that most persons had the disorder but once during its prevalence, and it seems probable that the same cause which renders the constitution not disposed to receive it a second time, should also (*cæteris paribus*) render the second attack less severe.

"In several places, two, and in some, three, very distinct forms of the disease were observed, during its continuance; this alteration was by some imputed to changes in the state of

" 'Pulmonic inflammations, hæmorrhages from the nose and lungs, rheumatic pains, etc., took place in those who were formerly subject to such complaints; and it was remarked, that, in some instances, affections even of the abdominal viscera, that had remained long dormant, were resuscitated.'—Dr. Mease, Strabane.

" 'Particular diseases incident to particular persons were often brought on by the influenza.'—Dr. Bisset, Knayton."

¹ " 'One or two villages situated exactly as others, where it was very general, escaped almost entirely.'—Dr. Leith, Greenwich.

" 'In Mersea Island, about eight miles distant from hence, the inhabitants are much more subject to pleuritic complaints than they are here. In that place the epidemic was very general, and the symptoms were much more inflammatory than here, and the pain in the side more fixed and violent.'—Mr. Newell, Colchester.

" 'In low situations (making allowance for difference in constitutions) it appeared pretty much the same; but upon high hills it was very slight, and gave little or no disturbance.'—Dr. Kirkland, Ashby.

" *Vide* note 1, p. 116, Dr. Scott, Isle of Man."

² " 'Those who were first seized had the disease in a milder manner than those who were later attacked.'—Dr. Leith, Greenwich."

³ " 'Some few suffered two or three relapses, but the succeeding attacks were in general mild, and of short duration.'—Dr. Bisset, Knayton.

" 'Mr. S—— relapsed twice, though each attack was lighter than the former.'—Mr. Boys, Sandwich."

the weather;¹ it must, however, be remarked, that in other places great alterations happened in the weather, during its prevalence, without any sensible change in the symptoms of the disorder.²

“From what has been said it is very clear, that the accidental symptoms, or those arising from particular predisposition, were in many cases stronger than the proper and specific symptoms of the disease; and consequently, it was frequently difficult, and sometimes impossible, to distinguish those cases which really belonged to the influenza, from those with which it was unconnected. The most general form of it was undoubtedly that of catarrh; and the great debility which followed its attack, and the rapidity with which its symptoms came on (which in some instances was truly wonderful), seem to have been the most remarkable characters of it.³

¹ “‘After the influenza had continued some time, the weather became hotter, and the symptoms were different; the fever became remittent, and in some intermittent.’—Dr. Cleghorn, Dublin.

“‘About the middle of June (three or four weeks from its first appearance) it began to put on a more formidable appearance, by attacking the lungs in the shape of pleurisy and peripneumony. About the middle or end of July it began to abate, and to appear like an intermittent.’—Dr. Petrie, Lincoln.

“‘In about three or four weeks from its first breaking out, the disorder in many cases put on a different appearance; for, with some of the usual symptoms, the patient had stitches in the side, and often also through the breast and trunk of the body, but the pulse was seldom or never hard; and some few were seized with sore throats, which had, in a great measure, the appearance of the common inflammatory one. About the last week of July (six or eight weeks from the first appearance of the disease), the fever seemed gradually to verge more towards the low and putrid.’—Dr. Scott, Stamfordham.

“‘About the 20th of July (seven or eight weeks from its first appearance), the disease began to put on a different appearance, and the symptoms seemed to partake more of the putrid than of the inflammatory; the causes I assign for this change were, the incessant rains for the preceding six weeks, which had entirely covered the lower lands; and what confirmed me in this opinion was, that the inhabitants of the flat country suffered more than those of the other parts of the island.’—Dr. Scott, Isle of Man.”

² “‘Before and for some time after the invasion of the disease, the weather was wet and cold, and suddenly became warm and dry, without any remission or other sensible effect being observed to follow.’—Dr. Anderson, Alnwick.

“‘It continued in this place three or four weeks, during which time the state of the weather was very variable; but I did not observe that the changes of the atmosphere had any sensible effects upon the symptoms of the disease.’—Dr. Livingston, Aberdeen.”

³ “‘The symptoms commonly followed in very quick succession, so that the disease was completely formed in a few hours. But in some cases the attack was

"When the various symptoms with which, in different persons, the disorder was accompanied, are considered, it will easily be conceived, that the remedies for it should also be very various; and that those which seem to have given great relief in some cases, should, in others, appear to have been very improper. In many places the disease, though very general, was so slight that few cases required any medical assistance.¹ Indeed, in most of the more mild and simple forms of it, a perspiration generally came on spontaneously, soon after the patient was seized, which seldom failed to relieve the symptoms so much, that most physicians considered that evacuation as the natural cure; and consequently, they thought proper to encourage it by tepid aqueous liquors, neutral salts, antimonials in small doses, etc.²—the stimulating

so strong and sudden, that there was not time to distinguish the progress of the symptoms. This happened where a great number of persons was crowded together, as on board the ships in our roads. Captain Kelly, of the Fly sloop of war, informs me, that he weighed anchor about ten o'clock in the morning with his crew (consisting of 145 men), but before six the same evening forty were laid by; and before the next morning he was obliged to return to Yarmouth roads for want of hands to navigate the ship. In this time he assures me that several of the men fell directly from the wheel, and were obliged to be carried below; and not a single individual on board escaped. He says, they were seized almost instantaneously with a vertigo, stricture on the chest, sickness at the stomach, and cold sweats. They all recovered.'—Dr. Macqueen, Great Yarmouth.

"The accession of the disease was often instantaneous; persons seemingly in perfect health were suddenly attacked, as it were, with a violent cold, to which succeeded headach, running at the nose, etc.'—Dr. Murray, Norwich.

"In some families I have observed that those who in the morning were in perfect health and laughing at those affected with the disorder, have before night been seized with all its symptoms.'—Dr. Spence, Guildford."

¹ "The mild appearance of the disease in this town, and the little apprehension it inspired, prevented my attendance on many patients.'—Dr. Macqueen, Great Yarmouth.

"The disease, hardly exceeding a common catarrh, and in no instance proving fatal, made a physician's attendance unnecessary.'—Dr. Frazer, Southampton.

"I have heard of no instance of its fatality in this neighbourhood; and but few cases called for the assistance of a physician.'—Dr. Morrison, Wolverhampton."

² "The cure in general was obtained in two or three days, by lying in bed and keeping up a sweat, by plentiful dilution, saline draughts, or small doses of emetic tartar.'—Dr. Livingston, Aberdeen.

"La veritable crise de ces maladies se faisoit par le moyen des sueurs que les malades ont tous plus ou moins éprouvés.'—M. Vicq D'Azyr's letter to Dr. Simmons.

"Before the miasma was fixed and propagated in the body, it was wholly

diaphoretics, such as contrayerva, wine whey, volatile alkali, etc.—were thought by several to aggravate the complaint.¹

“But in the more severe forms of the disorder, other remedies became necessary according to the nature of the symptoms. In many cases, especially in those attended with pleuritic symptoms, bleeding was found beneficial, and the operation was sometimes repeated with advantage, till a pretty large quantity of blood was taken away;² but in other cases, even where the symptoms were nearly similar, and the appearance of the blood was such as is generally supposed to justify the operation, it was thought, not only that it did not relieve the complaint, but that it actually was prejudicial.³

carried off in several patients, who kept in bed immediately after feeling the first attack, by a large perspiration. Other spontaneous evacuations, by vomiting, looseness or urine, were less frequent, and did not seem to procure such immediate and great relief, unless they were followed by a sweat.’—Dr. Reimarus, Hamburgh.

“‘Those who sweated most profusely of their own accord having been observed to be the soonest relieved, people when attacked were advised to lie much in bed, and to promote sweating by some mild diaphoretic, and drinking plentifully of some diluting liquor, which regimen in many cases removed every complaint in a few hours, and seldom failed to re-establish health in a few days.’—Dr. Anderson, Alnwick.

“‘Certain it is that the evacuation by the skin seemed to give the most immediate and the most natural relief.’—Dr. Ruston, Exeter.”

¹ “‘I observed that the stimulating sudorifics, as Pulv. Doveri, Camphor, Contrayerva, Serpentaria, etc., were to be avoided, as they irritated too much.’—Dr. Scott, Isle of Man.

“*Vide* note 1, p. 119, Dr. Campbell.”

² “‘Some of the patients whom I visited had a considerable degree of fever, and tendency to delirium, and were much relieved by bleeding pretty largely; their blood was, for the most part, viscid and inflammatory.’—Dr. Livingston, Aberdeen.

“‘The mode of treatment which I adopted, and which I found successful, was the early use of the lancet, which was sometimes employed more than once, and from which, except in one instance, I always perceived manifest advantage.’—Mr. Wilmer, Coventry.

“‘When the fever ran high, with plethoric symptoms, bleeding was of evident use; but many who had pretty severe attacks did very well without it, and it is said that some received injury by too liberal a use of the lancet.’—Dr. Murray, Norwich.

“*Vide* note 2, p. 112, Dr. Daniel; note 4, p. 113, Dr. Leith; note 1, p. 119, Dr. Campbell.”

³ “‘Bleeding, which was often practised in this place when the disorder first appeared, did not afford the advantage expected from it. It is acknowledged that the tightness on the thorax, and the violence of the headach, were frequently relieved; yet the disorder was not shortened in its duration, nor the cough in

"And some, who are very ready to testify the relief obtained by bleeding, think the necessity of it generally arose from the wine, volatiles, etc., which had been given in the beginning of the disorder, in order to encourage perspiration.¹

"Among those to whom bleeding was generally thought necessary, may be reckoned pregnant women;² but upon the

any degree moderated. I experienced this more particularly in my own case, being among the first persons attacked, and considering that I am remarkably subject to catarrhal affections, which bleeding never fails to relieve, I chose to submit to the loss of eight or ten ounces of blood. The violence of the headach, and the stricture on the thorax, I imagined were immediately abated; but the cough, heat of the fauces and coryza, did not yield until I had perspired two or three days in bed. The reports of my correspondents in the country afford still stronger testimonies against the propriety of bleeding.'—Dr. Macqueen, Great Yarmouth.

"Bleeding in general answered no good purpose, nay, some were evidently hurt by it.'—Dr. Flint, St. Andrews.

"Bleeding sunk the patient much, and, if repeated, proved fatal; indeed I heard of none dying but by the imprudent use of the lancet.'—Dr. Paterson, Margam.

"Those who had peripneumonic or pleuritic symptoms I was induced to bleed, but this operation did not relieve them.'—Mr. Newell, Colchester.

"Although the blood had always a strong thick buff upon it, few or none could bear the loss of much blood, for it was evident that the patient sunk under it.'—Dr. Petrie, Lincoln.

"Bleeding was practised, in my opinion, oftener than it was really necessary or serviceable. Though it generally relieved the symptoms, it appears to me to have often protracted the cure, and to have added considerably to the subsequent debility.'—Dr. Houlston, Liverpool.

"It was almost generally observed that bleeding did more harm than service.'—Dr. Reimarus, Hamburgh."

¹ "People in general were their own physicians, giving wine, whey volatiles, and the like, to encourage perspiration; but where they failed to excite a profuse sweat, the symptoms were all aggravated, and the disorder converted into a violent inflammatory fever, with all the marks of pulmonic or phrenetic inflammation; and I do not remember to have seen more strong marks of inflammatory diathesis than in some of those cases, nor where the relief obtained from large and repeated bleeding was more sensible and immediate; yet, on account of the general smallness of the pulse, and the relief obtained by perspiration, properly encouraged, I never had occasion to take away blood, unless the fever had been augmented by some of the above means, or other imprudent conduct, or where the pain in the side or breast indicated a particular determination to the lungs.'—Dr. Campbell, Lancaster."

² "I was called in the month of June to seven women in different states of pregnancy who had all severe symptoms of the influenza, and most of whom had more or less tendency to a miscarriage or premature labour. This event, however, took place only in one of that number; a weak, timid lady, who was seized when thirty miles from London, and hastening thither, was delivered twenty-four hours after her arrival, at the end of the eighth month of her pregnancy. Three

whole, it seems very certain, that though, in some cases, it was of considerable service, yet they were for the most part such as cannot be ranked amongst the simple and unmixed forms of the disease, in those, there seems great reason to believe that it was most commonly unnecessary, and frequently hurtful.

"Emetics do not appear to have been very generally used, but all who did employ them, concur in opinion, that they were of great service; not only where there was reason to suspect an accumulation of mucus in the bronchial ramifications, but also where they were given chiefly with a view to assist in producing a speedy and copious perspiration.¹

"Expectorants seem to have been very seldom given; expectoration not having been in general considered as the natural cure for the peripneumonic or pleuritic symptoms attendant on the influenza, as it is for the real peripneumony or pleurisy; indeed, some physicians remarked, that they saw no instance of a solution by expectoration;² there were,

were apparently prevented from miscarrying by bleeding and opium. Three others were relieved by opiates, but had no occasion for bleeding; an evacuation which the disease in its milder state did not seem to require; yet it was, perhaps, more frequently necessary to pregnant women than to any other class of patients. And when the violence of the symptoms rendered this evacuation necessary, it was remarked by myself and other practitioners, that the weakest and most timid patients sustained very large and repeated bleedings, without either being much debilitated or suffering abortion,—an event which frequently happens after such large evacuations, as has been observed ever since the time of Hippocrates.'—Dr. Garthshore."

¹ "In two or three cases of extreme danger, when the collected phlegm threatened suffocation, gentle emetics seemed to rescue them from death.'—Dr. Cleghorn, Dublin.

"Emetics gave great relief to all the symptoms.'—Dr. Flint, St. Andrews.

"An emetic early administered and followed by frequent draughts of warm diluting liquors, seldom failed of promoting a profuse perspiration, which, if properly kept up in bed, removed the whole disease in a few days.'—Dr. Macqueen, Great Yarmouth.

"Emetics given early contributed greatly to the speedy recovery of the patient.'—Mr. Henry, Manchester.

"An emetic and promoting moderate perspiration appeared to answer best to bring about an easy and speedy termination of the disease.'—Dr. Houlston, Liverpool.

"Emetics at first, and afterwards antimonials, relieved very much. In some cases I found a repetition of the emetic two or three times of great service.'—Mr. Newell, Colchester."

² "I thought it not a little remarkable that I met with no instance of a solution by expectoration, even when it assumed the form of peripneumony.'—Dr. Mease, Strabane."

however, some cases, in which that evacuation took place to a great degree, and was thought to be the natural cure of the disorder.¹

"Blisters were applied to various parts with good effect; when there was pain in the breast or side, the application of them to the part affected was found very beneficial; it was frequently thought proper to keep them open for some time, and it was in some cases remarked, that a second blister, applied some days after the first, produced great relief when the first had failed to do so.²

"Opiates were a common remedy with most physicians, and they all agree in testifying their great use; particularly in mitigating the cough, which was, in many cases, the most troublesome and tedious symptom of the disease.³

"Gentle laxatives were frequently used with advantage in the beginning of the complaint, especially where there was a disposition to costiveness; strong purges do not appear to have been often given; and from general observation respecting the

¹ "Expectorants, such as the Oxymel, or Syr. Scilliticus, joined with antimonials, and, when the cough was troublesome, some El. Paregor. or Syr. e Mecon., were very serviceable; indeed expectoration seemed to be the natural cure, and I encouraged it most diligently. In three cases the expectoration was inconceivably great, the patients spitting two or three pounds of an extremely viscid mucus in twenty-four hours. This continued for several days, and abated gradually, leaving them in a very emaciated state.'—Mr. Newell, Colchester.

"Ceux qui avoient été incommodés de la toux finissoient par expectorer des matières épaisses et visqueuses.'—M. Vicq D'Azyr to Dr. Simmons.

"Vide note 4, p. 113, Dr. Leith."

² "Blisters on the side and legs were serviceable, and, according to a remark of Dr. Sims, I found the second blistering of great use when the advantage from the first had not been very observable.'—Dr. Cleghorn, Dublin.

"I found blisters most eminently serviceable, particularly applied to the thorax and legs, and generally kept a small part of the blister open for many days, with remarkable success.'—Dr. Petrie, Lincoln.

"Blisters on the side or breast, immediately over the part affected, never failed to relieve most effectually.'—Mr. Newell, Colchester."

³ "Opiates became a favourite remedy with most of our practitioners. An anodyne given at night seldom failed to allay the cough, and at the same time to promote perspiration.'—Dr. Macqueen, Great Yarmouth.

"Opiates (after emetics) generally put all the symptoms to flight.'—Dr. Flint, St. Andrews.

"If the cough was troublesome at night, about twenty drops of Tinct. Theb. were of great service.'—Dr. Campbell, Lancaster.

"When the cough was violent, opiates were necessary and useful.'—Dr. Cleghorn, Dublin."

effect of bleeding, there is reason to think they would, in most cases, have been prejudicial.

"On account of the great debility which seldom failed to accompany or to follow the disorder, bark and cordials were frequently necessary, especially towards the close of it;¹ and though (as was before observed) wine was thought in most cases to be hurtful, there were some in which it was absolutely requisite, even in the course of the disease.² Bark was also given with advantage where the fever became remittent or intermittent,³ or where there were symptoms of putrescence.⁴

"The termination, or consequences of this disorder, were, like every other part of it, extremely various. In many places not one instance of fatal termination was observed;⁵ in others, the number of deaths caused by it was not very small;⁶ but

¹ "In some persons, after the febrile symptoms had abated, a great degree of debility suddenly succeeded, and it was necessary to give bark and cordials to those who a few hours before required a contrary treatment.'—Mr. Wilmer, Coventry."

² "In some cases the weakness was such, that, notwithstanding the cough and pain in the side, wine was absolutely requisite to support the strength and enable them to expectorate.'—Dr. Cleghorn, Dublin.

"At first I forbid all cordial diet, but finding some of them sink early (*vide* note 2, p. 117), I allowed them a more full diet; many of them craved much for wine, and I think some were saved by allowing it them freely.'—Dr. Leith, Greenwich."

³ "When the fever became remittent or intermittent, it was cured by the bark.'—Dr. Cleghorn, Dublin."

⁴ "In some of those cases which did not terminate in forty-eight hours, it ran on till it became putrid, and required to be treated as a putrid fever; and even when this was not the case, the debility and prostration of strength were often so great as to require bark.'—Dr. Ruston, Exeter.

"In the last state of the disorder (*vide* note 1, p. 116) the *vis vitæ* required to be supported by proper nourishment, and particularly by a liberal use of old Rhenish wine, and claret diluted with water, bark, blisters, etc.'—Dr. Scott, Isle of Man."

⁵ "I do not know that in any instance it proved fatal here.'—Mr. Wilmer, Coventry.

"The disorder did not prove fatal to any in this neighbourhood.'—Dr. Renny, Newport Pagnel.

"It did not prove fatal to any in this place.'—Dr. Livingston, Aberdeen.

"I do not know of any that could be said to have died of it, and there appeared no material difference in the bills of mortality.'—Dr. Murray, Norwich.

"None died here except a few who had been previously afflicted with other disorders.'—Dr. Reilly, Monmouth.

⁶ *Vide* note 1, p. 117, Dr. Morrison and Dr. Frazer."

"It carried off many old people of this town, and even many of the younger

that number can hardly be determined with precision, on account of the difficulty (in complicated cases) of ascertaining the disorder, on which same account it is probable that more deaths are generally ascribed to an epidemic than it really occasions.

"In London several pregnant women miscarried in consequence of it, and some of them died.

"In general, a great weakness remained after the disease, and the cough was sometimes troublesome for some weeks; but though from the nature of the symptoms it was with reason apprehended that pulmonary consumptions would be produced in constitutions which seemed predisposed to them, very few such instances were observed,¹ in many places not one.²

"In some persons, dropsical or paralytic complaints followed the disorder;³ a very particular kind of atrophy was in one

who laboured under pulmonary complaints, by precipitating them into galloping consumptions.'—Dr. Petrie, Lincoln.

"'In the last state of the disease (*vide* note 1, p. 116) I lost several patients.'—Dr. Scott, Isle of Man.

"'Four or five died with symptoms of pleurisy (*vide* note 2, p. 112), and several have died hectic.'—Dr. Daniel, Crewkerne.

"'I did not lose any, but have been informed of several who died with strong marks of putrefaction.'—Dr. Ruston, Exeter.

"*Vide* note 4, p. 113, Dr. Leith."

¹ "'Of 178 persons who fell under my observation in this complaint, all are perfectly recovered except three women; their coughs still continue, and seem to have laid the foundation of pulmonary consumption.'—Dr. Campbell, Lancaster.

"*Vide* note 6, above, Dr. Petrie and Dr. Daniel."

² "'I know not one instance of the disorder terminating in a phthisis; I cannot therefore think that much of the inflammatory diathesis attended it, or that it is in general an attendant upon epidemic disorders.'—Dr. Flint, St. Andrews.

"'I have met with no consumptions in consequence of this complaint.'—Dr. Kirkland, Ashby.

"'The poorer inhabitants of this place are much subject to pulmonary consumption, but I cannot learn, though I have directed my attention to this point, that they have been more so since the late disease.'—Mr. Wilmer, Coventry.

"'Consumptions were apprehended in habits disposed to them, but no such event was observed to happen in any case.'—Dr. Anderson, Alnwick.

"'It did not in any case within the circle of my observation degenerate into pulmonary consumption.'—Dr. Bisset, Knayton."

³ "'In some aged persons, dropsical and paralytic complaints soon succeeded the epidemic.'—Dr. Campbell, Lancaster.

"'In those patients who had been injudiciously treated by losing too much blood, the disease was apt to run out to a great length of time. In two or three of these cases the legs became œdematous, with fulness in the belly; but they were cured by proper strengtheners.'—Dr. Scott, Isle of Man.

"*Vide* note 1, p. 124, Dr. Daniel."

place observed after it, and suspected to be the consequence of it;¹ and symptoms of mania were sometimes produced by it, where no predisposition to that complaint could be traced,² two instances of which occurred to Dr. Simmons at St. Luke's Hospital. In a few cases, however, it appears not only that it left no disorder behind it, but that it actually removed some, which the persons affected laboured under before its attack.³

"From the foregoing description it is plain, that the disorder here treated of differed very essentially from the common catarrh. With regard to its symptoms, the debility which always accompanied it, and the rapid manner in which it was formed, were the most obvious and specific distinctions. In its cure, it is certain that it did not in general bear the loss of blood so well as the common catarrh, of which the case of Dr. Macqueen (see note 3, p. 118) is a clear and striking instance; and with respect to its consequences it seems pretty certain, that though pulmonary consumptions were sometimes produced by it, the number of them was much smaller than would have happened if an equal number of persons had been equally affected with common catarrh.

¹ "Since writing the account of the late influenza, and describing, as far as they were then known, its effects in this neighbourhood, we have had reason to suspect that it has produced others very different from any of those I mentioned. There have been during the winter, and there are now (March 15, 1783), many in a state of atrophy without any symptoms of hectic or even any other apparent disease; a want of strength and a wasting of the flesh are the only circumstances which call for attention; the appetite in the beginning is good, and they are much surprised at their losing both strength and flesh, whilst the food they eat seems more than sufficient to sustain both. There is very soon a yellowness upon the skin, but without the least reason to suspect that the liver is at all injured. The patients are, for the most part, costive, though now and then they complain of a diarrhoea; at length the appetite fails; there is a sickness and loathing of food; the symptoms of debility increase fast; the pulse, which was little altered at first, becomes very quick and very feeble; and now there are sometimes transient paroxysms of fever, like those of hectic, and in this manner the scene closes. I have seen two or three instances where the same symptoms terminated in dropsy.'—Dr. Daniel, Crewkherne."

² "A few who were long in recovering had a slight mania for some time, and one is not yet perfectly restored. They were all females.'—Dr. Petrie, Lincoln."

³ "I have met with more than one instance in which a change for the better was produced in the constitution of the patient. One lady in particular, who had for two or three years been afflicted with a bad cough, pain in her side, etc., and who I feared would have had all her complaints aggravated by the influenza, recovered speedily, and has enjoyed a much better state of health since that period.'—Mr. Henry, Manchester."

"Different opinions have been entertained respecting the manner in which this disease was produced and propagated. Some physicians thought it arose solely from the state of the weather; in other words, that it was a common catarrh, occasioned, as that complaint frequently is, by changes in the sensible qualities of the atmosphere, such as the increase of cold, or moisture; and consequently, they supposed it unconnected with any disorder that had prevailed, or did at that time prevail, in any other part. Others admitted its cause to be a particular and specific contagion, totally different from, and independent of, the sensible qualities of the atmosphere, yet thought that cause was conveyed by, and resided in the air. But the greatest number concurred in opinion, that the influenza was contagious, in the common acceptation of that word; that is to say, that it was conveyed and propagated by the contact, or at least by the sufficiently near approach, of an infected person.

"It appears from the '*Journal de Médecine*,' that the *Faculté de Médecine* at Paris were of the first opinion; at their *Prima Mensis*, the cause of La Grippe, as the epidemic was commonly called, is ascribed to, '*Les variations de l'atmosphère*.'¹

"At Venice also several physicians ridiculed the common name of the disease (Russian catarrh), and thought the changes of the weather sufficient to account for it; observing in support of their opinion, that the thermometer had sunk no less than ten degrees of Reaumur's scale (more than 22 of Fahrenheit's), between the 17th and 19th of July, about which time the disorder first appeared at that place. Other Italian physicians, however, were of a contrary opinion; and one (the Chevalier Rosa, of Modena) has published a treatise upon it, in which, it is said, he strongly and ably contends, that it was contagious.²

¹ " 'Cette cause en effet paroît suffisante, sans aller chercher des rapports entre la grippe dont nous parlons, et l'épidémie qui a parcourue les pays froids, ou celle qui regne actuellement en Angleterre sous le nom d'Influenza.'—*Journal de Médecine*, for August 1782."

² " 'Nos médecins rioient beaucoup sur cette denomination vulgaire (Catarrhe Russe). En effet on a remarqué que les variations du thermomètre furent assez remarquables dans les mois de Juin, Juillet, et Août; surtout du 17 au 19 Juillet le thermomètre avec l'échelle de Reaumur a baissé 10 degrés, et c'est de ce tems que commença cette maladie. Les alternatives de chaud au froid furent donc, selon nos médecins, la seule cause de ce rhume, qui s'est répandu, dans peu de

"At the first appearance of the disorder, before its character had been attentively observed, or its progress traced, it was in some measure excusable to ascribe it to causes, which, however inadequate to the effect, were the only ones that presented themselves to the imagination; but at present, when its character has been so well ascertained, and its progress from Russia to England, and from thence to the south of Europe, has been so clearly traced, and is so generally acknowledged, it would be superfluous to endeavour to prove that which every one admits; or should any one think arguments still wanting to shew that the late influenza was not a common catarrh, produced by the changes of the weather, he will find many of that sort in the subsequent part of this account.

"But though the idea that the influenza originated in this part of the world, from changes in the sensible qualities of the atmosphere cannot be admitted, it must be allowed that the state of the weather may have had some power in altering or aggravating its symptoms, yet the instances above mentioned (see p. 116) of changes in the weather without any alteration being perceived in the disease, give reason to doubt whether that power was so great as some have supposed it; and with respect to the weather previous to the appearance of the influenza, it is remarkable, that though in most parts of England it had been uncommonly cold and wet, it had, in other parts of the world, where the disorder was equally general, been very dry.¹

"Others, as was before observed, were of opinion, that the cause of the disease, however different it might be from the sensible qualities of the atmosphere, was yet conveyed by the air, from place to place;² and one gentleman, who seems to be

jours, parmi les gens de tous les ordres et de toutes les conditions. Tous les médecins de l'Italie ne pensent pas comme ceux de Venise sur cette affaire; le Dr. Gallicio de Vicenza, et le Dr. Sarga, de Vérone, prétendent que cette influence ait été une véritable peste, ou une maladie contagieuse. Le Chevalier Rosa, professeur à Modène, a donné, à cette occasion, un traité dans lequel il établit que notre maladie étoit contagieuse.'—Letter from Dr. Gallini, of Venice, to Dr. Gray."

¹ "'The weather had been very dry with us, whereas in England it had been very rainy.'—Dr. Reimarus, Hamburg."

² "'Upon the whole does it not appear that this disorder was owing to infectious particles conveyed in the air? for if it had been occasioned by any particular state of the air, such as heat or cold, dryness or moisture, it would

of that opinion, has given some reasons in support of it, but candidly confesses at the same time, that he sees many objections to them.¹ Another gentleman who acknowledges, that upon the whole, he thinks the disorder was contagious, relates some circumstances which occasioned doubts in his mind.² Without pretending to decide so intricate and difficult a question, some observations may, it is presumed, be made upon the arguments adduced in support of this opinion.

have shewn itself only where such a temperature of air prevailed. Whereas if it took its rise in China, as has been asserted, it is plain the seeds of it were something permanent, that could not be altered by passing through different climates; for though they might produce more violent effects in one place than in another, yet this was probably owing to difference in situation or constitution. The *materies morbi* of the plague has never, to my knowledge, been able to extend itself through different countries across the ocean, unless concealed from the air in cotton, or such like substances; on the contrary, the cause of this malady shewed its effects in the open air at sea, and landed without its mischievous properties being diminished.

“I believe contagious miasmata seldom, if ever, produce their effects by entering the *vasa inhalantia* on the surface of the body where the cuticle is not removed. I apprehend they more commonly make their way by the *primæ viæ*, the lungs, or other external passages; but though the eyes, nostrils, and mouth are always alike open to the effects of the air, yet we daily see it seize sometimes one and sometimes another, as sore eyes, coryzas, coughs, peripneumonies, sore throats, and epidemic dysenteries, etc., evince; whereas in this instance it affected the whole, because all the passages were diseased at the same time, and shewed signs of being irritated. But the irritating cause was of that kind which does not bring on any considerable degree of inflammation; for though there was a flux of humours, neither the eyes, nostrils, or throat were much inflamed; often no inflammation appeared, and it is reasonable to suppose the parts about the lungs were in the same predicament; for the symptoms of spurious peripneumony, tending a little towards inflammation, commonly affected the patient. The *materies morbi*, however, manifestly brought on debility, præternatural irritability, and weakened nervous energy, as the symptoms described evince, which effects are very frequently united by the same cause.”—Dr. Kirkland, Ashby.”

¹ “I am doubtful if with us its prevalence can be attributed to the contagion that arises from one diseased human body pervading and generating the same in another. Else how should many be seized without any previous communication with the diseased? How should those most exposed to the weather be the first sufferers?—or how should I and others have escaped when surrounded by a house full of invalids? But this is speculation, and I foresee many objections to this opinion.”—Dr. Frazer, Southampton.”

² “Though the influenza is generally acknowledged to have been contagious, some circumstances have led me to be rather sceptical, though, on the whole, I am inclined to be of that opinion. I think I have seen whole families seized with it at once, when few, if any, of them have been exposed to infection. A lady died this year whose disorder I now believe to have been the influenza, at

"They are the following: 1st. That those most exposed to the weather were generally the first persons attacked. 2dly. That many had the disorder without having had any communication with a diseased person. 3dly. That several escaped, though surrounded by persons ill of the disease. 4thly. That some *whole families* were seized at *once*. 5thly. That some persons had the disorder a week or fortnight before it began to be taken notice of as a general one.

"The first argument, that those most exposed to the weather were generally the first persons attacked, is surely by no means in favour of the opinion that the cause of the disorder resided in the air; for if it had resided there, what should have prevented those who staid at home from being infected; since the air they breathed must necessarily have been the same as that breathed by those who went out; but if, on the other hand, a communication with some infected person was necessary to produce the distemper, it is very clear that those who went out of doors, and mixed with the world, were more likely to get it, than those who did not stir from home.

"Before the second argument, viz., that many were attacked without having had any communication with a diseased person, can be allowed to have any weight, it must be clearly proved, not only that the persons themselves had not had any such communication, but also, that no person who had been near them had previously been where the disorder existed; for as it is generally admitted, that a person who has had the smallpox, can yet convey the infection of that disease from a person ill of it to one who has not had it, so, by parity of reasoning, it will surely be allowed that a person not actually labouring under, or not at that time susceptible of, the influenza, could (if the disorder were contagious) carry the infection of it from one place to another.

"From the third argument, that many escaped though surrounded by diseased persons, no inference of any consequence to the present question can be drawn; it being certainly, just as easy to say, why they escaped when surrounded by diseased persons, as it is to say, why they were attacked when surrounded by them. At least a fortnight before it became prevalent here, and who, not having been out of her room for many months, had been exposed to no contagion. A clergyman, a few miles from this town, also assured me, that he had the influenza about the same time, without having had any communication with, or having heard of any other person who was ill of it.—Mr. Henry, Manchester."

persons, as why they did so, when surrounded by the same air which had caused the disease in those persons.

“With respect to the fourth argument, that some *whole families* were seized at *once*, without having been exposed to infection, it may be remarked, that what has been said in answer to the second argument being considered, it will be very difficult to prove that they were not exposed to it; and equally difficult to give any reasons why, if the exciting cause of the disorder resided in the air, any whole family should have been affected by that cause, rather than an equal number of persons in divers families; but if we suppose the disease to have been propagated by personal intercourse, it is very easy to conceive in what manner it may have been communicated to some whole families at the same time.

“In answer to the last argument, that some persons had the disorder a week or a fortnight before any others were known to have it, it might be sufficient to observe, that the gentleman who mentions those facts, thinks them of no great weight, since he says, that, upon the whole, he thinks the disease was contagious; but admitting those cases to have been really the influenza, the supposition that the cause of it existed in the air, will not render it more easy to explain why those persons only should, at the time, have been affected by that cause.

“Of those gentlemen who have favoured the Society with their opinions on the nature of the influenza, by far the greatest number agree in thinking it was contagious, according to the common meaning of that word.¹ One of the arguments

¹ “‘I have no shadow of doubt that the disorder was contagious, and am certain I myself received the infection from a small trunk of wearing apparel which came from Dublin, where it then raged. I may add that this was the first introduction of it into this town.’—Dr. Mease, Strabane.

“‘The disorder was brought here by some travellers from Edinburgh, and in a few days became general.’—Dr. Livingston, Aberdeen.

“‘That it was infectious I have no doubt, having frequently remarked with how much facility and dispatch it communicated itself from one to another amongst those who were within the sphere of its activity.’—Dr. Ruston, Exeter.

“‘Mr. S——, Mr. B——, and myself, were taken ill at London (May 16), and whether we brought the disease into the country with us I know not, but our families were all affected by it immediately, and it became general in about ten days.’—Mr. Boys, Sandwich.

“‘The disease, in its slow and gradual progress towards this place, and subsequently rapid and general diffusion, bears so perfect an affinity to other contagious

made use of to support that opinion, is deduced from the debility which so early, and so constantly attended the disease, and from the rapid succession of its symptoms; those circumstances, however, are by no means decisive, and allowing them to give some weight to the opinion that the disorder was contagious, they do not at all assist in determining whether the contagion was conveyed by the air, or by personal intercourse.

“If the common and general progress of the influenza be taken into consideration, it will certainly be found to favour the opinion, that the disease was propagated by personal intercourse; it was in general observed, that some one person of a family was first attacked, and then several more of that family; and where that was not the case, those deviations from the more usual progress of the disorder may be easily explained, by a supposition of circumstances not at all improbable,

diseases, that it has left no doubt with me that it is to be considered as of that class. Although we had heard of its prevalence at Liverpool, and other places, a week before, we had no marks of it here until the time of our races, when it soon became general; probably the great afflux of people from the places where it was prevalent, many of whom were labouring under it, might introduce it.’—Dr. Campbell, Lancaster.

“‘The universality with the sudden debility and great lassitude which always accompanied its first attack, early and peculiarly marked it as a catarrhal affection from contagion.’—Dr. Spence, Guildford.

“‘Many reasons combine to make us think it was propagated by contagion; to avoid being tedious, I shall only mention the following: some few families in the town, many in the country round, and even some villages, remained totally free from it. Whenever one in a family caught it, in general, the major part or the whole of that family took it. I think, and so do others, that the time and manner in which it has been communicated, can, in some instances, be traced; and that on sitting near an infected person, an irritation of the mucous membrane of the nose was sensible, such as is produced by the dust of pepper, and which sneezing tended to remove. We had heard of it; and it had prevailed in London sometime before it appeared amongst us, and we know of some persons who arrived here from thence, labouring under it. To this I might add, that a lady returning to Kirkham (about thirty miles from hence) was seized with it just before her departure, and though I would not assert that she conveyed the complaint thither, yet I believe it is certain that no one had been attacked with it there before her arrival, and that it became very general soon afterwards.’—Dr. Houlston, Liverpool.

“‘I am inclined to believe, that the late influenza was communicated by human effluvia, and not by any matter generated in the atmosphere alone. What I have myself seen of the disorder, the whole tenor of the reports I had from others, and the analogy it bears to other contagious disorders, all lead to this conclusion,—not to mention the difficulty of accounting for such a peculiarity in

and too obvious to require to be pointed out; but in many instances the introduction of it into a place, seems to be pretty clearly traced to some particular person or persons.¹ In that mentioned (p. 120), it certainly appears to have been carried on board the ship by the Custom House officers; it would be more easy to form an opinion on that head, if it were known how long before that time, any of them had laboured under the disease, or had been where it existed; it may not, however, be impertinent to observe, that it is possible that the power of exciting the disorder might not leave those who had been affected with it until some time after the symptoms of it had quitted them.

“A very remarkable circumstance respecting its progress is, that it was sometimes prevalent in one place a week or two before it became so in another only a few miles distant from the first. In some cases of this sort, the situation of the places deserves to be taken notice of; thus, for instance, it

the atmosphere,—its occurring ten or twelve times in the course of a century, at no regular or certain periods; and that no naturalist has yet been able to ascertain in what this atmospheric matter consists. I would not, however, be understood to speak with confidence on the subject, nor do I deny that a certain condition of the atmosphere may not possibly favour the propagation of the effluvia from their first source: the extensive progress of the disease over so large a portion of the globe will be thought to favour such an opinion. I only assert, that the analogy between the symptoms of the influenza and those produced by contagious effluvia, is, in every respect, uniform and complete. It may be observed also, that the greater number of contagious diseases are evidently attended with a general debility; and that this debility not only rises to a greater degree, but is also more suddenly induced than in all other diseases (if there are any exceptions to this remark, it is only in respect to those few diseases that attack but once in life, as the smallpox, measles, and hooping cough). And I never heard an instance of men falling down so suddenly, and with such a train of symptoms, as I mentioned on the authority of Captain Kelly (see note 3, p. 116), but where contagion was supposed to be the cause. Another remark occurs to me on the subject of contagion, which I do not remember to have met with in medical writers. It is this: that contagious effluvia have a natural tendency to lodge in the mucous membrane of the body, and exert their greatest force in those parts. I do not venture this as an universal position, but I have no doubt of its being very general. Besides its application to the influenza, the measles, hooping cough, malignant sore throat, dysentery in all its forms, the gonorrhœa, and perhaps the smallpox, are all strong confirmations of it; even the slow, nervous, and putrid fevers are often accompanied with affections of the throat and lungs; and a cough and expectoration are frequent symptoms towards the crisis of such disorders.”—Dr. Macqueen, Great Yarmouth.”

¹ “*Vide* note 1, pp. 129, 130, Dr. Livingston, Dr. Ruston, and Mr. Boys; note 3, p. 132, Dr. Clark.”

was at Dartmouth much sooner than at Exeter, and yet it was at Exeter much sooner than at Tinmouth, though the last-mentioned place is situated between Dartmouth and Exeter.¹

"It was not observed at Plymouth until the very latter end of May, though it was in the western part of Cornwall so early as the 19th of that month, on which day, two of the North Devon regiment of militia were seized with it.²

"This slowness and irregularity in the progress of the disease may be easily accounted for, if we admit that it was conveyed by infected persons; but if we suppose it was conveyed by the air, they seem utterly inexplicable.

"Another remarkable fact remains to be taken notice of, which, though it is not mentioned as an argument of very great weight, certainly merits some consideration. The influenza prevailed in Russia in the months of December, January, and February, and in Italy and Spain in the months of July, August, and September, consequently its cause must have been capable of resisting almost the two extremes of European heat and cold; a degree of permanence difficult to be conceived, if we suppose that cause to have resided in the air.

"Some, who had no doubt that the disorder was communicated by infected persons, yet thought it might also be conveyed to a *considerable distance* by the air.³ This latter

¹ "'At Dartmouth it began much sooner, and at Tinmouth, which lies between both, it began much later than at Exeter.'—Dr. Ruston, Exeter."

² "The progress of the disorder through that regiment was observed by Mr. Mortimer, the surgeon of it, to be as follows:—On the 19th of May two were attacked; 20th, two; 21st, four; 22d, four; 23d, one; 24th, none; 25th, none; 26th, one; 27th, one hundred and twenty; 28th, twenty; 29th, forty-seven; 30th, forty-four; 31st, eleven; June 1st, seven; 2d, five; 3d, five; 4th, three; 5th, none; 6th, three; 7th, two; 8th, two."

³ "'The disease first made its appearance at Shields, the port of Newcastle, on or about the 26th of May; and what is remarkable, before it seized any person in the town some ships had arrived from London, where the disease was epidemic, whose crews had laboured under the distemper on their passage; and on the 27th and 28th of the same month, a very considerable number of vessels came into the harbour from the river Thames, after a sail of little more than forty-eight hours. The first family (at Newcastle), as far as can be ascertained, was seized on the 28th of May; and as the persons who were attacked kept a public shop, it is more than probable they received the infection from some sailors who had arrived from the ships at Shields. This opinion, of the disease being introduced into Newcastle by infection, is further confirmed by the following fact, for which I am indebted

opinion, however, certainly cannot be supported by any analogical reasoning from known facts; for, though the absolute contact of an infected person is not supposed necessary to convey a contagious disease, we have no reason to think the power of communicating it extends to any considerable distance in the open air; a free exposure to which seems so to divide, and dilute (if the expression may be allowed) all infectious effluvia, that their virulence is entirely destroyed. Even the infection of the plague, is not supposed to be communicable to any great distance by the air alone, though it is admitted, that certain substances, such as cotton, wearing apparel, etc., may be impregnated with it; and if secluded from the air, may convey the disorder from one place to another; in one instance, the influenza seems to have been transported in that manner.¹

“Upon the whole, the progress of the disorder is certainly more easily explained upon the supposition that it was propagated by personal communication, than by any other that has been suggested; in objection to that hypothesis, however, it is credibly affirmed, that the crews of several ships were seized with the influenza many miles distant from land, and came into various ports of England labouring under it; the

to Alexander Adams, Esq. The master of a vessel, who arrived at Shields in forty-eight hours after he left the river Thames, came to his office on the 28th of May, labouring under the distemper. On the 29th, one of the clerks in the office was seized, and, as far as I can learn, was the second person who was attacked with the disease in town. From whatever cause the present influenza may have originally originated on the continent, where it was first observed, from the account given of its introduction into this part of the country, there cannot remain a doubt of its being of an infectious nature. It is probable, however, that the manner in which it is communicated differs widely from that of other contagions. The small-pox and plague, for example, when they appear in any town or city, are gradually communicated from person to person. At first houses, then streets, and at last large portions of the town, are infected. The effluvia arising from the bodies of the sick, in these diseases, not being capable of tainting the air to any considerable distance, the contagion remains for a long time in a place; but the infection of the influenza being of an exceedingly diffusible nature, it is reasonable to suppose that the contagious effluvia float in the air to a considerable distance, and, by being applied to the mucous glands in inspiration, infect numbers of persons at the very same instant of time. Hence the disease, in a few days, spreads like an universal conflagration in every place where it is introduced, and soon totally disappears.”—Letter on the Influenza, from Dr. Clark of Newcastle to Dr. Leslie.”

¹ *Vide* note 1, p. 129, Dr. Mease, Strabane.

same thing is said to have happened to ships in the East Indies, and other parts. A want of precision or of authentication respecting the circumstances above alluded to, makes it improper to draw any inferences from them; but without pretending to deny the truth of them, the following anecdote will serve to shew that great caution is requisite before they are admitted.

“Mr. Henry, of Manchester, informed the Society, from what he thought good authority, that a ship from the West Indies to Liverpool, was, by stress of weather, driven out of her proper course, into a higher north latitude, where her whole crew were seized with the influenza; but wishing afterwards for more accurate information on the subject, he wrote to Dr. Currie, of Liverpool, desiring him to make every necessary inquiry into the matter; that gentleman, who took great pains to investigate the affair, at last met with the surgeon of the vessel, from whom he learnt, that before the crew were seized with the disorder, they had been off the north of Ireland, and had had some communication with the inhabitants of those parts.

“But, admitting it should be, by unquestionable evidence, established, that the disorder in some instances broke out on board ships, to which it could not possibly have been conveyed by personal communication, it will by no means follow that it was not generally propagated in that manner. No one doubts that putrid fevers are contagious, yet every one admits they frequently originate without communication with an infected person. Even the effluvia of persons in perfect health, by being confined, are well known to acquire a virulence capable of producing contagious disorders; indeed, every disorder of that kind, must, in the first instance, arise from causes very different from those by which it is afterwards propagated.

“A very singular and extraordinary fact was communicated to the Society by Dr. Macqueen, with which it is presumed this account of the influenza will not be improperly terminated; the symptoms of that disorder, and those of this about to be described, are so very similar, that there is great reason to suspect they are of the same species; but it must be confessed, that the fact itself seems inexplicable, upon any hitherto known and acknowledged principle.

“‘Amongst the islands on the western coast of Scotland,

there is one very remote from all the rest, named St. Kilda. It rises like a rock in the ocean, about 16 or 18 leagues west of the Lewis islands. This place is inhabited by 20 or 30 poor families, who subsist chiefly on the flesh and eggs of sea fowls which they have in prodigious quantities. They have, besides, a small quantity of barley, and a considerable number of sheep. The open and boisterous sea around them, together with their distance from every other land, exclude these poor islanders from the rest of their species; and they scarcely ever see a human being, except once in a year, when they are visited by the steward, who receives the rent in feathers, wool, and mutton.

“St. Kilda being an appendage to that part of the Lewes called *Harris*, and the property of Mr. Macleod, the steward always resides in the latter place. He makes his annual voyage to St. Kilda in the month of June, when the day is longest and the season most temperate. His retinue consists of ten or a dozen men, sufficient to manage a large open boat, such as are in common use in these islands. The inhabitants meet him on the beach, and prompted by a desire of intelligence, as well as a respect for his person, all assemble round the strangers. But behold the consequence! The next day the steward has hardly a St. Kilda man at his levee. They are universally seized with a catarrh or cold, as they call it, which rages so fast, that in twenty-four hours every individual on the island is generally laid by. The symptoms are a cough, head-ach, sneezing, and coryza, from which they recover in a few days by drinking largely of water-gruel, and other diluting liquors that promote perspiration. This is so invariably the case, that it is considered as the natural and infallible consequence of the steward's visit, and the poor people are prepared accordingly. I remember Dr. Cullen mentioned this circumstance in his lecture on the catarrh about six years ago, when I attended him, but I have had still better opportunities of knowing the matter in its full extent than the Doctor, and my connexions in that part of the country enable me to give it on the strongest grounds of authenticity.’”

2. DR. CARMICHAEL SMYTH¹

"The late influenza or epidemic catarrh which was almost universal in London, during the last week in May, and the beginning of June, 1782,² was very generally accompanied (in those cases which came under my observation), not only with the usual catarrhal symptoms, but with others no less distressing to the patient, and which were still more alarming to the physician; such as great languor, lowness, and oppression at the præcordia; anxiety, with frequent sighing, sickness, and violent head-ach. The pulse was uncommonly quick and irregular, and the sick were frequently delirious, especially in the night. The heat of the body was seldom considerable, particularly when compared with the violence of the other symptoms; the skin was moist, with a tendency to profuse sweating. The tongue white or yellowish, but moist.

"Some persons complained of severe muscular pains, either general or local, others had erysipelatous patches or efflorescences on different parts of the body, which in one instance terminated in gangrene³ and death.

¹ Remarks on the Influenza of the year 1782. By James Carmichael Smyth, M.D., F.R.S., Physician Extraordinary to his Majesty. (Medical Communications, vol. i. p. 71.)

² "This epidemical distemper, which was so extremely general in London for about ten days or a fortnight, from the time it was first publicly noticed, very soon declined; and about a fortnight afterwards was only to be heard of in some straggling instances of strangers arriving in town. But although the epidemical catarrh quickly disappeared, it seemed to leave behind it an epidemical constitution, which prevailed during the rest of the summer; and the fevers, even in the end of August and beginning of September, assumed a type resembling, in many respects, the fever accompanying the influenza."

³ "The patient alluded to was a lady who had miscarried in the fifth or sixth month of her pregnancy, and with considerable hæmorrhage. She had from the beginning a small, quick pulse, with great lowness, and was at times delirious. She complained of a violent fixed pain in one shoulder, and had an erysipelatous inflammation on one arm, which, from its appearance, caused no alarm, but a gangrene took place in a part of the body where it was least expected. She had the day before mentioned, though in a slight manner, that she felt a soreness on the inside of one of her thighs; the day following, upon her complaining of this soreness, which was now in both thighs, the surgeon was desired to examine the parts affected; he was greatly surprised to find a mortification considerably advanced on the inside of one thigh, with an erysipelatous inflammation and beginning mortification on the other; the progress of which was so rapid that it extended in twelve hours as high as the abdomen, and soon put a period to her sufferings."

"I observed petechiæ but once, and then only two days before death.

"Those attacked with the influenza were in general taken suddenly ill, and the symptoms in the beginning, or for the first twenty-four or forty-eight hours, were extremely violent, bearing no proportion either to the danger or duration of the distemper.

"Children and old people either escaped entirely, or were affected in a slighter manner. Women with child, when seized with the disease, were apt to miscarry; or if far advanced in their pregnancy, to be delivered before their time; in either case the hæmorrhagy was considerable, and several died.

"Patients subject to pulmonic complaints, suffered much from the cough, difficult breathing, and other peripneumonic symptoms, and to them also the disease proved dangerous or fatal.

"The head-ach which accompanied the influenza may be distinguished into three kinds:

"1st. The uneasy weight, soreness, and distention of the forehead, usual in common colds.

"2nd. The violent sick head-ach, arising from the affection of the stomach, and relieved by vomiting.

"3d. The head-ach during which the patients complained of a sensation as if their head was splitting, with a severe shooting pain at the vertex: this last head-ach was most usual in peripneumonic cases, and seemed chiefly occasioned by the violence of the cough.

"The fever began with irregular chilliness, had considerable exacerbations and remissions, and was always greatly increased towards night; but even then the heat of the body and thirst were seldom so great as might have been expected, and the accessions of fever were chiefly marked by the encreased quickness of pulse and delirium.

"The frequency of the pulse was¹ greater than is common in fevers; nor do I remember to have felt so frequent, and at the same time so irregular a pulse,² in any fever attended with

¹ "The pulse was often 120, even in the remissions of fever; in the accessions, 140; and sometimes so frequent, that it was impossible to reckon it; in many instances it was irregular and intermitting."

² "The irregularity of the pulse is, in a great measure, characteristic of

so little danger, and of so speedy and easy a termination, the violence of this being commonly over in twenty-four or forty-eight hours.

"Many, from the beginning, were delirious in the night-time, and during the exacerbations of fever, who were perfectly recollected and distinct in the day and during the remissions ; but even where the delirium continued, it was not a constant one, but might rather be called a wandering than a delirium, as the sick knew those who spoke to them, would answer some questions distinctly, and a few minutes after talk incoherently ; a fixed stare of the eyes at the time, and a kind of wildness in the countenance, were also very expressive of this state or condition.

"The delirium which we have just now described, though unnoticed (so far as I know) by any practical writer, is not unusual in the putrid fever, and differs as materially from the low delirium incident to the last stage of that disease, as it does from the phrenetic delirium of the febris ardens, or of any inflammatory fever.

"During the whole of the influenza, I met with only one instance of true phrenetic delirium ; and it may not be foreign to the purpose to remark, that it happened to a patient who had been three times bled, had swallowed no heating cordials, and who was taken every day out of bed, conformable to the judicious practice of Sydenham,¹ expressly with the intention of preventing this termination of the disease.

"Respecting the danger of the influenza, physicians, I find, have entertained somewhat opposite opinions, possibly owing to the difference of place and situation. In London, although the distemper, doubtless, proved fatal to many, yet it could hardly be accounted a dangerous one, if the number who died be compared with the prodigious number of those who recovered.

"Of the Cure of the Disease.—The late influenza might very properly have been named the sweating sickness, as sweating was the natural and spontaneous solution of it, and rest, abstinence, and warm diluents, were, in most instances, all that

malignant contagious fevers ; the pulse, in other cases, bearing a more certain relation to the symptoms of the disease and to the degree of danger."

¹ *Vid.* 'De Febre Comatosa.'

were necessary for the cure; yet, amidst such an amazing number and variety of cases, many occurred which required some further medical assistance; and when that became necessary, it was of the utmost importance that it should be procured early: for the disease, when neglected, or improperly managed in the beginning, sometimes ended in a malignant fever of difficult treatment and of very doubtful termination. And although the tendency to profuse sweating often continued, it now only weakened the patient, and a critical or salutary solution of the disease in consequence of this evacuation, was no longer to be expected; nor do I recollect a single example of profuse sweating being attended with any advantage after the first forty-eight hours.¹

"The medicines which I found most serviceable in abating or carrying off the fever, were, small doses of an antimonial powder, composed chiefly of tartar emetic; the *Julep. e Camphora*, with about a fourth part of the *Spirit. Mindereri*, the common saline draught, with ten or fifteen grains of the *Pulv. Contrayerv. c.*, or what I commonly preferred, from twenty to forty drops of the *Liq. Anod. Min. Hoffm.*, adding, occasionally, a small quantity of the paregoric elixir.

"In cases of great lowness, besides the drinks and nourishment usual in fevers, I allowed the sick white wine whey, wine and water, and weak veal broth.

"For removing the oppression at the præcordia, sickness and head-ach, no means were so certain as vomiting with tartar emetic, *en lavage*; that is, giving it in small doses, largely diluted, and repeated every ten or fifteen minutes, till it produced the desired operation. This medicine administered in this manner, had also a very remarkable effect in bringing on a remission of the febrile symptoms, and in accelerating the termination of the disease. It likewise commonly opened the body; when that was not the case, some gentle laxative was given.

¹ "During my attendance on a gentleman ill of one of those fevers, I observed a very singular appearance upon entering his bed-room one morning; his face, particularly the upper eye-lids, sides of the nose, upper lip and chin, and the part of his neck above the collar of his shirt, were covered with a fine white powder, which, upon a more close examination, seemed to be a saline matter, or crystallization, formed by the sweat evaporating or drying where it was exposed to the air."

"The cough required not only plentiful and warm dilution, but opiates and blisters were also very necessary ; and where the sick were attacked with stitches, or acute pains about the chest, with difficult or laborious breathing, and other peripneumonic symptoms, the propriety of bleeding was, in my opinion, clearly and evidently pointed out ; nor can I think any physician justifiable in neglecting the use of the lancet under such circumstances. At the same time I am ready to acknowledge, that bleeding, though necessary to obviate the fatal consequence of a particular symptom, was by no means conducive to the general cure of the disease ; that, on the contrary, the lowness and dejection were often increased by it ; that the blood taken away had not always an inflammatory appearance, but was sometimes florid, and the crassamentum tender ; that the relief afforded by bleeding, was neither so considerable nor so certain as in other similar cases of peripneumony ; and that in the course of the disease there frequently appeared unequivocal signs of a putrid tendency. But admitting the whole of these facts, and granting that they ought to make a physician cautious of taking away blood so freely, perhaps, as he otherwise would do, and as the urgency of the symptoms might seem to justify, yet they surely do not lead to an entire prohibition of the use of the lancet, at least in those cases where there was evidently no alternative, and where, although the effects of bleeding might be doubtful, the consequence of omitting it was certain. Upon such occasions the advice of Celsus is the voice of reason : '*Satius est enim anceps auxilium experiri quam nullum.*' Besides bleeding, blisters applied as near as possible to the parts affected, were here, as in similar cases, of very essential service, in removing the stitches in the side, and in relieving the difficulty of breathing, so that we may justly apply to them what an eminent author said of the Peruvian bark, that he found it most serviceable where it was most wanted ; for in cases purely inflammatory, where bleeding of itself will commonly do everything, blisters are less necessary ; but in those of a mixed nature, where the assistance of blisters is more immediately required, the relief afforded by them is in general more certain.

"Some may think it strange, that amongst the remedies employed in the treatment of this disease, I have made no mention of oily medicines, such as emulsions, linctuses, etc. nor

of the Peruvian bark. In regard to oily medicines, I have often observed, that the advantage derived from them in cases of catarrh, attended with heat and fever, was extremely equivocal; and that, wherever there was nausea, oppression and uneasiness at the stomach, with a bitter taste of the mouth, and nidorous eructations, they did more harm than good; as these symptoms so frequently occurred in the influenza, I thought it safest to omit their use entirely.

"The Peruvian bark has of late years been cried up as a panacea, and employed by many physicians in almost every fever. How far this practice has been successful with others I will not take upon myself to say; but it appears to me, to have opened a very wide door to empiricism, and is directly contrary to my experience of this medicine; which, though one of the most valuable that has ever been introduced into the materia medica, has, upon many occasions, where I have given it, or have seen it employed, either had no sensible effect, or has aggravated the symptoms of the disease. But, as it is foreign to my intention to enter, at present, into any discussion of this subject, I shall only remark, that in the influenza, the cough, affection of the breathing, and oppression at the præcordia, where they occurred, were to me sufficient reasons for not employing it; and that, even where these symptoms were not present, and in cases where the great lowness, and apparent putrid tendency, seemed not only to justify, but even to demand the use of the bark, I never was so fortunate as to see one single instance where it produced any sensible good effect, either in moderating the fever, supporting the strength, checking the disposition to gangrene, or in preventing the fatal catastrophe that ensued.

"When the fever, and other immediately alarming symptoms of the influenza had ceased, there frequently remained a teasing cough; and convalescents in general complained of languor, want of appetite, and that their sleep was interrupted and unrefreshing. For removing these complaints, and completing the recovery of the patients, change of air, and riding on horseback were the most effectual remedies, and to some they were absolutely necessary. A milk diet was recommended where the cough was obstinate; but I did not find it either necessary or of advantage to enjoin so strict an antiphlogistic

regimen as is usually done in similar complaints. Neither do I know of any instance where the cough terminated in a phthisis pulmonalis, and I am much inclined to believe that this fatal termination was much less frequent after the influenza than after a common cold. For the lowness and want of appetite, chalybeate waters, especially when drank at the spring, were of singular service. I also frequently prescribed, and I think with advantage, the elixir of vitriol with Hoffman's anodyne liquor, taken to the quantity of thirty or forty drops in a bitter infusion, or in a decoction of the bark.

"In this short account of the late influenza, I have offered no conjecture with regard to the original cause of the distemper, or the manner in which it was propagated. Opinions on this subject, if not merely hypothetical, must be founded on a number of well authenticated facts, collected at different times and by different persons; and I apprehend, from the present state of our knowledge, that we can hardly venture to say, even what it is not, still less to affirm, with any probability, what it is."

3. LONDON COLLEGE OF PHYSICIANS¹

"The College having, by public advertisement, desired information from the physicians of Great Britain and Ireland, relative to the late influenza, received various letters on the subject from physicians and other practitioners; and the following is presented as an abstract of the most important facts and observations contained in those letters, and in the accounts delivered in by several members of a committee appointed to take these letters into consideration.

"The earliest intelligence given of this disease is, that it appeared at Newcastle-upon-Tyne in the latter end of April, 1782, and raged there during the whole month of May, and part of the month of June. Perhaps, with some degree of accuracy, the date of its appearance in London may be fixed

¹ An Account of the Epidemic Disease, called the Influenza, of the year 1782, collected from the Observations of several Physicians in London and in the Country, by a Committee of the Fellows of the Royal College of Physicians in London. (From Medical Transactions, vol. iii. p. 54.) Read at the College, June 25, 1783.

somewhere between the 12th and 18th of May. It appeared in Norwich, and at St. Edmund's Bury in Suffolk, about the middle of May, and at Hadleigh in Suffolk it was general in May, but very mild; in June not so favorable. It began at Kingston, and at Guildford, in Surry, on the 20th and 21st of May. It appeared also at Portsmouth in May. At Oxford it began about the third week in May. It showed itself also at Edinburgh on the 20th of May, at Glasgow not until the first week in June; and what is remarkable, it did not appear at Musselburgh, a village about five miles south-east of Edinburgh, notwithstanding its vicinity to that capital (where it raged very much), until the 9th or 10th of June. At York and Liverpool it did not appear before the beginning of June. It first visited Chester on the 26th of May. It broke out at Plymouth on the 30th of May, and in the western district of Cornwall on the 19th of that month.

“As soon as it discovered itself in any populous town, it spread very rapidly through all the inhabitants, of whatever rank and condition; and it was by no means partial to any age, sex, or temperament. In London, however, it was observed to affect a much smaller proportion of children than of adults. Out of seven hundred boys in Christ's Hospital, only fourteen had the disease, and they in the slightest manner. It was, indeed, generally mild with children everywhere. The universality of the influenza was remarkable, the proportion of the inhabitants affected by it being in some places estimated at three fourths, in other places, at four fifths of the whole.

“Whether or not these estimates were accurately made, is not very material; it is sufficient to say, that the accounts which have been received from the country, concur with the observations made here, in showing the extensive sway of the distemper. Its rage, however, was neither very fatally exerted, nor long continued. Very few died of it; of those who died, the greater part were old, asthmatic, or who had been debilitated by some previous indisposition. The continuance of the distemper in any one place was not above six weeks; where it appeared in May, it vanished by the end of June; where it did not break out before June, it remained until the middle, or towards the decline of July. Its duration with each individual whom it attacked was as various as the degree of

violence with which the attack was made. It seldom held any one above a fortnight. In some places, relapses were very common to the second, third, or even fourth time; and this is similar to what was experienced in London, except in degree; relapses here not being rare, yet not quite so common perhaps as they appear to have been in some parts of the country, and by no means so frequently repeated.

"After three or four days from its first appearance had elapsed, it was observed in several instances, that when any individual in a family was attacked with this distemper, the greater part of that family, and sometimes the whole, was very soon after seized with it; and that those who were thus seized were not successively but almost all at once taken ill; and frequently with symptoms similar in kind, but differing in degree. In other instances the disease went successively through families; while to others, and those numerous, it was so favorable as only to attack very few in each. It was also remarked, that those whom business or inclination carried into the air, and who exposed themselves to the vicissitudes of the weather, were not more subject to the influenza than those whom occupation, accident, or previous indisposition of another kind had confined at home. Very early in June, three families, consisting of seventeen persons, came on the same day to the hotel in the Adelphi Buildings; they were all in perfect health when they arrived, and they were all affected the next day with the symptoms of the illness then reigning in London.

"The disease appeared earlier in towns than it did in the surrounding villages, and in villages earlier than in the detached houses in the neighbourhood.

"In some instances it was observed, that the influenza did not show itself in certain places, until some one or more arrived at those places, either actually labouring under the disease, or coming immediately from other places, whose inhabitants had been affected by it for some days: while, in other instances, very attentive and intelligent observers could not trace any communication between the families first attacked in the towns in which they resided, and other places, where the disease had previously appeared.

"Information has been received, that this distemper broke out and became very general among the crew of the 'Atlas'

East-Indiaman, in September, 1780, while that ship was sailing from Malacca to Canton. When the ship left Malacca, there was no epidemic disease in the place; when it arrived at Canton, it was found that at the very time when they had the influenza on board the *Atlas* in the China seas, it had raged at Canton with as much violence as it did in London, in June, 1782, and with the very same symptoms; but with the addition of bilious complaints, which also accompanied its appearance on the coast of Coromandel, and in Bengal, where it raged nearly about the same time. It is said also to have attacked the British army while it was besieging Negapatam, in November, 1781.

“In what particular part of this island it first broke out has not appeared; but the evidence of all our correspondents agrees, that it observed no regular progression from any one point of the compass to any other.

“On the 2d of May, 1782, the late Admiral Kempenfelt sailed from Spithead with a squadron of ships under his command, of which the *Goliah* was one, whose crew was attacked with the influenza on the 29th of that month; the rest were affected at different times; and so many of the men were rendered incapable of duty by this prevailing sickness, that the whole squadron was obliged to return into port about the second week in June, not having had communication with any shore, and having solely cruized between Brest and the Lizard.

“About the 6th of May, Lord Howe sailed for the Dutch coast, with a large fleet under his command; all were in perfect health; towards the end of May the disorder first appeared in the *Rippon*, and, in two days after, in the *Princess Amelia*. Other ships in the same fleet were affected with it at different periods, some indeed not until their return to Portsmouth about the second week in June. This fleet also had no communication with the shore until their return to the Downs, on their way back to Portsmouth, towards the 3d or 4th of June.

“We have credible information that a family, which came in the Leeward Island fleet, that arrived in England the latter end of September 1782 from the West Indies (where the disease had not made its appearance), was attacked by it in London in the beginning of October: this family afterwards told the physician who attended them, that several of their

acquaintance who came over in the same fleet with them had been attacked at the same time, and in the same manner as themselves. On the contrary, there is as good authority for the following fact: viz., that two Hanoverian regiments, which arrived from Minorca, at Plymouth, on the 23d of July of the same year (where it had ceased to appear for ten days or a fortnight), had nothing of the influenza, either before or since their arrival.

“This disease generally began with fits of chilliness and heat, alternately succeeding each other, sometimes with a slight shivering, followed by more or less of fever, anxiety of the præcordia, pain in the back and limbs, stitches and cramps in the muscles serving to respiration; a very great discharge of thin lymph from the eyes and nose; a sensation in the eyes as if they were about to start out of the head; sneezing, hoarseness, and frequently an incessant cough forcing up large quantities of mucus, and sometimes attended with a soreness of the breast. In many instances the appetite and sense of taste were lost or much impaired, with some degree of nausea, and a few vomited. The tongue was covered with a white mucus, was seldom dry, and not many complained of thirst. Most of the patients laboured under great lassitude and restlessness. The sleep was generally much broken, and many could hardly sleep at all. The pulse was frequent, but seldom hard or tense. Languor, debility, and dejection of spirits were general, and very great in all, far beyond what might have been expected from the degree of all the other symptoms. But the symptom which universally prevailed, and which appeared to be almost a pathognomonic of the disease, was a distressing pain and sense of constriction in the forehead, temples, and sometimes in the whole face, accompanied with a sense of soreness about the cheek-bones under the muscles. This, now and then, was felt previously to the catarrh, and not unfrequently was followed by very little or no catarrhus affection.

“The distemper was by no means so uniform as to present the same identical appearances in every subject whom it attacked, nor yet so various, but that the resemblance could easily be discovered; diversified, perhaps, by the peculiar habit and constitution of the sufferer, or by some other circumstances not easily explained. In some a part only of the mucous

membrane was affected, in others the whole. In the latter a soreness of the throat was common, with frequent excretion. Upon inspecting the fauces of these a redness might be observed; but in few instances any considerable swelling, and in none any ulceration. In some there was a great propensity to perspiration; it could be readily excited in most, but in a few the skin was dry throughout the whole complaint. Daily exacerbations and remissions of the cough and fever were obvious in many instances; in some, they either did not take place, or, if they did, were very obscure. The state of the belly was very different in different patients; in some it was regular, in others disposed to costiveness, which however was easily removed; and several had a spontaneous purging at various periods of the disease, sometimes with pain, but oftener without. Nothing in general could be collected from the urine that deserves notice.

"These were the most frequent and general appearances of the influenza; but it must be observed, that not only in London, but in all parts of the island, from whence accounts have been received, it now and then degenerated into pleurisy or peripneumony; yet these affections still manifested themselves as particular modifications of the epidemic, being either preceded or accompanied by some of its characteristic symptoms. Some thus attacked had, in the beginning, either that distinguishing pain in the face and forehead, or catarrh, or both: and in all there was that debility of body and depression of mind which are not essential to inflammation; the presence of which here, however, was obvious and indisputable.

"The rarer occurrences were, in some few, an unusual disposition to sleep; in others, strangury independent of blisters, and, in some instances, attended with bloody urine for three or four days; hæmorrhages from the nose, with relief to the catarrhus affections; and one instance of a clear discharge from the ears, as copious as others had it from the nose.

"The duration of this malady in some was not above a day or two; but it usually lasted near a week, or longer. In a few, the symptoms seemed to abate in two or three days, but soon returned, and raged with more violence than at first.

"It may not perhaps be entirely useless to take a comparative view of the late influenza with that of the year 1762.

“That distressing pain and sense of constriction in the forehead and temples was much more severe in the disease of the year 1782 than it was in that of 1762, and especially during the violence of the cough, it was a subject of very heavy complaint.

“The fever of both years was sometimes so slight as to have little effect in accelerating the pulse; though at the same time the lassitude, and the dejection of spirits, and the loss of appetite, seemed to indicate more disease than what was declared by the testimony of the pulse. That peculiar stricture of the breast, attended by a sense of heat and soreness quite through the *aspera arteria* (as if it were excoriated), which was remarkable in 1762, was not observed at all, or very rarely, in the last influenza.

“In both years, the old, the asthmatic, persons of tender lungs, and those of full and loaded habits, were the greatest sufferers. Almost all who died came under the foregoing description. Children in general were either not affected, or affected in the slightest manner.

“In both years this disease was apt sometimes to end in a pleurisy or peripneumony; but those effects were much oftener produced in 1762, at which time the disease had a greater tendency to inflammation. Nor was spontaneous and profuse sweating so general a symptom of the last influenza, as it was of that of the year 1762; nor did the external air appear to be so injurious to the sick.

“It was observed in both years, that a complete recovery was sometimes very slow. Some cases of phthisis pulmonalis, subsequent to the late influenza, have been noticed; and several persons have lately died at Bristol consumptive, who, previously to that epidemic, appeared to be in tolerable health, though of tender lungs. Instances, however, of this kind were much more numerous in 1762, when, indeed, the disease appeared to be far more fatal, both at the time of its raging and in its consequences, as several continued languishing under the remains of it for one or two years, and never recovered. But the languor of body and depression of spirits (which accompanied and followed this epidemic in both years), were of much longer continuance in 1782.

“It may be further observed, that the late epidemic began

later in the spring, continued to prevail a longer time, and had more evident marks of contagion, than that of 1762.

“Since the effects of this disease were different in different subjects, no general method of cure could rationally be followed. Many, indeed, were so slightly indisposed, as to require but little or no medicine. Nothing more was wanted to their cure than to abstain, for two or three days, from animal food and fermented liquors; and to use some soft, diluting, tepid drink.

“A lenient purgative, given at the beginning of the disease, was useful in moderating the fever; and nature sometimes seemed to point out the repetition of it afterwards, when there were pains in the stomach and bowels, and a tendency to a diarrhoea. The same was observed in 1762. Nothing likewise was observed so successfully to mitigate the cough, as to open the bowels with a gentle purge, and afterwards to give a slight opiate at night.

“It was observed by many correspondents, that emetics, exhibited upon the first attack, were evidently of use in relieving the head and breast. Nor were blisters omitted when the headache and cough were violent; they seldom failed to relieve the head, and to prevent too great a defluxion on the lungs.

“All attempts to force sweat appear to have done more harm than good; to keep a gentle moisture upon the skin, however, seems to have been an object that many physicians had in view; and they speak with favour and partiality to the effects of this method. Antimonials, in small doses, were frequently used for this purpose, sometimes alone, and sometimes joined with neutral saline medicines, particularly with Spiritus Mindereri, which also was confided in without such addition.

“During the fever, many were distressed by a difficult expectoration; and at the close of the fever, by an expectoration too profuse. The former of these symptoms was generally relieved by a few drops of vinegar of squills, or, at most, by a gentle emetic. In some cases, where there was a spontaneous laxity of the bowels for two or three days, without any alleviation to the fever or cough, small doses of the ipecacuanha wine, given three or four times a day, were found to be of use

in moderating the purging and in promoting expectoration. When the expectoration was too profuse, a decoction of the Peruvian bark was of service. The cough in many persons continued obstinate a long time, and sometimes was only to be cured by change of air, etc.

“The only matter of dispute in the treatment of this disease is concerning the propriety of bleeding. Undoubtedly, venesection was not always necessary or advisable; nor, on the contrary, was the omission of it always safe. Whenever symptoms of pleurisy or peripneumony appeared, the propriety of bleeding could not admit of a doubt. But even in cases where no such evident symptoms of inflammation appeared, many learned and experienced physicians, if they were called at the beginning of the disease to a person strong and plethoric, and labouring under great heat and inquietude, ordered bleeding without hesitation, notwithstanding the common symptom of languor; and under such circumstances they several times observed that the languor, oppression, and feverish anxiety were abated by the loss of a few ounces of blood; that both the head and breast were relieved, and that the disease proceeded to its termination with fewer difficulties, both to the patient and themselves, nor have those who were thus treated since suffered any inconvenience which could fairly be judged to have been the effect of bleeding.

“Some correspondents observe that they were induced, from considering the loss of strength, and the depression of spirits, to give some mild cordial medicines, and to allow a more generous diet, with the use of a little wine; and they justify the propriety of this method by its success. In London, cordials were seldom thought necessary or expedient.

“A similar disease is recorded in books to have visited Europe at several periods, viz., in 1510, in 1557, in 1580, in 1587, in 1591, in 1675, in 1709, in the latter end of 1732, and in the beginning of 1733, in 1743, in 1762, in 1767, and in 1775.

“Though it has been observed above, that this disease was not in itself fatal, and that few could be said to have died but those who were old, asthmatic, or who had been debilitated by some previous indisposition; yet it seems a very necessary addition to the foregoing account to record the numbers of

deaths—taken from the bills of mortality, for a few weeks preceding the first appearance of this disease in London (which, as was stated above, is nearly fixed to have been between the 12th and 18th of May),—during the time of its prevailing so generally; and after that it had nearly ceased.

“The bill of mortality is published every Tuesday, and the total of the burials for the following weeks stands thus:—

“Tuesday, May 7th, 299.	Tuesday, June 4th, 385.
” ” 14th, 307.	” ” 11th, 560.
” ” 21st, 336.	” ” 18th, 473.
” ” 28th, 390.	” ” 25th, 434.
Tuesday, July 2d, 296.	

“The great increase in the burials after the disease had appeared about three weeks, which is about the time when its effects would most generally be felt, is very striking. At the period when the effects of an acute disease would probably be over, it may be observed, that the numbers are again reduced to what they were previous to the appearance of the disease. To strengthen the inference which may be drawn from the foregoing remark on the bills of mortality, notice should be taken of the increase of the numbers of those who are there mentioned as having died under the general head of fever, keeping pace exactly with the periods above pointed out; viz.—

“May 7th, 28.	June 4th, 57.
” 14th, 34.	” 11th, 121.
” 21st, 45.	” 18th, 110.
” 18th, 49.	” 25th, 89.
July 2d, 49.”	

4. DR. R. HAMILTON¹

“SIR,—At your desire I sit down to inform you of the result of my practice, and the few observations I made on the influenza of 1782. Though I know it can add little to what

¹ Some remarks on the Influenza that appeared in Spring 1782, in a Letter to Dr. Lettsom, by R. Hamilton, M.D., of the Royal College of Physicians, London, Member of the Medical and Philosophical Societies of Edinburgh, and of the Medical Society of London. (Memoirs of Medical Society of London, vol. ii. p. 418. Read November 27, 1787.)

you are already in possession of, yet the desire I feel for the encouragement of every scheme which tends to the improvement of that science, into the principles of which I have been initiated, induces me the more readily to add my mite.

"From the 1st of January this year, till about the end of May, throughout most places in the kingdom, the weather was uncommonly unfavorable. Snow, frost, rain, wind, lightning, and thunder, to a great degree, by turns constituted the weather in the neighbourhood where I remained.

"The spring was consequently cold, and the tillage of the land was retarded by the almost constant rains that about this time marked the season.

"With regard to the time of its first appearance in the places where I then practised, as far as I could learn, it was in the first week in May. Dr. Grant dates its commencement in the suburbs of London, so early as March. For some time, at least, before it appeared at St. Albans, which is only twenty-one miles from London, our accounts from the capital told us of its commencement there. By the middle of April, the doctor says, it had spread itself all over London.¹ Others, however, deny it to be in London till May, and say that it raged most about the 20th of this month.

"St. Albans and Luton are only ten miles distant. It appeared several days sooner in the former than the latter. Luton does not lie on the great road from London, therefore the communication with it is less.

"My practice took in the compass of several villages, viz. Colney, St. Albans, Redburn, Market Street, Harpenden, Saundridge, Wheathamstead, Hatfield, and Bell-Bar. By this means it lay in a large scope of country, many miles in circumference. This afforded me some opportunities of remarking the progress of the disease, and symptoms with which it was attended.

"Between St. Albans and Redburn it is only four miles and a half; yet it was later by some days of appearing here than in the other, as far as I was able to learn.

"Market Street is about four miles north-west of Redburn. Here likewise it was later of appearing than at the other.

"Dunstable is between seven and eight miles northward, on

¹ *Vide* Grant on Influenza.

the same road, and Luton five miles from it southward. At these two places it showed itself much about the same time.

“Harpenden stands half-way between Luton and St. Albans. This was not only the latest place where it appeared, but fewer ill here, comparatively, both of the inhabitants and the soldiers quartered in it, and under my care. Perhaps this may be, in some measure, owing to its situation favouring less its exciting and pre-disposing cause.

“The houses in this village are scattered irregularly, over a considerable piece of ground; most of them not only stand separately, but at some distance from each other; the street, if it may be called so, except near the north end of the town, is in breadth near a musket shot, a pretty wide common extending down it. In this common (or street) stand many trees, but not so close as in any degree to prevent free perflation. At the south end of the village is a spacious common, covered here and there with heath. The town stands rather on an eminence, and the soil of a light dry nature, when compared to Luton, Redburn, and Dunstable.

“Saundridge lies about two miles and a half to the south-east, and is more encompassed with wood. About the same distance, likewise, but in a more northerly direction, lies Wheathampstead. Fewer were ill in Saundridge than Wheathampstead, according to the size of the town.

“Both Luton and Wheathampstead lie very low; but chiefly Luton, which is buried in a sort of dell, formed by hills near it on the south-west and north-east. Through both runs a rivulet, the banks of which in many places are flat, suffering its waters easily to overflow. This always happens when rains fall more than ordinary, whereby marshes are formed along them, which sometimes the heat of even a warm dry summer is not sufficient completely to exhale. In this part of the country there is also much wood.

“North-west of Luton, on the road to Dunstable, it is flat. A large ridge of hills runs from Dunstable to Luton, facing the east, and of so chalky a nature, that in many places no swerd grows to cover it. For a considerable way east of this ridge it is flat, the river aforesaid winding down it. This and the wood always keep a greater quantity of moisture in these places; hence the air is colder from the exhalation, and the ground, if

the weather be at all moist, is wet, and dirty under foot. I would assign this as the reason for the more frequency of intermittents along the banks of this stream, than in any other part of this country, space for space.

"Dunstable is situated more on a flat than the two last towns; it may be said to lie in a wide vale, formed by some hills at several miles distance. A large pond of water stands in the midst of the street, where horses are watered, and carriages washed. In St. Albans we find a similar one. These may be considered as no addition to the health of the inhabitants, especially to those living near them, and more immediately in the way of their effluvia.

"The water in the pond at Dunstable, as the weather became warm, grew very corrupt, which was denoted not only by its smell, but by its green colour. I have likewise seen dead dogs lying in it; and indeed it may be said to be a receptacle for much filth tossed into it by the carelessness and inadvertency of the inhabitants.

"Colney is on the great road three miles nearer London than St. Albans. The disease appeared about the same time here as at St. Albans. The town is small, and like Harpenden, scattered. It is washed also by a river; and the soil around appears to me rather of a lighter nature than several of the places mentioned.

"Hatfield is distant only five miles from St. Albans, and in a more northerly direction. It is situated on the great north-east road from London, stands partly on a hill, and partly on a steep declivity. Bell-Bar is only two miles from it, the country all around is also thickly covered with wood. Though Hatfield is only eighteen miles from London, yet the disease was later of commencing there than in the capital, notwithstanding the constant passing of so many strangers to and from London, by the stage coaches, waggons, and other conveyances. The inhabitants and soldiers here suffered considerably. Each of these towns contain several hundred of inhabitants. In several of them weekly markets are held. Saundridge, Bell-Bar, and Colney, are smaller than the others.

"The disease did not appear in Yarmouth till the first week in June. This town is distant from London 123 miles to the north. Ipswich, in Suffolk, is distant from the metropolis 70

miles on the north-east, or rather east road; it was also the first week in June when it appeared here; nor then, till it was brought there from London. A surgeon at Ipswich happened to be in London at the time it raged in it; he left it on the last day of May, and arrived at his house about eleven next morning. 'I left town,' he says, 'the last day in May at night, and was then ill of it. I had none under my care then in it; a few days after, I had several, but none so much debilitated as myself.' From him it spread through all the town.

"At Stamfordham, in Northumberland, it also appeared about the first week in June,¹ according to my correspondent; it showed itself much about the same time at Newcastle-on-Tyne. It disappeared about Stamfordham in the third week of August.

"In the places already described, where my practice chiefly lay, it may be said entirely to have ceased about the middle of June. But just at this time, a few dry, windy, and colder days than what had preceded, succeeded our moist weather. This produced several peripneumonic complaints. Some, not sufficiently aware of the distinction, and having their minds prepossessed with the prevalence of the late disease, mistook, or rather confounded this intercurrent complaint with the other; though, as it seemed to me, the distinction might be easily made.

"In such as I visited under it, there was neither coryza, cough, sneezing, nor pains in the forehead, back, or lions; nor did that degree of debility, so characteristic of the influenza, attend it; instead thereof, I found a strong full pulse, and short respiration, or a catching in taking breath, with fixed pains in the breast and sides.

"The mistake was not, however, attended with any mischiefs; for they bled their patients, found the blood sizy, and in some cases repeated it, they affirmed, with advantage. The disease was still termed the influenza, and they now contended that V.S. in it was altogether necessary; thus making the siziness of the blood a pretext for V.S., and the criterion whereby they were to be guided.

¹ "My correspondent's letter is dated July 8th, 1782, and says, 'The influenza now rages among us.'"

“But did we think it proper to enter on the subject here, we might with propriety contend, that it is not always to be held as the mark of the phlogistic diathesis prevailing in the habit.

“*Symptoms.*—As to the symptoms with which the influenza was attended, they were various in various persons, according to the state of the habit at the time of the attack. The first victims of its fury were the soldiers. And the first symptoms I perceived were, a great cough; straitness about the breast, considerably distended. The patients generally complained of a stoppage in the trachea, giving them the sensation of a ball lodged there. A coryza, or running of a thin acrid mucus from the nose, always took place, so as to excoriate the upper lip, and vellicate the schneiderian membrane. A violent sneezing; a pain of the head much increased by this last symptom, and most severe in the course of the frontal sinuses. A soreness over the eyes, chiefly about the eyebrows, which they said was seated in the bone. This rendered the eyes stiff, and painful to be opened, nor could they bear a strong light. A rheum also distilled from them, not unlike what we see in the measles. Universal pains over the body, in most only a slight fever; in others it ran very high, with a considerable acceleration of the pulse. Faintness; some, though no great degree of thirst; the pain of the breast seldom felt but on attempting to cough. Then it resembles the pricking of pins, but it was seldom or never felt so low down as the cartilago ensiformis. The throat and mouth burn with heat, with an uncommon smarting over the fauces. These, and the tongue dry, and somewhat parched. In two patients I remember a parched tongue was present to a great degree; here the thirst was greater. Some bled at the nose; and one of my patients had abscesses formed in both his ears, which burst, and continued to discharge for some weeks after. A diarrhoea was not a common symptom, yet I found it in several. Appetite in many was impaired; a nausea also in several cases took place. Little sleep, and this little for the most part broken and disturbed with incoherent dreams. Pulse by no means hard. In some, hoarseness and frequent hawkings-up of mucus; in others, little or none.

“The heat that succeeded the cold, which more or less

marks every febrile paroxysm, sometimes went so far as to be followed by perspiration. In many of the patients this did not happen. The skin remained dry. I seldom found the belly costive; the face sometimes swelled, and the eyes appeared sunk in it, as we often observe in the erysipelas, weakness of the joints of the knees on motion, and a great prostration of strength.

"In the neighbourhood of Stamfordham, my correspondent says, and about the neighbourhood of Newcastle-on-Tyne, it was accompanied with colic pains, and cramps in the region of the abdomen and stomach. And some there also had a purging; some had ulcers in the throat and fauces, but such as I had occasion to observe were very slight; this was rather a rare occurrence. Many had a slight vertigo, but few of my patients had delirium, though I have heard of its being found frequently in the practice of others. Though a great faintness and debility took place commonly, yet fainting fits as mentioned by some, except in one patient, and that after V.S., seldom or never happened among my patients.

"Fits resembling an ague have been mentioned as a concomitant of the disease, and in the more marshy parts of the island I doubt not of their existence; and that the influenza was frequently accompanied with a remittent fever, while, in the more dry and open situations, it would partake more of peripneumony. Huxham found this the case. 'I well remember,' says he, 'that the catarrhal fever which spread through all Europe, under the name of influenza, in the spring 1743, frequently became pleuritic and peripneumonic, and as frequently after two or three days ran into a quotidian, or tertian, the difference of the constitutions of the patients thus altering the nature and form of the disease.'¹

"In the villages where my practice lay, I do not remember to have met with any efflorescences on the skin. I find this was a symptom observed during the epidemic at Bath, as well as a redness and soreness of the throat; from whence Dr. Falconer imagines, that there is a similarity between it and the scarlet fever, as described by Dr. Withering, of Birmingham.² A surgeon in Beccles informed me, some of his patients had

¹ *Vide* Huxham on Fevers, art. Intermittent.

² *Vide* an Account of an Influenza at Bath, by Dr. Falconer.

not only a foul tongue, but ulcers on the tonsils ; he mentioned none that had red spots on the skin.

*“Age and Constitution most liable to the Influenza.—*With regard to the age most liable to the disease among my patients, I think the middle age felt it most, *cæteris paribus*. I mean from sixteen to forty-five, or so ; but few of any age, sex, or temperament, escaped it. When I speak thus, I am to be understood of those in good health before its attack ; for with regard to people in general, the infirm, the valetudinarian, and, if old, the more in proportion, suffered most.

“I had many opportunities of observing the influence of the weather, in rendering it more violent, in a house where the husband, wife, and three daughters were ill at once. The wife was by much the most severely handled ; next to her the husband. They kept a public house and brewery, to the latter of which they gave more attention than the daughters, whose employment consisted in waiting on their customers within doors.

“A boy of about twelve years of age, of a very stirring disposition, suffered severely, yet escaped the disease, though the rest of the family had been ill some time, till after bathing with other boys in the river, and remaining there longer than prudent, when he was seized next day with the influenza. We may add to this, that he was a valetudinarian for a long time before, but had lately overcome in a great measure all his complaints.

“To corroborate the remark, that the weather, etc., had great influence in modifying it, not only at St. Albans, but the other villages, the soldiers were first seized with it, and were more violently handled than most others. Soldiers are not only lighter clothed, but worse fed, worse lodged, and more exposed to all the vicissitudes of the weather than most other descriptions of men.

“An account from Aberdeen says, ‘The disease rages here, and it is rather singular that the soldiers are first attacked by it, and more ill of this description of men than any other.’ If we allow the same influence to the weather for which I contend, there will appear nothing singular in the case. In a word, the fact is well established. The same remark was made in

Dublin, for we find 700 soldiers there labouring under it at once, unable to do their duty in barracks.

"An account from Utrecht informs us, of their having no less than 3000 ill of it.

"With regard to the fleet, where the influence of the weather likewise prevails, as the crews are much exposed to the open air, both our own, and that of other powers were great sufferers.

"Among others of our own vessels, the 'Stag' and 'Stout' privateers suffered greatly; for on coming into Dublin harbour, most of their crews were ill of it. From one of our ships, it seems, no fewer than 300 were put on shore under it, and out of another 400.

"In the 'Nemesis' frigate, 70 were ill at once. This I had from an officer belonging to her, who was himself so ill, that he had not at the time I saw him, recovered from its effects, though at the distance of four months from the attack.

"Another instance that the weather had much influence in modifying it, is as follows:

"A young gentleman at Luton, about twenty-three, of a volatile turn, and lately a valetudinarian, but who, for eight or ten weeks had so far recovered, as to be able to follow his amusements; and who, for this purpose, generally walked or rode, whether the weather was favorable or not, several hours a day, often at the same time indulging himself freely in the glass, was at last seized with the epidemic, and suffered severely. We may place this gentleman, in many respects, in the situation of a soldier, with regard to the irregularity of his life, and exposure to the vicissitudes of the weather.

"The delicate also, and the valetudinarian, in all my observations, were great sufferers, and still greater in proportion as they were exposed to the vicissitudes of the weather. Others in different parts of England have also made the same observation. A surgeon at Newbury in Berks, writing to me on the subject, has these words: 'A few infirm and bad habits sunk,' as hardly any valetudinarian escaped it; and as in these it generally appeared with the greatest severity, so for the most part it was attended with dangerous symptoms only in patients of this class. One woman at Luton fell into a phthisis pulmonalis after it.

“ Both the states of old age and infancy was more exempt from it than any other: I mean such as were in good health. At four years of age or so, many suffered. A surgeon at Beccles, in a letter to a friend, affirmed, that a child of his, only eighteen months old, took the disease. This, however, is the only instance of the kind that came to my knowledge, though I have conversed with many, and made much enquiry on the subject in many parts of England. I had an evident example afforded me to prove, how far the distressing passions predisposed the body to be more severely affected by it. These always debilitate the habit by the constant uneasiness the mind undergoes.

‘ A soldier in the light infantry was for some time violently in love with one of the Cyprian nymphs that follow the drum. She was young and handsome, and had so far engaged his affections, that he offered to marry her, though well acquainted with her way of life. She preferred her liberty and refused him. This had such an effect on his spirits, that from a stout well-looking young fellow, with all the health of a farmer’s servant (for he was lately a recruit from the country), in a short time he became thin and wan; he took the disease; not, however, when the others had it, but in the beginning of June, when the regiment marched from the villages aforesaid to Royston, on their way to camp. A day or two before this he had parted with his goddess at Luton: he suffered more from the disease than any other of my patients, and his case put on more of a remittent than any other I had seen.

“ *Cause, not in the Air, but in a Specific Contagion.*—I would not be understood from what I have said relative to the influence of the weather, that the cause of the disease is to be looked for in the air alone. This is only a predisposing cause. Because cold air can give birth to a common catarrh, are we to conclude it can give birth to the influenza? Cold moist air renders, indeed, the application of a *materies morbi* more effectual.

“ We have many examples to prove, that the air cannot hold, nor yet convey contagion to any distance. If it be mixed with the atmospheric air, it is soon dissipated, perhaps chemically decomposed, if it be a compound body, and its

nature altogether changed. Experience shews, that contagions have always been communicated by contact with the infected, either mediately or immediately, *i.e.* by persons who bring it on their clothes to the persons who receive it, or by its being conveyed from the infected in various kinds of goods. I mean here all specific contagions, such as the smallpox, etc. or those from human effluvia, such as produce fevers of a dangerous nature. We are now well assured that the plague, the most infectious of all diseases, is not communicated by the air, but by contact.

"The Europeans, who live in those countries where it is endemic, and do not, like the Turks, believe in the destructive tenets of fatality, prudently shut themselves up in their houses, and with the utmost care shun the infected. By this precaution they escape. Hence the plague is often found in one street, raging with all its severity, while the inhabitants in the next remain unmolested.

"Bad weather may, and often does act on the human body, so as to debilitate it, by which means it becomes more disposed to receive any disease that rages at the time. Whatever debilitates the body, we know has the same effect. In countries where intermittents prevail, they attack the weakly and debilitated, while the more robust pass free.

"The late Dr. Gregory was one of twenty-five young gentlemen, who left great Britain to study under Boerhaave at Leyden, all of them, one excepted, lived pretty freely. He drank water for the most part, when the others drank wine, and he was the only one who suffered from an intermittent during some years they pursued their studies in this university.

"We are told by an accurate observer, that wet and cold weather is more injurious to our constitutions, than the same with moderate warmth. Though the moist and warm be the most productive of acute and fatal diseases; yet there is more danger, he tells us, in these respects to our constitutions from the opposite. A steady set of any sort of weather, he adds, may be productive of particular diseases, and so is a quick transition from one extreme to another.¹

"We have already mentioned the unfavorable weather of

¹ Dr. Fothergill. *Vide* Dr. Lettsom's ed. 8vo.

this spring. From a meteorological register, kept by Mr. Becket, of Bristol, we find, that in this city the month of April was for the most part cloudy and disagreeable. Rain, part of seventeen days; two days of snow, and not one day fair. The wind chiefly from the north and east.

"May was still worse. 'This month,' he says, 'no doubt will be remarkable in all the meteorological annals of Europe, for its unusual degree of cold and humidity, with a gloomy and uncommonly disturbed state of the atmosphere. It rained there part of twenty days, and all the others were cloudy and hazy; the wind generally between the south and south-west, frequently strong.'

"The next month, June, we find very variable; in the beginning it was cold and rainy; towards the middle, about a week or ten days fair and warm, the latter part variable. A remarkable change is noticed, which took place between the 17th and 18th, for between one and two in the afternoon of the 17th, the thermometer stood as high as 89 degrees in the shade; and next day, in the evening, it sunk as low as 55.¹

"It has already been pointed out that the attacks of the disease were not at the same time. If the cause lay in the air, all must have been seized at once; for though it often spread rapidly, it was still progressively, sometimes slowly and gradually.

"Others have alledged that it took its rise from the influence of the two superior planets, Jupiter and Saturn, that appeared in a particular situation this year. An ingenious surgeon at Plymouth is among those who embrace the opinion that the planets gave rise to the influenza which visited us some years prior to this.² If this be admitted once, it may be admitted again; therefore we ought to consider how far it is founded in fact, before we assent to it.

"That they might, by their great attraction and influence, joined to that of the other heavenly bodies that affect this terraqueous globe, be the cause of the unseasonable weather we experienced, I shall not venture to deny; but at the most this will prove no more than that this bad weather was favourable to the dissemination of any infectious disease appearing at

¹ *Vide* Broughton on 'Influenza at Bristol,' 1782.

² Mr. Geach, F.R.S.

this time. No writer, as far as I know, maintains that it was always the influenza that raged at those times when the planets were in similar situations. Besides, the disease has appeared when they were very differently situated, so that recourse could not be had with the same reason to their greater influence on the earth. I pass over the opinion, as too ridiculous, that the moth, frequent about London, called by Curtis, the *brown tail moth*, the caterpillars of which happened to be more than commonly numerous this spring, gave rise to the disease. Those who believed in this, must have very superficially considered the subject.

"That the true cause sprung from another source,—a particular *materies morbi*, a certain contagion,—I think will not require many arguments to prove; the following few proofs may suffice.

"The first who were seized with it at Norwich (I have it from good authority)¹ were two men lately arrived from London, where it then continued to rage. A sergeant of grenadiers of the 10th regiment of foot, went to London on furlow; the disease then raged in the capital; he returned in a few days to St. Albans, affected, and communicated it to the people in whose house he had his billet. This was the first of its appearance there, and from thence it rapidly spread all over the town.

"An officer of the same corps, being then in Dublin, told me he received it from a lady in whose company he sat at dinner. She was then complaining of indisposition from it; he sat next her. Before he left the room he was seized, and did not completely recover in two months, having lost his voice great part of this time.

"One of Lord Bute's labourers, living on the banks of the river at Luton, happened to receive a compound fracture of his thigh about the beginning of April, a month at least before the influenza appeared there. When the rest of the family were seized, though he had never been from his bed since the accident, yet he caught the disease, and suffered considerably. Here was no exposure to the vicissitudes of the weather. This fell under my own observation, as I attended him from the time of the accident till after the epidemic.

¹ Dr Macqueen.

"I escaped the disease myself, though daily visiting so many under it, till one day being at a clergyman's, and being desired to visit two of his maids then under it, and inspecting their throats of which they complained, I received their breath full in my face, and thought at the instant it smelled disagreeably. Returning home about an hour after, I began to feel myself chilly, with the sensation as if something stuck in my throat. In ten minutes after, I had a discharge of thin mucus from my nose, began to sneeze, and felt a pain in my head. Though I had only four miles to ride to my lodgings, yet by the time I arrived, I felt myself extremely ill. Here must certainly be contagion: no quality of the air would satisfactorily account for this. Another example of its contagious nature might be drawn from the news; the Convert and Lizard, men-of-war, escaping it till they came to that part of the Thames, near Gravesend, called Long Reach.¹

"We might prove it still further, was it necessary, from its gradual attack. This was very observable in many families where I visited. The housekeeper of a gentleman on the opposite side of the street to that where I lived, was not seized till more than ten days after I recovered, though her master often visited me while I lay under it. The lady likewise of the clergyman already mentioned, and her two children, had the disease some days before her maid servants were seized. Thus we find one was taken ill to-day, a second to-morrow, and a third, perhaps, not till several days after. Is not this the usual mode of seizure in all contagious diseases?

"Besides, when we reflect on the symptoms of the influenza, we shall find them such in general as denoted debility. Far more prostration of strength was united with it, than we ever find attend catarrhs from cold alone; and I am led to think this forms one of its chief distinguishing symptoms. 'A catarrh,' says a certain writer, 'from the situation of our island, and from the sudden vicissitudes of the weather, with respect to heat and cold, may with the strictest propriety be looked on as the endemic disease of Great Britain.'² But catarrhs from this source alone, never bring with them such loss of the powers of exertion and universal asthenia.

"Whatever then may be the nature of this *materies morbi*,

¹ *Vide* London Medical Journal.

² *Vide* 'Abuse of Medicine,' p. 57.

it is such as always produces great alterations in the functions of the nervous system.

"Few diseases, putrid fevers excepted, ever produced loss of strength and debility more suddenly than this. The crew of the Fly sloop of war was an instance of this. The captain affirmed that forty of his men fell ill in less than eight hours; several of whom he declared dropped down at the wheel as they steered the vessel. This circumstance obliged him to put back, and stand again for the Yarmouth Roads, which he had only left a few hours before with all hands apparently well, merely for want of hands to navigate her. The infection must have been received from shore, with which they had frequent communication.

"The subject of contagion is an obscure one were we to enter on it; much indeed might be said, but little at present with certainty. We might amuse ourselves with inquiring, wherein consists its difference, by which it can produce in the human body diseases specifically different? why one kind seems to exert its force on the mucous membrane of the trachea, nose, etc., and produce fever as in the disease under consideration? Why another spends its fury on the skin, and perhaps cellular texture connected with it, as in the smallpox? why a third produces dangerous glandular swellings, both external and internal, on the throat, with bright red eruptions covering the surface of the body, as in a scarlet fever? But these, and other inquiries of this nature, it is proper to pass over here, as it is matter of fact, not conjecture, I wish to confine myself to. Such shall be left in the state we find them, enveloped in uncertainty and obscurity, from which it is to be feared our present limited knowledge of the various combinations of matter will not allow us soon to involve them; yet, as the knowledge of the human mind is progressive, and every year adds to industrious inquiries some extension of physiological investigation, I would not too rashly conclude them inscrutable. Were this inculcated it would prove a check to industry, and become the nurse of ignorance. Several things familiar to-day, in the beginning of the present century, seemed as inscrutable as the present subject, and another series of years may produce as material discoveries in the natural world.

"*Of the Fatality of the Disease.*—In all the scope of country

in which I was employed, during its continuance, not one died immediately from it. My medical friends in London gave me much the same account. I find, however, by the bill of mortality, published in the third volume of 'Medical Transactions,' that there were a great increase of burials in May and June, which is attributed to it.

"In Kent we are informed it was not dangerous. A gentleman residing near the Coast says, 'Few have escaped it, but I know not of a single instance of danger.'¹ It was said to be fatal in Jersey; but some doubt may remain concerning the disease, as every complaint was denominated influenza that appeared about this time. Mr. Friend, of Newbury, lost only one patient; nor was he altogether certain whether the disease was influenza. From a cursory account of her symptoms, which he adds, 'I am inclined to doubt in like manner, as this case happened,' he adds, 'in June, when the influenza was prevalent here, I have been disposed to think it partook of the epidemic, though the symptoms were somewhat dissimilar.' Four in the practice of Mr. Binney, of the same place, died. 'Two of these,' he says, 'were upwards of sixty, and very infirm before the influenza seized them; the other two were also in advanced life.'

"At Royston I was told few or none died there. In the neighbourhood of Cambridge I found a man who had lost his wife, and I think he said three children, by it; but this is likewise doubtful, it might be at least compounded with the ague, a disease frequent here. At Yarmouth, on inquiry, I found none died of it. I arrived there July 6th, very lately after it had ceased. My correspondent from Stamfordham (Mr. Scott) says, 'it only proved fatal, in this neighbourhood, in three instances.' At Ipswich, in Suffolk, I cannot learn that it proved fatal in a single instance.

"*Cure.*—Among the means of cure various in various persons, which have been had recourse to, none is of more material consequence to consider than venesection. On this head we shall beg leave to suggest a few things. Those who contended that they found it useful and necessary, generally gave the appearance of the buffy crust, as one of their reasons. This, it is well known, is a very fallacious test. It appears on

¹ London Medical Journal.

many occasions, where venesection is by no means warranted. We always find it in the blood of pregnant women, if their pregnancy be anything advanced; and we meet it often in the last stage of a consumption, when the powers of the body are nearly exhausted; likewise in dropsy, where we have little reason to suppose inflammation, and less still that venesection would prove useful.

"The coagulable lymph may be separated in whitish or bluish streaks on the surface of the blood; yet the crassamentum, if compared to the serum, may be very disproportionate. It may be smaller in quantity, perhaps a thin pellicle, and even sometimes not very accurately separated from the serum. The crassamentum, with this appearance, may almost dissolve on handling; or the under-side be so loose as to fall into pieces when taken up for examination.

"It is needless to mention here what every one knows who has attended to the subject, that the form of the cup the blood flows into, the size of the orifice, nay, the very materials of which it is composed, with several things of this nature, are to be attended to in forming an opinion respecting blood.¹ Hence, neither the presence nor yet absence of the buffy crust is an absolute guide to determine us for or against venesection. The density of the crassamentum, the small quantity of serum separated, with perhaps its greenish colour, even should no coagulable lymph appear, denote higher degrees of inflammation and greater activity in the arterial system oftentimes, than when the buffy coat covers the surface. The first drawn cup often shews none; the second and third, perhaps, abound with it.

"Inflammatory blood, denoting general venesection, is not only dense, but the lymph on its surface, when it shews itself, is tough and thick, still growing tougher by handling, contrary to what it does when it appears in debilitated habits. The crassamentum is often found contracted on its surface, somewhat into the form of a cup, with the under-side of the cake solid and firm. Nor should we be led always to judge of the propriety of venesection, even from the pulse, without maturely weighing every circumstance of the case, and symptoms with which it is attended. A small pulse should not always deter us from the use of the lancet, nor yet a large pulse, apparently

¹ *Vide* 'Hay on the Blood.'

strong under the fingers, urge us to it; for the one, even from a trifling loss, a few ounces, will sometimes sink, and prostration and debility so rapidly follow, that all our endeavours may not be able to repair the injury occasioned by it: while the other rises as we continue to draw off the blood, and bears with manifest advantage a large loss of blood. A dyspnœa is another symptom for which venesection has been commonly instituted; but here, likewise, the same caution ought to be observed, for it not unfrequently takes place from debility; and this is manifested from its often attending too much depletion. Every one who has seen it improperly instituted, and repeated for this symptom in rheumatism, will be fully convinced of the truth of this observation: instead of remedying this symptom, every repetition increases it, and the anxiety with which it is attended; and that, on a corroborating plan being pursued, it is as gradually and effectually removed. These things duly attended to, should teach us caution at all times in the use of the lancet. To these may be added, that the symptoms, as already observed in the influenza, were, for the most part, such as to deter the cautious from venesection; even in those cases where it seemed admissible, it was to be done with care, and after nice observation.

"We found that for the most part the pulse was soft, indeed very rarely hard, that it was small and debile; even seldom full, and betraying very little activity in the arterious system, with pains in the back and loins, vertigo, rigors, etc.

"Some inflammation I will allow; the state of the mucous membrane proved there was a degree of it present. We know a degree of it exists in chronic rheumatism; yet venesection is seldom advantageously used in this complaint; for if it be pushed to any degree, a paralytic affection might be the consequence, or other marks of asthenia equally bad.

"Who would at this day think of employing venesection in the putrid sore throat; yet we find from the authors who have treated on the subject, that the blood often shewed the buffy coat. Dr. Fothergill, speaking on the subject, expressly says, after telling us the blood was of a fresh, florid colour, and the crassamentum lax, etc., 'but it is often sizy when the disease has continued two or three days; and, in some instances that

lately occurred, it was so soon after the first attack ;'¹ yet it is well known bleeding never cures it, nay, though it relieves for a little by taking off the sense of plethora, and easing the breathing, it only serves, if often repeated, to weaken the system, and reduce the miserable patient still further.

"I call it plethora here, whether in relation to the increased quantity of the blood or other fluids ; or in the diminished force of the heart, unable now to propel the blood, so as to dilate the artery with its accustomed ease. It is this last plethora that seems sometimes to exist in hectic habits, where venesection serves only to augment the degree of debility. The blood is thereby lessened in quantity, and thus the plethoric symptoms for a time relieved ; but the vessels soon accommodate themselves to their lessened contents, whereby a similar spurious plethora is again induced. Venesection is repeated with a view to remove this sensation, and so on, till the powers wholly sink. I have somewhere read of an instance where the patient died under the operation.

"In the peripneumonia notha of Huxham, we find him dissuading from venesection, though at the same time he admitted the presence of considerable inflammation. Practitioners in different parts of the island confessed, that in the epidemic of which we are treating, little of the inflammatory crust appeared on the blood. This was the case at Yarmouth ; the surgeons there found it always florid, and loose in its texture : they bled, however, but they observed it never gave that permanent relief which, from the straitness of the chest, they expected from it.

"In a letter from Stamfordham I find that venesection was pretty generally used in the beginning of the epidemic, but they found reason to alter the practice as they became more acquainted with its nature. 'But now,' says my correspondent, 'the disease has taken another turn ; though the patient complains of aches and pains all over him, particularly about the breast ; and, if you bleed him, the inflammatory crust, as it is called, manifestly puts on its appearance ; yet, notwithstanding all these symptoms, which indicate venesection, the disease at least, in our part of the country, does not bear bleeding ; for the pulse becomes weak, and there is great debility, and

¹ *Vide* Fothergill's Works.

languor hangs upon them.' In a second letter on the subject, he says, 'at least it seemed to run a good deal into the low and putrid, so that we were obliged to give cordials and antiseptics.' Dr. Macqueen says, 'the only one that died there was a man that had been twice bled,' and he was of opinion this contributed to his death.

"By what has been said, I would not be understood to mean a total dissuasion from venesection in every case. I doubt not but the phlogistic diathesis prevailed so much in many patients, as to indicate venesection, and that much relief was afforded by it. Patients very differently affected, according to circumstances of habit, place, etc. When venesection was used with proper circumspection to the nature of the epidemic, the habit, etc., and in the robust and strong, no doubt can remain of its utility; but this is far from that promiscuous use of the lancet, which I fear too often took place; it happened frequently that patients insisted on being bled; they never failed to find those who complied with their desire; 'many were bled by my young man,' says a surgeon, 'without advice.'

"I suffered from the disease severely, being ill upwards of three weeks, though but a few days confined to bed; the nature of my situation, and the number I was obliged to visit, preventing me from taking that care of myself which I recommended to others. My throat was much inflamed: the external fauces considerably swelled, with other symptoms of a phlogistic diathesis, yet from universal pains on motion, a lowness of spirits, rigors, and a slight vertigo, I would not suffer myself to be bled. I trusted to gentle diaphoretics, laxatives, and diluting drinks acidulated, with a linctus to mitigate the burning heat and pain I felt in my throat. Dr. Macqueen told me he suffered also much from it, and being subject to catarrhal affections, which venesection always relieved, he had recourse to it; but though he found it productive of some benefit to his head-ache, for a short interval, yet his complaints rather recurred with additional force: from which he concluded that venesection did not give that permanent relief in the disease, as from the seeming inflammatory symptoms there was reason to expect. We find it was frequently tried both at Bath and Bristol; it did not answer in either place.¹ Neither

¹ *Vide* 'Treatise on Influenza' by Broughton and Falconer.

Sydenham nor Huxham speak favorably of venesection in the influenza; yet the latter especially had good experience since he practised in no fewer than in three epidemics of the disease. Dr. Fothergill,¹ speaking on another occasion of venesection, and dissuading from its free use, unless we be perfectly certain of considerable inflammation of internal parts, has these words, 'This is only intended as a caution to some who have been taught to think, that copious bleeding is indicated whenever a patient complains of pain in any part of the region of the thorax.' And in another place he cautions us to judge of its propriety, 'not from the appearance of the blood alone, for this will often continue sizy, till more be taken away than is compatible with the patient's situation in other respects; for if we lessen the *vires vitæ*,' says he, 'by inanition too much, a disease then takes place, which probably will increase our difficulty; i.e., debility of the solids, and the consequent vitiation of the fluids; the pulse, the heat, the cough, respiration, strength and age, of the patient, should all be taken into consideration. Many persons,' he adds, 'live free from complaints with sizy blood. The condition, therefore, of the blood singly ought not to determine us; we should examine all the evidence.'²

"The recovery from the disease we always found slow, in such as suffered most from it; so great was the debility that it was weeks before the patient's strength was perfectly recovered, though in others the disease was slight, and left little marks of debility behind it. This is still a farther proof, that in general there was little of the phlogistic diathesis in the system. We never observe such great debility after pleurisy, or peripneumony, except where phlebotomy has been injudiciously prosecuted; in such cases, indeed, the patient will not only be weak long after, but obnoxious to serous effusions. The dissections of industrious practitioners shew, that these often follow inflammatory diseases, where the lancet has been improperly used. 'It is an undoubted fact,' says a modern author, speaking of venesection, 'that repeated bleeding without necessity has greatly injured many constitutions. The catarrh may frequently attack delicate relaxed habits, which are rendered

¹ Lettsom's edit. of Dr. Fothergill's Works, 8vo, vol. i. p. 219.

² Fothergill, vol. ii. p. 136.

highly irritable from excess of heat, and unhappily obnoxious to the disease, from exposure to cold. In these as well as in more robust constitutions, the catarrh is often perfectly pure, unaccompanied with peripneumonic affections, or such other symptoms as indicate bleeding.¹

“ Besides, I am apt to think, our constitutions have considerably changed within this last century in Great Britain. Luxury, and its enervating effects, render the diseases of this island less inflammatory than perhaps they formerly were. Diseases that in their nature were always, and even now are allowed to be, phlogistic, have appeared within the space of these last thirty years, accompanied with a considerable degree of putridity, viz., the measles. We use less of the robust exercises than formerly. Carriages are more frequent, delicacy greater; nay, many of our occupations, introduced by philosophy within the last century, are of a sedentary kind. Our amusements are of a less active nature; our articles of diet are in like manner changed, and infusions of tea,—a debilitating liquor, injurious to the nervous system,—is in such common use, that even paupers feed on it. Many among the poor drink it three times a day, making it their chief subsistence, among whom, both from its quantity and bad quality, it is productive of injury. We may add the immoderate use of spirituous liquors; and of these much is to be attributed to gin. Many among the lower rank are so habituated to it, that both health and substance suffer; hence often proceed jaundice, scirrhi, and various diseases formed by obstructions in the nobler viscera. All these concur to strengthen an opinion I have for some time entertained, that our diseases partake much more of debility than of genuine inflammation, and that the system cannot bear the same evacuations as formerly were in use; even in diseases universally allowed to be of the phlogistic type.

“ To conclude, I am of opinion, that the fever which accompanied this catarrhal affection, showed, in most places, more marks of asthenia than of phlogosis; that venesection has been oftener used in it than with permanent relief; and that, should we again be visited with it, under the same circumstances and train of symptoms, we should profit by our late

¹ *Vide* ‘Abuse of Medicine,’ p. 60.

experience, and use the lancet with caution, never letting slip from our minds the nature of the contagion, which certainly appears from its effects to be of a debilitating nature; and since, to use the words of a certain author, 'if venesection be powerful in preserving life, it is also powerful in destroying it.'¹ Thus far of bleeding in the influenza.

"The natural crisis of this complaint appears to be by the skin. Diaphoretics, therefore, and diluents constitute the chief part of the cure. Emetics, or rather nauseating doses of antimonials, when early used, seemed very serviceable,—they are diaphoretic; they also prove expectorant when given in full doses, and in this sense they have been useful in the beginning of the disease. They generally prove laxative, cleansing the *primæ viæ*; nay, they become hypnotic, for, generally speaking, the sleep of the succeeding night is sounder, especially when they have been exhibited in the evening. They open obstructions in vessels, whereby the different secretions are more equally performed; and thus, by one simple medicine, we have oftentimes various purposes answered. A happy choice of a simple, the dose, and time of exhibition maturely weighed, will, for the most part, answer better than a multiplicity of medicines jumbled in a prescription, and save the patient not only from much uneasiness, which would be created by loading the stomach improperly with medicines it abhors, but from unnecessary expenditure of his money. A conscientious physician will also have this in view.

"Considerable advantage has likewise been obtained from the prudent use of opiates; where the cough was severe, as was mostly the case, they also determine to the surface. Though their chief use seems to consist in the respite they give to the cough, the removal of irritation, and thus allowing time to the mucous membrane to recover its tone; by this means the discharge decreases, and the habit in the mucous glands to a vitiated secretion is thereby checked.

"Nitre has been celebrated for relieving the cough, and I, with others, have sometimes had recourse to it. I would, however, be cautious in its frequent exhibition, as it sometimes renders worse the very symptom for the relief of which it had been administered. Others have made the same observation.

¹ 'Abuse of Medicine.'

‘I have known,’ says Fothergill, ‘in common doses of nitre, the saline draughts, and other cooling salts, increase a cough by irritation.’¹

“I found a generous diet, where it was in the patient’s power to procure it, highly conducive to a more speedy recovery; and even in the course of the disease many bore a more liberal use of wine than is generally given in catarrhal affections from cold alone.

“After what has been said, I need scarcely dissuade from the warmer sudorifics or the stronger purges. These were always found as prejudicial, as diaphoretics and laxatives were useful.

“A cautious discrimination between it and other diseases appearing sporadically at the same time, should most certainly be kept in view; for where it proves thus compounded, the method of cure must also vary; and more or less of the inflammatory diathesis prevailing may lead to mistakes with respect to the genuine nature of the disease. Not only the weather, situation, and constitution, but intercurrent diseases all unite to vary the appearance of the epidemic, to all of which the cautious and prudent practitioner ought strictly to attend.

“Pediluvium determines also to the surface, encourages a larger share of the blood from the head and superior parts to the lower; is generally followed by sleep, relieves delirium, moderates the cough, and removes sickness at the stomach, from the great sympathy between this organ and all parts of the body, but especially with the surface. Hence I frequently ordered it, and with advantage; but at first I was timid, considering the disease of a more inflammatory nature than a little practice taught me it was, and therefore never suffered a patient to sit in the water above a few minutes; but from its inducing a quiet night’s rest, and was often followed by a gentle diaphoresis, when assisted with a few drops of antimonial wine, I continued it in many cases to near half an hour, taking care not to keep the water at so high a degree of heat as to create too much stimulus, and produce an increased action in the arterious system. This is another remedy, powerful in producing different, and even opposite, effects,

¹ Fothergill, vol. ii. p. 133.

according to the mode of its application, as is well known to practitioners.

"I say nothing of blisters, as I had seldom occasion to use them in my practice. Others, I find, often tried them with good effects. Where vertigo or delirium occur, or where the breathing is difficult, they will doubtless have their utility, as also where languor prevails. They may raise the pulse where it is thought too low, by rousing the *vis vitalis* to greater action, or they may remove topical congestion. Though a blister may draw off but a small quantity of serum, yet much relief may be derived from it to the turgid vessels. This will readily be granted when we consider how large a portion of the finer vessels so small a quantity as even half an ounce will fill, and how great an alteration will take place from thence in the balance of the system, by an over proportion to this amount in a given space; but whether their chief use was as evacuants or antispasmodics, it is affirmed they were followed by happy effects in this epidemic.

"Practitioners in various parts found the bark useful. I doubt not but it was where the disease put on more of the appearance of an intermittent, or remittent, and where it was accompanied with symptoms of putrescency, which several affirmed it to be. In low situations, such as the fenny parts of Cambridgeshire and Lincolnshire, where fevers from marsh effluvia are endemic, the bark, and antiseptics, and tonics, must be more requisite than in drier situations; but I forbear offering any further remarks on the method of cure, for the same reason I omitted mentioning the other concomitant symptoms.

"Although the disease, considered simply in itself, may be looked upon as of little consequence, since it was often mild, and seldom fatal, if not improperly treated, either by bleeding or by the use of too heating and irritating medicines, or by entire neglect; yet its causes, progress, and mode of attack may not be deemed altogether unworthy the attention of the medical philosopher, and to afford some hints in furthering this inquiry, was my principal reason for collecting the foregoing."

The peculiar state of the weather at the period of this visitation is thus graphically described by the same writer :¹

“The inclemency and backwardness of the season has been remarked by some of the oldest people alive to be the greatest in their remembrance. The spring proved exceedingly cold, which checked vegetation ; and in several parts of Scotland numbers of cattle perished for want, as neither fodder nor grass could be procured for money. Many were killed for the same reason. Our accounts from Plymouth are nearly similar. A gentleman, who took for several months past an exact account of the weather, assures us he found the thermometer stand one degree lower on the 22d of May than it did on the 22d of the preceding December, and that on Christmas day last and Whitsunday it stood precisely at the same height. For three months we have scarcely enjoyed a single day without more or less rain. About three weeks ago there was a dreadful thunder-storm. The morning shone bright, and the day warm, till about twelve, when it lowered of a sudden. The lightning and thunder were remarkable, accompanied with a shower of large hail-stones. I took up some as they fell and examined their size, but did not measure them ; yet am persuaded they would have measured upwards of half an inch round. The thunder lasted more than half an hour, and the hail continued to fall about a quarter of an hour or twenty minutes. It did not, however, spread to any great distance ; for five miles from this no hail was perceived. Since this it has thundered frequently, but the most remarkable was about the 24th of May. It began in the evening a little before sunset, and continued at least for two hours. The thunder at this place, however, was less remarkable than the lightning. I stood with a gentleman here to observe it nearly the whole time of its continuance. Preceding the thunder, it was a dead calm, and the day likewise by far the warmest we had experienced for a length of time before. There was something awfully beautiful in the lightning. It did not appear in flashes in general, but in large balls, one rolling after another over the heavens northward of us, and then dashing one against another, driving off large sparks producing a great and sudden glare, which enlightened the street

¹ A Description of the Influenza, with its Distinction and Method of Cure. By R. Hamilton, M.D. London, 1782.

of the village for an instant, as if the sun had shone forth ; yet the thunder was at a considerable distance, as we could easily distinguish by the interval between the lightning and the peal. From this we concluded ourselves in no danger, and stood with the less concern to view the uncommon appearance it produced. We presaged that over the places where the fire-balls passed there must be damage sustained ; and almost the next peal confirmed our suspicions, for not only houses were burned, but several persons lost their lives, and many trees were shattered to pieces. Nearly about the same time the influenza made its appearance in London and the country round. It spread in a few days with great rapidity, insomuch that a physician, in extensive practice in the city, is said to have visited no less than a hundred and seven patients labouring under it in one day. At St. Albans it soon became prevalent. The soldiers that lay there seemed to be the first victims of its fury. Out of three companies quartered in that town scarcely a single man was fit to do duty. The officers suffered in like proportion, for one only escaped the complaint. In the neighbouring towns it ranged with no less severity.

“ A gentleman who left London a few days ago told me, as he passed through the streets pretty early in the morning, that he observed many of those who cry things for sale to lean their heads against the wall of the houses and cry their goods, not being able to support themselves upright.”

5. DR. BLAGDEN

The late Dr. Blagden entertained particular opinions regarding the relation of certain states of weather to this epidemic.¹ To the supposition that the disease was produced by a matter mixed with the air, he found an objection in the prodigious quantity which would be requisite to infect the space, not only of the Chinese land, but to a hundred leagues of the coast, or, as in this instance, all Europe and the circumjacent seas. If, in order to avoid the difficulty connected with quantity, the theory of a contagious influence conveyed from one body to

¹ The Editor derives this information from a MS. letter, of which he is obligingly permitted to avail himself.

another be adopted, he argued, that as great a difficulty presented itself in the much greater rapidity and universality with which such contagion is propagated, even than those diseases known to be the most easily communicated. How different, for instance, the history of the plague spreading in a country to that of the influenza, and how extremely dissimilar they appear. Indeed the many instances of crews affected in the channel about the same time that the disease appeared at Plymouth, seemed to him irreconcilable with the idea of contagion.

On the whole, Dr. Blagden adhered to the opinion, that the disorder was induced by weather unusual for the season—the human body, having adapted its habits to certain states of weather, when irregularities beyond certain bounds occur in the atmosphere, is then obliged to make an effort to restore its balance. The seasoning of Europeans in foreign climates he considered a result of the same principle, the kind of effort being determined by particular circumstances, especially those connected with the endemic constitution of the climate. In influenza it may be that nothing occurs to modify the usual effects of change in the sensible qualities of the air, and therefore nothing is produced but catarrhal fever; or if catarrhs in general depend upon a contagion, as many eminent physicians have suspected, it may be (he suggested) that this contagion, being very generally spread over Europe, always gives the type to the effort made by the system on such occasions.

The liability of the inhabitants of St. Kilda to get an epidemic catarrh on the visit of any one from the main land, seems explicable only from such a general contagion amongst us; that effort, therefore, which would be a bilious fever in Jamaica, is with us only the catarrhal fever called influenza.

Dr. Blagden was of opinion, that if future facts should show this reasoning not to be applicable to the case of the late epidemics, it would still tend to explain many difficulties which occur in medicine.

6. DR. JOHN HAYGARTH¹

"1. In 1775, the first patient I saw in the influenza was on the 2d of November, the landlady of a principal inn; but it did not spread generally through the city till near a fortnight later. It chiefly attacked the citizens from the 15th till the 25th of that month; very few were seized so late as December. On the 18th or 20th of November it pervaded all North-Wales, as I had authentic information from almost every town and many considerable villages. I was curious to know at what time in Llyn, the most western and remotest corner of Carnarvonshire—a medical inhabitant of that district informed me, 'that it began here about the 20th of November, was general through every part of this peninsula, and affected all classes of people; one in a family now and then escaped it, but I know no family, however small, among whom it did not make its appearance.'

"In the western part of Cheshire, and that part of Shropshire which borders on Cheshire, I observed that this epidemic began soon after the middle of November. However, I was informed by the inhabitants of several Cheshire villages, when I visited them, that the influenza had not appeared there on the 25th of November, though it afterwards spread through them all. On the whole, the people in the country were attacked rather later than the towns which they surrounded; however, not only the inhabitants of villages, but of solitary houses, were seized with the distemper. I could not discover that high or low, dry or moist situations, the neighbourhood of mountains, or of the sea, or any particular exposure, rendered the epidemic later or milder. I made very circumstantial inquiries to ascertain these facts.

"In the sketch of this epidemic, written by my highly-respected friend the late Dr. Fothergill, it appears to have spread in London about the beginning of November, that is, near a fortnight earlier than at Chester.

"From my very ingenious friend Dr. Dobson, I received the following curious and instructive intelligence:—'With regard

¹ Of the manner in which the Influenza of 1775 and 1782 spread by Contagion in Chester and its Neighbourhood. By John Haygarth, M.D., F.R.S.

to the progress of the influenza in 1775, I found that it prevailed at Leghorn about the 24th of September, continued to be very general for about eighteen days, and was almost over by the beginning of November. It reached England early in November, and passed through England, Wales, Scotland, Isle of Man, and Ireland; but I could not find, after repeated inquiries, that it ever reached the West Indies, the Continent of America, Sweden, Denmark, or the northern parts of Europe. From a general state of facts I found that none were attacked with the epidemic while at sea; but as soon as the vessels arrived at any port in which the disease prevailed, few escaped. Those seamen, likewise, who were seized with the epidemic on land, soon recovered on going out to sea; and if they came into port where the disease was present, some relapsed.'

" 2. In 1782, a gentleman ill of the influenza came from London to Chester on the 24th of May. A lady, into whose family he came, and to whom he is since married, was seized with the distemper on the 26th of the same month. The second family which I heard of in Chester was attacked on the 30th of May; the wife of the patient sickened on the 3d of June. Both of these families, which were numerous, had the distemper soon after the first seizure of each, and before I heard that any other family was attacked. About the 5th or 7th of June it began to spread generally through the town, that is, ten days later than the time of its first arrival. Though the distance of time between the first and last patient was six weeks, yet a large proportion of the inhabitants was attacked in a fortnight after the 5th of June.

" It may be proper to mention one remarkable fact. In the Chester Infirmary, out of between fifty and sixty in-patients, none had the influenza, except three men, all surgical patients with sore legs, and these might have only symptoms of a common catarrh.

" It will be most instructive to exhibit in one connected view the progress of the epidemic. The facts are ascertained by medical observers in each town, whose judgment and fidelity are indisputable: their accuracy was confirmed in many instances by my own observations on the spot.

"A table, showing the time when the influenza of 1782 began and ceased in Chester and the neighbouring towns:—

	Miles and bearings from Chester.	First patient.	Days after Chester.	Last patient.	Days' duration.
Chester . . . .	...	May 26	...	July 7	42
Tarporley . . .	S.E. 10	June 6	11	...	...
Holywell . . .	N.W. 18	June 6	11	July 7	31
Malpas	S.E. 15	June 7	12	July 25	...
Frodsham . . .	N.E. 10	June 7	12	Aug. 5	59
Middlewich . .	E. 20	June 9	14	...	...
Wrexham . . .	S.W. 12	June 10	15	July 20	40
Mold	W. 12	June 13	18	Aug. 1	48
Ruthin	W. 20	June 14	19	July 12	28
Oswestry . . .	S.W. 28	June 14	19	July 8	24

"Having remarked that the influenza of 1775 began sooner in towns than in the villages near them, I inquired among my medical correspondents, what they observed as to this point in the epidemic of 1782. The uniform testimony in regard to all the nine towns named in the table was, that it began earlier in each of them than in the surrounding villages and the scattered houses in the country.

"As the first patient I had seen in the influenza of 1775 was the landlady of a principal inn, and as I had observed so distinctly that the epidemic of 1782 was brought into Chester by a patient coming from London, I stated this question to my correspondents: 'Could you discover whether the distemper was introduced into your town from any place where it had previously attacked the inhabitants?'

"My answers were, '1. That the first patient who had the disease in Frodsham was seized with it as he was returning thither from Manchester. 2. That at Malpas, the first patient was the landlady of the inn and her family, a week sooner than any other patient in the town. 3. That the first person who had the distemper in Middlewich brought it from Liverpool. 4. That the first person affected with the influenza at Mold had been at Chester a few days before, in a family ill of that distemper. 5. That a gentleman arrived at Oswestry ill of the influenza, before the inhabitants were attacked. 6. That at Tarporley the first person seized was a postillion, who had driven a chaise thither from Warrington, where the distemper

had previously appeared. 7. That at Wrexham the first patient came from Chester, and the second from Shrewsbury. But my correspondents at Holywell and Ruthin did not recollect by whom it was brought into those towns.'

"All these facts were accurately and faithfully ascertained, in order to determine the following questions:—

"1, 2, 3? How far does the propagation of the influenza depend upon climate, weather, or season?

"1. In 1775, the epidemic came from the southern part of Europe and spread to the north. In 1782 it came from Russia and spread to the south.

"2. During the spring and summer of 1782 the weather was remarkably wet and cold, except for ten days; from the 16th till the 25th of June inclusive, it was extremely hot and dry, except some thunder-showers. The facts ascertained in the table, compared with this state of the weather, do not prove that it had any influence.

"3. Season manifestly is not the cause of its rise or propagation, as these and similar epidemics have appeared and spread at opposite times of the year.

"4, 5? Is the influenza conveyed from one place to another by the wind; or does it spread through the atmosphere like sound, from a centre, gradually and uniformly to all the surrounding places?

"4. Before and during the influenza of 1775 and 1782, the wind was so variable in degree and direction, as to suggest no suspicion that it had any particular effect.

"4, 5. These suppositions are fully refuted by the facts above related. For both the influenza of 1775 and 1782 appeared in towns earlier than the villages and scattered houses which surround them, so as to refute all analogy with the course of the wind or the propagation of sound. To Chester the contagion was brought from London, yet these facts prove that it did not spread from London as a centre. If the influenza was conveyed by the wind, it would pass through the whole extent of Great Britain, being about 800 miles, in twenty-seven hours, by a moderate breeze of thirty miles an hour, and in less than half that time by a brisk gale. If the influenza travelled like sound, at near thirteen miles in a minute, it must infect the whole island in an hour.

"6? Can it be supposed, that the first patient who comes into a town contaminates the atmosphere of the place, so as to render it generally pestilential in regard to this distemper?

"6. If this hypothesis were true, the general seizure must have been much more sudden than what actually took place. In the two families which were first attacked by the influenza in 1782, the greatest part of both of them had the distemper in a week or less after its first appearance in each. Now, if all the inhabitants of a town were infected at once, the seizure of the first and last patient could not have been at so great a distance of time as represented in the table.

"7? Does the influenza spread by contagion of patients in the distemper?

"7. Many facts above related manifestly prove the truth of this conclusion. At Chester and most of the towns which surround this city, I had the good fortune to discover the individual person who brought it into each place, previous to the general seizure of the inhabitants. The intercourse is greater from the metropolis to Chester than to the other towns in its neighbourhood. Again, more people go from Chester to the adjacent market-towns than to the villages and scattered houses which surround them. The influenza spread exactly in this order of time, from the metropolis to Chester, to the neighbouring towns, and lastly to the villages.

"The most obvious objection to this conclusion which occurs to me, is the swift progress of the epidemic. It attacked a great proportion of the inhabitants of a large town in ten days or a fortnight, and passed through a whole kingdom in a few weeks. How different is this general seizure from the progress of another distemper, which is allowed to be propagated by contagion! The smallpox will remain in one narrow lane, entry, or court, for several months, without attacking all the inhabitants who are liable to receive it, as we had numerous proofs during the time when the Smallpox Society of Chester was established. If both distempers spread by the same cause, and according to the same law, what reason can be given why the progress of the one is so rapid, and the other so slow?

"1. The smallpox is generally attended with so much fever, pain, etc., as to confine the patient at home; but if one now

and then go abroad, his aspect is so distinguishable and loathsome as to excite horror in every beholder who is liable to infection, and apprizes him of the danger so as to avoid it. In the influenza, the far greater number mix with society through the whole disease without reserve. There is no caution and no fear to keep the infectious separate from those who are liable to infection.

“ 2. The gentleman who brought the distemper into Chester in 1782, from London, travelled with it at the rate of 182 miles in twenty-seven hours. Such facts explain in a satisfactory manner why it spread through the whole island in so short a period of time.

“ 3. Again, a large proportion of the inhabitants in most towns having had the smallpox, few are liable to receive and spread the infection; whereas persons who have had the influenza, being not exempted from a future attack, a large proportion of persons are capable of receiving and propagating the distemper.

“ 4. Another cause has some, though less, influence. There seems to be a shorter *latent* period between infection and the commencement of the disease in the influenza. The lady who caught it first in 1782 from her visitor, was seized on the third day inclusive (about forty-eight hours) after the interview. In the next family, the wife was seized on the fifth day inclusive, after her husband, though, probably, he might not be infectious, as soon as the disease commenced. It is well known that the period between infection and the commencement of the smallpox is much longer.

“The substance of this paper was communicated to the College of Physicians, in answer to their address to the physicians of Great Britain and Ireland, to obtain information when the influenza of 1782 first appeared in their respective neighbourhoods, and at what time it ceased. In a letter from my highly respected friend, the late Dr. Heberden, dated the 13th November 1782, he wrote the following intelligence: ‘Your paper on the Influenza came just in time to be read with the others at the College. I looked it over, as you had desired, before I gave it in, and finding nothing which I thought required any alteration, I delivered it to Dr. R——

last night. At the first reading of the papers which had been sent to the College, it was the first paper that was read. It gave, I perceived, very general satisfaction.'

"Why the publication of this disquisition should have been delayed for twenty years, and yet why it is now laid before the public, may require some explanation.

"The contagious nature of the influenza had, I thought, been sufficiently proved by many physicians, and among others by Dr. Falconer, in his account of that epidemic in 1782.

"But a contrary and, as I think, a very pernicious opinion has lately been supported by physicians of great respectability; and authors of the highest reputation, not, indeed, in this, but in other enlightened nations, have ascribed not only this but many other epidemics, even the plague itself, to a morbid constitution of the atmosphere, independent of contagion. To determine whether this doctrine be true or false, is of the highest importance to mankind. Knowledge, in this instance, is power. So far as it can be proved, that a disease is produced by contagion, human wisdom can prevent the mischief. But the morbid constitution of the atmosphere cannot possibly be corrected or controuled by man.

"This important question may fairly be brought to issue on the present occasion. Let the facts above recorded, in regard to the progress of the epidemics of 1775 and 1782, be compared with what has happened in 1803. We first heard of it at Paris, where it spread so early as the 10th of January; then in London, next in Bath, Chester, and other large towns which have the greatest intercourse with London; afterwards in smaller towns; and, last of all, in the villages which surround them.

"It is contended, that no hypothesis about the wind, weather, season, or any morbid constitution of the atmosphere whatsoever, can possibly account for such facts. But the progress of the epidemic may be distinctly traced, and explained in the most satisfactory manner, by personal contagion of travellers ill of the distemper, who, as above related, actually conveyed it from place to place. While these events are fresh in the memory of medical observers in every town in the kingdom, I wish to appeal to their testimony to correct any false representation in regard to the present epidemic. On the contrary, I have no doubt that many of them will have had the sagacity

to discover the individual patient who first introduced the distemper into each place. No physician ought to be satisfied with conjectures, when such numerous and decisive facts are so obvious to every observer.

"It might be difficult to exterminate the influenza from any country, because it spreads so quickly and universally through all ranks of people, being attended with little danger to the generality of mankind. But as the influenza is fatal to patients ill of many other diseases, or debilitated by age, it is certainly of much importance to know that such persons may be preserved from the contagion by cautious *separation*, so as to prevent every patient ill of the distemper from approaching them; and by strict *cleanliness*, so that no dirty clothes, etc., which can contain infection, may be brought to them.

"In order to discover what effect this distemper produced on the bills of mortality, I classed the mortal diseases of Chester for ten weeks, during which period the epidemic seemed to have a fatal influence. From the middle of November 1775, till the end of January 1776, there died 43 by *decay of age*, and 20 by *asthma*, and only 62 by all other known diseases."

During this year the brown tail moth occasioned such alarm in the vicinity of the metropolis by its devastations, that rewards were offered for collecting the caterpillars; and the churchwardens and overseers of the parishes attended to see them burnt by bushels.¹

In 1783 the *Bostrichus Typographus* attained its height and migrated in swarms from the Hartz mountains into Swabia and Franconia, a million and a half of trees were destroyed by it, threatening the inhabitants with the suspension of their mining works, when happily a succession of cold, wet seasons abated the scourge.²

After this period Europe appears to have remained free from any widely-diffused visitation of influenza for nearly twenty years; it occurred, indeed, during the year 1788, in some parts of the Continent, chiefly in Paris and Vienna, but does not appear to any considerable extent to have afflicted

¹ Kirby and Spence, *Entom.* vol. i. p. 209.

² Latreille, *Hist. Nat.* xi. 194.

any part of Britain, with the exception of Plymouth, where it attacked chiefly persons exposed to the weather;¹ but the disease prevailed in America in 1789-90, as appears from the following letter from Dr. Warren, of Boston, which, from its intrinsic interest and succinct description of the disease, as occurring among our Transatlantic brethren, the editor is tempted to introduce.

EPIDEMIC OF 1789-90

DR. WARREN²

"BOSTON, May 30, 1790.

"The influenza, well known in Europe, invaded the whole of the United States in the course of the last autumn. The symptoms with which it was attended were much the same with those described by Dr. Fothergill in his work, and by Dr. Hamilton in his letter to you, contained in the memoirs of the Med. Soc. of London, as attendant on the epidemic of 1782. Similar methods of treatment, with those therein recommended were generally found successful. It prevailed here in November and December; at Georgia, the most southern state in the Union, in September; and in the British government of Nova Scotia in December. The present spring, with us, has been remarkable for an epidemic, almost as universally prevalent as that in the fall. The symptoms, however, were extremely different, as far at least as they have fallen under my own observation. In the latter the affection was almost entirely confined to the Schneiderian membrane, insomuch that though the same disease has undoubtedly frequently made its appearance in this country before, yet from its assuming the form of a catarrhal fever, it has never been noticed under any other denomination. In the former this membrane was seldom diseased. The attack was for the most part sudden and violent

¹ Observations on the Influenza as it appeared at Plymouth, in the summer and autumn of the year 1788, by Mr. Vaughan May. (Medical Commentaries for the year 1789, vol. xiv.)

² Memoirs of the Life and Writings of J. Coakley Lettsom. By Thomas Joseph Pettigrew. Vol. iii. p. 234; 1817.

generally, without any cough at this period, without coryza, and without those pungent pains (so remarkable in the influenza) about the frontal sinuses. I do not recollect seeing a single instance of stricture in the antrum highmorianum which in many cases attended the sick in the fall. The predominant complaint at the seizure was violent pain in the back and limbs, sometimes with headache, often without, and rarely preceded by very severe rigor. The pulse frequent, seldom very full, sometimes however hard, and attended with peripneumonic affection; the tongue oftener dry than in the epidemic of the fall; but, like that, covered with but little saburra.

"In this stage an emetic generally removed all the complaint in thirty-six or forty-eight hours, except the debility. This was attended with loss of appetite, and frequently continued for several days afterwards. Small doses of emetic tartar, combined with an opiate preparation, were sometimes necessary to determine to the skin, promote expectoration and relieve a slight cough, with which some were afflicted. Those who did not take the emetic in the beginning were not so completely relieved by it afterwards, and the cure was often protracted to the term of two or three weeks. In no disease do I recollect ever to have met with such immediate and sensible success from medicines of this class, as in that which I am describing; and this I may remark was by no means in proportion to the quantity of matter evacuated from the stomach, for the relief was as complete when nothing was discharged, but the substances just taken down, as when large quantities of bile were ejected. The efficacy of the emetic seems to have depended upon the relaxation of the cutaneous vessels consequent on the nausea which it excited, and upon the force of re-action in the act of vomiting, produced by the contraction of the diaphragm and of the abdominal muscles. The facility with which the severe pain in the breast, and the stitches in the side, experienced by some, yielded to this remedy, seems to confirm the hypothesis that they were doubtless spasmodic, and to remove the spasm was the evident indication.

"I must, however, remark that the sweats with which this disease terminated were by no means so profuse as in the autumnal epidemic; they were rather a moderate and universal diaphoresis; children under eight years of age commonly

escaped it as they did also that of the fall. Few adults were exempt from its ravages, and I cannot find that the aged were less subject to it than others; most who died were of the latter class, yet the bills of mortality were remarkably enlarged in all ages at the epidemic period. It began about the middle of last month in this town, and spread as universally through the country as through the metropolis, and that with such astonishing rapidity that it was scarcely possible to notice any circumstances that might lead to the ascertaining the degree of its contagion. It is now about three weeks since it ceased in the capital, and we have not yet obtained any accurate histories of its progress in the country. The first appearance of it is said to have been earlier than here, pretty high up upon the Hudson River; thence it is said to have proceeded down Connecticut River, and to have bent its course hither, after which we heard of it at Portsmouth, sixty miles eastward, before it appeared at Salem, which is forty miles on this side the capital of New Hampshire. At New York, as far as I can learn, its appearance was somewhat later than here, and our beloved President Washington is but now on the recovery from a very severe and dangerous attack of it in that city. From all accounts I have been able to collect, bleeding was sometimes but seldom had recourse to; blistering, very commonly and almost always with success, especially in cases where the disease assumed the form, as it was often observed to do, of a rheumatic affection. Whether this is a variety of influenza, or a new disease with us, I am at a loss to determine. The first stage of it appears very dissimilar from it, but the last approaches nearer to a likeness. I have not met with any account of it under this form, and can scarcely believe that the difference of season is sufficient to explain the variation of symptoms, nor so far as I can learn, are there any instances recorded of its return in Europe, at so short an interval as that of the instance in question. The periods of 1510,—57, 80, 87, and 91: 1709,—32 and 33: 1743,—62, 67, 75, and 82 are much more distant. The summer preceding the fall disease was remarkably hot. Mean height of the thermometer, September, 75°; October, 63°; in Pennsylvania; which is ten degrees higher than usual. The last winter was uncommonly mild and rainy. The diseases of that season numerous, both synocha

and typhus. I could wish to know whether any such disease has appeared with you, and at what period? Your opinion whether it may be considered as a variety of influenza would greatly oblige me.

“ I am, Sir,

“ With great respect and esteem,

“ Your obliged friend, and most obedient servant,

“ JOHN WARREN.”

EPIDEMIC OF 1803

1. VARIOUS AUTHORS

The influenza of 1803 prevailed in France, especially in Paris, and in some of the northern departments of the Republic, and in Holland long before it was experienced in England. It seems to have been first observed in London early in January, and to have occupied nearly three months in its diffusion over the kingdom, advancing northwards before it raged to any considerable extent in the west of England, but to this statement there are some remarkable exceptions. For example, it appeared in Taunton as early as the 15th of January, and did not reach Chester till the 30th of that month. The adjoining table gives an idea of its course, as deduced from the statements of observers in the different districts specified, and renders it obvious that the disorder did not proceed by orderly and successive steps, but rather alighted at various and distant points with seeming capriciousness. It reached Portsea, Hull, and East Retford, nearly on the same day; but it existed at Doncaster two weeks, and at Newark three weeks earlier, although these places were respectively only eighteen and twenty miles distant from Retford. Six or seven months elapsed between the time of its first appearance in the country and its cessation; and, as a general rule, although the duration of its virulence might not materially vary, yet it was longest in disappearing at the places where it was first harboured.

It was pretty generally observed, that the disease prevailed in cities before it appeared in the neighbouring villages.

"I remember," says Dr. Callaman of Cork, "our being free from it in town by the time it had reached the remote parts of the country, even the difference of a week, at a distance of less than twelve miles, where the communication with town was not so frequent as in the late epidemic, when the playhouse and assizes brought town and country more in contact."¹

From Bridgewater, at which place influenza prevailed in the month of February, writes Mr. Symes on the 9th of April 1803, "There are many places in this neighbourhood, with which the inhabitants have no intercourse, where the influenza has not made its appearance."²

"The epidemic appeared at Manchester at an earlier date than in the neighbouring towns. An interval of about ten days elapsed from its spread here to the time of its reaching Bolton, and some other populous places situated at about twelve miles' distance. It seemed to diverge from Manchester, as from a centre, to the surrounding country, but certainly appeared in the more crowded and populous towns, placed at the extremities of the circle, than in the intermediate space, which contains a thinner and more scattered population. This may be explained from the greater intercourse subsisting between the larger manufacturing towns and Manchester; and likewise from the consideration, that in towns where the inhabitants are crowded together, the propagation of contagion is much more favoured than in the less populous country villages and detached dwellings."³

The same circumstance was noticed in many other places, of which Shrewsbury, Rochester, and Ashbourne, may be specially mentioned. It is, however, fair to give the opinion expressed by Dr. Woodforde, although not in harmony with the statements of other observers: "The disease must naturally attract attention, first in the metropolis and other cities, from their corresponding population and greater number of the sick. This circumstance seems to have given rise to a precipitate conclusion, that these were the places first attacked, and that from these it was diffused progressively through all the others."

¹ Medical and Physical Journal, vol. x. p. 524.

² Idem, p. 228.

³ Dr. Bardsley, Medical and Physical Journal, vol. x. p. 211.

Whereas, it is more probable, that the disease broke out in all these places at or nearly the same time.”¹

The following table represents as nearly as can be ascertained the progress of the epidemic throughout the country.

Places.	Commencement.	Height.	Disappearance.
London	Early in Jan.	April	June
Dublin	Jan.	...	July
Armagh	Jan.	...	...
Pontefract	Middle of Jan.	...	June
Taunton	15 Jan.	April and May	July
Yarmouth	22 Jan.	15 March, 20 April	17 June
Oxford	End of Jan.	3d week of Feb.	3d week of March
Chester	30 Jan.	Middle of Feb.	Middle of April
Hertford	1 Feb.	10-25 March	Beginning of April
Stourbridge	1 Feb.	...	...
Coggleshall	Begin. of Feb.	March	End of April
Manchester	4 Feb.	26 March	26 April
Sunderland	6 Feb.	9 March	...
Halifax	8 Feb.	...	...
Edinburgh	10 Feb.	End of March	...
Lincoln	15 Feb.	25 March	26 April
Ryegate	15 Feb.	March	May
Kidderminster	15 Feb.	End of March	Middle of May
York	Feb.	March	June
Minchin Hamp- ton Stone }	16 Feb.	...	Beginning of May
Leicester	18 Feb.	10 April	25 May
Cardiff	18 Feb.	...	...
Worcester	20 Feb.	26 March	Beginning of May
Rochester	25 Feb.	...	...
Lewes . . . .	...	Middle of March	April
Liverpool	27 Feb.	3d week of March	End of April
Ludlow	do.	Beginning of May	...
Aberdeen	do.	End of March	...
Caermarthen	do.	...	Middle of May
Honiton	1 March	...	Middle of May
Plymouth	2 March	...	12 May
Shrewsbury	3 March	20 March	20 April
Frome	Begin. of March	...	July
Almsford	Begin. of March	Beginning of April	June
Clifton	5 March	18 March	...
Swansea	7 March	...	19 April
Gosport	10 March	...	End of May
Lichfield	10 March	1 April	1 May
Newcastle . . . .	...	Middle of April	...
Portsea	18 March	...	...
Cork	20 March	29 April	20 May
Hull	20 March	10 April	End of April
Isle of Man	24 March	...	...
Penzance	25 March	...	...
Fulneck near Leeds	End of March	End of May	July
Biddeford	30 March	...	June
Dumbarton	Begin. of April	...	...
St. Andrews	Middle of April	...	...

¹ Medical and Physical Journal, vol. ix. p. 505.

Immunities.—Many remarkable instances of immunity are mentioned by practitioners, for the most part having reference to schools or other establishments. At Huddersfield, schools are said to have generally escaped.¹ At Gosport, in a school of about 80, only 4 applied for relief.²

It is difficult to assign any reason for such immunity, which was by no means universal in similar establishments.

The influenza first appeared at Brompton, near Rochester, in the evening of the 25th of February, when it seized 28 of Mr. Hulet's scholars.³ In the house of industry at Worcester, containing about 160 persons, nearly one half of whom are children, not more than 5 or 6 were affected, and those slightly.⁴ In a school for young ladies, consisting of 33 residing in the house, not one was indisposed; the day scholars were not equally exempt.⁵ In a second school of the same nature, consisting with the family of 48, more than 20 suffered, but here only one of the pupils had the disorder with any considerable degree of violence, though the grown-up individuals of the family had it with that degree of severity which more generally prevailed.

In a workhouse at Ryegate, wherein there are 200 people employed in a blanket manufactory wherein oil is used, no decided instance of the influenza occurred!⁶

Within four miles of Pontefract, there is a pottery consisting of upwards of 300 souls; they have daily intercourse with the town and every part of the country, yet not a single person of them has suffered from the disease.⁷

The lunatics in the Hereford Asylum were not affected.⁸

Some prisons were similarly favoured. "The city gaol at Worcester, including the governor's family, contained on an average 23, all of whom escaped. The county gaol contained men debtors 11, and 1 woman debtor. Men felons 24, women ditto 15, with 3 children. The governor's family 7, in all 61; of these only the governor and his daughter had the complaint, and they very severely. The house of correction contained,

¹ Dr. Oakley, Mem. Med. Society of London, vol. vi. p. 356.

² Mr. Harper, idem, p. 566.

³ Idem, p. 582.

⁴ Idem, p. 438.

⁵ Idem, p. 436.

⁶ Idem, p. 580.

⁷ Mr. Jeaffreson, idem, p. 349.

⁸ Dr. Blount, Medical and Physical Journal, vol. x. p. 127.

men 18, women 7, 3 children, and the governor's family 2, in all 30. Of these only the governor had it, and he also very severely."¹

There were some places which appeared very long to resist, and some never to admit the disease. Mr. Whateley, of Burton-on-Trent, says: "I feel satisfied the disorder, which was so prevalent in most parts of the kingdom early in the year, was never met with in this place or its immediate vicinity, at least not commonly."²

"The town of Wisbeach had a circumvallum of health, none of the neighbouring villages had been visited by influenza, and many parts of England have not been visited by influenza. How is this to be accounted for? Not surely by saying they had no communication with the diseased. I have seen the disease in the most sequestered situations. It may be worth while to inform you a little as to the country I now inhabit; it is a country *sui generis*. We have a few inconsiderable rivers moving sluggishly to the sea, but every four or five acres for twenty miles around me, is surrounded by a ditch with stagnated water. When these ditches are filled with water, the people are healthy, and in proportion as water diminishes, our epidemic diseases increase. We had very little rain here during the winter and spring, but much dry weather and unusual warmth in the spring months. These are the reasons, in my opinion, why influenza was complicated with our endemics; and they lead me also to believe, that influenza is a weed of our own growth, that is, that it would have appeared here without communication with any other place."³

"The epidemic, in its genuine form, exhibited the following symptoms: spontaneous weariness and languor, succeeded by slight shiverings, with alternate flushings of heat, first attack the patient: he then complains of a deep-seated pain in the course of the frontal sinuses, accompanied, for the most part, with sneezing, and a profuse discharge of lymph from the nose and eyes. In the space of an hour, acute, darting pain in the muscles subservient to respiration, attended with a tickling cough, and hoarseness, frequently occur; as the disease advances, the

¹ Mr. Rayment, Mem. Med. Soc., vol. vi. pp. 435, 436.

² Medical and Physical Journal, vol. vi. p. 521.

³ Dr. Frazer, June 12, 1803; idem, vol. x. p. 207.

patient complains of much anxiety about the precordia, dull, aching pains in the back and knee-joints, and of great debility, languor, and depression of spirits. The pulse is small and quick, seldom if ever hard and full; the tongue is covered with an extremely white mucus, and has the appearance of having been suffused with milk. The tongue being moist, little or no complaint is made of thirst. The appetite is not only entirely lost, but a fixed loathing of any solid food is expressed: on the third day, and sometimes as late as the fourth, the disease seems to have attained its acme. The above description is only intended to apply to the genuine unmixed form of the epidemic. Modified by age, sex, and temperament, and (admitting it to be contagious) by the circumstances under which contagion was communicated, it exhibited a remarkable diversity in its effects, upon different subjects; yet in every case some degree of resemblance might be observed. Its distinctive character was never completely lost. In most delicate females, either sickness or diarrhoea, with transient shiverings and debility, unaccompanied with any catarrhal affection, formed the prominent symptoms of the disease.

"In some the mucous membrane was but slightly inflamed; in others, great pain and difficulty of breathing, with a sense of rawness and soreness of the trachea and chest, indicated more extensive inflammation. Members of the same family were differently afflicted,—some were sorely affected with the almost pathognomonic symptoms of intense pain in the head and general debility; others chiefly suffered from the catarrhal affection, attended with unusual languor, and derangement of the stomach and bowels."¹

"There was considerable diversity of symptoms in different constitutions, and perhaps in different localities. The pulse, for example, was sometimes full and tense, but generally became soft on the occurrence of free perspiration."²

"There was another variety of pulse not unfrequent, this was extreme slowness, accompanied with weakness; in several persons there were only 60 pulsations in the minute; and in one lady, not naturally subject to slow pulse, it was at 58 for many days, and did not amount to 65 for three weeks."³

¹ Mem. Med. Society of London, vol. vi. pp. 359-361.

² Idem, p. 306.

³ Idem, p. 509.

Mr. Hodson of Lewes met with two or three cases, in which the pulse was remarkably slow; one was in a robust lad, about eighteen, whose pulse, soon after the commencement of the attack, was only 40 in a minute. He, however, very soon got well under simple treatment.¹

"The pains in the chest or sides² were often very acute and violent, much increased on coughing, or on any motion of the body; but they seldom continued long fixed in one part, and though increased, on making a full inspiration, were certainly not attended with that great and permanent dyspnœa so usually attending genuine pneumonia."

"Often there was not so much fixed pain as general discomfort. The patients complained of universal uneasiness, and when they were asked what part was most affected, they said they could not tell for they had not a free part about them."³

"A great loss of appetite commonly occurred, with a loss of distinction of taste. In many cases there was a disagreeable saccharine odour in the breath, which remained for weeks."⁴

"Under circumstances of aggravation the patient was affected with nausea, anorexia, bilious vomiting, and purging, icteric discoloration of the skin and of the eyes, a sense of fulness in the right hypochondrium, laborious breathing, bloody expectoration, epistaxis, muttering delirium, and extreme depression of mental energy."⁵

"When diarrhœa occurred, which was not common, the cough was usually slight. When the weather became warmer, the disease did not abate; but, on the contrary, vomiting occurred more frequently."⁶

"The patients in general, if they gave a false step, or bent their head forward or sideways, imagined, to use their own expressions, that their brains were likely to fall out. Deafness and tinnitus aurium were not alike common to all. Rheumatic persons, or that had been previously subject to intermittents, had a fixed pain in one of the temples, vulgarly called megrim, which, as usual, put on remittent exacerbations; a sharp, cold rheum or fluid, as clear as rock water, run from one or both nostrils; a total want of taste and smell for upwards of three

¹ Mem. Med. Soc. of London, vol. vi. p. 593.

² Idem, p. 534.

³ Idem, p. 398. ⁴ Idem, p. 426. ⁵ Idem, p. 546. ⁶ Idem, p. 595.

weeks, affected some of my patients, quick pulse, tightness across the sternum, laborious respiration, preceded by rigor, and all the other leading symptoms of pyrexia; these, in most cases, terminated in four days, with lassitude, feebleness of the knees, stiffness of all the joints, and great decay of strength,—some actually fainted away, and continued cold so long as to give concern for the event.”

“The affection of the head sometimes amounted to delirium, especially during the night; in a few instances a certain degree of stupor took place.”¹

“This affection of the head was perhaps most frequently observed in robust young people.”²

“In some the countenance swelled with a bloated puffy appearance.”³

“In many instances the fever was exceedingly high for two or three days; but, about the fourth day, usually abated.”⁴

“The sweat in the night, independently of the use of sudorifics, was often more profuse than in an ague fit.”⁵

“Towards the close of the disease it evidently assumed in many cases, though not in all, an intermittent type, at which time the cough gradually abated; the expectoration became more free, and the sputa more consistent.”⁶

“The disorder sometimes terminated in perspiration, sometimes in spontaneous diarrhoea; but after the feverish symptoms vanished in that way, a cough, want of appetite, with a bad taste in the mouth often remained behind, which were removed by an emetic, and suitable remedies for a cough. When combined with exquisite pleurisy or peripneumony, it required medical assistance; its resolution was expedited by blood-letting, general and local blistering, mucilaginous and acid expectorants, attenuating, diluting regimen, etc. In cases of inflammatory pneumonic affection, where adequate bloodletting had not been employed, the disease sometimes terminated in vomica, and often in death.”⁷

“The urine in some cases was very much diminished, sometimes very high-coloured; and, during the height of the disease, deposited a pink-coloured sediment.”⁸

¹ Mem. Med. Society of London, vol. vi. p. 422.

³ Idem, p. 273.

⁶ Idem, p. 382.

⁴ Idem, p. 294.

⁷ Idem, p. 278.

² Idem, p. 428.

⁵ Idem, p. 399.

⁸ Idem, p. 417.

"In cases attended with decidedly inflammatory symptoms the blood was sily or buffed; but did not exhibit this character in uncomplicated cases." ¹

"The young, plethoric, and robust of the male sex were the most severely affected with thoracic and pneumonic affections; the female sex, with affections of the abdominal viscera, bilious and obstinate constipations of the bowels, which, if not removed, the sick became yellow, and died in great distress." ²

"In general it happened that whatever might be the indispositions to which certain persons were habitually affected, these were aggravated even where no appearance of influenza existed; but when it took place, and continued for some days, it seemed to participate of typhus." ³

"In some an acrid discharge from the nose and eyes gave them an appearance not unlike that which they have in the measles." ⁴

"Together with cough and hoarseness many of the younger or middle-aged patients had more or less inflammation of the mucous membrane of the fauces; in a few instances suppuration took place in one or both tonsils, in others it attacked the Eustachian tube and ear, and then formed a very unpleasant part of the disease, producing temporary tinnitus and deafness." ⁵

"Many complained of great soreness in the throat; when upon inspecting the fauces, no morbid appearance could be perceived." ⁶

Some diversity of opinion existed regarding the influence of sex and age, in modifying the liability to the disease.

Of 188 cases, recorded by Mr. Rayment of Worcester, 80 were males, 108 females. ⁷

At Leicester, under Mr. Bishop's observation, four-fifths were females; ⁸ and Dr. Bardsley found female servants peculiarly liable to the complaint.

At many places, as at Fulneck, ⁹ Dublin, ¹⁰ Cork, ¹¹ and

¹ Mem. Med. Society of London, vol. vi. pp. 328, 393. ² Idem, p. 274.

³ Medical and Physical Journal, vol. x. p. 402.

⁴ Mem. Med. Society of London, vol. vi. p. 340.

⁵ Idem, pp. 396, 397.

⁶ Medical and Physical Journal, vol. x. p. 195.

⁷ Mem. Med. Society of London, vol. vi. p. 433.

⁸ Idem, p. 391.

⁹ Idem p. 327.

¹⁰ Idem, p. 290.

¹¹ Idem, p. 295.

Oxford¹ the proportions were equal; probably the observation of Dr. M'Can of Armagh may assist in explaining the discrepancy; "the young, plethoric, and robust of the male sex were the most severely affected with thoracic and pneumonic complications; the female sex with affections of the abdominal viscera."²

"More males died than females, owing to their being more exposed to the inclemency of the weather, and not from any other predisposition."³

Dr. Dixon says, "the proportion of females was greater than that of males when it first appeared; but, afterwards, *vice versa*."⁴

"Heads of families, and very young children, form a comparative exception to its indiscriminate attack; but those who were most obnoxious to the complaint, and felt it most fatally and severely, were old, asthmatic, or otherwise debilitated subjects. It would appear that puerperal women were highly predisposed to, and fatally afflicted with, this malady. One intelligent midwife lost five patients within ten days; and one puerperal patient died of the epidemic in our lying-in hospital. This is so important a fact, and shews the necessity of strict seclusion, from the risk of personal infection, in all puerperal cases, that it cannot be too generally promulgated."⁵

"Relapses appear to have been very frequent at Fulneck and Leeds, but not at Manchester."⁶

At Cork⁷ they were very frequent when the weather became cold, which happened from about the 9th of April to the 18th, when the thermometer fell to 48. Convalescents recovered very slowly, and relapses were common on exposure to cold air.⁸

On a careful comparison of the recorded experience of different practitioners, there is ground for concluding that relapses were decidedly least frequent amongst the patients of those who used calomel pretty freely; and were common when opium, bark, and stimulants were given at an early period of the disease.

The influence of the lunar phases upon the human constitution in producing and modifying disease has been maintained

¹ Mem. Med. Society of London, vol. vi. p. 524.

² Idem, p. 274.

³ Idem, p. 320.

⁴ Idem, p. 307.

⁵ Idem, pp. 361, 362.

⁶ Idem, pp. 329, 366.

⁷ Idem, p. 296.

⁸ Idem, p. 296.

by many authors : it may upon this account be not improper to remark that, at the period (viz. about the 20th of April) when the influenza raged most powerfully, the Moon was in perigee, or nearest to the earth. Several evenings previously to the accession of this disease, slight appearances of aurora borealis had been observed.

In some parts of Norfolk the oats were much blighted by parching winds, and it was found necessary to sow barley again.

Dr. Turton of Swansea inquires whether these results did not follow the line of the earthquake, and whether the earthquake, some few years ago, was not succeeded by a similar national affection ?¹

At Whitehaven, during the continuance of the influenza, the wind was generally from the north, whilst at Sunderland, the south and south-east wind, dry and excessive cold at first prevailed, and latterly it veered about to the west and north-west to which this place lies exposed.

With persons residing on hills, and exposed to all winds, the disease was very prevalent and troublesome.²

On the 26th of April a remarkable shower of two or three thousand meteoric stones, the largest weighing $17\frac{1}{2}$ lbs., occurred at L'Aigle, in Normandy. In the previous year, about June and July, the sheep farms of Tweeddale were dreadfully infested by a caterpillar which was probably the larva of the *Chareas Graminis*, the capricious lepidopterous insect said not to touch the fox-tail grass. Spots of a mile square were totally covered by these caterpillars, and the grass devoured to the root. They made their first appearance in the dry, bent ground, consuming everything green, and though thousands of crows and other birds constantly fed upon them, they gradually spread into the boggy and finer pastures. The only plants spared were the *Calluna vulgaris*, *Juncus squarrosus*, and *Galium saxatile*. Some heavy rains at length drowned or swept them into the drains, many of which were literally stopped. They again made their appearance, but in diminished numbers, during the years 1812, 1824, and 1826.³

¹ Medical and Physical Journal, vol. x. p. 202.

² Mem. Med. Society of London, vol. vi. pp. 312-321.

³ Records of Parish of Yarrow, in Farmer's Magazine, vol. i. p. 124.

Contemporaneous Disease amongst lower Animals.—There is considerable evidence of the prevalence of disease amongst the lower animals shortly before or simultaneously with the prevalence of the influenza.

Mr. Webster of Denham observes, "Previous to the appearance of influenza, I understood there was some contagious disease among the horses."

"At Gosport many cows died this spring."¹

"At Armagh, horses had a disorder similar to the influenza, in the spring of 1802, attended with severe, hard cough, laborious difficult respiration, fever, and great prostration of strength. I had two of my own so affected; they were plentifully blooded, kept on soft mashes, got a ball composed of Aloes, Sal Polychrest, Extractum Glycyrrhizæ, āā ʒss; Calomel, Kermes Mineral, āā ʒj, twice a week; of ʒss Nitre and grana x, of Tartar Emetic, three times a day, the days on which the purging-ball was not given; it terminated favorably by a plentiful discharge by the nostrils; with some it terminated in farcin, and heart strangles, so called; and some it killed. Calves were very differently reared then, and many of them died in the attempt; the bloody murrain prevailed much among horned cattle this spring and summer; and many of them have died of it; calves also die in the rearing."²

At Cork, "many horses during the prevalence of this disorder were attacked with ophthalmia and cough."³

The previous year "many horses died of what the farriers termed the mad staggers; but which, upon dissection, appeared to be occasioned by an inflammation of the lungs and substance of the heart, proving fatal in 36 hours, and within these few weeks this has re-appeared, but less frequent, and infinitely milder."⁴

"Influenza prevailed at this place from the beginning of March to the beginning of May."⁵

"About January a great number of cats in Shrewsbury were seized with what is commonly called the houst, swelled heads, defluxion from the nose and eyes, with vomiting, sometimes purging, and sometimes costiveness. Some died and

¹ Mem. Med. Society of London, vol. vi. p. 576.

² Dr. M'Can, idem, p. 288.

³ Idem, p. 297.

⁴ Idem, p. 414.

⁵ Mr. Hickman, of Burslem, July 3, 1803.

others were relieved by means of opening medicines. At the time the human species became a prey to the influenza, the dogs and horses were evidently affected; many dogs were killed as mad dogs which were not hydrophobic."¹

"A disease called the black quarter² was more than usually prevalent this spring amongst black cattle in the neighbourhood of Whitehaven, and was always fatal. Horses also suffered a slight degree of catarrh."³

At Droitwich influenza was stated to be by no means so general in the town as in the country. During its prevalence the cattle were unhealthy, cows and sheep in particular, and the farmers lost a great number of lambs. Cats also were affected, many of which died.

At Worcester, seven miles south, no epizootic disease was observed.⁴

A disease among cats and cows was noticed at Gosport, four or five months before the outbreak of influenza at that place.⁵

At Dublin dogs had sore eyes, whilst influenza prevailed.⁶

At Garstang, in the month of February, two months before the appearance of influenza in that place, "a very fatal epidemic was predominant among the swine; in the town and neighbourhood whole herds were swept off by it."⁷

"It has been often observed during the prevalence or previous to these epidemics, that various animals and birds have been affected and destroyed; and, if I am not much mistaken, even an impression on the vegetable creation has been somewhere mentioned. I have just learnt, and I have no doubt the information is perfectly correct, that several horses died in this neighbourhood very suddenly during the time the late influenza was at the worst with us. That during the close of the last year and the early months of this, horses were everywhere unusually diseased, that very many died (I knew a neighbour-

¹ Dugard, Mem. Med. Society of London, vol. vi. p. 426; Medical and Physical Journal, vol. x. p. 217.

² "This incurable distemper consists in a powerful inflammation of the lower extremities, which terminates in gangrene. The progress of the disease is very rapid, and young cattle are most liable to it.

³ Dr. Joshua Dixon, Mem. Med. Society of London, vol. vi. p. 316.

⁴ Idem, p. 445.

⁵ Idem, p. 576.

⁶ Dr. Percival, idem, p. 292.

⁷ Mr. William Knipe, idem, p. 379.

ing farmer who lost three, and with difficulty saved several others), and that such were the apprehensions of the farmers for their horses at this time, it was a practice with those who thought the distemper infectious, to put large patches of tar upon the breasts of them by way of preservation; but many attributed, however, these disorders to the horses having eaten insects, which for many weeks were innumerable, and covered the fields in the most extraordinary manner, wherever there was any length of grass, and this, from the mildness of the season, was general in almost every field. These were covered with a sort of spider's web; and wherever you stepped, these insects flew off in vast numbers. I noticed them many times; they were a long-legged, indeed a sort of winged spider, I believe, of the class *Diptera*, named *Oleracea*. A respectable gentleman-farmer, living near Modbury, on whose veracity I have the most perfect reliance, assures me that toward the end of March last and beginning of April, during the prevalence of the influenza, many of his horses and those of his neighbours were very much disordered; the disease among them was called the squinsy, and was marked with the following symptoms: running at the nostrils, cough, sudden weakness, and loss of flesh (these are his own words), none died; abscesses frequently formed and broke externally, between the cheek-bones, about the root of the tongue, and sometimes internally about the same situation. The same intelligent person, Mr. Parsons, tells me, that in November and December last, dogs were generally affected with a disease, termed of them the houst; which, he observed, seems to consist of a continual effort to vomit, and that froth and slime were thrown up by these efforts in considerable quantities; many of these animals were ill several weeks, and many died. In the advanced period of this distemper they were very subject to fits, as they call it, running here and there, and into pools and ponds; several ran off, and have not been since heard of; they never attempted to bite; and, therefore, apprehensions which were at first entertained that they were mad, were soon removed."¹

Relation of the Epidemic to other diseases.—An important inquiry arises regarding the relation of influenza to other

¹ Mr. Dunning, Medical and Physical Journal, vol. x. p. 137.

diseases, and this inquiry resolves itself into two questions. 1st. Whether there be a transition more or less gradual, from a state of atmosphere favourable to influenza, to states of atmosphere tending to produce other special diseases? 2dly. Whether the presence of the influence inducing influenza produces in the system a greater susceptibility to any other diseased actions? As respects the visitation of 1803, this inquiry particularly points to pleurisy, inflammation of the lungs, typhus, dysentery, cholera, quinsy, and exanthematous fevers.

"The young, strong, and plethoric suffered most from exquisite pleurisy and peripneumony; the elderly, plethoric, and asthmatic, from apoplectic and pneumonic affections, both true and spurious. The weak, languid, and relaxed, from low fevers. The concomitant seemed to be connected with the constitutional predisposition of the patient, and made its greatest impression on the most irritable and susceptible organ or part of the system."¹

"When the disease was protracted beyond the tenth day, the pulse became gradually weaker and quicker, and brought on a typhus state."²

"The influenza made its appearance again in May. About the same time, also, a most malignant fever, having some symptoms in common with the influenza, began to rage in that part of Lincolnshire contiguous to us, which has proved fatal to hundreds."³

At Holywell, near Chester, on the other hand, "on the appearance of the influenza, the typhus entirely ceased, and only one case of fever subsequently occurred;"⁴ and at Navan, after the influenza, "a low fever, almost constantly prevailing in the town, disappeared for a considerable time."⁵ "A number were affected in the latter stages of the disease, and some even in the beginning, with severe gripping pains in the belly, tenesmus, and considerable discharge of slimy matter tinged with blood."⁶

"During the months of November and December last, the winds prevailed in the eastern quarter, which continued in

¹ Dr. M'Can, *Mem. Med. Society of London*, vol. vi. p. 275.

² Mr. Hunter, *Dumbarton*; *Medical and Physical Journal*, vol. x. p. 234.

³ Dr. Frazer, *Wisbech*; *idem*, p. 206.

⁴ Dr. Currie, *Chester*; *idem*, p. 214.

⁵ *Idem*, p. 527.

⁶ Mr. Hunter, *Dumbarton*; *idem*, p. 234.

January and part of February of the present year. In this period, diarrhoea and cholera were very prevalent: so nearly similar to that preceding the influenza of 1788, that to many of my friends I hazarded a pretty confident opinion of an expected return. In this I was not deceived."¹

"Some had violent and sudden attacks of vomiting and purging nearly resembling cholera morbus, though the evacuations did not indicate so much error in the biliary secretion either in quantity or quality, yet the majority were, in most of the *catarrhal* cases, costive. Others, again, had considerable affections of the tonsils constituting the *cynanche tonsillaris*, which, however, most commonly terminated in resorption.

"Although it may seem objectionable to include those seemingly distinct disorders under one name, yet I do it from a firm conviction of their being different types of the same disorder, and occasioned by the same cause, as I cannot trace that more than one of the above train of symptoms existed in the same person, either at the same time or in succession, during the whole prevalence of the epidemic."²

At Swansea "the disease was preceded by sore throat, and other diseases of debility."³ Mr. Goodwin, of Framlingham, says, "Typhus, scarlet fever, measles, and mumps prevailed."⁴ "And now I will add, by way of supplement, a short account of the diseases which I have observed to follow the influenza, without endeavouring in the least to shew their connection with it. Catarrh and pneumonia have ever since occurred sporadically, as have likewise cynanche tonsillaris, cynanche pharyngæa, and cynanche parotidæa. From about the beginning of June till the middle of July an exanthematous fever prevailed, and was evidently contagious—although I have not been able to learn that it attacked any except those whom the influenza spared. Some called it a scarlet fever, but a scarlet fever it was not; for there was no florid redness of the skin, nor any desquamation of the cuticle."⁵

"I said in general, as I think I have observed for about

¹ Dr. Vaughan May, Plymouth Dock, June 1803; Medical and Physical Journal, vol. x. p. 291.

² Dr. Bertram, Hull; Mem. Med. Society of London, vol. vi. pp. 331, 332.

³ Dr. Turton, Swansea; Medical and Physical Journal, vol. x. p. 201.

⁴ Idem, vol. ix. p. 509.

⁵ Dr. Vaughan, Rochester; Mem. Med. Society of London, vol. vi. p. 591.

five years past, what is called influenza to partake much of an erysipelatous nature, the fever attending being much of that kind, and local attacks of erysipelas occurring exteriorly on many parts of the body when the lungs were quickly relieved. I have not the smallest doubt but that this type of disease often occurs unobserved, or is mistaken for real inflammation.”¹

Scarlatina and ophthalmia prevailed at nearly the same time at Gosport.² “In the workhouse none of the patients were bled, the disease in the men having taken on the appearance of typhus. They recovered more slowly, while the women were more mildly affected, except in two or three instances, where the disease terminated in phthisis. In these, however, a predisposition to cough seemed to exist prior to the attack of the disease. Children in general, especially those under eight or ten years of age, were but little affected with this complaint; and, what is not a little remarkable, this was the case with those in the workhouses, of which there were a great many. Several had laboured under the whooping-cough, and, as the warm weather advanced in July and August, many were seized with measles, and some with scarlatina anginosa, from which they recovered with little or no medicine.”³

The relation of succession appears to have been noticed by many observers. One or two examples may be added. Typhus was peculiarly prevalent at St. Neot's during the three months preceding the visitation of influenza.⁴

“Before the influenza had run half its career, the scarlatina anginosa became very frequent among our children, and, contrary to the above assertion (viz. that Biddeford is peculiarly happy in resisting epidemics), became the most general epidemic I have ever seen in this town.”⁵

At Hutton Bushell, near Scarborough, “scarlatina anginosa and pertussis succeeded the first appearance of the influenza; the former continued to prevail about three weeks; of the latter there are still some instances (Sept. 18th), two of them

¹ Dr. Doyle, of Ross, Ireland; Medical and Physical Journal, vol. x. p. 194.

² Mr. Walter, Mem. Med. Society of London, vol. vi. p. 575.

³ Mr. Wilkinson, Sunderland; Medical and Physical Journal, vol. x. p. 401.

⁴ Dr. Alvey, Mem. Med. Society of London, vol. vi. p. 462.

⁵ Mr. Smith, Biddeford; Medical and Physical Journal, vol. x. p. 104.

are in the same house, a child and an adult. In this house the influenza prevailed in the spring, but neither of my present patients had it, nor do I recollect that any patient has had the influenza who had been previously attacked by scarlatina or whooping-cough, or *vice versâ*.”¹

It is worthy of remark, that in villages near the sea the scarlatina prevailed before the influenza began, seemed suspended during the epidemic, and first appeared again in those very villages.²

“Influenza did not shew itself among the children, either in the seminaries or workhouses. Scarlatina anginosa had been very general amongst children.”³

“For many months the scarlet fever had been pretty prevalent amongst us, and attacking chiefly female children. The report of a contagious catarrh or influenza existing in various parts of the kingdom called forth my greatest attention; and about the end of April I met with a few instances of catarrh in which the febrile symptoms were for a day or two severe, especially pain of head and back.”⁴

The substitution of one disease for another is favourable to the idea of some similarity of the cause.

“This influenza seems to have superseded or deferred the usual diseases of the spring, as the measles and scarlatina.”⁵

“At Bury St. Edmunds the common diseases in the months of January and February, previous to the influenza, were catarrh, rheumatism (both chronic and acute), measles, and a few slight remaining attacks of scarlet fever.”⁶

“In a few instances of the disease on the second or third day, an eruption like measles came out.”⁷

Dr. Thorp of Ludlow writes (June 2d), “The influenza made its appearance here about the latter end of February, and still continues. It has been gradually declining for more than three weeks.”

“The measles have prevailed to a greater degree in this part of the country within these last two months than ever

¹ Mr. Shann, Medical and Physical Journal, vol. x. p. 394.

² Idem.

³ Mr. Judson, Ware, Herts; Mem. Med. Society of London, vol. vi. p. 516.

⁴ Mr. J. Whateley, Burton-on-Trent; idem, p. 405.

⁵ Mr. Robinson, idem, p. 520.

⁶ Dr. White, idem, p. 491.

⁷ Medical and Physical Journal, vol. x. p. 117.

was known; and elderly people, who had before escaped, have been very generally affected. I have had one patient of 89 years of age, and great numbers of from 50 to 70.”¹

“Since the summer solstice the influenza seemed to be in some measure succeeded by the measles and smallpox, which, however, were not very general, nor of long continuance. They seem to have taken their flight along with the influenza. I have not seen or heard of either measles or smallpox these three weeks past. I have seen but one serious case of influenza during the month of July: it was since the measles and smallpox made their exit; it is hoped it has now made its exit also not to return again with its late concomitants.”—August 6th.²

At Aberdeen, influenza was succeeded by a violent epidemic of measles.³ It would appear from the above statements that a previous influenza exerted no marked effect in modifying measles, but that the latter disease, as well as scarlatina, materially diminished the susceptibility to influenza.

“In a boarding-school consisting of seventy-two boys and eight domestics, one only of the latter, and not more than five boys, were attacked with the common symptoms, two of whom kept their beds for a day or two at the onset. In another school of thirty, with domestics, not more than four; and in a third of fifty young ladies, with teachers and household servants, no more than three, all very slightly affected. Each of these houses had not long before been visited with the measles. Day-scholars were indiscriminately admitted, several of which class were affected with the epidemic.”⁴

The last disease claiming our attention in connection with this inquiry is pulmonary consumption.

The general testimony is favourable to the opinion, that this visitation had a tendency to elicit any existing aptitude to that disease.

“When the influenza attacked subjects apparently pre-disposed to phthisis, it never failed to increase and call into action the latent seeds of that disease, and in several instances

¹ Medical and Physical Journal, vol. x. p. 220.

² Dr. L. M'Can, Armagh; Mem. Med. Society of London, vol. vi. p. 289.

³ Medical and Physical Journal, vol. x. p. 233.

⁴ Mem. Med. Society of London, vol. vi. p. 494.

to induce speedily a confirmed state of it, which quickly proved fatal. Of this I saw one case a few days since; it was a female aged 23, and born of consumptive parents, but who at the time she was seized with influenza, three months ago, was free from any evident phthisical symptoms.”¹

“There cannot be a doubt that it has laid the foundation of phthisis pulmonalis in many habits, particularly in those predisposed to this disorder. I have under my care this moment three cases of it in the incipient stage, evidently originating in this source, and not the slightest tendency to pulmonary consumption appeared in any one of them previous to the appearance of the influenza.”²

“Amongst the lower orders, from inattention to the inflammation along the mucous membrane extending down the bronchia, I can perceive symptoms of phthisis. Of these I have seen above a hundred, who began their tale with—‘Sir, about six weeks ago I had the complaint, but thought nothing of it at the time.’”³

“Since the appearance of my pamphlet on consumption, I have had very numerous applications for the cure of that disease, and more especially since the prevalence of the influenza. Seven out of ten of my phthisical patients dated their complaint from the attack of the epidemic in question, and certainly I think that there is a greater tendency to fatality in the cases originating in the influenza than in those which have sprung from other causes. I find extreme difficulty in combating the symptoms. The powers which I employ successfully in other cases, do not effect the same relief from phthisis arising from the influenza. This is curious, but I have no doubt of the fact.”⁴

A few observers, however, express a contradictory opinion: for example, Dr. Woolcombe of Plymouth writes, “During the prevalence of this epidemic I observed with some surprise that the complaints of consumptive patients, in the various stages of phthisis, were not affected by it in the slightest degree, nor has phthisis been more frequent since. I have met with but

¹ Dr. Woodford, Almsford; Mem. Med. Society of London, vol. vi. p. 538.

² Dr. Ryan, Kilkenny; Medical and Physical Journal, vol. x. p. 301.

³ Dr. Alderson, Hull; idem, p. 126.

⁴ Dr. Mossman, Bradford; idem, p. 388.

one instance of this disease originating in the influenza ;”¹ and a practitioner at Ryegate observes, that “the patients were left very weak and debilitated, and some complained of rheumatic affections, others of a continuance of the cough, but I know of no instance of phthisis pulmonalis succeeding it.”²

Contagion.—There is no department of the subject regarding which there is so great a diversity of opinion among observers, as on the much-vexed question of contagion ; it seems, therefore, desirable to present the most definite statements made on each side of the question.

“The influenza appears to me to be infectious, and the contagion to operate in about twenty-four hours.”³

“Though at first of a contrary opinion, I was soon convinced that the disorder was of a very contagious nature. It appeared very clearly to me, and to the heads of all the very numerous families where I attended, that the complaint did pass from person to person, and the proof is very sufficient, no one family having been affected *en masse*, where the disease did not first appear in some individual of it.”⁴

“In whatever house it appeared it almost invariably attacked every individual comprehending the family, notwithstanding every precaution to guard them against the application of cold and other causes, commonly producing catarrh, and that the complaint appeared to me more prevalent with those using these means of defence, but who were within the influence of infection, than with those who were more frequently or constantly exposed to the atmosphere, and yet out of the reach of contagion. It has made its appearance where the subject has not been exposed to the common air for several months, but with whom others seized with this disorder have had frequent communication : further, in a family where the sick were so numerous that it became necessary to call in the assistance of a nurse, the woman, although in perfect health when she commenced her attendance, and during the same, was never exposed to the cold, yet took the complaint, and died.”⁵

¹ Mem. Med. Society of London, vol. vi. p. 563.

² Idem, p. 578.

³ Mr. Du Gard, Shrewsbury ; Medical and Physical Journal, vol. x. p. 216.

⁴ Mr. Hall, of Bridgenorth ; idem, p. 220.

⁵ Mr. Yeo and Mr. Burroughs, of Clifton ; idem, p. 224.

"It appeared to me to be contagious as it did not seize families all at once; for first one individual was attacked, and in a few days after more were, and so on, until all susceptible of the disease had been affected by it."¹

"The following fact likewise disposed me to consider the complaint as contagious. A gentleman and lady came, in the beginning of March, upon a visit to a gentleman's house in the neighbourhood of Britton Ferry, where some of the family were labouring under the influenza; they came from a part of Carmarthenshire, where the disease had not shewed itself. The lady was seized in the course of a few days after her arrival, and the gentleman a few days afterwards."²

"The first case of well-marked influenza I saw, I believe was on the 5th of March; it happened to be a robust and healthy farmer, who the week before, on a journey into Essex, passed twice through London: he lives in a village about five miles from hence, where, at that period, the influenza had not appeared, but was then universal in London. Many cases come now daily before me, for it very much prevails at this time in this town, and in the neighbouring village."³

"Two ladies of this place spent a few days at Exeter, and slept at a friend's house, where the family had been ill of the influenza (and indeed some part of it then laboured under the complaint); one of them was seized as she was returning, and the other two days after; and the whole family, where they lodged, had the complaint within ten days. About the same time, a person coming from Plymouth Dock, where the influenza was very prevalent, was seized at a friend's house at a different part of the town from the ladies just mentioned. The family of this house, likewise, soon became infected. These were the first instances of the complaint in this town, but it soon became general."⁴

"One large family in the country, and who had little communication with others, escaped the disease till June (*i.e.* for two months). They thought they caught it from their music-master. Seven persons, who attended in succession a lady

¹ Mr. Bond, of Glastonbury; *Medical and Physical Journal*, vol. x. p. 226.

² Dr. Hobbes, Swansea; *idem*, p. 290.

³ Mr. Lawrence, Cirencester; *idem*, p. 200.

⁴ Mr. Harness, Tavistock; *idem*, p. 291.

who had it severely, were attacked with it. Her daughters, who were kept away from her, escaped. Several instances of a similar kind occurred. Nothing that I witnessed authorised me to say positively that the disease was contagious; but I thought it right to separate as much as possible the sick from the well.—Sept. 18.”¹

“Mr. M'Donald, with his wife, his son, and his daughter, were in London in the beginning of 1803; they left London on the 3d of February, at which time the influenza was very prevalent there; but they did not know of their having been in any house where there were individuals subjected to that disease. When they set out on their journey they were all in perfect health. They arrived at Berwick-upon-Tweed on the 8th of February, and were there in a house where there were several persons subjected to influenza. They arrived at Powder Hall, situated within a mile of Edinburgh on the 9th of February. The next day Mr. M'Donald himself was attacked with severe febrile symptoms, attended with uncommon prostration of strength, and all the other appearances which most frequently occur in influenza. Soon after Mr. M'Donald was attacked with this disease, almost every other person in his family, amounting to near a dozen, were attacked in succession; but its progress, as far as I could learn, was not immediately afterwards very rapid in the city of Edinburgh, and I did not myself attend any case where the disease was distinctly marked till the 23d of February, when I was called to a gentleman dangerously ill of the disease, several of whose family had before been affected with it in a much slighter manner. . . .

“The contagion of influenza is not indeed conveyed on the point of a lancet to be intentionally communicated like small-pox; but from all that I have been able to learn of the history of this disease, as recorded by eminent writers for many centuries past, from all that I have seen of it during former epidemics, from its progress during the present epidemic, with very different states of the atmosphere when passed from Paris to London, and from London to Edinburgh, etc.; from its progress in Edinburgh after it appeared in this city; and, finally, from its progress in my own family, after its introduction into

¹ Dr. Fowler, Sarum; Medical and Physical Journal, vol. x. p. 386.

my house ; I have no more doubt of the contagious nature of the influenza than I have of the contagious nature of the measles, chin-cough, or typhus fever.”¹

Mr. Smart of Hutton Bushel observes, that “one person employed to shave another, beginning in the influenza, although this circumstance was unknown to him, went home, and complained of the disagreeable smell of his customer’s breath, and in less than three hours was attacked with the disease ; had it very violently ; but his wife, who slept with him the whole time of his illness, escaped.” Mr. Smart met with several similar instances.²

“A cat was attacked with what I supposed to be the influenza ; it was caressed by a little boy during the time of its illness, and the child became indisposed in about twenty-four hours. He was removed to another house, where he infected his two attendants in about the same time : these three cases were severe. The cat was costive, and by the advice of one of the family, had an injection. It was held by six people, five of whom were seized, in the course of forty-eight hours, by the influenza. Is it probable that these people were infected by the cat, or was it only a coincidence ?”³

Dr. Magennis of Plymouth mentions the following circumstance as the only one which disturbed his opinion of the non-contagiousness of the disease. In a gentleman’s family with which he was intimate, the man-servant was first attacked with severe catarrhal symptoms. “The complaint continuing to increase in violence, and being a married man, it was judged necessary that he should go home to be nursed by his wife. The cook was then seized, and likewise obliged to quit his service. The woman who succeeded the cook, as a temporary substitute, was, in less than forty-eight hours, also attacked with similar symptoms ; and, shortly after, the gentleman’s daughter. In the mean time the man-servant recovered and returned to duty ; but he had not been many days in the house when he was again seized, from which he recovered very slowly, and has continued ever since in a very debilitated state, notwithstanding the use of the most powerful tonics.”⁴

¹ Dr. Duncan, sen., of Edinburgh ; *Med. and Physical Journal*, vol. x. pp. 406, 407.

² *Idem*, p. 397.

³ Mr. Du Gard, Shrewsbury ; *idem*, p. 218.

⁴ *Idem*, p. 122.

"The first case that I perceived (says Mr. Du Gard of Shrewsbury), was, on the 20th of February, in a little boy at the public Grammar School in this town. He was seized with the symptoms of influenza, and was ill a week. His bedfellow was not infected by him, nor were any of the boys in the room, and there were twenty in the same apartment, nor did any one in the house become attacked with the disease till this boy had been well eleven days, at which time five or six were taken ill, and the same number daily, till four-fifths of the school were affected."¹

Mr. Fieldhouse of Stafford writes: "Mr. Ward and myself are fully convinced of its being highly infectious, and ground our opinions on the following circumstance, among many others which occurred. Mr. Ward's family, living in the country, and detached from any house, continued free from the complaint, until a late period, when Mrs. Ward paid a visit to some ladies who were ill in Brewood. She was attacked in three days after being in the family, and returned home; about the same distance of time a little niece that they kept was seized; the child hanging upon Mr. Ward, he was taken ill, with a lady, and the rest of the family. A schoolmaster in Brewood (a small town) kept his scholars and family unconnected with the rest of the inhabitants for a considerable time, until the complaint had nearly disappeared: during this period they continued perfectly free, but taking off that restriction and mixing with the people they were all soon attacked."²

"It appeared to us (observes Dr. Longfield, of Cork), to be very contagious, as some boarding-schools in the country remained free until visited by some person who brought it from the neighbouring towns: its progress was evidently traced from England to Waterford, where it raged before it reached us. Some schools which had little or no communication with large towns, escaped. It did not extend much beyond this city to the south-west: in most instances it went through boarding-schools and manufactories, but progressively and gradually. Three physicians, who attend the house of recovery in this city, were almost immediately attacked after visiting a patient ill of this epidemic in that charity."³

¹ Medical and Physical Journal, vol. x. p. 215.

² Idem, p. 399.

³ Mem. Med. Society of London, vol. vi. pp. 296, 297.

Whatever be the nature of the morbid influence capable of producing the disease, it would seem to have been most virulent in cities, especially where individuals were congregated together in considerable numbers. "During the Lent Assizes the influenza was exceedingly prevalent in Shrewsbury: most of the country-gentlemen, composing the grand-jury, came to town in health, but very few returned without taking the disease along with them. At these assizes a case was tried from Clun, twenty-seven miles south-west of Shrewsbury. Most of those who came here on that account were taken ill of the disease on their return, and spread it all over that little retired town."¹

"The first case (says Mr. Hugo of Crediton), which came under my observation, was on the 22d of March, in the family of a gentleman who resides about three miles west of this town. He had been attending, with his lady, the assizes at Exeter, the whole of the preceding week, at which time the influenza was very general there. They came home both ill of the disease. On the next day the servant who returned with them was seized with it, and by the 25th, it had been communicated to every other person in the house. Some labourers who resided at an adjoining farm, were affected about the same time; but a woman who had been employed at Exeter was the first attacked by it. It appeared very soon afterwards in the town of Crediton; and here, also, the first case I visited was a gentleman who had been attending at the Assize. It spread very rapidly, and in a short time became general in the town and adjoining villages."²

"In some country-places, isolated and detached from any adjacent dwelling, I have known the whole family continue exempt from the influenza, until one of them happened to come to town, bring it home, and, after a few days' confinement, communicate it to the remainder. Though this epidemic diffused itself very extensively through all ranks and descriptions of people, I have notwithstanding known many entire families to escape that must have been constantly exposed to infection, supposing it to exist; nay I have remarked, that some who acted in the quality of nurse-tenders in the family-way did not

¹ Mr. Du Gard, Shrewsbury; Medical and Physical Journal, vol. x. p. 217.

² Idem, p. 311.

take it; but these were few indeed when compared with the immense numbers who caught it by their attendance of the sick."¹

"That the influenza is a contagious disease arising from a specific materies morbi, and readily communicable from one person to another, is rendered probable from various facts, as well as from its analogy to other contagious disorders. Its appearance here, although rapid, was progressive. It spread, like other infectious maladies, more particularly among those exposed by their greater intercourse with each other to the danger of contagion. Female domestics and the inhabitants of the nursery seldom escaped its influence. A gentleman of this town returned from London in the third week of May, while labouring under influenza. He found his family in the country all well; and, unconscious of the infectious nature of his complaint, he bestowed the usual caresses upon his children. Three of them sickened the next day, and two more on the following. The nurses of the house of recovery fell sick soon after the reception of the first cases of the malady, notwithstanding the usual preventive rules against infection were strictly followed.

"At Rochdale, I am assured, the origin of the disease was distinctly traced to some gentlemen who had brought it from Lancaster, where they had attended at the Assizes. But the most complete and satisfactory evidence of the propagation of this disease by contagion (I had almost said the only mode by which it is communicated), is derived from what happened in the Manchester Lunatic Asylum. None of the patients were affected with the epidemic (although permitted to walk out daily in the airing grounds), until the keeper and matron became affected. In consequence of their attention, while labouring under the influenza, to some elderly patients, whose situation demanded more than common care, they communicated the infection to five of the persons thus circumstanced, while all the rest, to the amount of eighty and upwards, entirely escaped the complaint."²

"Well-marked examples often presented of its personal communication. It occurred to me often to remark, that

¹ Dr. Ryan, Kilkenny; Medical and Physical Journal, vol. x. p. 297.

² Dr. Bardsley, Manchester; Mem. Med. Society of London, vol. vi. pp. 367-369.

when the disease had been unduly protracted, and had proved unusually violent, those who were the most occupied in the cure of the patient successively suffered. This fact was so striking, that it soon confirmed me in the propriety of analogically extending to the disease my *general persuasion* of all morbid action being more or less contagious according to the degree of the malady, personal proximity, existing temperature, and temperamental susceptibility for diseased impression. In short, my opinion is, that the late influenza, in common with every variety of epidemic disease, not excepting even the plague, originated from the morbid influence of variable temperature, by which the salutary conditions of vital motion became at length so distempered, as to generate and evolve from every part of the system an *halitus*, or *materies morbi*, proving infectious or not according to its degree of concentration, and the existing temperamental aptitude for being impressed by it. In many instances it may be efficient, while in others it may be quite inert. A similar operation of cause and effect obtains in every description of disease that disturbs vital motions sufficiently to vitiate its salutary processes or functions. The principle of contagion consisting of a specific arrangement of matter issues from every conceivable disease, but it amounts to operative force in comparatively few instances.”¹

The opinion that the disease could be communicated through the medium of clothes was not absolutely without an advocate.

“I am happy to give you an instance where the influenza was brought from Dublin by parcels which were made up by a person very ill of that disorder, and sent to a lady of quality here. As soon as the parcels were unpacked, the person who unpacked them was first seized, then the lady herself, and the whole family were infected, as was the neighbourhood.”²

On the subject of prophylactic measures the following remarks may not be uninteresting:

“Those drinking port wine in moderation, and living much in the open air, appeared less liable to the infection.”³

“A ladies’ school that I attended kept perfectly free by the

¹ Dr. Kinglake, Taunton ; Medical and Physical Journal, vol. x. p. 307.

² Mr. Edgeworth, Edgeworth Town ; idem, p. 302.

³ Dr. Thorp, Ludlow ; idem, p. 220.

constant use of the Nitr. and Ol. Vitriol, notwithstanding the complaint raged at the next door." ¹

"I have considerable reliance from many and repeated trials on the power of acid fumes to weaken the force of, if not altogether to destroy, febrile contagion." ²

"In a school for ladies in this town of near thirty boarders, two of the children had the influenza; but by carefully separating them from the rest, and keeping the fumes of Henry's vinegar constantly in the room and about the bed, all the rest of the family escaped it; but this is the only instance of prevention I knew practised." ³

"It was seldom confined to one individual in a house, except where the acid fumes were used." ⁴

"Fumigating is employed to purify the air in the Salop infirmary, and the floors are mopped with lime water some hours previous to the first process; it did not, however, prevent the introduction of the influenza: indeed how should it, when the friends of the sick are perpetually visiting them from the town?" ⁵

The belief in the contagiousness of the disease, although widely prevalent, was yet, as formerly observed, not universal.

"Many individuals have taken the disorder without any intercourse with the sick. I have seen some instances of one individual in a full family ill of the disease, and all the rest escaped. I have known wives sleep with their disordered husbands without being infected, and husbands sleep with their sick wives with equal impunity. I cannot say that any sickened by immediate contagion or intercourse with the sick, but as they happened to be constitutionally predisposed, and incurred, or were exposed to the exciting cause, which, when closely investigated, could in general be traced up to some evident cause, as exposure to cold air, change of bed, laying aside heavy cloathes and putting on lighter, overheating and getting cold afterwards, fatigue, a wetting, or some such cause. The hurtful impression of cold, however incurred, was the most

¹ Mr. Fieldhonor, Stafford; Medical and Physical Journal, vol. x. p. 399.

² Dr. Bardsley; idem, p. 210.

³ Mr. Baddeley, of Newport, Shropshire; idem, p. 215.

⁴ Dr. Thorp, Ludlow; idem, p. 219.

⁵ Mr. Dugard; idem, p. 399.

general occasional cause both of the primary disease and subsequent relapse. I cannot say that human effluvia had any effect in propagating or multiplying the epidemic. Many more of the inhabitants of the most remote and thinly peopled parts of the country, in proportion to their number, were ill of the epidemic, and suffered a much greater fatality from it than the inhabitants of the most populous streets and closest lanes and alleys. In general, collections of people who were immured or inaccessible to the inclemencies or vicissitudes of the weather, escaped the disease better than those who were at large, and exposed to its hurtful influence. The influenza was not known in the jail, or county infirmary of this place. Of upwards of 400 men of the 18th regiment, who lived in their barracks here for ten months past, paraded, messed, and slept promiscuously, but were kept to regular hours, no more than eight of them had the influenza; while, at the same time, upwards of ten times that number of the county militia regiment that were recruiting here for about three months past, billeted about the county, straggling and exposed to all weather, got ill of the disease. Their surgeons assured me they could not consider it contagious from intercourse with the sick. . . . Of upwards of 70 boarders of the Rev. Dr. Carpendale's school here, who all past the day in school together, messed and played promiscuously, continued to sleep in their respective dormitories without any removal or separation, 25 had the influenza so slightly as not to require medical assistance, and all in succession; some at the interval of one, two, and three days, some after ten days or a fortnight, since any had been ill of it. Dr. Carpendale could not observe that those who slept in beds contiguous to the sick were more disposed to take the disease than those who slept in beds the most remote from them."¹

"The cavalry barracks at Eastborne, occupying a square of about four acres, is situated within a mile of the sea and fifteen yards of the town, but being built on an acclivity is more exposed than Eastborne, particularly to the rage of the S.W. winds, which are very prevalent, and blow at times over Beachy Head with tremendous violence. The officers' apartments are separated by a brick wall from those appropriated for the accommodation of the non-commissioned officers and privates;

¹ Dr. M'Can, Armagh; Mem. Med. Soc. of London, vol. vi. pp. 279-281.

the latter, consisting of ten rooms, are on the same floor. During the month of March last, the influenza was very prevalent at Eastborne, and was epidemic in the town and neighbourhood some time before it made its appearance in the barracks.

“On March 19th, in the evening, two private dragoons in rooms 4 and 7 complained of violent pain in the head and over the eyes ; and every symptom of influenza, as described by Dr. R. Pearson, who all followed the treatment laid down in his publication. One was discharged to his duty on March 24th, the other not till April the 2d, cough and debility resisting the usual remedies. A third dragoon, in room 3, was attacked on March 21st, and remained incapable of doing his duty till May 25th. A fourth private was also attacked on that day in room No. 6, and remained on the sick list till the 27th. The farrier's wife and a child, who were, if I recollect rightly, in the same room, also went through the disease about the same time. All those persons continued in the barrack-room, an hospital not having been then built. The subjoined account will shew at one view the number of persons in each room, and the proportion those attacked bore to those who escaped the disease. I am not prepared to give it as my decided opinion, that the epidemic which lately prevailed was not contagious ; but from its appearance in Eastborne barracks, and all the information I have been able to collect, I am inclined to think that it was not. And I believe that its cause must be sought in the state and variations of the atmosphere, and great and sudden changes of temperature.

*"An Account of the number of Persons who were attacked by or escaped the Influenza in the Commissioned-Officers' and Private-Soldiers' rooms, Eastborne Barracks, March, 1803."*¹

	Men in each room.	Women in each room.	Children in each room.	Total number in each room.	Men attacked by the disease.	Women attacked.	Children attacked.	Total number of those attacked.	Total number of those who escaped.
Quarter-masters' room . . .	1	1	2	4	—	—	—	—	4
Barrack-sergeants' room . . .	1	—	—	1	—	—	—	—	1
Sergeant's room . . .	3	1	2	6	—	—	—	—	6
Soldier's room, No. 1 . . .	7	1	1	9	—	—	—	—	9
— No. 2 . . .	7	1	1	9	—	—	—	—	9
— No. 3 . . .	4	1	1	6	1	—	—	1	5
— No. 4 . . .	8	1	1	10	1	1	1	3	7
— No. 5 . . .	8	—	—	8	—	—	—	—	8
— No. 6 . . .	8	1	1	10	1	—	—	1	9
— No. 7 . . .	8	1	1	10	1	—	—	1	9
	55	8	10	73	4	1	1	6	67 "

A large proportion of the observers express themselves undecidedly as respects the question of contagion.

"I am not obliged to determine, from my own observations, whether the influenza is contagious, or otherwise. I think it may be communicated from one person to another, yet my observations lead me to consider its powers in that way to be weak."²

"Whether the influenza has been a contagious disease or not I really cannot satisfactorily determine. I am of Sir Roger de Coverley's opinion, when he so wisely decided, on another occasion, 'that much might be said on both sides;' however, upon the whole, I think that the preponderance of probability is in the scale of contagion."³

Some consider it to be contagious only when it degenerates into typhus.

Treatment.—By most practitioners who have reported on the subject, emetics are recommended, often in strong terms.

"I almost invariably found that, where an emetic was

¹ Mr. Luscombe, of Eastbourne; *Medical and Physical Journal*, vol. x. p. 107.

² Mr. Lawrence, Cirencester; *idem*, vol. x. p. 199.

³ Mr. Constance, Kidderminster; *idem*, p. 200.

given in the first, or early in the second day, the disease was cut short; and the patient, after experiencing a slight degree of debility, recovered.”¹

“Emetics were found highly beneficial on the first attack; indeed the frequent occurrence of spontaneous nausea and sickness pointed out their use.”²

“The influenza seized 28 of Mr. Hulet’s scholars; out of this number 16 were immediately sent home; and to the 12 who remained, an emetic was administered. . . . The twelve scholars who had been vomiting, and who drank plentifully during the night of weak wine whey, were quite well by the next morning; but the sixteen who were conveyed home were all of them worse; and, indeed, the least attentive observers agree in this, that the influenza, if left to itself, came to its height on the second day.”³

“The sickness was always relieved by a gentle emetic, sometimes a cupful of strong green-tea proved an useful and gentle puke.”⁴

Calomel was, by some practitioners, employed conjointly with emetics;⁵ by others, as a substitute.

“If called in within a few hours after its first attack, the administering a brisk calomel cathartic generally checked its progress, insomuch that, afterwards, not anything more was required. An emetic was attended with nearly the same advantage, but did not so effectually check the progress of the disorder as a calomel purge.”⁶

“In some cases, when rigorously attacked in its commencement with an active medicine that operated briskly in every direction, *quâ datâ portâ*, it was cut short, and, as it were, choaked in its cradle, at least, as to its febrile symptoms.”⁷

Others employed calomel in small doses repeated from time to time.

“The best mode of medical treatment of this com-

¹ Dr. Thorp, Ludlow; Medical and Physical Journal, vol. x. p. 219.

² Dr. Bardsley, Mem. Med. Society of London, vol. vi. p. 362.

³ Dr. Vaughan, Rochester; idem, p. 582.

⁴ Dr. James Flint, St. Andrews; idem, p. 302.

⁵ Dr. Bardsley, idem, p. 362.

⁶ Dr. Robinson, Newcastle, Stafford; Medical and Physical Journal, vol. x. p. 110.

⁷ Dr. M‘Can, Armagh; Mem. Med. Society of London, vol. vi. p. 273.

plaint, according to my observations, consisted in the early employment of antimonial and calomel in small and repeated doses, so as to act gently on the whole alimentary canal." ¹

"To cleanse the *primæ viæ*, moderate doses of calomel, with rhubarb and antimonial powders combined, were given and repeated occasionally with excellent effects." ²

It may probably be accepted as a general rule that relapses were least frequent in the patients of those practitioners who employed repeated small doses of calomel.

When we consider the variety of symptoms attending the complaint, it is not surprising that considerable discrepancy should have existed on the subject of bleeding.

Dr. Thorp, of Ludlow, says "wherever the lancet was used after the first day, the disease became tedious; debility excessive, almost constant nausea, pain in the head violent, and frequently delirium." Mr. Waiblinger, of Fulneck, observes, ³ "I seldom bled, and when I did it, did not perceive any good effect; though sometimes symptoms ran so high as to apprehend violent pulmonic inflammation, yet I seldom found any relief ensuing from bleeding." On the other hand Mr. Bishop, of Leicester, remarks, ⁴ that "in those who appeared to labour under phlegmonic inflammation of the chest in whom recourse was had to general bloodletting in the first instance, pulse being hard, frequent, and oppressed, the evacuation was of considerable advantage in relieving the chest, and abating the hardness of the pulse" (and he proceeds to show that, in such cases, the blood is occasionally cupped and buffed).

"Small, close, hot rooms were always injurious; many received great benefit by opening the windows, or permitting them to go out into the air." ⁵

Dr. Kinglake remarks: that a cold temperature was highly gratifying and beneficial; he recommends a temperature of from 40° to 45° of Fahrenheit, and thinks the complaint was always aggravated when it rose to 60°.

¹ Dr. Wall, Oxford; Mem. Med. Society of London, vol. vi. p. 524.

² Dr. Bardsley, Manchester; idem, p. 362.

³ Idem, p. 328.

⁴ Idem, p. 392.

⁵ Dr. Wall, Oxford; idem, p. 526.

The prevailing opinion was in favour of consulting the feelings of patients, and inclining to cool, free air.

The opinions entertained respecting the use of opium do not perfectly coincide.

"Opiates (says Mr. Swan, of Lincoln) did much good, and were given pretty generally, when no inflammatory or other symptom indicated their use. They quieted the cough, and abated many of the other symptoms."¹

Dr. James Flint, of St. Andrews, writes, "it was necessary to command the cough by gentle opiates as the Elixir Paregor. of the Edinb. Pharmac. Syr. Diacodii, and Sydenham's Tinct. Opii. I never saw any harm from opiates when properly administered."²

By others opium was considered injurious, especially if given in large doses,³ or at the beginning of the disease. Dr. Longfield, Cork,⁴ and Dr. Martin Wall, Oxford,⁵ found that they increased dyspnœa, and produced confusion of the head and costiveness. In one patient, a lady of very weak habit, a few spoonfuls of Syr. Papav. Alb. very nearly produced suffocation.

The most judicious practitioners, for the most part, deferred the use of opiates till after the abatement of any inflammatory symptoms.⁶ By some they were considered safe in combination with such medicines as Ipec. and Antim.⁷

The external application of opium was employed by some. Mr. Evans, of Ketley,⁸ found the following embrocation, when rubbed on to the back and sides of the patient at bedtime, never fail to procure a comfortable night's sleep:

R Tinct. Opii,
Spir. Ammon., Comp.
Lin. Saponis C., āā ʒij. Misc.

Most practitioners agreed in considering the acetate of ammonia a very useful medicine in this disorder; and, for the first two or three days, antimonials were employed with con-

¹ Mem. Med. Society of London, vol. iv. p. 400.

² Idem, p. 304.

³ Dr. Joshua Dixon, of Whitehaven, idem, p. 309; Mr. J. C. Melhurst, Tiverton, idem, p. 544; Dr. Bertram, Hull, idem, p. 333.

⁴ Idem, p. 295.

⁵ Idem, p. 524.

⁶ Dr. Woodford, Almsford; idem, p. 537.

⁷ Mr. Bush of Frome; idem, p. 542.

⁸ Idem, p. 418.

siderable benefit in lessening the feverish state.¹ By others ipecacuanha was thought more appropriate.² Various observers say that oleous medicines were in general ungrateful to the stomach; but many administered Squill, combined with Ammoniacum, or Limoniated Kali (after the inflammatory excitement had abated). Pediluvia were often very useful, especially when used about the time of the accession of the natural evening paroxysm.³

Blisters were particularly serviceable in relieving topical pain and dyspnœa,⁴ but were not considered harmless by all practitioners.⁵

When the disease assumed the intermitting type, recourse was had to red bark as soon as the intermission was complete; and, if taken to the extent of half an ounce in sixteen hours, never failed to prevent the recurrence of the fit.⁶

A very different opinion was entertained by others regarding this medicine.

The bark, in any form, according to Mr. Dixon, of Whitehaven, was never beneficial, but always hurtful.⁷

“Bark, in all its forms, seemed in many cases not only of no advantage, but oftentimes prejudicial; the bowels were thrown into inordinate action; and the languor and debility much increased by the too powerful purgings occasioned by its use; under such circumstances I administered diluted Sulphuric Acid and Tincture of Rhubarb, with Infusion of Cascarilla and Camphor Mixture.”⁸

Mr. Rowe, of Portsea, administered nitre in free doses, namely, half a drachm every hour and a half in a cup of barley-water.⁹

Oranges were found very grateful to most people;¹⁰ but wine was too heating in general, except cowslip, which was an agreeable cordial at bedtime.

Whey, made of orange-juice, was occasionally ordered.¹¹

The greatest number of children (who were under my

¹ Dr. Longfield, Cork; Mem. Med. Society of London, vol. vi. p. 295.

² Medical and Physical Journal, vol. x. p. 521.

³ Idem, p. 227.

⁴ Mem. Med. Society of London, vol. vi. p. 394.

⁵ Mr. Ward, Woodchester; Medical and Physical Journal, vol. x. p. 521.

⁶ Mr. Bond, Glastonbury; idem, p. 228.

⁷ Mem. Med. Society of London, vol. vi. p. 310.

⁸ Dr. Thomas Hull, Retford; idem, p. 385.

⁹ Idem, p. 571.

¹⁰ Idem, p. 418.

¹¹ Dr. Vaughan, Rochester; idem, p. 588.

directions) required no other medicine than as many oranges as they chose to suck.¹

When the cough was incessant and sharp, wandering pains affected the breast and muscles subservient to respiration, attended with a rapid and somewhat hard pulse; the addition in small doses of Tincture of Digitalis, to saline and diaphoretic medicines, not only instigated the cough, but likewise promoted expectoration and induced sleep.²

"*Saltpetre*.—In the evening of March 18th I was desired to attend a female about twenty years of age. She complained of sudden chillings, which were succeeded by faintness, giddiness, throbbing pains in the head, flushes in the jaw, restlessness, weariness, and depression of spirits. Ordered her $\frac{1}{2}$ drachm of Sal. Nitri every hour and a half, dissolved in a cup of barley-water, which she drank of copiously; her extremities were bathed in warm water. When I visited her in the morning of the 19th, I found she had perspired very much through the night; the pain in the head was much relieved; the flushes in the face and the weariness were gone off, and she was in every respect much better. She had now taken about ten drachms of nitre, and continued to take half a drachm every third or fourth hour. On the 20th, she said she was now quite comfortable, but rather costive; discontinued the use of the nitre, and ordered her to take one ounce of vitriolated natron, dissolved in a cup of warm water-gruel, which operated very well. On the 21st all the symptoms were removed, leaving a debility which was removed by a nutritious diet and moderate exercise; several other cases I have met with, which I treated in a similar manner. I have generally found the good effects of Sal. Nitri freely administered in their diluting drinks."³

This summary of the treatment must not be closed without introducing the remarks of Mr. Hunter, of Dumbarton, on the efficacy of tobacco.⁴

"*Tobacco*.—A young man who had been affected with influenza for twelve days, had been advised by some acquaintance to drink a considerable quantity of whisky. This had

¹ Dr. Girdlestone, Yarmouth; Mem. Med. Society of London, vol. vi. p. 474.

² Idem, p. 364.

³ Mr. Rowe, of Portsea; idem, p. 571.

⁴ Mr. Hunter, of Dumbarton; Med. and Physical Journal, vol. x. pp. 234-236.

exasperated all his symptoms, and brought on so severe a vomiting, that everything he took was instantaneously rejected; his belly was bound, skin dry, and his pulse 130, weak and intermitting. Before I saw him a number of injections had been given, some of them very stimulant, but without effect. I ordered an injection of *Nicotiana* Zij, Infus. in Aq. Bullient 3xij, to be given; it produced an immediate evacuation of a considerable quantity of indurated fæces, caused severe vertigo, faintishness, and at last a copious perspiration, followed by sound and refreshing sleep: when he awoke his fever was greatly diminished, and the vomiting did not again come on; and without any other application, except a plentiful use of wine, in which a small quantity of Rad. Gentian was infused; he quickly recovered.

“As this remedy had been so useful in this case I determined to try it in others; and, as in the beginning of the disease, costiveness was frequent, I began by giving the injection, of a strength in proportion to the state of the patient, but always wished that, besides emptying the bowels, nausea, or even vomiting, might be excited; whenever this took place it was followed by a profuse sweat and sound sleep.

“After having found the beneficial effects of the medicine in injections, its internal use by the mouth was tried; the preparation made use of was the *Vinum Nicotianæ*, given at first in small doses, frequently repeated, combined with some aromatic water, or tincture; it was always pushed so far as to produce giddiness of the head, or nausea, and when carried this length, it almost in every instance brought on a large discharge by the skin and kidneys, and sound sleep; it also caused a considerable increase of expectoration, and relieved the cough; indeed, in my opinion, its anodyne effects were equal to those of opium; and, as it aided the discharge from the breast, which the other retarded, it was undoubtedly preferable.

“Since I first became acquainted with the sudorific and narcotic powers of the *nicotiana*, it has been used in every case that came under my management, except those where gripes, and bloody, slimy stools took place, and always with evident advantage, nor did I see in any one instance the least disagreeable circumstance arise from its use.

"When after the first exhibition of the medicine any fever remained, and the cough was troublesome, a second dose was given in the course of two or three days after the first, and managed just in the same way; the operation was equally successful as before, and the symptoms proportionally diminished; a third application I never had occasion to make. I wish, however, to remark, that during the course of a month that the medicines, as mentioned in the beginning of this paper, were used, my practice was tolerably successful, but not equal to what it was afterwards, as my patients both recovered with less pain, and in a much shorter period, by the use of nicotiana than by all the other remedies formerly employed."

2. DR. RICHARD PEARSON¹

"The catarrhal fever, or influenza, which has lately spread itself over the whole metropolis, and has since made its way to almost every part of the kingdom, first shewed itself here about the middle of February, when a damp and mild state of the atmosphere had succeeded to severe cold. This again was followed by frost, and keen northerly and easterly winds during the first part of March, the latter part of which was very warm. In the beginning of April, the weather was mild and rainy; in the middle dry and fine, the noon-days remarkably warm, but the mornings and evenings cold. Wind east. The latter part of the month was cloudy, windy, and very cold, with showers of rain and hail. Wind westerly and northerly. The last week of this month was unusually cold. This severe weather occasioned a great aggravation of the pulmonary symptoms.

"Like all former catarrhal epidemics, the present influenza has exhibited various degrees of morbid affection; having been in some instances so slight, as not to incapacitate persons from continuing their ordinary occupations and pursuits, and scarcely to require the aid of medicine; while, in others, the attack has been of such a malignant nature, as to endanger and even destroy life.²

¹ Observations on the Epidemic Catarrhal Fever, or Influenza, of 1803. By Richard Pearson, M.D. London, 1803.

² "Between these epidemics, and the condition of the atmosphere, there seems to be a connection different from that which depends upon a mere alteration of

"The following is its most frequent mode of attack :—After some alternations of chilliness and heat, the patient is seized with a heaviness or pain of the head, with sneezing, wateriness of the eyes,¹ hoarseness, and cough. These symptoms come on in the order here stated. In the course of a few hours the headach increases, the skin becomes hot, with pains in the back and limbs, or transitory stitches across the chest. The tongue is white ; the pulse quick or frequent, and for the most part soft. There is more or less of sickness at the stomach, and sometimes vomiting. The bowels are generally costive ; and considerable uneasiness, or even a distressing pain, is felt in some part of the abdomen in many instances. By the second or third night, the cough and fever become greatly aggravated. The former, viz., the cough, is strong and incessant, sometimes dry, but often accompanied (even at its first coming on) with an expectoration of thin sharp mucus ; the latter, viz., the fever, is attended with increased heat, and with extreme restlessness and anxiety. There is also some confusion of the head. At this time the pulse is often from 110 to 120. In the morning there is a considerable remission of the febrile symptoms ; but the cough (with more or less dyspnœa) still continues urgent, and the patient complains of excessive languor and dejection of spirits.

"After the third or fifth day, where early perspirations have come on, or sufficient evacuations have been procured by the stomach and bowels, the fever declines ; and although the cough continues, the expectoration is more free, the sputum being of a thicker consistence and milder quality. The urine, which before was high-coloured and clear, now becomes turbid, or throws down a sediment. In other instances the cough

temperature, or of dryness and moisture ; but what that peculiar connection is, we shall not attempt to explain. Yet it is proper to notice the changes of temperature, and other sensible qualities of the atmosphere, as giving rise to the predominance of a certain set of symptoms at one time more than another. Thus in frosty weather, and during northerly and easterly winds, the catarrhal and peripneumonic affection will be most conspicuous ; while in warm weather, and during westerly and southerly winds, the headach, sickness, disordered bowels, glandular swellings, etc., will constitute the most urgent symptoms. All these modifications have been observed during the changes of the weather in the present epidemic."

¹ "In some, an inflammatory appearance of the vessels of the tunica conjunctiva, and a puffy swelling of the eyelids."

continues very troublesome for many days, or even some weeks, after the abatement or cessation of the fever, and goes off very tediously without any remarkable degree of expectoration.

"The lassitude and depression of spirits, with restless nights, harass the patient for many days after the decline of the fever; which, indeed, in several instances, does not entirely go off after the fifth day, but becomes intermittent, the patient feeling himself worse every other day.

"Such is the most common form of this epidemic. Its modifications, however, as we have before observed, are extremely numerous, so that in some there is a violent headach, with little catarrhal affection, in others a sore throat, in others a peripneumonic condition, and in others a disordered state of the stomach and bowels.¹ In several instances, swellings of the parotid, maxillary, and cervical glands have been observed, especially during the month of April; *i.e.*, towards the decline of the epidemic. These and other varieties have been particularly noticed in the histories of former epidemic catarrhal fevers, to which (in order to avoid repetition) the reader is referred. Relapses were not uncommon. In such cases the mucous covering of the tongue was generally yellow or brown (not white, as in the first attack), and the whole condition of the patients resembled that of low fever.

"From this sketch of the disorder, it is evident that this epidemic differs from a common catarrh, in the *degree and kind of fever* with which it is accompanied; and that, as it is the fever which constitutes the essence of this disease, and not the catarrh, it should be denominated *epidemic catarrhal fever*, or *synochus catarrhalis*, and not simply epidemic catarrh.² Its infectious nature can scarcely be doubted; but how long its contagion is capable of being applied before it takes effect, and what are the circumstances most favorable to its action, are points which have not yet been duly investigated.

"As it is the fever which constitutes the essence of this disease, our first attention should be directed to it, and not to the cough (except when it is accompanied with pneumonic inflammation); otherwise, by prescribing only for one of its

¹ "The stools are more or less bilious in all instances. In some they are of a very dark colour and extremely offensive."

² "In certain situations the fever degenerates into the typhus kind."

symptoms, we shall make but little impression upon the general morbid affection.

"We are not, therefore, to begin the cure with pectoral medicines, but with such remedies as are capable of acting upon the system at large through the medium of the stomach and intestinal canal. Such are emetics, and mercurial and antimonial cathartics.

"A bad taste in the mouth, oppression about the epigastric region, and nausea, indicate the use of an emetic, which even where some of these symptoms are wanting, should seldom be omitted. But, whether an emetic be administered or not, the bowels should be moved by a dose of calomel, joined with about half its weight of the Pulv. Antimonialis, Ph. Lond.

"If, after some hours, this medicine shall not appear to be sufficiently active, its operation should be promoted by a solution of the Kali Tartarisatum, Magnesia Vitriolata, or some other neutral salt, the patient all the while diluting freely with some tepid mucilaginous drink.

"Before the purgative operation takes place, this combination of calomel and antimonial powder produces a marked effect upon the skin, and a general diaphoresis breaks out. Nor does this appear to be checked in any considerable degree by the subsequent discharge from the bowels; before the coming on of which, a pediluvium may sometimes be used with advantage.

"As the calomel and antimonial powder produce their effect, the headach, anxiety, and heat of the skin abate. The cough, however, and dyspnœa, are little altered, and require the application of a blister. They are also further relieved by draughts composed of Aqua Ammoniæ Acetatis, and Æther, or Sp. Æth. Nitros., mixed with a proper quantity of common water, or mint water.¹

"After evacuations by stool have been procured, opiates afford relief; but they should be prescribed in very small quantities, a full dose producing great mischief in this stage of the disorder. The Syrupus Papav. Alb. is a convenient preparation. Of this one drachm may be given to an adult, joined with five or six

¹ "The inhalation of æther-vapour is not so beneficial in this epidemic as it is in simple catarrh. Where, however, the cough is dry, and the dyspnœa urgent, without being accompanied with pneumonic inflammation, it may be resorted to with advantage."

drops of the Tinctura Opii. To young persons a double quantity of the syrup may be given, without the opiate tincture.¹

"The day after the operation of the mercurial and antimonial purge, the patient should drink freely of a solution of crystals of tartar in common water, unless (a circumstance which we have rarely observed in the present epidemic) a loose state of the bowels should come on.²

"The solution of this acidulous salt (the crystals of tartar) forms a pleasant and refreshing beverage; and, along with its beneficial action upon the bowels, promotes a flow of urine, a mode of operation which contributes in no small degree to the removal of the fever.

"Where the bowels are not readily acted upon by the medicines above mentioned, it will be necessary to have recourse to clysters, which indeed are most indispensable in the case of children.

"In the course of this disorder, the calomel should be repeated two or three times, without the antimonial,³ and in smaller doses.

"To promote expectoration, squill, in some form or other, will now be proper, provided the heat of the skin and frequency of the pulse shall have been greatly abated; *i.e.*, provided the fever shall, for the most part, have subsided. It may be joined with the Aq. Ammon. Acetat. and Sp. Æther. Nitros.; but oily medicines, and the common pectoral emulsions, are of very little use. Mucilages, however, such as gum arabic or tragacanth, may, in some instances, be advantageously joined with the squill. Also small doses of ipecacuanha.

"In the beginning of the attack a moisture upon the skin is doubtless salutary; but after the second or third day, it is not desirable to excite a perspiration by keeping the patient in bed, and giving him strong sudorific medicines and warm liquors, as in the case of a common catarrh. The heat which accompanies

¹ "The dose of the opiate tincture may be increased towards the decline of the fever; but even in the advanced stage of the complaint it will seldom be proper to exceed fifteen drops. I wish to call the attention of practitioners to the difference between small and large doses of opium in this epidemic."

² "In that case the spontaneous evacuation is not to be checked. Plentiful dilution, with blisters and mild opiates, will form the whole of the cure."

³ "Without the antimonial, if there be no peripneumonic affection; if there be, either with it or with small doses of ipecacuanha."

such a sweating process aggravates the fever, and the forced diaphoresis is constantly followed by increased languor and dejection of spirits. The recovery, under such circumstances, is extremely tedious.

"Paying less attention, therefore, to the catarrhal symptoms than to the general febrile affection, we should avoid all accumulation of external heat; and after the third day (except in those few cases where violent pneumonic inflammation occurs), direct the patient to sit out of bed, allowing him *cool* drinks, and taking care to have the room kept *cool*, and properly *ventilated*, especially when the temperature of the atmosphere exceeds 45° or 50° of Fahrenheit's thermometer.¹

"Whether the fever goes off entirely, or puts on an intermittent form, great languor and depression of spirits, with want of appetite, remain for many days. Contrary to what is observed in other cases of febrile debility, the Peruvian bark and mineral acids are here of no avail. They even do harm. But infusions of the simple bitters, or a solution of myrrh, may be prescribed with good effect, especially when joined with the acetated kali, or prepared natron. This last combination agrees best with young subjects.

"At this period a less restrained use of opium is admissible, in order to counteract the disturbed nights.

"During the convalescence, the bowels are liable to occasional irregularity; which, if it incline to costiveness, will require a repetition of the calomel, in a smaller dose, with the addition of a grain or two of aloes; or the Pil. Aloes cum Myrrhâ may in some cases be given without the calomel.

"Throughout the whole progress of the disorder, the diet should consist of mucilaginous vegetable decoctions, and of animal jellies, flavoured with subacid vegetable juices. Broths should not be allowed during the feverish state, as they tend to

¹ "As the weather grew warmer, the symptoms of the influenza in 1782 were more severe, and the recoveries more tedious; and the inhabitants of low and close situations had the disease worse than the inhabitants of high ones. In some hospital patients it wore a malignant aspect. See the account drawn up by Dr. Gray. In like manner it is recorded by Sir G. Baker (on the authority of Dr. Petrie), that in the neighbourhood of Lincoln the epidemic of 1762 raged with unusual violence in low situations; that is, in places where a due ventilation was wanting. (Baker, 'De Catarrho Epidemico.') And in the present epidemic, persons employed in heated and crowded workshops have had the disorder in its severest forms."

keep up an unsalutary perspiration, and never fail to increase the headach, nausea, and languor.

“ When the disease is complicated with pulmonary inflammation, the same remedies are to be employed (the lancet, however, not quite so freely), as in the case of simple peripneumony ; but after the removal of the local inflammation, calomel should be given in small doses, together with the saline diuretics before mentioned, in order to counteract the morbid condition of the system at large. It is to be remarked, however, that free and brisk purging is not so well suited to the cases of this fever which are complicated with pneumonic inflammation, as to the other forms of the epidemic;¹ but early and gentle evacuations by the bowels are serviceable, even in the first-mentioned cases. When venesection is judged necessary, it should be resorted to in the beginning of the attack ; for after three or four days have elapsed, the period for employing the lancet with advantage, or perhaps with safety, is past. A middle-aged patient who, in the month of March last, had the catarrhal fever complicated with pneumonia and diaphragmitis, was blooded on the fourth day of the disorder, and again on the following day. The blood exhibited a strong buffy coat ; but the case terminated fatally on the sixth day. Those who have seen much of this epidemic will easily bring to their recollection many similar instances of the unsuccessful employment of bloodletting in the advanced stage of the disorder, though accompanied with symptoms of local inflammation.

“Recapitulation of the Nocentia and Juvantia in this Epidemic.

“THINGS HURTFUL.

1. Bleeding, except in those few cases where there is evident pneumonic inflammation ; and even then, unless employed in the beginning.
2. Forcing out sweats by accumulation of external heat and strong sudorifics.

“THINGS USEFUL.

1. That degree of diaphoresis, which either comes on spontaneously, or is consequent to the mercurial and antimonial medicine given at the beginning of the attack.
2. Copious evacuations by stool.

¹ “ In like manner brisk and copious purging was not suited to very old people nor to consumptive subjects. In these a gentle and moderate catharsis answered best.”

"THINGS HURTFUL.

3. Emulsions, and other oily pectoral medicines.
4. Large doses of opium in the beginning of the disorder.
5. A close and unventilated room.
6. Broths and warm animal decoctions, while the febrile state subsists.
7. The Peruvian bark, with very few exceptions, even in the advanced stage of the disorder.

"THINGS USEFUL.

3. Blisters and æther, or Sp. aeth. nitros.
4. Small doses of opium (after the bowels have been acted upon), gradually increased as the fever declines.
5. Promoting a flow of urine by a solution of crystals of tartar.
6. A cool and well ventilated room.
7. Infusions of the simple bitters, joined with the acetated kali or prepared natron."

3. DR. CARRICK¹

"1. The first case of influenza that occurred to me with symptoms distinctly marked, from the very frequent catarrhal affections of the season, was on the 5th of March. In the course of a single week from that period, the disorder had become remarkably general, and continued with unabating frequency a fortnight longer. It then speedily declined both in frequency and severity, and very soon ceased to be epidemic, although a few insulated cases continued to occur for a length of time.

"2. The complaint was at first generally (I may say uniformly) accompanied with inflammatory symptoms. The nearer the commencement of the epidemic, these were the more considerable, and continued to decline during its progress, so that, in the latter instances, they were scarcely, if at all, perceptible. As this change of symptoms might be influenced by the temperature of the atmosphere, I shall subjoin a register of the weather at Clifton for the months of February, March, and April.

"3. The cases in which no sensible affection of the lungs took place, were, about the commencement of the disorder, not more than one in twenty. The cases attended with imminent pulmonic inflammation (pleurisy or peripneumony in a high

¹ Observations on the Influenza, as it appeared at Bristol in the year 1803. By Dr. A. Carrick. Being Answers to certain Questions respecting that Disease, transmitted to him by Dr. Richard Pearson, Physician, London. (Annals of Medicine, vol. iii. p. 410.)

degree), so as to indicate the use of the lancet, were at no time more than one in thirty. In the progress of the complaint, these proportions varied exceedingly.

“ 4. The influenza was in general accompanied with a greater degree of languor than usually attends inflammatory disorders; and the pains in the back, and headache, bore some resemblance to typhus. These symptoms were particularly striking, when the throat happened to be inflamed and ulcerated; but latterly I have observed this languor and dejection to a very great degree in cases where no inflammation or ulceration of the throat took place.

“ 5. The actions of the stomach and bowels were not in general disturbed, at least not in any particular or unusual manner. Constipation was not unfrequent at the commencement of the attack. In some cases, bile was evacuated in large quantities by stool; but, in the majority of cases, the stools were not unnatural; neither was vomiting a frequent symptom.

“ 6. The expectoration was in general proportionable to the degree of pulmonic affection.

“ 7. It is not easy rigidly to prove or to disprove the contagious nature of this epidemic. The opposing facts and arguments are numerous. But I must decline giving any opinion of my own. It is not opinions you ask, but facts. In many cases, a whole family, of a dozen persons and upwards, have been seized with the disorder, one after another, in such a manner as to induce the belief that they caught it of each other, while in many other families, similarly circumstanced (as to situation, exposure, age, etc.), only one or two have been affected, while all the rest escaped. In the first-mentioned cases, the intervals of attack in the different individuals were from one to two or three days, in women, which although a shorter period than usually takes place in most infectious disorders, is by no means without example in the history of contagion. Even in cases where two or three individuals of a family were seized with the complaint at nearly the same moment, we have not an absolute disproof of infection; for while the disease was so extremely prevalent, it was impossible to conjecture, with any degree of certainty, from whence or at what precise time the infection (supposing it to be infectious) took place. The slow progression of the disorder from one

place to another seems to oppose the supposition of its arising from the constitution of the atmosphere, or from anything wafted in it. The influenza was certainly prevalent in London, at least two or three weeks before it made its appearance in this neighbourhood; although the course and velocity of the wind, during that period, were such as to bring the whole atmosphere across the country in one day. By such accounts as I have been able to procure from Edinburgh, nearly a month must have elapsed from the first appearance of the disease in London before it reached that place, although the wind was for many days of that interval pretty violent from the south-west. Moreover, if the disease depended on the atmosphere, or on anything carried along with it from the eastern countries, it ought to have made its appearance equally soon on the east coast of Scotland as that of England; whereas the history of its progress, the periods at which it commenced or became general in various parts of the kingdom, seem to favour the supposition of its having been originally imported into London, and the parts adjacent, by the Straits of Dover, and thence propagated to different parts of the island according to their respective distances and intercourse.

“On the other hand, it must not be denied that many circumstances were observable, which tend to invalidate this supposition, and to induce a belief that the disorder arose entirely from the condition and temperature of the atmosphere. The epidemic, whatsoever might be its nature, was evidently regulated in an imminent degree by the degree of exposure to cold, and to the sharp east winds which at that time prevailed. Those persons, who by choice or accident, remained in the house, either in general escaped the disease entirely, or had it much more slightly than those who exposed themselves, particularly if the house was warm and comfortable, or in a low and sheltered situation, and screened by adjacent heights from the north-east wind. In that part of Clifton, called the Hot-Wells, which is sheltered in a very great degree from the north and east, the influenza was comparatively rare, as well as mild. In the low, confined, and ill-ventilated houses in the Hot-Well road, where typhus often abounds, the influenza was likewise very unfrequent; while in the exposed high-lying buildings on Clifton-hill, it was almost universal. One of the

most open and exposed of these is Richmond Terrace, which forms three sides of a parallelogram, fronting respectively the east, south, and west. On the east side of this Terrace, not one family, and scarcely an individual, escaped the complaint; while on the south side a great majority, both of persons and families, in all other respects similarly circumstanced, escaped entirely. That the catarrhal and pneumonic symptoms were chiefly owing to cold, appears, from their having been more or less frequent and severe, according to the degree of cold at the time. After the breaking up of the frost, very few instances of the complaint were accompanied with catarrhal or pneumonic symptoms; and the most recent cases have been uniformly exempted from them. In these the attack could hardly be distinguished from that of ordinary typhus; but in their progress and general habits, they bore an exact resemblance (in all other respects) to the late epidemic.

" 8. No opportunity occurred to me, of observing the appearances after death. Indeed very few died of the disorder in this neighbourhood: and of these, most, or perhaps all, seemed to fall victims to the accompanying pneumonia.

" 9. The inflammatory symptoms yielded in general to the combined action of antimonials, diluents, purgatives, and blisters, even where they were considerable. But it is equally true, that in other cases the inflammation resisted these; and when the lancet was altogether or too long withheld, death was the consequence.

" Several instances occurred to me of pneumonia in its most violent degree, superinduced by the influenza, where the lancet was imperiously called for, and repeatedly employed; twice, thrice, and, in one case, five times, with as liberal a hand as in ordinary pneumonia, and with as eminent and uniform advantage. The loss of blood was borne every bit as well as in other diseases, where bleeding is indicated. No case so treated terminated fatally. But, on the other hand, I witnessed the unfortunate termination of several, where the patients, I am fully persuaded, fell victims to an unfounded terror of venæ-section in all cases of the influenza; derived, I suspect, from some foolish paragraphs in newspapers, which not only materially influenced the opinion of the public at large, but likewise that of many medical practitioners.

"10. In the milder cases of this epidemic, perspiration was in general very easily excited, and sometimes, likewise, easily and unintentionally protracted beyond the duration of any apparent febrile action. As under these circumstances it could not be expected to do any good, it was of course discouraged. And although it was certainly possible in such cases to carry perspiration, and detention in bed, to an hurtful extreme; yet this could scarcely be supposed ever to happen where any practitioner of common sense was consulted. Upon the whole I have no hesitation in declaring, that decided advantage seemed to be derived from keeping up a moderate diaphoresis for one, two, or three days, by means of the more gentle, aqueous, saline, and antimonial diaphoretics, with a room and bed of moderate temperature. Powerful sudorifics, or great external heat, were seldom employed or necessary.

"11. The liberal use of purgatives was always beneficial, particularly in relieving the distressing headache, which so frequently attended this disorder. The choice of the medicine seemed to be of but small importance. Calomel, being tasteless, and little liable to excite nausea, was perhaps in general the most eligible. But the common senna mixture, or neutral salts, or castor-oil, seemed to be of equal utility in those cases where they were employed.

"12. There cannot be a doubt that full doses of opium in the commencement of the disorder, where the inflammatory action was considerable, with much heat, dyspnœa, headache, and constipated bowels, must have proved highly injurious. But on this point I cannot speak from experience; common sense must have forbid it. I have, however, frequently observed very great relief from moderate anodynes, given to allay cough in every stage of the complaint, where their exhibition was not particularly counter-indicated,—such as syrup or extract of poppies, extract of hyoscyamus, or even opium.

"Although I had little or no opportunity of observing pernicious effects from the injudicious administration of opiates, it was not so with regard to wine and animal food. The propensity of human nature, to search for and to frame some reason or excuse, for what it likes and relishes, together with the idle paragraphs in newspapers formerly mentioned, had induced a pretty general bias in favour of a generous regimen

in this disease, which in some cases it was not easy to remove. It was, however, in almost every instance, evidently pernicious, particularly in the early stages, and near the commencement of the epidemic; and as the disorder was at that period so universally of an inflammatory nature it could not possibly be otherwise.

"Some, to be sure, did survive such a regimen, but that is no proof of its propriety; for it is very well known that patients in almost all diseases will sometimes struggle through in spite of any bad treatment."

4. DR. FALCONER¹

"The first appearance of the influenza, in such a form as to admit of no doubt respecting its nature, took place, as far as I can learn, about the middle of February 1803.

"The access of this epidemic was not, I believe, distinguished by any symptoms essentially different from those that usually mark the coming on of feverish complaints, especially those which incline to an inflammatory diathesis. Chilliness, shivering, a sensation resembling that of cold water running down the spine of the back, and often considerable pain in that part, together with a sensation of weariness and stiffness in the limbs, were, in general, the first symptoms. In some the approach of these was gradual; but in many they came on with such suddenness, as to be almost instantaneous, and were in general more vehement than those of a similar kind which mark the approach of the usual catarrhal complaints of the season.

"The above symptoms were soon followed by feverish heat, headache, cough, and difficulty of respiration; together with an acrid distillation from the nose, great pain and throbbing of the temples, and great desire to spit, or throw off, by efforts of that kind, the mucus which collected in an inordinate quantity on the bronchial glands, and those of the fauces. The cough was in some subjects slight and inconsiderable, in others loud and oppressive; and nevertheless often ineffectual to produce

¹ An Account of the Epidemic Catarrhal Fever, commonly called the Influenza, as it appeared at Bath in the Winter and Spring of the year 1803. By William Falconer, M.D., F.R.S. Bath, 1803.

relief by the expectoration of mucus. The skin was at this period, in general, hot and dry, though in some persons sweats came on early in the complaint. In some bad cases, the peripneumonic symptoms increased to a great degree, the pulse rose to 100, 120, and 150, and were scarcely to be kept under by the most powerful remedies. Such cases, however, though not of extraordinary occurrence, were not, I believe, very frequent. Out of more than 100 patients at the Bath Hospital, who were seized with the influenza, only six were attended with peripneumonic symptoms to any considerable degree. I must however own, that, in my private practice, the proportion of severe peripneumonic cases exceeded considerably what appeared in the Bath Hospital, probably because the advice of a physician was seldom asked in this disease, except in cases that were attended with some anxiety respecting the event.

“Vertigo, and that to a considerable degree, was, in some persons, one of the first signs of the disease, and, in several instances, very alarming and distressful. I saw a lady affected to such a degree as not to be able to raise her head from the pillow without losing all sense, and to whom all objects appeared thrice multiplied; and these uncouth symptoms continued four days in their full extent. I observed in several persons, that where the vertigo was most troublesome, and appeared early in the disease, the peripneumonic symptoms were but slight, and *vice versâ*. Two of the worst cases of the peripneumonic kind that I saw, were not attended with any symptoms of vertigo. Those who were affected with vertigo, even to a less degree than in the case above described, were nevertheless unable to read a letter or a few lines in a book; and in several a degree of delirium took place during the night, but not, as I saw, to any violent degree.¹

“The expectoration, in ordinary cases, differed little from what is spit up in a common catarrh; but in those instances where the peripneumonic symptoms were much aggravated, it was very large, of a yellow colour, and scarcely to be distinguished from simple pus; it was, however, thrown up with difficulty in several persons, and their inability to cough it up

¹ “Dr. Haygarth has since informed me, that he saw one case attended with strong delirium.”

completely, was one of the most alarming symptoms, and what I saw, in some instances, prove fatal. The breath was frequently much oppressed, and a great source of uneasiness: I counted it, in several instances, to be more than forty-five respirations in a minute.

"Several persons, at the beginning of the disease, complained of soreness of the throat; but no particular appearance in the fauces was observable, and in a few days it either went off altogether, or became so inconsiderable as to be nearly disregarded among so many other distressful symptoms. The catarrh or defluxion was, towards the beginning of the disease, thin and acrimonious; but in a few days disappeared, especially in such cases as were combined with peripneumony, being probably carried off by the expectoration.

"Pains of the limbs, especially about the joints, occurred to a considerable degree, in some instances in which the other symptoms were moderate, but generally went off in a few days. In one instance, however, they continued, in a very troublesome degree, several weeks after the symptoms of the original disease had ceased. The body was, in those instances, I had an opportunity of observing, inclined to be costive during the course of the disease; and I find that to have been the case with the patients at the Bath Hospital. I have, however, been informed, that a purging came on in some persons early in the complaint; nothing, however, remarkable was observed in the appearance of this evacuation.

"The urine was in quantity nearly as in health, but generally of a dark reddish colour, clear, and depositing no sediment. As the disease declined, it became tinged with a pink or whitish sediment, and paler in colour. In some cases the amendment was marked merely by the increase of quantity and change of colour in the urine to a pale amber hue, without any sediment being deposited.

"The tongue was, at the beginning of the disease, hot and dry, and of a deep red hue. It soon, however, became moist, and of a whitish brown colour, and in some covered with a foul thick crust. In some instances, and those not the most favorable, the tongue was little affected, which I have often observed to be the case, even where the symptoms were very pressing, in cases accompanied with large expectoration.

"The skin was at first hot and dry, but this soon gave way to gentle perspiration, which took place pretty universally over the body as the disease abated. The appetite was, in the cases I saw, almost entirely destroyed, and the thirst pretty considerable. Acid juices of fruits were to some particularly agreeable; but after a few days' use, seemed to create disgust. Iced creams, moderately taken, were highly acceptable, and served to cool the mouth and fauces; the heat and dryness of which were among the most uneasy symptoms.

"The pulse was variable, in some very quick, even to 150 in a minute; in others, not exceeding 80 or 90. Out of upwards of 100 persons afflicted with this complaint at the hospital, the pulse in no instance exceeded 100 beats in a minute.

"In one of the worst cases I saw, the pulse never exceeded 72 beats in a minute, which was the usual number in health. Yet the patient at that time had every other symptom of peripneumonic fever, great heat, thirst and cough, with expectoration so difficult that I apprehended suffocation would speedily take place; and when, to relieve these urgent symptoms, she was bled, as she was, twice in one day, to fourteen ounces, the blood drawn was so tenacious as to bear being lifted entire with a pin out of the cup of the crust, without affording more than a few drops of serum.

"The debility that followed this complaint marked it very strongly. Few persons recovered their strength in less than three weeks, and several persons were so reduced as to be sensible of its weakening effects for a longer time after the fever had entirely ceased. In some a dimness of vision continued sometime after the strength was pretty well recovered.

"I have not had an opportunity of personally inspecting the body of any one who died of this disease, which was opened; but the following account, authenticated by several medical persons of respectable character, was communicated to me by a gentleman who was an eye-witness, and whose accuracy and judgment may safely be trusted. I shall, therefore, make no scruple of giving the detail of the case in his own words.

“ Dr. Broderip’s Account of a Case of Influenza, and what was observed on opening the Body.

“ ‘ I was desired to visit M. Ditcher, a young woman, in the 21st year of her age, who was indisposed with the prevailing epidemic disease ; it was on the ninth day of her indisposition ; and I found her in imminent danger. Upon inquiry into the origin of her complaint, and the symptoms which attended the incipient state of it, she informed me, that she was first seized with cold shivering over the whole body, drowsiness, and frequent chills, passing in the direction of the vertebræ ; this was succeeded by feverish heat, a violent pain in her head, principally across her forehead, and immediately above the eyes ; throbbing at the temples, an acrid discharge from the nostrils, troublesome cough, and difficulty of breathing. The following day she was troubled with an internal pain, which she described as directly underneath the left mamma ; her respiration was more hurried, and she became more thirsty ; her urine was very high-coloured, and, after standing a short time, threw down a considerable lateritious sediment ; her tongue was much furred ; and the phlegm which she attempted to expectorate was so tenacious, that she could not loosen it from the fauces. With remissions in the day, but returning with more violence towards evening, the train of the chief symptoms continued to the day of my seeing her.

“ ‘ When I called, she was sitting in her bed, gasping for breath, and apprehensive of syncope. Her cough was incessant, and of a peculiar kind ; she expectorated a small quantity of mucus tinged with blood, her pulse was at 140, low, small and tremulous. Her tongue was foul, but not dry ; the coating different from what is usual in febrile affections, and more resembling the appearance which we generally find in cases of croup. She complained of unusual pain ; but particularly at the back part of the head, and across her chest ; in short, her situation presented one of those distressing cases which result from inflammation, protracted from the omission of timely bleeding, etc. Immediately on leaving the room I expressed my concern that she had not applied earlier to the medical gentleman who was then attending her ; and submitted to him my opinion of the morbid state in which the

thoracic viscera would probably be found, upon dissection, after death.

“‘Soothing and such medicines as appeared to me the best calculated to relieve the pressure of the various symptoms, were administered till the 13th day, when she was suddenly seized with general spasm, and expired. The following day the body was opened by Mr. Cam, in the presence of Dr. Davis. When the contents of the thorax were exposed to view, the anterior part presented nothing remarkable; but in attempting to take up the long lobe of the left lung, we found that adhesive inflammation had taken place over the whole posterior surface of that lobe. The adhesive exudation was considerable, and had attached that part of the lungs to the corresponding costal pleura, though the pleura itself was not inflamed; but the connecting medium, being newly formed, readily gave way to the pressure of the hand, and enabled us to examine the posterior part of the lobe, which we found in a condition highly morbid. That part of the pleura, which is reflected over the lungs for its external membrane, peeled off in the same manner as the cuticle of a fœtus does, which has been some time dead in the uterus; the substance of the lung was of a dark, livid colour, and appeared in a gangrenous state; some vessels had given way in the diseased part, and about three ounces of extravasated serum, and some coagula, were found in the depending part of the thorax. Upon cutting into the lungs we found a good deal of extravasated coagulable lymph in its substance, and a very extraordinary quantity of blood was congealed in the vessels. The ramifications of the bronchia were loaded with puriform matter; and upon removing and dividing a portion of the trachea, just above the beginning of the bronchia, we found its inner lining in a high state of inflammation; the whole surface of the membrane putting on the appearance of what is usually termed ‘great vascularity,’ or, could we associate the idea of beauty with a destructive morbid action, I should say, that it looked like a beautiful preparation of a membrane, where the vessels designed to carry lymph had been filled with a vermilion injection. On viewing the inner membrane of the trachea with a magnifying glass, ulcers were clearly perceived at the edges of the small holes which supply

the trachea with mucus, to defend it from the acrimony of the air.

“‘ Upon dividing the pericardium the heart appeared natural ; but, on the posterior or lower side, the coronary veins were remarkably turgid with blood. The water in the pericardium was more than usual, but not exceeding what is sometimes met with in subjects unconnected with disease.

“‘ We were not permitted to extend our examination to the other viscera,—a circumstance which would have been a cause of much regret, had not the morbid state of the thoracic viscera so clearly evinced the nature and principal seat of the disease.

“‘ It may be proper to remark that the costal pleura, not being inflamed, accounts, in some measure, for the little relief afforded by blisters ; and it may not be undeserving of notice, that the patient’s description of the seat of pain is deceptive ; for notwithstanding the disease was at the posterior part of the lungs, the sensation of pain was uniformly described as immediately beneath the anterior part of the chest.’ ”

“‘ We have perused the above accurate description, and find it perfectly conformable to the appearances presented by the dissection.

“‘ J. F. DAVIS, M.D.

“‘ THOMAS C. CAM, Surgeon.’ ”

“ But notwithstanding this formidable detail of symptoms, the mortality that followed was not so great as might be apprehended, though greater than was commonly imagined. At the general hospital, in this city, where upwards of 100 persons had the disease, not one died, though several suffered severely. Four persons of those I attended died, and all of them peripneumonic ; but one of them had been subject to pulmonary complaints, and in a valetudinary state for the last six months ; another was in the decline of life and debilitated by repeated gouty attacks, and had his end hastened by a suppression of urine, which, though relieved by the catheter, introduced without much trouble by an able surgeon, produced so much distress as to contribute in no small degree to his death. All whose cases terminated unfortunately were considerably past the meridian of life.

“ What proportion of people in society were attacked with this disease, I am unable to say. A large number were

certainly affected; and it appeared to make no distinction in age, sex, habit of body, or state of health. The general hospital, which contained, at the time when the disease made its appearance, about 125 patients, had upwards of 100, or about 4 out of 5, seized with this complaint.

"It will now be asked by what marks or symptoms is this epidemic distinguished, at or near its first appearance, from the usual complaints of the winter season, which it is acknowledged much to resemble? I wish I could answer this question satisfactorily; but I really know of no positive distinction, except in those cases wherein vertigo was among the first symptoms; which, though often occurring, was by no means a constant attendant on this disease.¹ The suddenness of the attack, indeed, afforded a pretty strong presumption; but the epidemic spreading of the complaint afforded the strongest indication. All the symptoms, the vertigo excepted, which rarely occurs in catarrhs, and never I believe at their first coming on, are common to those complaints that accompany an inclement season of the year; and it is more from the frequent appearance of the malady, and its aggravation of symptoms beyond a catarrh of the season, than from any specific diagnostic, that our judgment must be formed.

"It is a matter of doubt with some, if this epidemic catarrh be a contagious disorder, or propagated from one person to another by infection, as the smallpox or measles; or whether it be owing to a general cause, as a particular disposition, or, as it was formerly called, constitution of air; affecting a large number of persons at the same time, which is the correct sense in which the word *epidemic* is used.

"I have no doubt myself that it is contagious, in the strictest sense of the word. It has scarcely ever appeared without spreading to a vast extent; and has affected equally countries in the greatest variety, both in point of climate, and in the manners, diet, and habits of life of the inhabitants. But still there has always been a perceptible and, indeed, sufficiently-marked interval between its appearance in one country and another; and it has never appeared in all parts at once, as it

¹ "Dr. Haygarth observed to me, that the prostration of strength was much greater than in a common catarrh; but I did not myself observe this to be the case at its first coming on."

would have done, had it been produced in each individual by some generally operating cause.

"I proceed now to speak of the signs of amendment, or the contrary, that attend this disease.

"The peripneumony has appeared to me by far the most threatening symptom of any. The abatement, therefore, of the cough, and some relief of the breath, are primary objects; and except these can be attained, all other marks of amendment, even such as are drawn from the diminution of the numbers of the pulse, are fallacious, as I have experienced. A free and plentiful expectoration, if accompanied with the abatement of the difficulty of respiration, is a primary circumstance; and next in importance to that, is an increased urinary discharge, which I have seen accompany the other, and prove, as it should seem, particularly serviceable. It is long before any appetite for solid food returns; but some inclination for liquid nourishment is among the first marks of amendment.

"On the other hand, when the difficulty and frequency of respiration both concur, in spite of the remedies used, the danger is increased, notwithstanding, as I have just before observed, the number of the beats of the pulse be diminished.

"I have not noticed any bad consequences that seemed connected with the vertigo, which, though threatening generally, went off in a few days. I shall now speak, as briefly as I can, of the practice which appeared to me most conducive to the cure.

"And here I must freely own, that there appeared, in several instances, a strong necessity for active operations. The peripneumonic symptoms were so urgent as to supersede all general cautions respecting bleeding, and admitted of no alternative. Nor have I observed, that the persons on whom this operation was practised, even to a considerable extent, suffered from any consequences that might be supposed to attend the excess of this evacuation. On the contrary, I found that those persons who were bled to such a degree as effectually to relieve, not merely to palliate, the more urgent symptoms, sooner recovered strength, than those on whom this operation had been most sparingly practised.¹ In short, my decided opinion is, that, when it appears in a threatening peripneumonic form, it must be treated in the same manner as is found effectual in

¹ "Cleghorn makes nearly the same remark. 'Diseases of Minorca,' pp. 261, 262."

that disease, without regard to any speculative opinions that may be entertained respecting its specific nature or character.

"I freely own, that on the first appearance of this epidemic, I was somewhat deceived by the general opinion; and, indeed, by some recollection of the same complaint in 1782, when bleeding appeared in some instances rather to aggravate than relieve the symptoms. The weakness, too, which this epidemic almost universally left behind, undoubtedly ought to suggest caution in the use of this evacuation. But, on the other hand, the urgency of the symptoms, the nature of the parts affected and their immediate importance to life, superseded these considerations; and my observation of the relief which bleeding afforded, encouraged me to apply this remedy; and I have the satisfaction to reflect, with the success I hoped for.

"The application of leeches, in cases where the symptoms were pressing, I found inadequate to the purpose. They, indeed, when put on in considerable numbers (as to eight or ten) seemed to afford a present alleviation of the symptoms; but the relief was transitory only; and bleeding by the arm was found to be the only means of imparting effectual assistance. It should, however, be considered that it is only in cases where the symptoms threaten life, that bleeding by the arm is necessary. In common cases,¹ where the breath is little affected, other remedies supersede its use, or at least render the application of leeches sufficient.

"Emetics have, in my observation, been found particularly serviceable. If administered at the beginning of the complaint, they served to obviate the peripneumonic symptoms altogether, by throwing off with more ease the profusion of mucus, that in a good measure characterises this disease. But in the advanced state I was sorry to find the use of emetics less successful. When the breathing was greatly oppressed, it was difficult to make them operate upwards; but they were subject to run off by stool,—an operation which did not afford the same relief with an emetic, and which, by diminishing the strength, without proportionably relieving the symptoms, seemed rather prejudicial than otherwise.

"Diaphoretic, or rather sudorific, remedies seemed to succeed very well; and, indeed, this seems to be the method pointed

¹ "None were bled at the hospital, except with leeches, although more than 100 persons were attacked, and all recovered."

out by nature for the cure. The *vol. sal.* draught, with the *pulv. antimon.* or the *vin. antimon.* succeeded in most instances; and in slight cases soon put an end to the complaint. With the same view I found moderate warmth, as that of a bed, highly necessary; together with the frequent administration of thin diluting liquors. I observed, however, that much heat, either of fires or of bedclothes, was prejudicial, and prevented rather than encouraged the salutary evacuation. The access of cold sharp air I found essentially necessary to be guarded against, as it immediately aggravated the cough and other morbid symptoms.

"In one bad case, the excitement of the urinary discharge was particularly serviceable. A small quantity of the dulcified spirit of nitre was administered with a different view, and chanced to excite this evacuation very powerfully, and as it should seem with great advantage to the patient.

"The medicines, usually called expectorants, as *lac ammoniacum* and *squills*, could not in bad cases be employed; and in the slighter attacks, there was no necessity for their use. The former was too heating and stimulant; and the latter was apt to run off by stool. I must own, that nothing which I tried with this intent succeeded to my wishes, except the volatile alkaline, which, in the proportion of thirty or forty drops of spirits of hartshorn, taken pretty frequently in any warm vehicle, seemed to be of service. I had some expectation that the steam of warm water drawn in by the breath, by means of some of the inhalers, might have answered this purpose, but was deceived. The breath was too short to admit of its being used effectually in bad cases, and in others it was superfluous.

"Purgatives, taken by the mouth, were not so useful as might have been expected. When given in any effectual dose they seemed to weaken the patient more than to diminish the fever and relieve the most distressful symptoms.

"Clysters, however, were of great service in preserving a due regularity of evacuation, and also in encouraging the secretion of urine, which I before observed was of considerable service.

"Blisters were, I believe, pretty freely tried; but, in the cases that fell under my observation, I cannot say that they

were as serviceable as I expected. In some bad cases they seemed to give a temporary relief to the difficulty of breathing ; but, in several instances, no good effect whatever was produced by them. I did not however find, except in one instance, that they were productive of any mischief. It should, however, be noticed, that I speak here of peripneumonic cases ; for in those where vertigo was the leading symptom, blisters were of great use ; and, indeed, I think the principal cause of its abatement, even after leeches had been tried with little advantage.

“Opiates I constantly found to be among the most necessary remedies. They were of the utmost service in abating the cough when convulsive and violent, and gave time for the expectoration to thicken into a consistence fit to be easily spit up. I never observed them to have any ill effect in checking the expectoration. Some inconvenience, indeed, accrued from the costiveness which opiates occasioned ; but I saw no instance where this was not easily obviated by clysters. The black drop, called the *Asiatic Balsam*, seemed to me, in some instances, superior to the common *Tinctura Opii* ; but its particular advantages were not very considerable.

“Having thus concluded my own observations, I wish to speak of the French account of the disease, as it appeared in the *Moniteur* of the 10th of February 1803, rather before (I think) its shewing itself at this place. This account is published under the inspection of the *Société de Médecine*, at Paris, and signed by the President and Secretary-General.

“The general symptoms of the disease that they recite, are as follow ; and, probably, meant to be understood in the order in which they usually occurred.

“General indisposition, want of appetite for some days, shiverings of longer or shorter continuance, and subject to be renewed by the slightest motion of the body, even when in bed, and alternating with a brisk heat ; heavy pain in the head, in the forehead ; and above the eyebrows ; drowsiness, sense of weight, and weakness of the body ; inward heat ; partial sweats ; total loss of appetite ; tongue white, or inclining to yellow ; renewal of the fever at the coming on of the night ; and, sometimes after midnight ; abatement of the symptoms in the morning ; quick, hard pulse, often very low, and becoming stronger, as the disease advanced to a favorable termination, and still

preserved its original nature and character. The fever continued three, five, seven, twelve, fifteen days, and sometimes longer, but then changed its character.

"It terminated either by urine, highly loaded, and depositing a compact brick-coloured sediment; or by plentiful and universal sweats, or by expectoration of something resembling matter, which continued a shorter or longer time. Or, lastly, by mucous or bilious stools, and sometimes by a combination of several of the above-mentioned evacuations.

"This disease is divided into seven varieties, each distinguished by the parts principally affected. The first is the nasal catarrh or *rhume de cerveau*, much the same as we mean by a cold in the head. This is marked in addition to the symptoms before mentioned by a stoppage of the nose; vertigo; tingling in the ears, and sharp pain in that part; swelling of the parotid glands; difficulty of breathing through the nostrils; face swelled, red, painful, and of a bloated appearance, not unlike an erysipelatous eruption; the eyes watery and red; discharge of a serous fluid more or less acrid from the eyes and nostrils, often swelling, inflaming, and even excoriating the nostrils and lips; and sometimes a suffocating obstruction of every serous discharge whatever.

"The next or second variety is, *catarre guttural*, or *esquinancie catarrhale*, or what I believe we call the *angina tonsillaris* or common sore throat. The signs of this are a complaint of the throat, attended with shivering, swelling, and slight inflammation of the back part of the mouth, of the *septum palati*, of the *uvula*, and of the tonsils; a painful sensation along the course of the trachea; difficulty both of swallowing and of respiration; hoarseness; difficulty of speaking; and the back part of the mouth covered with mucus, more or less thick.

"The third variety is what is called *catarre bronchial*, *rhume peripneumonic catarrhale*. This is distinguished by a sharp dry cough, difficulty of respiration, sense of oppression; a sharp pain in the side, felt principally near the false rib, and seemingly very superficial; flying pains resembling rheumatism, moving up and down through the breast and the loins; saliva difficult to be collected, and frothy, often bloody; bleeding from the nose, the lungs, or the hæmorrhoidal vessels, sometimes symptomatic of the disease, and sometimes critical, but

almost always relieving the pain of the head. This kind is often difficult to be distinguished from the simple peripneumony, which can only be done by considering the severity of the symptoms, and the particular seat of the pain. This variety terminated by expectoration, or by sweats; the spitting became easier to be discharged, and thicker in consistence, and of a white colour resembling matter. Sometimes the disease seemed to be translated by a kind of imperfect crisis to the limbs, where it appeared in rheumatic affections.

"The fourth variety is called *catarre suffoquant*, and was fortunately very rare. It principally attacked old people, and such as were of a bad habit of body, and was sometimes the consequence of improper regimen of living. It was apt to put an end to life at a time when danger was little apprehended. It was distinguished by a sensation of great weight about the chest, much oppression, and a wheezing sound from the bronchia; the strength decreased rapidly, the powers of nature sunk, and a sudden congestion of mucus in the lungs soon finished the tragedy by suffocation.

"The fifth variety is what they call *catarre intestinal*, which happened when the disease took a course to the bowels, and appeared there in form of a mucous or dysenteric evacuation, which quickly exhausted the patient."

The French physicians observe, that the above varieties are not all of them found distinct and separate, but are often much intermixed or combined with one another.

"Another variety or distinction is said to be drawn from the nature of the disease, and is called *catarre inflammatoire*. The symptoms were a deep-seated pleuritic pain, occupying a fixed point about the middle of the third true rib; considerable oppression of breathing; frequent hard and compressed pulse; great difficulty of respiration; urine red; the face swelled and inflamed. It attacked young, plethoric, and vigorous subjects, and was generally owing to the admission of cold air to the body when in a heated state.

"Another distinction is taken from the complication of the epidemic catarrh with typhus; or, as it is called, *catarre gastrique*, *catarre compliqué de fièvre putride ou adynamique*. This variety is described as common among those persons who gain their livelihood by their labour, and amongst artisans in the

civil and military hospitals. It particularly attacked poor people who lived on bad food, those who were subject to excessive labour, and in want of the common resources and comforts in sickness; persons weak, exhausted, of bad habit of body, lying-in women, etc. Its distinguishing symptoms were prostration of strength; tongue foul and bilious; derangement and confusion of the intellectual functions; low spirits; loss of appetite; flatulence; heavy paleness of the countenance; dislike of animal food; nausea; vomiting; nervous symptoms; pulse frequent and depressed; signs of worms in the alimentary canal.

“Prognostic or judgment respecting the termination of the disease.—The fever, when simple and properly treated, ceased about the fourth, or from thence to the seventh day, though it sometimes was protracted longer. The catarrh continued sometimes after the fever was gone. Persons so affected were very liable to relapses, and their recovery was often difficult. These circumstances are recommended to be early attended to, as the catarrh may end in a consumption. Turbid and muddy urine, more or less of a brick colour, indicated the termination of the disease, at least of the fever, and the same often took place from sweating and expectoration.

“This disease is declared not to be of itself dangerous, but liable to become so from the following circumstances:

“1. When those who were seized by it, persevered in refusing to change their manner of life, but continued to expose themselves to the action of the same causes which gave rise to it. In such cases the irritation was increased, the inflammation of the chest shewed itself, and the catarrh became combined with a nervous or putrid fever.

“2. When those seized with it, mistaking the nature of the attack, attempted its cure by the exhibition of hot stimulating remedies, with a view to restore perspiration, which method of treatment was apt to convert a simple catarrh into a mortal peripneumony.

“3. A third source of danger is said to originate from too large bleeding, when the quantity of blood drawn was regulated by the entire cessation of the local pleuritic pain, the relief of the breathing, and the disappearance of the inflammatory crust on the blood, which last circumstance is condemned as extremely fallacious.

"The immoderate use of syrups, and of oily lohocks or linctuses, is also condemned as prejudicial, and even dangerous, as is the early and inconsiderate administration of purgatives, especially when given at a time when nature was preparing for the crisis of the disease by another channel. The medical treatment of the disease consisted in a recommendation to avoid animal food, to keep in bed, and to preserve a moderate degree of warmth; to use pectoral drinks, either sweetened with honey or otherwise, and taken pretty warm frequently, and in small quantities at a time; to drink a decoction of bran, broths of veal, with onions and turnips, to inspire the steam of hot water through the mouth and nostrils; in the evening, to take small quantities of the infusion of wild poppy, sweetened with syrup of marsh-mallows, and with diacodion, provided the patient is in want of sleep; to use the pediluvium, and emollient or gently laxative clysters. As the disease goes off, gentle purgatives are recommended, and afterwards mild tonic remedies.

"Such is the general treatment, which they assure us, in general, is not less simple than efficacious towards the cure. In that variety of the disease that is accompanied with sore-throat, the use of leeches to the part affected is advised, together with emollient cataplasms round the jaws. If the pulse become weak, the stomach sick, and the glands loaded with mucus, an emetic of 15 or 20 grains of ipecacuanha is recommended; and if that does not relieve the symptoms, a blister or sinapism applied round the throat, to be employed, however, as rube-facients, and removed as soon as symptoms of inflammation of the part come on.

"In the third variety, called the *catarrhal peripneumony*, they advise leeches to be put on the seat of the pleuritic pain, and these to be followed with the applications of emollient cataplasms, or bladders half filled with warm milk; and if these do not relieve, to have immediate recourse to a blister or a sinapism. If, besides the pain in the side, the tongue be foul, if the patient complains of a bad taste in the mouth, an emetic of ipecacuanha often affords relief. Opiates are also recommended, as fulfilling all the indications. If the expectoration stops, and the breathing becomes oppressed, blisters between the shoulders, and to the legs and arms, are advised.

"In the fourth variety, or *catarre suffoquant*, they recommend

not to lose a moment of time. Warm inciding draughts are advised, with large doses of oxymel scilliticum; ipecacuanha and antimonial vomits to be repeated till a discharge be obtained. Blisters are also advised as before.

"In the fifth variety, or the *catarre intestinal*, ipecacuanha is advised to be given as an emetic at the beginning of the disease, with pectoral draughts, mucilaginous clysters, gentle purgatives, bolusses with opium, ipecacuanha, or the Peruvian bark, according to circumstances.

"In the *catarre inflammatoire* they recommend bleeding at the beginning, and to be repeated as the symptoms seem manifestly to indicate. We are cautioned, however, to attend carefully to the state of the pulse, both before and after this operation, and to keep in mind the observation that a great prostration of strength attends the frequent repetition of bleeding in the generality of epidemical complaints.

"When the catarrh is complicated with typhus, we are advised, at the beginning of the complaint, to use ipecacuanha and tartarised antimony. To keep the body open by mild evacuants; to use pectoral drinks, rendered gently emetic; vermifuge remedies; mild antimonial preparations; oxymel of squills; camphorated juleps; sinapisms and blisters to different parts; gentle purgatives, and slight tonic preparations, which last are directed to be continued for a considerable time during the recovery of the patient."

"Such is the abstract which I have given from the account of this disease, published by the Faculty of Medicine in Paris. The symptoms are much the same with those observed in this country; but I suspect, if these were as urgent as here described, that the mortality must have been greater than they seem willing to allow. The vertigo seems to have been more general and more distressful in the cases that fell under my observation, than it is represented to have been in the French accounts.

"The method of cure seems to be, as far as respects the general indications, judicious and proper, but encumbered with a farrago of decoctions and pectoral drinks, which were in use in the old French practice; and which the modern practitioners, notwithstanding their pretences to lay aside old prejudices, have not yet reformed.

"Probably the greatest improvement that could be suggested, would be the more free use of emetics at the beginning of the complaint. The recommendation of this remedy, together with bleeding and blisters early in the disease, is however a proof that they attended to its leading symptoms, and to the indications which they suggested.

"The editor of the last edition of M. Sauvage's *Nosologia Methodica*¹ has described this disease as it appeared at Paris, A.D. 1743, under the name of *rheuma epidemicum*, anno 1743, —*la grippe*,—which is the name by which it is at present distinguished in France.

"It came on about the beginning of Lent, which appears that year to have taken place on the 5th of March, not very different from the season when the late epidemic came on in this country. Its symptoms were a dry cough, pain of the limbs, fever during the day-time, and headache; but, in young subjects, these symptoms did not continue longer than the fourth day, and were relieved by increase of spitting and expectoration. In old people, these symptoms came on with greater violence; and when accompanied with a hissing noise attending the cough, carried the patients off, about the ninth or the eleventh day. On dissection, the lungs were found either gangrenous, or much charged and distended with blood. In many persons a hæmorrhage from the nose had come on before death, and sometimes afterwards, notwithstanding the patient had been bled two or three times. Forty persons died daily of this disease, for some time, in the Hospital of the Invalids at Paris.

"The most successful method of treating this disease was as follows: on the first day, two bleedings; on the second, an emetic or purgative; on the third, bleeding again; and in the evening, an opiate julep; from the fourth day to the ninth, a medicine was given, composed of three grains of Kermes mineral, with half a drachm of vitriolated tartar, and the like quantity of diaphoretic antimony. This quantity was divided into six doses, of which one was taken every three hours: about the tenth day the recovery was perfected by the accompanying expectoration.

"This practice seems in the main judicious, though some of

¹ Vol. iii. p. 225, edit. 1795; Lipsiæ.

the remedies advised are now rather out of date. By the recommendation of repeated bleeding, I am apt to suspect it resembled the late epidemic, which last certainly partook more of an inflammatory disposition than those in 1775 and 1782. That in 1788 more resembled the late influenza in this respect; but the inflammation of the throat was in that more common and more vehement, and the peripneumonic symptoms less urgent. Bleeding, however, which, in those of 1775 and 1782, had been less necessary, was in that indispensable, as it was in the one with which we have been lately visited.

"The state of the lungs appeared, on dissection, according to the account in the '*Nosologia Methodica*,' to resemble that above described by Dr. Broderip; and these circumstances argue strongly for decisive measures towards the cure being adopted early in the complaint, should it appear again in a similar form to that of the years 1782 and 1803."

5. DR. JOHN NELSON SCOTT¹

"Observing, in your interesting volume of Annals for this year, that you intend in your next to present some account of the influenza, permit me, residing in this detached spot of the British empire, to trouble you with my observations on the late epidemic, premising, that the climate of the Isle of Man very much agrees with the description of that of Ireland, as furnished by the ingenious Rutty. Our weather is very vicissitudinous, and our atmosphere exceedingly moist. The latter quality is very peculiarly possessed this last winter. Patients under typhus were in a greater proportion. The pertussis had been among us, and we met with some sporadic instances of scarlatina simplex.

"In detailing my experience of the influenza, I shall suppose that you have proposed the questions which Dr. Richard Pearson did in his circular letter; not that I had the honour of receiving one from him; but, I presume, you approve of the plan of queries, by your adding two very apposite ones to the doctor's.

¹ Observations on the Influenza as it appeared in the Isle of Man, in Spring, 1803. By Dr. John Nelson Scott, in a Letter to Dr. Duncan, Senior. '*Annals of Medicine*,' vol. iii. p. 424.

"1. The influenza appeared among us towards the end of March. The first patient I saw was on the 24th, who had received the infection from a gentleman, who, two days before, had arrived from Park-gate, and who had been seized with the complaint in London, and was still labouring under it. In a few days after, one of our Liverpool packets arrived, having many passengers on board under the epidemic. From my inquiries, I have every reason to think that thus it was imported among us.

"2. It was not generally attended with symptoms which shewed an inflammatory tendency; and even much less so, in this respect, than in the epidemic of 1782. By referring to my late father's notes, I am clear on this point.

"3. The proportion of pneumonia cases was very small. They amounted to a few, indeed, when compared to the number of other patients. Stout young men, who were exposed to wet, etc., had strong pneumonic symptoms. Pregnant women were also much affected with pain in the side (particularly the left); had great cough, and difficulty of breathing, and, on the whole, suffered much from the complaint. But, except in these two sets of patients, genuine marks of inflammation in the lungs and pleura were seldom to be met with.

"4. In the generality of my patients, the attack of the disease, and its progress for a day or two, were much alike to what we observe in typhus. In so much so was this the case, that at the first breaking out of the disorder, we were diffculted in the diagnosis; for the typhus here often comes on attended with some of the phlegmasiæ, particularly simple catarrh and cynanche tonsillaris; and I am confident that much harm ensues in practice, in paying too much respect to the presence of such phlegmasiæ, as in a day or two they very generally disappear, at least are not so material in themselves, as is the withholding the proper remedies for typhus, especially the cold affusion. None complained of acute pains on the attack, except the few in whom the pulmonic symptoms were high; then the side, or middle and upper part of the chest, were the parts specified. I had some patients under acute rheumatism, who had lost much blood, and who were attacked with the influenza in their bed. In all of these, but more remarkably in one (a gentleman of plethoric habit, and who had had a

violent rheumatic fever three years before), the violent pains of rheumatism subsided for a few days on the first seizure of the epidemic; instead of which he complained of the usual unhinged sensations in the head, back, and limbs, attendant on influenza: on the declining of which, that is, in three or four days, the rheumatism returned, and, owing to the violent pains in the joints, required further evacuations of blood. There could not possibly be a finer elucidation of the state of the system, induced by the influenza supervening on a rheumatic diathesis, than this gentleman's case afforded.

"5. The stomach was very commonly much out of order from the first, with nausea, inclination to vomit, and, as I suppose, arising from this state of the stomach, there was a disagreeable heat, and unpleasant taste in the mouth. This last was a very much complained-of symptom, and continued, with a furred tongue, in some far advanced in convalescence. Except where the disease was very light indeed, patients were not inclined to take anything but drinks; and those of the acidulated kind were most grateful. Many, by this way, found a temporary relief to the heat in mouth, and nausea, from half a pint of Henry's soda-water, and from equal parts of porter and water, which were never interdicted. The bowels commonly were much inclined to be constipated; but in some, the supervision of a diarrhœa, on the fifth or sixth day, seemed critical. In such cases the fæces were surcharged with bile, otherwise there seemed a deficiency of that secretion by the clayey appearance. Few complained of pain in the bowels.

"6. In a number of cases, the complaint terminated with very trifling expectoration. Where the pneumonic symptoms were high, and the patient doing well, we had the sputum album et bonum. I remarked that the sputum, where the pain in the side was violent, was generally streaked with blood. In some patients, where the disease had not been severe in any respect, a copious viscid expectoration, with a trifling hawking cough, supervened, and continued for a week or two, after the person might be said to be well. Such were relieved by bark and equitation.

"7. I feel quite satisfied as to the infectious nature of the influenza. I had many opportunities of observing the most incontestable proofs of it, from the persons who first imported

the complaint, to the infection of the distant mountaineer. I have reason to suppose, that the contagion often exerts its influence much sooner than is commonly imagined. I have witnessed its specific action in the course of a few hours. It is curious to remark the insusceptibility shown by some constitutions to take on the disease: one or two very striking instances I had an opportunity of observing, in the members of large families.

“8. From the superstitious notions annexed to the opening of dead bodies in this country, my curiosity in this respect is never gratified. I should much sooner be pardoned for murdering a man, than opening him afterwards.

“9. With the class of strong and athletic males, especially those resident in high and mountainous situations, the lancet could be used pretty freely. In general, bloodletting from ten to fifteen ounces was required at first; and it often was necessary to repeat it a second time, but not to such an extent. With pregnant women, I found the French practice of bleeding frequently repeated; but very small bleedings, the most advisable. But however violent the cough, pain in the breast, and other pneumonic symptoms were, neither males nor females could bear with impunity such a loss of blood, as may be sustained in genuine pneumonia with advantage. I know it for a fact, that several fell victims to the immoderate use of the lancet, as prescribed and practised by old wives and rustic phlebotomists. Antimonials and blisters I found of great and special use, conjoined and separate, in many cases, and were great auxiliaries to the lancet, particularly the latter. But where the pneumonic symptoms were high, they were not sufficient of themselves. I cannot speak much of the calomel alone (except as a purgative). When combined with opium, as recommended by the late Dr. Hamilton, I am in the habit of using it in cases of catarrhus senilis, and with decided benefit. But I cannot say so much for its effects in influenza.

“10. Profuse sweating was exceedingly hurtful at any period, particularly if excited by strong diaphoretics; but I invariably kept the patients to bed for some days, if the complaint was not very trifling indeed, and this practice I hold to be of the first importance. In the first days, I looked on the bed as half the cure; and when we consider the less irritation

there is thus offered to the system, and the freedom with which the vessels of the skin act, we are not to be surprised. I do not of course mean that the patients were closely covered in bed, and under much perspiration. I attended assiduously to the temperature of the chamber, and I continually observed, that where it was cool, and ventilation practised, that it contributed much to the comfort of the sick, and tended to accelerate their recovery. In the habitations of the poor, where ventilation, etc., were not well attended to, their sufferings were in proportion greater; and where, as I often had occasion to observe it, a man, his wife, and three or four grown-up children were crowded in a small dirty apartment, I thought it a charity to order the window to be taken out, and to remain so night and day. This practice seldom failed to relieve the stuffing of the head, dejection of spirits, etc. When the pneumonic symptoms were high, this was had recourse to with more caution.

"11. I found it necessary to keep the bowels soluble. But I did not find that the symptoms were relieved by a hypercatharsis; neither was I sensible that more benefit accrued in effecting the purpose of a purgative, by using the decoct. Tamarind. cum Sen. and such like, or by having recourse to the more drastic means of Calomel, which alone, and with Jalap, I tried freely. As a purgative and stomachic, I used with advantage a large dose of Calcined Magnesia and Pulv. Rhei, with a drop of Ol. Cin., to be taken over night in a large draught of any simple water.

"12. I seldom administered Opium by itself at first; but when the complaint was farther advanced, and it became necessary from a teasing cough, etc., I exhibited Tinct. Opii in large doses, finding that small ones manifestly did harm, by adding to the irritability of the system. Many, on being attacked, took Tinct. Opii camphorat. of their own accord, with various effects. In general, they were prepossessed in its favour, and continued its use.

"I shall now proceed to answer the queries proposed by yourselves; first, observing that we have in this town about 6000 inhabitants, and in the island about 35,000.

"1. I have seen a very large number of persons under influenza, amounting certainly to some thousands. Not that I

mean to be understood that I was called in to the greater number, but that with a view of observing the symptoms of the disorder on different constitutions, and in different parts of the island, I put myself to much extra trouble. Of patients immediately under my own care, I lost five of pure influenza; they all died with symptoms of pneumonia typhodes. No petechiæ appeared that I could discover on any. In two there was an eruption, but it seemed of the miliary kind, and arose, I believe, from their being kept too warm in bed, very much contrary to my orders.

"Two (in whom was the miliary appearance) were bled, but with evident bad effect; but, indeed, I was in a manner compelled to it, by the violent pain in the side, and tremendous cough. Strong soups, wine and stimuli, including blisters, were the means used.

"The subjects were all above 20, and under 55.

"The mortality, in an indirect way, was truly very considerable; in which class I include persons who had been long tottering over the grave from age. Old people, I observed, had not the complaint unusually violent, but it was so, relatively considered with their frail constitution.

"Though a little out of place, I must remark, that I had no infant patients, nor many very young people, and those labouring under various chronic ills, as asthma, catarrhus senilis, hydropic affections, etc.; and one (a much regretted friend, a captain in dragoons), a martyr for some years to angina pectoris, and who, by the way, had been greatly benefited in this dreadful malady by the use of issues.

"The influenza, also, most manifestly hurried off many who were in different stages of phthisis. This effect, I observe, is doubted by some, and denied by others, in the full history of the influenza of 1782, given in the first volume of 'Medical Communications.' But my own experience leads me to a perfectly contrary conclusion; and surely it seems as probable, that tubercles in the lungs will be irritated as much by a cough induced by a specific cause, as by one arising from cold.

"2. In scrofulous habits, the influenza often is followed by phthisical symptoms; and when consumption is a sequel, it runs on to its fatal termination with greater celerity than I have observed as arising from other excitatives. Some, I am

sorry to say, have become victims to phthisis this autumn, in whom no symptom of the disease had appeared previous to the attack of influenza last spring; a very short course for a complaint, as often lingering as it is certainly mortal.

“The epidemic left, in many males above 50, a great liability to be affected with cold, in the way of cough, which may eventually become catarrhus senilis, or may give an aptitude to an attack of peripneumonia notha.

“A frequent immediate consequence of influenza in pregnant women was to induce miscarriage, which in the latter months was attended with the most dreadful floodings. On reasoning on this consequence of the influenza, it seems to me, that perhaps the epidemic exerts an analogous, though not so violent an influence on the pregnant female, as variola, however favourable, is known to do; and that thus, and not from the mechanical effect of the cough, etc., are we to account for so serious an occurrence.

“Some few patients had epiphora and inflamed eyes, as we observe in measles, for a considerable time after the influenza had gone off. Some were afflicted with repeated attacks of epistaxis; and one patient had hæmoptoë to a serious degree after the epidemic had left him, who had never before been subject to such an ailment. The patient with hæmoptoë had no hereditary claim to phthisis. Perhaps all these cases arose from the debility occasioned by the previous increased action in the vessels of the head and lungs.”

In reference to the meteorological phenomena of the year, it may be interesting to mention that, on the nights of the 5th and 7th of March, red snow was observed on the mountain Tölmezzo in Frioul. Red rain and snow fell at the same time in Vienna, and passed over Italy and Sicily, falling from a dark red cloud, coming from the south-east, and attended with lightning, thunder, and hail. The cinnamon-coloured dust with which this was associated contained eighteen species of polygastric animalcule, one of which, namely the *Synedra entomon*, is known only in South America.¹

¹ Ehrenberg, *Passat-Staub und Blutregen*, pp. 107, 129.

EPIDEMIC OF 1831

DR. BURNE¹

"The present influenza—a disorder according exactly with the Tussis epidemica of Sydenham, and the influenza of later authors,—has prevailed epidemically for the last two weeks in this metropolis, affecting all ages, and supervening without any assignable cause. Of seventy patients who presented themselves at the public Dispensary, on Thursday, the 23d inst. (June), more than one-half were suffering from the influenza. The influenza may be said to centre in the chest, although the whole body is affected by it, the head particularly. When at its height it consists in a severe, hard, harsh, dry cough, recurring more or less in paroxysms, with great soreness behind the sternum or a fixed pain on one side of it. The whole mucous lining of the throat, nares, and eyes, participating in the affection, the eyes being vascular, the nose stuffed, and the throat slightly sore. The head, too, is heavy and painful, and it jarred distressingly by the paroxysms of coughing, which gives the sensation as if the head was splitting. Withal, there is an unusual languor and debility disproportionate to the local affection. The skin is generally very hot, and at the same time chilliness is felt on exposure to a current of air. The tongue is foul, the taste impaired, and the appetite gone. The urine is scanty and high coloured, and there is a great and general *malaise*. The pulse is accelerated, and increased in volume and force, yet it is by no means full or strong. The attack commences with a sense of rawness, with irritation, and at the same time constriction in the trachea, extending downwards to the chest, which provokes a cough of the character above described. In addition to which is a heaviness of the head and dullness of the sensorial powers, and great bodily languor. The eye soon feels stiff and weak, the nares dry and stuffed, and the throat rather full and sore. There is also this circumstance peculiar in the attack, namely, that the patient is not sensible of having taken cold, nor of any cause that can

¹ Dispensary Reports by John Burne, M.D., Physician to the Public Dispensary, Chancery Lane. London, Medical Gazette, 1831, vol. viii. p. 430.

have produced his illness. The invasion does not depend on the usual exciting cause—cold, but must be considered spontaneous. Some persons, it is true, date the attack from a particular chill or exposure, but this is rare compared with the number affected. The influenza generally goes off with an abundant nocturnal perspiration, about the third or fourth day, and with a considerable discharge from the nostrils, but not by an abundant expectoration; the cough continuing nearly dry to the last, and there being only a little thick, tenacious expectoration, which is detached with difficulty. Cases of this description in which the pneumonic signs are severe, require the antiphlogistic treatment of bloodletting and antimony; but I have not been induced to bleed largely on account of the great depression of the strength and dullness of the sensorial powers, nor have I in any instance had occasion to draw blood a second time. I have found the abstraction of eight, ten or twelve ounces of blood sufficient, in the worst cases, to mitigate the severe symptoms immediately, and with the assistance of the Tartarized Antimony and the Tinctura Camphoratae Comp., and a blister, or warm plaister, to remove them altogether in a few days, leaving the patient, however, weak and languid. In the milder cases of the influenza the pneumonic symptoms are less urgent, while the pain and heaviness of the head, with the depression of strength and dullness of the sensorial powers, is greater than in the description above given. Indeed many of these patients present the aspect of persons attacked with the adynamic fever, so much are the vital powers depressed. The pneumonic symptoms in these milder cases, consisting of a tickling sensation in the trachea, with a dry, troublesome cough, are relieved by saline medicines and the Compound Tincture of Camphor, and warm plaisters to the chest; but so prominent is the prostration of the powers of the muscular and nervous systems, that I have, in many instances, been obliged to commence at once with the Carbonate of Ammonia, which has been followed by the best effects. With this various treatment, adapted to the peculiarities of the case, the patients have all done well.

“CASE I.—A young man, about 22 years of age, presented himself at the Dispensary, on Monday the 19th inst. He complained of a sense of rawness and irritation in the trachea,

with a dry and rather harsh cough recurring by fits. His eyes were very vascular, but dull and heavy. His nares felt stuffed, his skin was dry and hot; the tongue foul, the appetite gone, and the urine scanty and high coloured; his head also was heavy and painful. The most prominent feature, however, was a very great muscular debility and dullness of the sensorial powers, which deprived his face of expression, and himself almost of the power of supporting his body. The character of the febrile movement was markedly adynamic. I directed a warm plaister to be applied to the chest, and one drachm of the *Liquor Ammoniae Subcarb.*, to be taken every four hours, with 20 drops of the *Spir. Lavand. Comp.* in peppermint water. By this treatment he improved speedily, the cough abated gradually, the headache and heaviness diminished, and his strength began to return. He is now convalescent.

"CASE II.—On the 23d inst., early in the morning, I was called in haste to visit a medical friend, who although rather subject to colds, felt himself now unusually ill. He was lying in bed, distressed by a hard, harsh, dry cough, which jarred his head excessively, as well as aggravated a fixed pain on the right of the sternum. The cough recurred in paroxysms, during which he suffered more from its effect upon the head than upon the chest. He had, in addition, considerable pain in the head, with depression of strength and spirits, believing himself to be very ill, and having feelings of apprehension which he had not experienced on other occasions. The pulse was accelerated, and somewhat increased in force and volume, but it was neither full nor strong; the tongue was foul, the skin hot. He was restless, and had been indisposed for two or three days, with pain of the head, and wandering pains about the chest. He was bled immediately to twelve ounces, and began to take one sixth of a grain of the *Antimon. Tartariz.* every two hours, with 20 drops of the *Tinct. Camph. Comp.* By the evening he was much relieved; the severity of the pneumonic signs was checked by the loss of blood, and effectually relieved as soon as the antimony produced nausea, which happened in a few hours, his stomach being easily acted upon by that remedy. Still, however, he felt ill at ease; his head was light from the loss of blood; he was weak, and anxious

about himself. The antimony was discontinued, and after having passed a tranquil and refreshing night, he was next day in a more comfortable state, and free from apprehension. From this time he has recovered rapidly."

About the same time that influenza visited London it also prevailed at Plymouth, where delirium was not an uncommon symptom; and at a later period some of the cases terminated in diarrhoea. The complaints of this spring, as well as of the previous year, were considered peculiar in character, as though from some unusual atmospheric influence.¹

"The disease first appeared, as related by Mr. Lawson,² on board the Hon. Comp. ship 'Inglis,' while at China, on the 25th of January 1830, on which day eight or nine men were suddenly seized; on the following day twenty-four were attacked; on the 27th eight or ten; and on the 28th and 29th six more cases are recorded, after which there were no new cases. The attack was sudden, and the disease, within two hours, as severe as during any time of its continuance. The symptoms were pain in the head, more especially over the frontal sinus. Cough, discharge from the nose, sense of rawness in the throat and chest, rather than severe pain; great prostration of strength; in some of the cases there was pain in the epigastrium, as well as across the loins, with severe aching pains in the limbs; pulse frequent, but generally soft. The febrile symptoms in most cases had entirely subsided on the third or fourth day, and the cough, in the majority of instances, in about the space of a week from the commencement. There were, however, some exceptions, where a troublesome cough remained for two or three weeks. The remedy employed at the commencement was an emetic of ʒj Pulv. Ipecac., with subsequently febrifuges and purgatives. One man who had for a length of time been confined to his hammock with swelled testicle, was also attacked among the rest; but it left him about the usual time, his other complaint having been in no way affected by it.

"The disease prevailed again in China during the month of September, and at the same time visited Manilla, where it had

¹ On the Epidemic Catarrh which prevailed at Manilla, etc. By George Bennett, M.R.C.S. London, Med. Gazette, 1831, vol. viii. p. 522.

² Idem, 1831, vol. viii. p. 525.

also raged in the year 1810, and exhibited similar symptoms to those which were presented in China.

“Previous to the appearance of the epidemic catarrh at Manilla, the weather had been unusually hot and dry for the season of the year, which combined with a very variable atmosphere, during the day and night, was considered by the inhabitants to forebode a severe hurricane or an earthquake. . . . The crew of the ship ‘Charles Forbes,’ which arrived at Manilla from China, on the 18th of September, was attacked with the epidemic during the voyage.

“During the month of May the weather was unusually variable; the barometer rising and falling suddenly, and the thermometer standing one day at 80° Fahrenheit, and a few days afterwards at 32°. The wind was prevailing steadily from the north-east. The month commenced with heavy clouds, murky storms, copious precipitations of rain, and remote thunder; the thermometer ranged from 55 to 60 degrees, and the wind blew for a few days from the west, and then shifted round to the north. This condition of atmosphere was succeeded by an overcast sky, with intervals of sunshine; a keen, cutting wind from the north-east, frost, ice, and snow; the thermometer rapidly sinking to 32 degrees. Greatcoats which had been thrown off were resumed, and the fire-hearth became acceptable. By the middle of the month the weather cleared, and became warmer; the sky brightening, a high blustering wind prevailed from the north-east, drifting before it clouds of the dust from the roads; the thermometer ranging with celerity between 62 and 32 degrees. During the severest intervals of this weather ice was formed upon the ponds at night; the early fruits were partially blighted; the petals of the new-blown rose dropped from the shrub, and the hedge-row box seemed as it were singed; ‘the frosty air burnt froze.’ The north-east wind was heightened into a gale, by which several vessels were drifted from their moorings in the port of the Thames, and a heavy atmosphere, a calm, and a soaking rain followed. From this time, the 20th, to the end of the month, either a grey mist, with a hot sun, 80°, occasionally gave way before a gelid wind, 40° from the north-east, the usual forerunner of storms and thunder, or the soil became dry and dusty under a light sunshine, with fleeting cloudlets, or a sultry sun gleamed

through a hazy atmosphere. The thermometer stood at 32° and, in the day, varied between 50° and 80°. A pelting rain, north 50°, and a fine, clear, breezy day, west 60°, closed the month. Then followed the month of June, remarkable only for a high temperature, a singular humidity of air, a soft wind from the south-west, and a bright, hot, summer sun. During the first days of the month the sunshine was interrupted by a light rain, once by clouds, rain, and a gale from the north 40°, and occasionally by transient hail-storms, and remote thunder. The thermometer ranged between 40° and 80°; but it generally varied between 75° and 60°; and this was the month in which the influenza made its appearance.”¹

“Additional evidence of the unhealthy character of this year is afforded in the following extract from the ‘Statistical Reports on the Health of the Navy’ for the years 1830-6.² ‘In certain positions within the tropics, or on their confines, little surprise is excited when an unhealthy succeeds a healthy year, or when a series of years in which there is much mortality follows a number in which there had been comparatively little; because we are prepared by experience for the eruption of sweeping epidemics there, which leave no room to question the cause of difference, whatever doubt there may be as to the origin of the epidemic on which the difference evidently depends; but in the force under review, embracing the ports and shores of Great Britain and Ireland, and the adjacent seas, and in the absence of any uncommon, generally-diffused, or epidemic disease, it is surprising that the mortality of one year should more than double that of the year which immediately preceded it. In 1830 the rate of dying, from all causes and in both sections of force, the home and various, was 7·5, while in 1831 it was nearly 16 per 1000 of the number employed. The former is lower than that of any foreign station in any one year, excepting two years in South America, and is under the annual average of seven years there: the latter is within 4 per 1000 of the annual rate of dying, on seven years’ average, in the West Indies and North American command, and nearly double the

¹ J. A. Hingeston, in London Medical Gazette, 1831, vol. viii. p. 587.

² Part II. Africa. Home and various forces, p. 157. The preceding tables in these reports present results which differ strikingly from those of the year 1830, and for which there are no means of accounting satisfactorily.

annual average of the South American. . . . The augmented mortality depended chiefly on increase of force in the causes of febrile disease, and that not only of idiopathic fevers, but also of other diseases in which there are febrile manifestations.' There was no adequate meteoric or other cause discovered.

"The pervading influenza which occasioned increased mortality among the citizens and the shore-residents appears to have been extended to the harbours and coasts of these islands, giving to common forms of disease, as on shore, more than ordinary degree of fatal force. During the following year the cause of malignant cholera became operative in many parts of the United Kingdom, with great concentration of power, and proved fatal in a very high proportion of the number attacked. Whether the same, or an altered agency, with less concentration and more diffusion, co-operated with the common causes of disease during the year in question, and endowed them with greater destructive agency, cannot be determined; but looking at all the circumstances, and bearing in mind the peculiar power of endemic, epidemic agency in some other cases, it is reasonable to conclude that it did."

A large proportion of the cases of catarrhal fever noticed in these reports were from the receiving-ship off the Tower of London.

During the prevalence of influenza many other diseases exhibit more than the ordinary degree of fatality.

On the continent, during the year 1830, intermittent fevers prevailed, succeeded by remittent and gastric fever. At the beginning of 1831 the prevailing type was again intermittent. In May influenza appeared, to be followed in summer by cholera.¹

There were great variations in the duration and severity of this visitation in different places. Thus for example it did not increase the mortality in Paris, but at Berlin was as fatal as cholera. At Berlin it lasted only a few weeks, at Moscow and St. Petersburg two months, but at Paris it hung about for a year.²

Dr. Lombard observed that the symptoms in Geneva were similar to those in England. That physician found emetics so useful that patients often felt cured the day after their employ-

¹ Medicinische Zeitung, pp. 242, 247.

² Gazette Médicale, 1833.

ment. The pulse sinking from 100 to 80 or 70, and the headache, whatever its intensity, disappearing as if by enchantment.¹

Adynamic fever, influenza, dysenteric diarrhoea and cholera succeeded each other, and indeed, to a certain extent, prevailed together in the year 1831, so as to present a resemblance to the epidemic constitution described by Sydenham as prevailing from the year 1675 to 1679.

The disease prevailed very extensively amongst horses, affecting the whole system, and often making its attack whilst they were under a medical regimen adapted for its removal.

In the months of August, September, and October many horses in the neighbourhood of Chester were affected with dysentery, and the same disease was very widely diffused amongst dogs.²

A similar transition was observed in epidemic influence exerted on the human subject, especially at Paris. In that city, during the month of July, which was even hotter than usual, diarrhoea and dysentery took the place of influenza; and in August the intestinal catarrh was called cholérine. Some degree of intestinal irritation, indeed, attended some of the cases of influenza.³

In the year 1832 epidemic diseases extensively affected the lower animals. Chickens, in various parts of France, had an affection analogous to cholera. They were thirsty, suffered from spasm, sought the sun, and crowded together for warmth, and their blood was darker than natural. Great mortality was also observed amongst fish, especially carp, and their spinal cord was found in a state of great congestion.⁴

On the 15th of May 1830, during the prevalence of the Sirocco, red-dust fell on the ship "Revenge" at Malta. This dust was accompanied by rain, and the atmosphere was at the time thick, and of a yellow colour. The wind was east-south-east.

On the 27th of October similar dust fell on board the Prussian merchant-ship, "Princess Louisa," to the west of Africa, and at the Cape de Verd Islands.⁵

¹ Gazette Médicale, 1833, p. 729. ² Veterinarian, 1831, pp. 185, 217, 223.

³ Chomel; Gazette Médicale, 1831, p. 314.

⁴ Groguier Recueil de Méd. Vétérinaire, vol. ix. Olivier, Gazette Médicale, No. 27, 8th May 1832.

⁵ Ehrenberg, op. cit., p. 116.

EPIDEMIC OF 1833

MR. HINGESTON ¹

"The passing features of disease are quickly lost and forgotten if we do not pause and depict their aspect while yet they are present. He who has not made the experiment, or who is not accustomed to require rigorous accuracy from himself, will scarcely believe how much a few hours take from certainty of knowledge and distinctness of imagery,—how the succession of objects will be broken,—how separate parts will be confused,—and how many particular features and discriminations will be compressed and conglomerated into one gross and general idea. (Dr. Johnson, *Western Isles*, etc., *Inch Kenneth*.) The following sketch of the influenza, so lately prevalent in London, has been drawn with a rapid pencil from a distinct survey of many cases, and a characteristic outline of the disease is presented as it appeared to one within the circuit of his own recognition.

"In the middle of the month of March, several persons were attacked with the affections of the bronchia and larynx common in the spring of the year, but it was not till the 6th of April that the influenza developed its pathognomonic character, and within the city started up widely on a sudden, manifesting itself in three different forms; each of these forms arose in succession, the active preceding the passive, and thus it happened:

"1. Bronchitis with acute fever and keen arterial action, which presented itself in single cases towards the end of the month of March, and in the beginning of April. It yielded to the ordinary antiphlogistic treatment, and ended in a copious pituitous expectoration.

"2. A catarrh of all the air passages, announced by sneezing, heaviness of the forehead, suffusion of the eyes, running at the nose, and a teasing cough. There were fugitive pains along all the great muscles of the limbs, pain of the hypochondria, and loins, and nape of the neck; perspiration and soreness pervaded the skin, but the perspiration was not critical. The bowels were naturally relieved, the tongue was clean, but the

¹ London Medical Gazette, vol. xii. p. 199.

urine was scanty. In healthy persons this attack lasted from three to six days, and yielded to salines, nephritics, rest, abstinence, and sudorifics.

"3. Adynamic catarrh, announced like the former by sneezing and the usual symptoms of a common cold, but distinguished by deep nervous depression and a subacute fever, running on, in some instances, to twenty-one days. The tongue was foul and loaded, and there was nausea, a complete loss of taste and appetite and smell, a pale languid countenance, torpor of the bowels, præcordial distension, and a deficiency of bile. In some cases there was a sudden and very marked prostration of all the vital powers. The sleep was broken and interrupted, with frightful and fantastic dreams; the cellular tissue was lax, and the skin humid and universally sore; the urine was scanty, high coloured, and turbid. In this form of the disease the thorax was internally sore, with an incessant cough, and a teasing glutinous expectoration; and occasionally by fits and starts, there would be a fixed pain in the head or abdomen, simulating inflammation; the pulse being at the same time quick, and often accelerated. The patient was cast back on his bed, and appeared alarmed at his own situation.

"This form of the influenza obeyed no simple febrifuge, but seemed to run a certain course, and then expire of itself, leaving a very characteristic lassitude, so as to depress the patient greatly. It was aggravated by bleeding and active antiphlogistic treatment; it was alleviated by mild purgations of mercury, rhubarb, and colocynth; but the chief means of relief, was by acting on the kidneys, and causing a copious flow of urine. The soreness at the chest might be removed by a blister, and as soon as the febrile condition had passed away, the quinine was serviceable. It was always proper to impose abstinence and absolute rest under the bed-clothes, but all patients were not submissive. The muscular languor continued for some time after the outward restoration to health and vigour of aspect had apparently returned, and the patient was still reminded of his weakness by a lurking pain which tarried in the loins. The expectoration became chronic, plentiful, and inconvenient, the appetite might fade, the stomach and bowels falter, and a relapse occasionally ensue. The animal spirits drooped, and some invalids felt and confessed an unaccountable

sense of woe ; and so much for the three forms of this malady. Under the influence of this epidemic, asthmatic old people gradually became ill, and the medical man's attention was attracted at first to the stomach. There was vomiting of all the ingesta, pains in the hypochondria and shoulder, bladder and loins, a rapid pulse, often irregular costive bowels, and restlessness. Gradually the respiration became high and laborious, the breath wheezing audibly, a stifling cough being incessant, and the air tubes becoming choked up with froth and tough mucus. The patient fixed his hands and shoulders, and assumed various erect or reclining attitudes, always indicative of the greatest uneasiness. The urine was diminished or entirely suppressed, the lips darkened, the countenance expressed alarm and anguish ; the pulse in some was quick, large, and bounding, in others rapid, little, and irregular ; the skin was hot and dry, the tongue clammy, the thirst great, and the appetite gone, and so the patient might die suffocated.

"The disease seemed to have its seat in the air-tubes, the smaller ramifications of which were filled with a tough yellow phlegm, causing an incessant short cough, so as to clear them for the permeation of air, and the indispensable oxygenation of the blood. Here lay the disease : 1st, in tough phlegm which could be thrown off only by coughing ; 2d, in an imperfect and impeded oxygenation of the blood. The liver was always deranged, either as a sequence or a cause. The object of treatment was :—(1) to give the lungs less work to do, therefore to bleed once ; (2) to relieve the lungs by external irritants, by blisters ; (3) to loosen the phlegm by warm expectorants ; and (4) to act on the bowels, kidneys, and skin.

"As far as my experience has gone, any treatment was fallacious. One bleeding from the arm was beneficial, but it could not be repeated, for though the blood might be both cupped and buffed, yet the crassamentum was weak, and the serum abundant. Diffusive stimulants and generous food, when it could be taken, were more useful than depressants, and the difficulty seemed to lie in making the kidneys act efficiently. Vomiting was unfavorable, but a spontaneous purging seemed to be beneficial and decisive. The restlessness and vigilance could be opposed by opium, only towards convalescence.

"These patients might linger for the space of two or three

weeks and then get up well, or they might die in the same number of days. Children of ten months old were also afflicted with pulmonary disease about this same period. Now their symptoms were those of pneumonia notha, and they looked like little old persons labouring under asthma. Leeches, Ipecacuanha, and Mercury specifically, killed them; but relief seemed to be procured by mild doses of Rhubarb, with half-grain doses of Calomel as a purge, and a combination of Oxymel of Squills with the Acetate of Ammonia. A bland milk food was the best. Many died.

“And so much for the influenza manifested in its three forms, and in its particular modes of attack upon the old and the young.

“The disease was ushered into London during the prevalence of a bleak wind and a cold vernal atmosphere succeeding to a long, warm, moist winter. Storms of hail, snow, sleet, thunder, and rain, from dark fragments of clouds, were alternated only by currents of gelid air and harsh squalls from the north and north-east. Under these coarse rude flaws of heaven, the pulmonary organs of man, so susceptible of atmospheric changes, were excited and parched or moistened and depressed, and the whole surface of the skin must have suffered universally in its functions. Those persons were the least liable to the influenza who were the most exposed to the outward changes of the weather, and those had it the worst who were irregularly exposed, as servants and kitchen-maids. The valetudinarian, the epicurean, and the profligate, seemed to fall readily under the distemper; and it was both curious and interesting to remark in the mingled population of this immense city, when all were equally exposed to the same evil, the patience of the poor and the impatience of the rich. Disease may be modified or aggravated by any native or acquired irritability of temperament, and the sudden and unexpected accumulation of wealth often inflicts upon its surprised possessor a restlessness of spirit which, in animated nature, is the attribute only of birds and children. The patience of the poor is founded upon hope; they anticipate death as a refuge, a port, a harbour of safety; they foresee in the end of their days the only certainty in life. But the offensive intrusion of illness sullies the furniture of a handsome apartment; and death is bitter to a man in the

midst of his possessions. 'Une malade dégoûté,' says Voltaire, speaking of happiness in prosperity, 'ne mange rien d'un grand festin préparé pour lui' (*Articles de Littérature très intéressans*).—He who is engaged in the active pursuits of merchandise and money, or who exhausts his intellect in schemes of worldly parade and ostentation, brooks not the imperative restraints of sickness and pain, and seems astonished that his will no longer commands the servile functions of his limbs. Pride, proper to man and fostered in polite society, may be checked by adversity, but can be extinguished only by disease and the visible approach or vicinity of death. The physician beholds the commonalty of human nature, and hears the same words and the same phrases expressive of the same sensations, as if the rich and the poor, the foolish and the wise, had previously met by concert and agreed to speak the same language in their separate habitations. But as soon as health is again confirmed, the distinctions of wealth, rank, and intellect, become again paramount, and all equally defer the end of life, the certainty of which is equally unacceptable to all.—At length the canopy of clouds was withdrawn, and the summer sun shone brightly as the disease faded."

The previous visitation of 1831, occurring in summer, and attacking subjects exhausted by heat, was attended with more debility: this of 1833, occurring in spring, was attended with greater nervous disturbance, and the convalescence was more tardy: nearly four-fifths of the inhabitants of Paris were affected. In this city it appeared under three varieties:—1st, the form complicated with angina, pleurisy, or pneumonia; 2dly, with fever and local disturbance; 3dly, with malaise and hoarseness. Tic douloureux, neuralgia, and rheumatism, prevailed shortly before the onset of the epidemic, especially at Geneva; indeed, an eminently nervous constitution of atmosphere seemed to prevail in the year 1833 as well as in 1831.¹

It was observed by many continental practitioners, that if purgatives were not administered, the appetite was slow to return. The most approved treatment was to administer emetics at the onset, and afterwards purgatives.²

In London, concurrently with the prevalence of the disease in man, horses were affected with influenza; but for some time,

¹ Gazette Médicale, pp. 345, 729.

² Idem.

whilst those in the low parts suffered, those in the upper and north-west districts escaped. Not many weeks afterwards, there was not a mews in Marylebone which did not contain some patients, while Westminster was exempt from disease, and in Marylebone, observes Mr. Youatt, "I have known it to be confined to a district not a furlong square. In one extraordinary case, a fifth part of the horses in a certain mews died, while there was no vestige of disease elsewhere. I recollect, that in one of our barracks, the majority of the horses on one side of the yard were attacked by epidemic catarrh, while there was not a sick horse on the other side. These prevalences and these exceptions are altogether unaccountable. The stables and the system of stable management have been most carefully inquired into in the infected and healthy districts, and no satisfactory difference could be ascertained. One very important fact, however, has been established, namely, that the probability of the disease seemed to be in a tenfold ratio with the number of horses inhabiting a stable. Two or three shut up in a comparatively close stable would escape. Out of 30 distributed through 10 or 15 little stables, not one would be affected; but in a stable containing 10 or 12, although proportionably larger and more ventilated, the disease would assuredly appear; and, if it does enter one of the largest stables, almost every horse will be affected."¹

At Alfort, many horses convalescent from internal diseases, or affected with surgical maladies, were in the hospital suffering from Anorexia, weight and heat of head, weakness, red conjunctivæ, and dry cough; and many previously in good health became affected, when brought into the neighbourhood of the sick.²

In the spring of 1834, a minute species of ant so swarmed in London and Brighton, that many of the inhabitants were obliged to quit their houses.³

In 1835, the turnip suffered from the ravages of the wire-worm (*elater segetes*), the favourite food of the water-wagtail;⁴ but the general failure of the crop, which occurred in the southern and midland counties, was attributed to the incursions

¹ Mr. Youatt, Veterinarian, p. 117, 1833.

² Rec. de Méd. Vétér. vol. x. p. 530.

³ Entomol. Magazine, vol. ii. p. 310.

⁴ Farmer's Magazine, vol. iv. p. 28.

of the 'Altica Nemorum,' the glossy, tiny, skipping, hopping, merry-Andrew kind of beetle, called the turnip-fly.¹

During the space of about three weeks, namely, from the 16th of January to the 8th of February, the wind being north-easterly and the atmosphere hazy, that the visible horizon was only one mile distant, a peculiar dust fell at St. Jago in the Cape de Verd Islands. Much of this dust, which was of a reddish-brown colour, yielded a blackish or grayish bead to the blow-pipe, and did not effervesce with acids, was collected on the deck of the ship 'Beagle.' The dust was excessively fine grained, and so constantly falling as to roughen, and in some degree injure, the astronomical instruments.²

EPIDEMIC CATARRH OF 1836-37

DR. STREETEN³

"At the close of the epidemic catarrh which prevailed so extensively in the months of January, February, and March, of the year 1837, the Council of the Provincial Medical Association issued a circular to the members, requesting information respecting the origin, progress, and duration of the epidemic, its symptoms and treatment, the atmospheric phenomena attending and preceding it, together with such other particulars as might be necessary for the elucidation of many questions of interest immediately connected with it. The following were the questions to which the Council more especially directed the attention of the Society, and upon which they were desirous of obtaining explicit information:

"1. When did the influenza appear in your neighbourhood? and how long did it prevail there?

¹ Entomol. Magazine, vol. i. p. 363; vol. iv. p. 338; vol. v. p. 342.

² An account of the dust which fell in the Atlantic, by C. Darwin, F.R.S.; 'Geological Transactions,' 1845, p. 27.

³ Report upon the Influenza or Epidemic Catarrh of the Winter of 1836-37. By Robert J. N. Streeten, M.D. With Observations upon the Meteorological Phenomena, by Wm. Addison, Esq., F.L.S. 'Transactions of Provincial Medical Association,' vol. vi., London, 1838, p. 67.

" 2. Did it attack a great many individuals at the same time ?

" 3. Did it appear partial to any age, sex, or temperament ? or did it appear to attack all indiscriminately ?

" 4. Was it milder when it attacked children ?

" 5. What age appeared to suffer most from it ?

" 6. Was the spread of the distemper very extensive in your neighbourhood ?

" 7. What was the proportion of deaths to the number attacked ?

" 8. What circumstances predisposed the patients to a fatal termination of the disease ?

" 9. What was the ordinary duration of the disease ?

" 10. Were relapses common ?

" 11. Were persons whose occupations exposed them to the vicissitudes of the weather in the open air, more liable to the distemper than those who were confined chiefly to the house ?

" 12. Are you in possession of any proof of its having been communicated from one person to another ?

" 13. In persons attacked by the epidemic, who at the time laboured under pulmonary disease, was the former malady found to be aggravated on the subsidence of the influenza ?

" 14. Were there any circumstances that appeared to exempt individuals from an attack of the disease ? and, in particular, did the having been attacked during the last similar epidemic of the year 1834, appear to afford any protection ?

" 15. What were the usual symptoms of the complaint ?

" 16. What unusual symptoms occurred in your practice ?

" 17. What was your mode of treating the disease ?

" 18. Did any peculiar atmospheric phenomena precede or accompany this epidemic ?

" At the anniversary meeting held at Cheltenham, in the month of July last, a committee was appointed to take this subject into consideration, and to draw up a report from the answers sent in reply to the foregoing questions. These answers, though not so numerous as could have been wished, are yet sufficiently so to afford valuable information ; at the

same time, having been received from nearly all parts of the kingdom, they furnish data from which the influence of locality, and other causes depending thereon, in modifying the general features of the disease, may be inferred.

"In collating and comparing the various particulars contained in these replies, the authors of this report are of opinion, that they cannot proceed better in this inquiry than by following the plan already laid down, taking the questions in the order in which they were proposed by the Council.

"1. *When did the influenza appear in your neighbourhood, and how long did it prevail there?*—The answers to this question present considerable discrepancies, some of them dating the first appearance of the epidemic as early as the third week of November; others giving the second, third, and fourth weeks of January, and one assigning for its commencement a period as late as the 2d of February. The dates of cessation are also as indefinite, varying from the first week in February to the month of May. All accounts, however, coincide in referring its greatest prevalence to a period extending from the middle of January to the end of the first week in February.

"The following table exhibits the range of the dates assigned for the commencement and termination of the epidemic in various parts of the kingdom, which we have denominated, respectively, the Northern, Midland, Western, Southern, and Eastern Districts:

District.	Commencement.	Termination.
Northern	November; middle of January.	February 8; April.
Midland	November; January 16.	Middle of February; May 1.
Western	End of December; February 2.	Feb.; beginning of April.
Southern	Middle of Dec.; middle of Jan.	Middle of February; May.
Eastern	End of Dec.; beginning of Jan.	Beginning of Feb.; middle of March.

"From the preceding table it is obvious, that no conclusion can be drawn as to there having been any regular progression of the disease from one part of the kingdom to another; and, indeed, the individual details from which it is drawn up are

too imperfect and too discrepant to warrant such a conclusion, even had the general summary of them appeared to favour it. Thus, in the northern district, in which the range of appearance in the various localities comprised within the district is, according to the answers, from November to the middle of January, nearly the same diversity exists in the statements of different individuals residing in the same town,—Dr. Macrorie assigning November as the date of commencement, and April as that of termination at Liverpool; while Dr. Baird and Dr. Ramsay assign the month of January as being the period of commencement, and from the 8th to the middle of February as that of termination. To prevent any imputation from resting upon the general correctness and fidelity of the answers, it may be desirable to make some extracts from such of the replies as throw light upon the causes of this diversity of opinion. One of these causes would seem to be the latitude in which the term *Influenza* is made use of by different medical men. Dr. Baird says: ‘The first decided case of influenza which I met with occurred on the 3d day of January, and the last on the 8th of February: catarrhal complaints continued to be prevalent amongst the resident inhabitants for the three succeeding months, but their systems had either become proof against the distemper, or it had lost its intensity, for in no case could it be fairly said to be an attack of influenza. That the atmosphere of Liverpool, however, was still contaminated by the epidemic influence up to the middle and latter end of April was apparent, from the fact that many of the officers and men of the American ships, and generally the most robust, were violently attacked shortly after their arrival in port.’ The same also is stated to have occurred among the black sailors of ships coming from South America and the coast of Africa. It is not an unwarrantable assumption, that the catarrhal affections here spoken of by Dr. Baird, may have been considered by other observers as connected with the prevailing epidemic. Many of the replies from other parts afford illustrations of the preceding remarks. Dr. Hastings, of Worcester, states that he had observed several more than ordinarily severe attacks of bronchitis, frequently complicated with pleuritis, during the month of December 1836, these attacks being more fatal than in former winters, but that he did

not notice any *decided* case of influenza until the 13th day of January 1837. Other practitioners, residing in the counties of Worcester and Warwick, seem to have considered that these bronchial attacks partook more or less of the character of influenza, as may be inferred from the nature of their replies to this question; and it would appear that, notwithstanding that the chief prevalence of influenza was during the months of January and February, cases of catarrhal disease, amounting even to a partial epidemic, may have occurred in some localities previous to the general outbreak throughout the kingdom.

"The greater number of the replies from all parts agree in assigning the early part of January (from the 3d to the 13th) as the period of this outbreak; but setting aside those answers in which the information upon this point is less explicit, and confined merely to the announcement of a certain date or period as that upon which the epidemic made its appearance, there is evidence to show, or at least to lead to the inference as above stated, that a partial, and, as it were, preliminary epidemic, may, in certain localities, have been the forerunner of the more general one. Mr. Rice, of Stratford-upon-Avon, distinctly states this as the result of his observation: 'The influenza,' he says, 'appeared in this neighbourhood at two distinct periods, the first commencing the third week in November, when it continued about five weeks; the second about the 10th of January, when it continued epidemic in this town and the neighbouring villages up to the first week in March. A few cases occurred in the interval; and some cases have occurred since, and still continue (June 30th) to present themselves occasionally.'

"Another of the causes tending to give rise to a degree of uncertainty upon this point in the replies, is the different manner in which different individuals would regard the question. Some in their answers have simply stated the date of the first case to which they themselves were called, while others appear to have given a more extended signification to the terms of the question, and have thus stated the results of general observation, rather than of their own immediate experience. In the Chichester report, which contains the results of the united experience of the medical profession of

that place, this source of ambiguity is avoided; and it may, therefore, be taken as affording the most correct information as to the outbreak of the epidemic in the southern and south-eastern part of the kingdom. According to this report, 'The influenza began about the middle of December 1836, was at its height during the latter half of January and beginning of February 1837, and ended about the first week in March. There were, however, a few cases bearing all the characters of the epidemic as early as the middle of November, but they were detached, both in regard to time and place, and, therefore, not mentioned in the account.' Mr. Maul, of Southampton, bears similar testimony to the occurrence of sporadic cases previous to the general outbreak of the epidemic, to which, however, he assigns a date somewhat later than that given in the Chichester report. 'A few scattered cases,' he observes, 'of anomalous catarrh and bronchitis occurred in my practice at the end of December 1836. These cases increased in number at the beginning of January 1837; by the end of the first week the disease prevailed more generally, and assumed the character of an epidemic. During the second, third, and fourth weeks in January, and the first and second weeks in February, the cases became most numerous, and far exceeded anything that I had ever before met with. In the last two weeks in February, they declined in number, but many individuals were more severely assailed. In March, the disease again manifested itself, but rather in a modified form, and prevailed with diminished consequences through the month of April.' This last statement of the reappearance of the epidemic in the months of March and April, is consonant with the observations of several other practitioners, and may perhaps afford an explanation of the extended range given to the whole epidemic, in the replies from some of those gentlemen who have not entered into particulars upon this point.

"2. *Did it attack a great many individuals at the same time?*—The replies to this question are uniformly in the affirmative, and by far the greater portion of them speak decidedly as to the simultaneous outbreak of the disorder throughout the localities to which they severally refer. Dr. Davis, of Presteign, observes, that within his district, comprising a circle, the diameter of which is about fourteen miles, it

was impossible to mark any progression—cases in every part of it occurring simultaneously. Mr. May, of Reading, and several other gentlemen make the same remark. Dr. Shapter, of Exeter, however, states, that for the first ten days occasional cases only occurred, but that on the 18th, 19th, 20th, and 21st of January, it was a most prevailing epidemic. Mr. Bree, of Stowmarket, Mr. Maul, and some others, also refer to sporadic cases preceding the general attack. The terms in which the very great prevalence of the epidemic in all parts of the kingdom are spoken of, are most decided.

“3. *Did it appear partial to any age, sex, or temperament? or did it appear to attack all indiscriminately?*—A considerable portion, amounting to more than half of the returns, answer the latter part of this question affirmatively, stating that the epidemic in its attacks was irrespective of age, sex, or temperament. Others, however, point out a certain degree of exemption, or an increased liability, as attaching to one or other of the conditions mentioned in the former part of the question:—And first, as respects age, there seems to be a very general impression that infants and young children were less the subjects of this epidemic than adults or those advanced in life. Dr. Davis states, as the result of his experience, that persons of all ages were attacked by the epidemic, except young children, those under six years of age almost entirely escaping. Dr. Baird, Mr. May, Mr. Maul, Mr. Davis of Tenbury, Mr. Gwynne Bird of Swansea, Mr. Fletcher of Croydon, Dr. Grove and Mr. Sampson of Salisbury, Dr. Barlow and Mr. Godfrey of Bath, and other practitioners, express, in terms more or less decided, the entire or comparative immunity of children from attack during the late epidemic. Mr. Appleton, of Evesham, says, that of ninety-nine cases occurring during the month of January, there were only five under five years of age. Mr. Pritchard, of Leamington, gives the following statement of the ages in 170 cases occurring in his practice:

Under 14 years	26 cases, about one-sixth.
Between 14 and 65	119
Above 65	25
	} 144, about five-sixths.

“The Chichester report, however, makes the subjoined statement in reply to this question, ‘In regard to age, it seems almost equally to have attacked young and old. Of cases

recorded, the greater number appears to be at the periods under ten, and from thirty to forty, but the difference in the intermediate decades was trifling, and the uniformly decreasing numbers beyond forty would probably about tally with the small population of those ages.'

"It does not fall within the province of the authors of this report to decide which of these views,—that children were equally liable to, or comparatively exempt from, the attacks of the late epidemic,—is the correct one; but they may observe, that notwithstanding the high value to be placed upon the Chichester report, as embracing the united experience of the medical practitioners of that city and neighbourhood, and the support which this obtains from the experience of Dr. Brown, of Sunderland, Dr. Hastings, and other eminent individuals, who state unreservedly, that persons of all ages were attacked indiscriminately, their own experience would lead them to say that young children had manifested less liability to the attacks of the recent epidemic catarrh, than individuals more advanced in life. With one or two exceptions, it does not appear from the replies that the aged were the subjects of the influenza more than adults of an earlier period of life.

"Secondly, as respects sex and temperament, there seems to have been, for the most part, no appreciable difference in respect of liability to the disease. Mr. Myles, of Warrington, indeed, in his reply to this question, says, that 'those in the meridian of life, whose temperament was melancholic, principally males,' were more liable than others; and Dr. Macrorie considers the feeble and those of the lymphatic temperament to have been most subject to attack. The Chichester report gives the following statement:—'In regard to sex it seems to have had no great partiality. Of the entire number of recorded cases, the males to the females are as fourteen to nineteen; but the reports of parish practice give a very nearly equal share of each. It should perhaps be mentioned, that of one hundred and fifty-five cases in the parishes of Chichester and its suburbs (population between nine and ten thousand), eighty-two were males and seventy-three females. In the Manhood (?) district (population four thousand), of twenty-two cases, nineteen were males and three females. In this district not one patient was under thirty. In the Donnington district (popula-

tion three thousand), of sixty cases, twenty-two were males and thirty-eight females: twenty-six were under thirty, and nineteen under ten years.' This statement is in itself quite sufficient to show, in accordance with an ascertained principle in statistical inquiries, that the apparent exceptions derived from the limited experience of one individual, or one locality, must not be taken into account in deriving the general conclusion. It is only the accumulation of facts by numerous observers from a great extent of country, or a considerable period of time, which can enable us to correct the errors of a partial or limited experience, and to arrive at conclusions founded on truth.

"It should perhaps be mentioned, in connection with this question, that some of the replies state the liability to the disease to have been greater in those subject to chronic bronchitis, and in those of debilitated constitutions generally.

"4. *Was it milder when it attacked children?*—At least three-fourths of the returns answer this question in the affirmative. There are, however, some exceptions of importance. Dr. Fife, of Newcastle-upon-Tyne, states, that some of the most severe cases which he witnessed occurred during the period of dentition, from the age of six months to the third year; and Dr. Shapter says, that it was certainly not milder among children, but was, on the contrary, very fatal to them. Mr. Ceeley, of Aylesbury, reports that, except in *very young children*, it appeared to him to be rather milder in the young than in those more advanced in life. Mr. Nott, of Bew Regis, makes a similar exception; and Dr. Clendinning, of London, states, in reply to this question, that 'except in the cases of very young or of unhealthy children, it was mild.' It would seem, therefore, upon the whole, that the epidemic generally assumed a mild character when it attacked the young, but that cases of considerable severity were not uncommon among very young children and infants. This is readily accounted for by the predisposition which exists at an early age to bronchitis and to convulsive attacks. Thus, at Reading, according to the report of Mr. May, the disease appears to have assumed amongst children the characters of severe bronchitis or pneumonia; while Dr. Brown reports that he beheld the death of three infants, and heard of other fatal cases at this period

of life, all of whom died with symptoms of cerebral congestion.

“ 5. *What age appeared to suffer most from it?*—The answers to this question are almost unanimous in the statement, that the aged suffered most from the attacks of the epidemic; and next to the aged, it is remarked in several of the replies, that infants or very young children were most severely affected. Some practitioners, however, make a distinction between the severity of the symptoms and the fatality of the disease; and, according to these gentlemen, the actual suffering would appear to have been greater among the robust and adults of middle age, although, at the same time, they state the disease to have been most fatal to the aged. It is proper to observe, that this severity of suffering in the robust and those of middle age, was by no means general, as the subjoined extract from the replies sent in by Dr. Hastings sufficiently testifies. In answer to this query he says, ‘From sixty upwards. I answer this question most unhesitatingly. Under the age of sixty, persons, male as well as female, required many of them but slight attention to get safely, and in a few days, through the malady; but all of those, indiscriminately, male and female, who were so far advanced as sixty, suffered most severely, and had a long and dangerous illness, being confined to bed with cough and copious expectoration for some time. Of twelve persons above the age of sixty attacked, all were in bed for a week, all suffered most severely from profuse muco-purulent expectoration, all became considerably emaciated; eight were in bed for a fortnight, and had a dry tongue, with small feeble pulse; four were in bed for a month, all the time so critically ill that I scarcely expected them to live from day to day; and two died within nine days of the attack. The four old persons who were in bed a month have not yet¹ quite recovered, and neither of them left the house till the month of June. Among the persons attacked below sixty, although in number thirteen times more than those above that age, I had comparatively few that were in bed a week, and those were persons who had been previously ill, either with pulmonary or other complaints.

¹ “The communication bears no date, but we believe it to have been forwarded to the Committee in July or August last.”

"6. *Was the spread of the distemper very extensive in your neighbourhood?*—The answers to this question are uniformly in the affirmative; the terms in which the prevalence of the epidemic in all parts of the kingdom is spoken of, being most decided. 'I never knew an epidemic prevail so extensively.' 'Whole families in bed together.' 'It was, indeed, a general disease.' 'Very few persons, indeed, that escaped.' 'Almost general.' 'It would be difficult to point out an individual who had not the disease,' etc., are expressions taken indiscriminately from the replies, and furnish most conclusive evidence as to the widespread and almost universal influence of the causes which gave rise to this epidemic.

"7. *What was the proportion of deaths to the numbers attacked?*—The replies to this question, as might be expected from the circumstances of accurate numerical records not having been in every instance preserved, are extremely indefinite. It will still appear, however, that an approximation to the correct ratio is capable of being deduced. Several of the returns afford numerical details, giving the number of cases attended, and the number of deaths which ensued. Others afford a mere statement of the proportion which the deaths bore to the cases;—a statement which although less satisfactory than the more explicit details, may be presumed, for the most part, to have been made with due consideration. In those returns in which the actual numbers are given, the total of the cases is 2347; of the deaths, 54. These were distributed in the usual districts as follows:—

District.	Deaths.	Cases.	Proportion.
Northern . . .	3	171	1 in 57, or 1·7 per cent.
Midland . . .	22	932	1 in 42, or 2·3 ,,
Western . . .	4	73	1 in 18, or 5·5 ,,
Southern . . .	25	1171	1 in 47, or 2·1 ,,
Total . . .	54	2347	1 in 43, or 2·3 ,,

"The returns from the eastern district do not give any precise numerical statements.

"Omitting the western district, in which the number of

cases actually reported is so small, there is no great difference in the general result, and thus, as far as these data go, the conclusion may be drawn, that the proportional mortality of the epidemic was about one in fifty of those attacked. This agrees remarkably with the estimate formed by the greater number of those who have not given a precise numerical statement. Thus in two of the returns from the eastern part of the country, Kenninghall and Burnham, the deaths are stated to be about one in fifty, and about two and a half per cent of the cases; and the Chichester report estimates them as being from about one in forty to about one in fifty. Others of the returns give the proportion of about one in a hundred, or even a smaller ratio, while Mr. Bree did not see a single fatal case, although he thinks he could not have attended less than five hundred persons affected with the disease. The general result, however, as we have stated, affords a ratio of mortality of from two to two and a half per cent of those attacked, whether the numerical statements are taken as a guide, or the estimate deduced from the aggregate experience of those who have furnished the replies.

“ In two or three of the returns an attempt is made to throw some light upon the actual mortality resulting from influenza, by comparison of the parish registers for the period during which it was prevalent, with the corresponding period of one or more preceding years. Dr. Brown states ‘ that the funerals in the different parish churches of Sunderland were doubled in January, during the height of the epidemic; but that in February, when it was declining, though still existing, they exceeded but little the ordinary average.’ From a valuable statistical table sent by Dr. Black, of Bolton, it appears that there were four hundred and twenty burials at the parish church of Bolton during the months of January, February, and March, of the year 1837, being an excess of one hundred and thirty-two over the average for the same months of the five preceding years. In Bolton, however, this increase in the number of burials seems to have occurred for the most part during the month of February, as is shewn by the following table :—

	1837.	Average of Five preceding Yrs.	Excess.
January	115	111·2	3·8
February	205	79·0	126·0
March	100	97·8	2·2
Total	420	288·0	132·0

“ The only other return which furnishes any information of a similar character is that of Dr. Shapter, who says that in the two large burial-grounds belonging to the city of Exeter, the registered number of burials during the months of January and February 1837, were two hundred and twenty-seven, whilst in the corresponding months of the year 1836, they were only one hundred and twenty-five, giving an increase of one hundred and two as probably owing to the prevalence of influenza during that period.

“ 8. *What circumstances predisposed the patient to a fatal termination of the disease?*—The circumstances enumerated in the replies to this question may be resolved into those which are connected with the age of the patient, the previous general health, and the presence of or predisposition to actual disease. Nearly all the returns state old age to be the chief circumstance predisposing towards a fatal termination, and several of them add infancy as next in importance to old age. Many of the returns specify debility of constitution, without evident disease, from whatever cause arising, as materially conducing to a fatal result. But next to old age, previously existing disease of the pulmonary organs would seem, from the returns, to afford grounds for an unfavourable prognosis. Chronic pulmonary disease, chronic thoracic disease, affections of the lungs and heart generally, are mentioned as circumstances rendering the attacks of the epidemic more likely to prove fatal; and among those diseases which are more specifically characterised, bronchitis and asthma hold the first place. Some difference, however, in this respect would seem to have existed at different periods of life. Dr. Shapter observes that ‘the circumstances which particularly predisposed to a fatal termination were, amongst children, hooping-cough, and the recently having had some of the infantile

eruptive diseases, which prevailed very much during the preceding November and December; amongst the more advanced in life, pectoral weaknesses generally, but more especially asthma.' Dr. Brown, again, remarks: 'Besides the time of life, old age, and infancy, already mentioned, chronic thoracic disease, or peculiar proneness to such disease, predisposed the patients to a fatal termination. Of the aged persons who died, in almost all there was some previously-existing disease, generally chronic bronchitis, affection of the heart, or both conjointly. Of the young and middle-aged who *ultimately* fell victims, the majority died of phthisis, leading me to suppose that a tubercular diathesis pre-existed, and in such cases there were either previous indications of pulmonary disease, or a family tendency to it.' Dr. Brown adds that 'of all circumstances which predisposed to a fatal event, neglect, or mismanagement of the disease, in its early stage, was the most influential,' a statement confirmed by Dr. McCabe, of Cheltenham, who forcibly points out the mischiefs which arose from the empirical use of stimulants and other remedies recommended at the time in the public press.

" 9. *What was the ordinary duration of the disease?*—From a careful consideration of the answers to this query, it appears that the disease may be divided into two stages,—one which may be termed the acute stage, lasting generally from two to four or five days, the disease frequently terminating altogether at the end of this period; and a second or more chronic stage, in which the symptoms continued in a slighter form for a period varying from five to ten days, or even a fortnight more. In addition to this, however, a state of debility seems to have hung over many of those who suffered, for an indefinite period. These circumstances, taken in connection with relapses and sequelæ, will sufficiently account for the extreme variation in the replies to this question, the greater number of which, however, give in general terms from five days or a week to a fortnight as the ordinary duration of the symptoms. Dr. Hastings, Mr. Rice, and several other gentlemen observed, that the duration of the disease was very various in different individuals, and Dr. Baird states that it was much longer in the aged, than in persons of the middle period of life.

" 10. *Were Relapses common?*—This is one of the queries,

in the replies to which much difference exists. The diversity is probably owing, in many instances, to the vague and indefinite nature of all information of the kind which is not founded upon numerical data. The language of the Chichester report, which bears every evidence of having been drawn up from such data, although in the present instance it does not give the details, is strongly corroborative of this remark. 'Relapses,' it is stated, 'were very frequent, but probably in relation to the entire number of attacks, not very numerous; when they occurred they were generally severe.' One only of the returns gives a proportionate statement, that of Dr. Hastings, who assigns one in twenty-one as the proportion borne by the relapses to the primary attacks in his practice. The following are among the chief localities in which relapses are stated to have been of frequent occurrence:—Sunderland, Newcastle-upon-Tyne, Leicester, Stratford-upon-Avon, Stroud, Holywell, Presteign, Hereford, Kenninghall, Framlingham, Burnham, Chichester, Southampton, and Bath. Dr. Fife and Dr. Davis state, that in some of their cases relapses occurred as many as three and even four times. At Liverpool, also, according to Dr. Ramsay, secondary attacks were very frequent; but Dr. Baird is of a different opinion, and Dr. Macrorie, whose opportunities of observation are very extensive, states, that in his practice relapses were not common. In the Midland counties generally, secondary attacks of the epidemic appear to have been of less frequent occurrence; the greater portion of the replies to this question, from the Midland district, being decidedly in the negative.

"The symptoms are stated in several of the returns to have been more severe in the relapses than in the primary attacks; and Dr. Shapter thinks that they were modified also in their nature.

*"Were persons, whose occupations exposed them to the vicissitudes of the weather in the open air, more liable to the distemper than those who were confined chiefly to the house?—*The answers from all parts of the country are, with scarcely an exception, in the negative, and from the expressions made use of in several of the returns, it would even seem that those exposed to the vicissitudes of the weather had been somewhat less liable to the attack than those whose occupation did not

subject them to such exposure. 'I do not think (says Dr. Brown) that seclusion from vicissitudes of the weather in the open air, diminished at all the liability to attacks; indeed the few instances of exemption from this epidemic which fell under my observation, appeared generally to be in the instance of persons very constantly exposed to such vicissitudes, excepting during the hours of repose.' Dr. Baird states that some of the most severe cases which he met with, were in aged females previously confined to the house. Dr. Hastings saw one lady, eighty years of age, who had not been down-stairs for forty years, who had the disease very severely, though she ultimately recovered. Mr. Davis, of Tenbury, observes, 'that exposure to atmospheric changes did not appear to exert any influence in rendering the person liable to the disorder, some of the worst cases occurring in those who led sedentary lives.' Mr. Smith, of Stroud, says, 'I think those most exposed to the vicissitudes of the weather, that is, those continually in the open air, were less susceptible of it.' Dr. Davis, of Presteign, writes, that as far as his observations went, exposure made little difference, and, indeed, that a majority of the cases requiring medical treatment, were delicate persons shut up in houses on account of the cold.

"The exceptions to this very general statement are few, but at the same time sufficiently important to require notice. Thus, Mr. Ceeley reports that 'persons exposed to the vicissitudes of the weather in the open air, were certainly more liable to attacks; yet a slight exposure to cold, in numerous instances, appeared sufficient to give rise to an attack.' He adds, 'a few cases occurred in patients confined to bed with other disorders.' Mr. Bird, of Hereford, says, 'From the disease attacking a greater number of males than females, I should say those persons whose occupations exposed them to the vicissitudes of the weather in the open air were more liable to the distemper than those who were confined chiefly to the house.' Dr. Clendinning also enumerates exposure to the vicissitudes of the weather among the causes which rendered persons predisposed or liable to the attacks of the epidemic; and Mr. Myles thinks that the exposed suffered more severely. But, however we may feel disposed to place reliance upon the observations and opinions of these gentlemen, the very general

testimony of others, no less competent, must lead us to the conclusion that some circumstances, accidental or otherwise, have interfered in rendering the results at which they have arrived less to be relied upon in this particular than would otherwise have been the case.

“12. *Are you in possession of any proof of its having been communicated from one person to another?*—The answers to this question are also of an almost uniform tenour, the opinion of nearly all those who had the most extensive opportunities of investigating the disease, and the best means of arriving at a definite conclusion, being, that there is no proof of the existence of any contagious principle by which it was propagated from one individual to another. —‘A gentleman (says Dr. Brown) subject to very severe bronchial affection, and in whom I apprehended that influenza would prove very severe, if he were attacked, escaped it altogether, and attributed his escape to avoiding all close intercourse with the members of his family when it prevailed among them; but as there were exceptions when no such precautions were adopted, I did not think myself justified in coming to the same conclusion.’ In the Chichester report it is stated, ‘We have no proof of the disease having been communicated from one person to another, though the patients often suspected it themselves. Our observations, however, incline us to the opposite belief. It was no uncommon circumstance for the persons who had nursed a number of influenza patients to escape it themselves entirely.’

“With these statements the greater number of the returns agree; those which express any difference of opinion are the following:—Mr. Williams, of Holywell, writes, that he had no decided proof of the disease being communicated from one person to another, but very strong suspicions that such might be the case. Mr. Smith, of Stroud, observes, ‘In some families I thought it contagious, as it affected one after another, until it had gone through the whole of a large family. I have known from seven to nine affected in this way; in other large families, only one, two, or three had the disease, the other parts of the family not being in the least affected by it.’ The following statement, made by Mr. Fox, of Cerne, affords an instance of this progression in the time of attack, although that gentleman does not seem disposed to give much weight to

evidence of this description:—‘In a family of ten persons residing in a small and generally healthy parish, one was first attacked, on the third day two more, another on the fourth, two more on the sixth, on the ninth two; these were all children. The mother, who had been in constant attendance, and had not left the house during the whole time, was seized on the tenth day, and on the twelfth the father was seized, and had a *very slight* attack. He had during the preceding eleven days *been constantly exposed on horseback*. Many such instances could be produced, but they scarcely deserve to be called proofs.’ Dr. Shapter seems to lean to the idea of a contagious influence. He says, ‘Though in many instances it appeared not improbable that the disease was communicated by one person to another, yet from the very general prevalence of the epidemic, any such conclusion cannot be positive.’ It is obvious, however, that nothing approaching to tangible evidence is afforded by any of these statements; and the only really important observation in any way favouring the idea of contagion or infection, is made by Mr. Maul, who remarked, that ‘if an individual came from a distance with the disease, the inhabitants of the house into which he arrived were usually attacked.’ Mr. Maul, however, draws no conclusion from this fact, contenting himself with simply stating it; and standing alone, as it does, the observation in itself carries little weight.

“13. *In persons attacked by the epidemic, who at the time laboured under pulmonary disease, was the former malady aggravated on the subsidence of the influenza?*—This seems to have been decidedly the case, and generally speaking with but few exceptions. According to some of the returns, however, persons affected with certain forms of pulmonary disease, would appear to have especially suffered, particularly those labouring under phthisis pulmonalis and bronchial affections. Dr. Baird, in his reply, states, that it was only the purely phthisical cases which were aggravated on the subsidence of the attack. The testimony of Mr. Appleton, of Evesham, and Mr. Smith, of Stroud, is to the same effect; and Mr. Rice says, that in the only instance of this kind (previous pulmonary disease) which he attended, a case of hæmoptysis, the attack proved speedily fatal. Mr. Bree, Dr. Shapter, and Dr. Clendinning, observed

that the attack of the epidemic seemed to hasten the development of phthisis or other pulmonary disease, when it had been previously latent, or when a predisposition had existed. Dr. Hastings, at the same time that he bears testimony to the facts above stated, says, 'I may also remark that this is not confined to pectoral complaints. I find muco-gastritis and muco-enteritis of long standing, referred in its commencement by patients to the influenza. Wherever, in short (he continues), any latent disorder existed in the system, the effect of the disturbance of the functions of the body by the epidemic seems frequently to have been, to call into activity disease which had been previously for a length of time dormant.'

"In two only of the replies is this question answered altogether in the negative, and in one of these, from Mr. Welchman, of Kineton, it is even stated that certain cases of pulmonary disease were decidedly benefited after recovering from the epidemic. 'I do not think (he observes), any of my patients who were attacked by the epidemic, who at the time laboured under pulmonary disease, had their former malady aggravated by the more recent affection; two or three who had previously had chronic bronchitis, were decidedly free from it after recovery from influenza.' Dr. Hastings refers to a case in which he observed the same circumstance. 'In a lady, who has for years been very liable to bronchial attacks, and has for many winters been under the necessity of taking great precautions as to exposure to weather, the influenza came on with great severity, and much aggravation of the usual pectoral symptoms. They did not, however, continue longer than a week, and this lady has ever since that time been more free from pectoral complaints than for three years previously.' These, however, are obviously but exceptions to the general rule.

"14. *Were there any circumstances that appeared to exempt individuals from an attack of the disease? and, in particular, did the having been attacked during the last similar epidemic of the year 1834, appear to afford any protection?*—Several of the returns are expressed in very doubtful language in the reply to these questions, and in some of the returns they are passed over altogether. The greater number, however, agree in stating that the having undergone an attack of the previous epidemic,

afforded no protection, and that there were no circumstances which appeared to exempt from an attack of the disease. With respect to the influence of the former epidemic, some practitioners would seem to think that those who had suffered from it, shewed themselves even more liable to the late epidemic than those who had escaped its attacks. Dr. Fife says, 'Many of those who suffered most severely from the former epidemic, were violently affected during the late visitation. In fact (he continues), I was almost led to believe them even more prone to attack;' and Mr. Smart, of Cranbourne, expressly states it as his opinion, 'that the influenza of 1834 had rather left a susceptibility to, than protected the constitution from, the attack of the late epidemic.' In many of the returns, instances are adduced of individuals having suffered severely from both epidemics; still, however, there are some few in which the opposite opinion is stated. Mr. Appleton remarks, that persons who had had the disease before, either escaped it altogether, or were but slightly affected. He adds, however, 'I notice this, not as the result of my own observations in many cases.' Dr. Grove, of Salisbury, states, that he knew several persons formerly attacked, who were not attacked by the late epidemic; and Mr. Ceeley observes, that he met with several instances of apparent exemption from an attack of the disease of 1836-37, or of a much milder attack, in those who had suffered from the influenza of 1834, or in the intervening period between the two epidemics. Mr. Ashwin, of Abergavenny, also thinks that the attack was milder in those who had the disease during the previous epidemic. Mr. May and Mr. Maul notice that it was the popular belief that such as had been attacked previously, were protected in consequence from the recent visitation; but it does not appear that this belief received any confirmation from the personal experience of either of these gentlemen.

"Among the very few circumstances mentioned in addition to an attack of the previous epidemic, as affording exemption in some cases, and modifying the severity of the symptoms in others, are,—the actual existence of other severe disease, noticed by Dr. Fife of Newcastle, and Mr. Bloxam of Newport; general strength of constitution and regular habits of life, by Dr. Davis and Dr. Clendinning; and the age of infancy, by Mr. Gwynne Bird.

“15. *What were the usual symptoms of the complaint?*—Of the answers to this question, some are expressed in general terms, while others go into considerable detail. From a careful consideration of the valuable information thus given, and a comparison of the several accounts, we have not been able to arrive at the conclusion that any very appreciable variation exists in the general features of the disease as it occurred in the different localities to which the returns refer. The symptoms enumerated as constituting the usual course of the complaint, may be divided into those indicating the existence of a general febrile condition of greater or less intensity, and those more immediately characteristic of the epidemic, whether purely catarrhal and resulting from an affection of the mucous lining of the pulmonary organs and air-passages, or connected with one or more of the other organs or systems of the body.

“The symptoms referable to a general febrile state were very much the same as those observed, either as precursors, or as arising in the progress of mild febrile diseases in general. Such of the returns as enter into any lengthened account of the symptoms almost uniformly describe the disease as commencing in mild cases, with indistinct chills: in the more severe ones, with shivering, or even actual rigor. In some instances the rigors appear not to have occurred until the second or third day of the disease; in others, to have arisen suddenly, affording the first indication of attack, and to have continued to recur at intervals during two or three days, or even for a longer period. The chills and rigors are described as alternating with heat of skin and flushing, until the febrile state became completely developed, at which time the more peculiar features of the disorder seem in general to have shewed themselves. The fever from this period appears to have been usually of a mild open character, attended with some heat of the skin, and, occasionally, a dry imperspirable state; but more frequently there was a tendency to perspiration, which, when free, gave considerable relief. In more severe cases, the morbid temperature was more urgent, the skin hot and dry, the face flushed, with mild delirium at night, and there was considerable feverish restlessness and anxiety; at the same time there was great debility and languor, with an overpowering sense of sinking and depression of spirits. In some few cases the fever seems

to have assumed a typhoid character, but no very definite account of this modification is given. Nearly all the returns mention general pains, or pain and soreness of the back and limbs, and of other parts of the body, as among the most well-marked symptoms. These pains may, in part at least, be considered as appertaining to the general febrile state; but the pain of the back and loins in particular was so very generally felt, was in many cases of such extreme severity, and so prolonged in its duration, and, in almost all, gave rise to so much inconvenience and distress, being complained of more than any other symptom, that it is certainly to be classed rather as one of the symptoms especially characteristic of the epidemic, than as connected merely with an ordinary febrile condition.

“The catarrhal symptoms, to which we have next to direct attention, were, according to the returns, a suffused state of the eyes with discharge of tears; sneezing; tingling of and acrid discharge from the nostrils; sense of weight and pain of forehead; soreness of the fauces; hoarseness; cough; expectoration; dyspnoea; and pain and sense of constriction about the throat and chest. Several of these symptoms are lightly passed over, and appear to have been either not of very general occurrence, or so trivial as to be thought not of sufficient consequence to be recorded. The suffused state of the eyes does not appear to have been commonly observed; sneezing and watery discharge from the nostrils are more frequently mentioned; but the sense of weight and frontal headache were very prominently marked, being recorded in almost all the returns. In many cases the pain was exceedingly severe and distressing to the patient, and by no means confined to the frontal region, extending to the vertex and occiput, and over the head generally. It is in connection with this severe form that giddiness, delirium at night, and, in one instance, deafness, were noticed. The headache is variously described as violent, severe, intense, oppressive, etc. Mr. Ceeley says: ‘It was frequently complained of as unlike in nature and degree to anything ever before experienced.’ Mr. Bree remarks: ‘The pain in the head was generally supra-orbital, and for a short time very severe; in three cases there was delirium, and in one decided meningitis.’

"The soreness or rawness of the fauces is only occasionally alluded to, and, in some cases at least, seems to have been observed more particularly in connection with the more marked symptoms of coryza. The Chichester report, in which 'defluxion at the nose and eyes, sneezing, and frequent epistaxis,' are mentioned as prominent symptoms of the disease as it appeared in that city and neighbourhood, describes the fauces as being 'generally red and tender,' which state in some cases ended in quinsey. Dr. Fife also noticed inflamed pharynx and tonsils as being among the symptoms of the disease observed at Newcastle; and Dr. Shapter alludes, among other symptoms, to a sensation of painful rawness of the fauces and trachea as quickly following frontal pain, sneezing, and 'a very copious flow of a thin acrid discharge, chiefly from the membrane of the nose.'

"The sense of tightness or constriction about the throat and chest, with more or less soreness beneath the sternum, is very generally noticed in the replies; but the symptom to which the greatest prominence is given is the cough, which is variously described as being short and harassing, troublesome and frequent, harassing and incessant, preventing sleep, very distressing from its aggravating the pain of the head, sometimes as severe, violent, or coming on in frequent paroxysms of long duration. Mr. Smith, of Stroud, mentions, that in two cases occurring in his practice, it produced hæmoptysis to an alarming extent, and that premature confinement followed in two others. The expectoration is by no means so generally noticed; but when it is mentioned, is stated to have been scanty, difficult, and consisting of clear viscid mucus at the commencement, afterwards becoming more copious and free, opaque and muco-purulent in its character, and occasionally tinged with blood. In some cases it is described as excessive and profuse. The respiration seems to have been very generally more or less affected; in some cases short and hurried, or uneasy and oppressed, in others difficult. Pains in the chest are mentioned in some of the returns in addition to the soreness under the sternum, and in one these pains are described as having been acute and lancinating. Examination by the stethoscope, according to Dr. Shapter, revealed the existence of sonorous and sibilous *râles*, and for the most part also a well-

marked crepitation in some part of the thorax, generally in the lower portion.

“The symptoms of disturbance in other organs of the body may be briefly noticed under the following heads,—those connected with the organs of circulation, those indicative of a disordered state of the digestive and urinary systems, and those which may be referred to the nervous system. The circulation seems in almost every instance to have been in a state of depression rather than of excitement; accordingly the pulse, although usually characterised in the replies as accelerated, frequent, quick, is at the same time stated to have been variable, small, and feeble; in two only of the returns is it stated to have been occasionally full but soft. Mr. Ceeley remarks, that in the decline of the disease in simple cases it was slow and occasionally intermitting; and Dr. Brown also observes, that during the convalescence it was frequently slow and feeble.

“The symptoms which may be referred to a deranged state of the digestive and urinary systems, are pain and tension, with tenderness at the epigastrium and upper part of the abdomen; loss of appetite; thirst; nausea and vomiting; a furred state of the tongue, and a morbid state of the alvine and urinary secretions. The oppression and tenderness of the upper part of the abdomen is noticed in several of the returns, and seems to have been often accompanied with nausea and vomiting. Dr. Barlow remarks, that when the chest affections were of trifling importance, the special irritation of the epidemic appeared to be seated in the stomach and bowels, and mentions a case in which a fit of spontaneous vomiting carried off the attack, all the constitutional disturbance being well-marked but mild, without any cough or bronchial disorder. Thirst does not appear to have been a very urgent symptom. The tongue is described either as furred, white, and moist; or as loaded with a thick coating of moist yellowish fur. Occasionally it became, in the progress of the disease, brown and dry, or as stated by Mr. Dent, of Kenninghall, ‘morbidly red and shining,’ in which case ‘there was a good deal of tenderness about the right iliac region.’ The bowels are very generally reported to have been constipated, though occasionally a relaxed state was observed. In the Chichester report is the follow-

ing observation relative to this point:—‘Bowels not much affected. It is, however, right to say, that previous to the accession of the epidemic in the latter part of the last year, diarrhœa was rather prevalent, but ceased with the increased violence of the distemper.’ The urine was observed, according to such of the returns as afford information as to the characters of this secretion, to be, for the most part, scanty and high-coloured,—rarely abundant and limpid,—sometimes becoming, during the progress of the disease, thick and reddish, or of a whey-like appearance, and depositing a copious sediment.

“Among the symptoms which appear to have depended upon or been connected with a disordered state of the brain, spinal marrow, and nerves, may be enumerated, in addition to the delirium, etc., before alluded to, prostration of strength, pain of the back and loins, and various neuralgic and rheumatic affections. The extreme prostration of strength, which, in many of the reports, is stated to have arisen suddenly at the very commencement of the attack, is, in almost all of them, characterised as presenting a striking feature in the disease. It seems even in some situations to have approached the collapse of the late visitation of cholera; and to have been accompanied also, notwithstanding the generally observed torpor of the intestinal canal, with a relaxed state of the bowels. Dr. Davis, of Presteign, observes, that the *prostration of strength* was *instant and universal*, and attended *with extreme depression of spirits, and, in a vast majority of cases, spontaneous diarrhœa*. Another peculiarity in the character of this symptom, is the length of time which the patients continue to labour under it, even after the cessation of the other symptoms of the disease. The pain of the back and loins is also very generally described as of peculiar severity, and seems to have been scarcely of the same nature as the pain and sense of weariness usually attendant upon febrile disease; or if of the same nature, certainly of much greater intensity than what is commonly observed in diseases of this character. In addition to this pain, and the general pains of the limbs and soreness of the trunk before mentioned, some of the returns enumerate among the usual symptoms of the epidemic, either as attending its progress, or making their appearance upon the decline of the more acute symptoms, certain painful affections, which are variously termed

rheumatic, neuralgic, or local rheumatic neuralgia. These, however, do not seem to have been of very general occurrence, and may possibly be connected with some local peculiarity: Salisbury and Aylesbury are the places in which they appear to have been most frequently observed among the ordinary symptoms.

“Such is a condensed account of the usual characters of the epidemic, as far as we have been able to ascertain from the several returns: and in these characters there is little difference, upon the whole, in the statements received from different places. The most important variation is one to which no allusion has been made in the preceding statement, mentioned by Dr. Fife, who remarked that, in several cases, ‘the parotid gland was enlarged to such an extent, as to lead to the belief that the patient was actually suffering from cynanche parotidea.’ This, however, does not seem to have been observed elsewhere, and must, therefore, we think, be placed among the ‘unusual symptoms’ to which the next question refers.

“We cannot better conclude this summary of the general features of the epidemic, than by extracting the following account of its progress as it presented itself at two widely separated localities, Exeter and Sunderland, with the view of exemplifying the course of the disease. ‘The usual symptoms of this epidemic (says Dr. Shapter) were:—First, oppressive pains of the head, especially over the region of the frontal sinuses; diffused muscular pains of the shoulders, loins, and legs; constant sneezing, early followed by a very copious flow of thin acrid discharge, chiefly from the membrane of the nose (the membranes of the eyes were not so greatly affected as in the influenza of 1831 and 1834). Secondly, these symptoms were quickly followed by an overwhelming feeling of lassitude and prostration of strength, with, in many cases, a loss of all muscular power, together with great anxiety of the præcordia, and agonising fears of death; a sensation of painful rawness of the fauces and trachea, a voice hoarse and hollow, frequent short cough, for the most part dry, stricture and acute lancinating pains of the chest. By the stethoscope, there were heard râles, sonorous and sibilous, and almost always in some part of the thorax, generally the lower portion, a well-marked crepitation. Tongue covered with a copious white mucus,

with inflamed elevated papillæ showing themselves at the tip and edges. Bowels not confined, and easily acted upon: in fact, there was rather a tendency to diarrhœa than otherwise; appetite gone; occasional thirst; pulse small, quick, but soft. Paroxysm generally severe during the night. In this stage of the disease I was sensible of a peculiar and very characteristic odour proceeding from those affected; though not able properly to describe it, I may state its general character to have been that of a flat musty smell. Thirdly, about the fifth or sixth day a mucous discharge from the nose came on, together with a muco-purulent expectoration in coughing. The various symptoms now gradually declined, leaving the patients in a state of great general weakness, together with a peculiar aching feel, and loss of power in the muscles of the legs.'

"Dr. Brown's statement is as follows:—'The tongue was white, and considerably swollen; the fauces were inflamed; the eyes were often injected; the nostrils felt hot and irritated, with abundant thin secretion; and there was pain across the forehead in the situation of the frontal sinuses. A sense of heat and irritation extended down the trachea to the thorax, where besides, there was a feeling of constriction; there was cough, very distressing from its aggravating the pain of the head; it was dry at first, but soon became attended by a copious mucous secretion, often opaque and straw-coloured, sometimes with slight streaks of blood; and, in some cases, there was a considerable degree of dyspnœa. Sickness and vomiting were very common symptoms, especially at the commencement of the disease; and there was sometimes (especially in relapsed attacks) acute pain in the lower part of the abdomen, aggravated by pressure. There was much thirst, total want of appetite, and the sense of taste was impaired and vitiated. The urine was scanty and high-coloured, and, on standing, speedily deposited a very abundant lateritious sediment. The pulse was in general soft, but not deficient in strength; it was frequent, but not considerably so, from 80 to 100 being its average range. When convalescence was approaching or had taken place, it often became unusually slow, even below 50, and was feeble. There were the ordinary febrile feelings of bodily and mental oppression, and pain and weariness in the back and limbs. The skin, in the early stage

of the disease, was warm and generally moist; towards the close, cool, if not cold, and moist. In bad cases, where the dyspnœa was considerable, the advanced stage of the disease, with the cold and wet skin, and bluish hue of the countenance, often recalled to my mind the collapsed stage of cholera.

“‘This description will be understood to apply, where exceptions are not stated, to cases of the ordinary severity. Like all epidemics, influenza has a wide range of intensity, being, in many cases, a very dangerous disease, in others, little more severe than an ordinary catarrh.’

“16. *What unusual symptoms occurred in your practice?*—As might be anticipated, certain symptoms enumerated as of occasional occurrence in some of the replies to the former question, are mentioned in others under the present question as unusual symptoms of the complaint. This is especially the case with the more severe cerebral affections, and also with acute bronchial and pneumonic inflammations, with certain abdominal affections, and with rheumatic and neuralgic pains. On this account it might perhaps have been advisable to throw the answers to this and the preceding question into one: still, however, it seemed desirable to preserve the mode of inquiry pointed out by the council unbroken, and a comparison of the statements severally drawn up from the answers to these questions, will sufficiently fulfil the object of pointing out those symptoms which, upon a general view of the whole phenomena, may be considered as unusual. At the same time the occurrence of such symptoms among the usual characteristics of the disease, indicates that under certain circumstances, and in certain situations, they assumed such a degree of prevalence as in some measure to modify its general type.

“Among the most prominent and important of these unusual symptoms of the complaint, or rather of the variations from the usual type presented by the epidemic, must be classed those indicative of severe affection of the cerebral organs. Dr. Brown mentions the occurrence of three fatal cases of meningitis in adults, to which he had been summoned in the advanced stage, and which appeared to him to have originated in a neglected inflammatory affection of the lining of the nostrils and frontal sinuses. Dr. Hastings knew of one instance of meningitis, in which, however, the disease was

subdued by the use of bleeding and purgatives, and other appropriate remedies. In this case the individual had been in a state of considerable anxiety of mind previous to the attack. Another instance is also referred to, where insanity succeeded to the attack of the epidemic, and lasted several weeks. Mr. Godfrey, of Bath, mentions acute pain in the head, in a few cases so severe as to last above a week, and then only relieved by a copious discharge of pus from the ear; and Mr. Fox, of Cerne Abbas, notices abscesses of the ear among the unusual symptoms. Symptoms of pressure on the brain are also enumerated as of occasional occurrence. The Chichester report, in answer to the question, is as follows: 'There was delirium occasionally. In some cases the speech was affected, so that the patient was unable to articulate; in a few cases there was coma at the outset which soon went off.' 'In one case' (writes Dr. Fife), 'the disease at its commencement appeared to be apoplexy; in another, partial paralysis existed. In this case,' he adds, 'perhaps the term paralysis may not be justified, as it rather consisted in the inordinate or spasmodic action of the extremes of the fingers and thumbs of the hands, than in loss of power in the flexors.' Dr. Hastings also saw one instance in which apoplectic symptoms occurred, but without subsequent paralysis. Mr. Ceeley observed, 'that in a few old and feeble persons, the primary effect on the sensorium resembled a sudden apoplectic seizure, from which, by sinapisms and diffusible stimulants, they slowly recovered, with fever and the usual affection of the mucous membrane of the air-passages; one of these cases, however, proved fatal in four days from its commencement.' And Mr. Fox states, that in a few cases there was sudden insensibility, continuing from one to two hours. The same gentleman also observes that there were some instances of boys dropping down in the fields while ploughing,—a circumstance, however, to be attributed rather to sudden exhaustion, or to the shock upon the nervous system generally, than to any influence acting more immediately upon the brain alone. Convulsive attacks were noticed in some instances by Dr. Ramsay; and Mr. Appleton mentions inflammation of the spinal marrow as having occurred in some cases which had not received early attention.

'Inflammatory affections of the lungs are included in certain

of the returns, under the unusual symptoms of the disease. These affections, however, appear for the most part to have arisen, either in neglected cases, in those previously disposed to pulmonary disease, or in aged persons, and are perhaps rather to be regarded as the effects of the disease acting upon unfavorable constitutions. It may be observed, in connection with this subject, that Mr. Godfrey saw three cases of pneumonia, in which he used the lancet freely, and upon the subsidence of the inflammatory symptoms, the usual symptoms of the influenza continued.

“Among the symptoms indicating unusual affection of the circulatory system as connected with this epidemic, are syncope and intermittent pulse. Dr. Ramsay states, that syncope was not an unusual occurrence in his practice, and Mr. Godfrey noticed the same symptom. Intermittent pulse is mentioned by Dr. Baird only.

“Unusual symptoms connected with the abdominal organs are more frequently alluded to. Dr. Brown mentions excessive pain in the abdomen, generally situated mid-way between the umbilicus and symphysis pubis, as of frequent occurrence in relapsed cases. It was sometimes associated with obstinate constipation, at others with mucous and sanguinolent stools, resembling in their appearance and the manner of their expulsion, those of dysentery.

“Mr. Appleton observed, amongst the ill-fed and ill-clothed, considerable disturbance of the biliary functions, with looseness, in the early onset of the disorder. In others of the returns, however, this relaxed state in the commencement of the disease was noticed as of usual occurrence, although the greater number agree in stating that the bowels were generally constipated. Mr. Ceeley remarks, that in his practice a few cases occurred in which there was more affection of the mucous membrane of the intestines than of that of the bronchi. Diarrhœa is also enumerated among the unusual symptoms attendant upon the epidemic by Mr. Bloxam and Mr. Sampson, and Dr. Shapter notices three cases of gastro-enteric affection as the only peculiarity occurring in his experience of the epidemic. Mr. Bird, of Hereford, observed pain of the pubic region and retention of urine; these last symptoms, however, are probably to be considered only as an accidental complication.

"Rheumatic and neuralgic pains were mentioned under the preceding question, as constituting, in certain situations, a usual feature in the disease. In other localities, symptoms of this description were also observed to occur in some instances, and are noticed in the returns in reply to the question now under consideration. Dr. Brown mentions as an irregularity next in point of frequency to the abdominal affections, 'pain of the head, often wearing the aspect of neuralgia of the branches of the fifth pair. It remitted,' he observes, 'but never totally intermitted. It was often associated with inflammation of the lining of the nostrils and frontal sinuses; indeed, it was not always easy to discover whether the pain did not purely depend on this inflammation. In some cases it yielded to arsenical solution or other remedies of neuralgia.' Intermittent pain in the head and temples, and sudden attacks of pain in different parts of the body in a most acute degree, are mentioned by Mr. Rice, and were probably of a similar character. Mr. Bree writes, 'A frequent symptom, in females only, I found to be a neuralgic affection on one side of the face, similar to that produced by decayed teeth, and which also affected the hearing of the same side. I had in several cases also a similar pain though more acute, affecting the parietes of the chest, which produced disorder of the respiration, and if not carefully observed might have been mistaken for pleuritis.' Mr. Davis, of Tenbury, states, 'that in three or four cases, he observed acute rheumatism as an accompaniment of the disease; and Mr. Gwynne Bird, that it was often followed by rheumatism. Rheumatic or neuralgic pains were also observed by Mr. Smart of Cranbourne, who considers that the disease assumed three different types. 'In one there was merely a spasmodic cough, with symptoms of a common cold; in a second, all these symptoms were increased so as to resemble bronchitis or fever; in a third, there were rheumatic or neuralgic pains of the head or neck.'

"The only other peculiarity requiring notice here, is soreness of the lips, mouth, and fauces, of unusual severity, which both Mr. Godfrey and Mr. Rice mention as having occurred in their practice. The latter of these gentlemen also observed *spontaneous* ptyalism in connection with the tenderness of the gums and mucous membrane of the mouth and fauces.

"It should be observed, that a considerable number of the replies state, in answer to this question, that no unusual symptoms occurred in the experience of the writer.

"17. *What was your mode of treating the disease?*—In the general plan of management adopted during the epidemic, there appears to have been little difference, certain principles of treatment being laid down in nearly all the returns. The main features of this plan are, a very cautious employment of evacuant remedies in general; the use of diaphoretics and mild aperients in the earlier stage, with a diluent diet, regulated temperature, and cessation from all active pursuits; in the more severe cases, occasional local bleeding and counter-irritants to the throat and chest, and confinement to bed. In the second stage, expectorant and anodyne medicines, with sulphate of quinine or mild tonics, where there was much debility remaining, are most commonly recommended; in the relapses, a more active treatment, with a freer use of evacuant remedies; and in complications with acute bronchitis, pneumonia, muc-enteritis, or cerebral disease,—venesection, leeches, blisters, mercurials, cathartics, or other remedies called for by the nature of the symptoms complicating the disease, though perhaps, as far as depletion is concerned, with less freedom than would have been required had no epidemic influence existed.

"The abstraction of blood by venesection was very rarely had recourse to, and is almost always spoken of as a measure of doubtful propriety; in some instances as having proved positively injurious.

"Dr. Fife says, '*General bloodletting, in the abstract, I am decidedly of opinion is seldom required, and very frequently most injurious in its effect.*' Mr. Rice writes, '*I very seldom used the lancet, in not more than six cases, and in only two of them am I satisfied that it did not do mischief.*' Dr. Davis observes, '*Venesection was always mischievous, and even local bleeding, by leeches and cupping, was not well borne.*' Mr. Ashwin says, '*Bleeding was always regretted when used.*' '*In no case,*' says Dr. Shapter, '*did depleting or severe purging hold out encouragement for a continuance of such means;*' and Dr. Barlow remarks that '*for the ordinary disease bloodletting was neither required nor borne. Some practitioners,*' he continues, '*bled in the beginning, but were soon obliged to desist,*

faintness being induced by small loss of blood, and great weakness ensuing. Cases did occur, however, which required bleeding, and when the disease passed into pneumonia, as occasionally happened, as active treatment was necessary as if no epidemic existed.' Dr. Baird, Mr. Davis of Tenbury, Mr. Prichard, Mr. Bree, and other practitioners, never employed general bloodletting, and the almost unanimous testimony is, that this measure was seldom had recourse to, except in active inflammation of the pulmonary organs. The following is the statement of the Chichester report upon this question: 'Except in severe attacks bloodletting was not required, and when it was tried, it frequently seemed to weaken without benefit. Detraction of blood was, however, practised with benefit in some cases where the pulse indicated an active and acute state of inflammation. The number of severe cases, however, calling for active treatment, was very small. It is right to state that a very small quantity of blood drawn from the Schneiderian membrane, relieved the distressing headache in a marked manner; even a few drops accidentally flowing, in two cases, gave almost instantaneous relief.'

"The local detraction of blood by leeches or cupping, is more frequently recommended; though even in this manner, depletion to any extent is discouraged, and seems to have been rarely practised. The plan of drawing blood from the mucous lining of the nostrils, mentioned in the Chichester report, is also spoken of in terms of commendation by Mr. Prichard. Counter-irritation, by means of blisters, sinapisms, stimulating plasters and liniments, warm cataplasms, etc., is very generally mentioned in the returns as proving of service, more especially in the early stage of the complaint, and in aged persons. These remedies were applied to the throat, chest, pit of the stomach, or interscapular region, according to the varying circumstances which called for their use.

"Of internal remedies, emetics are spoken of, in a few of the returns, as productive of considerable benefit at the onset of the disease; but the measures most generally recommended, are the exhibition of mild aperients and saline diaphoretics. In some of the returns more active cathartics are stated to have been given with advantage; in others, a combination of antimonials, ipecacuanha, or squill, with the saline diaphoretics.

Anodynes are also recommended in some of the returns as of use in allaying the cough. Of these, hyoscyamus, acetate and muriate of morphia, and opiates generally, were most frequently employed; but conium and colchicum are also mentioned. Some difference of opinion would seem to exist as to the benefit derived from remedies of this description. Mr. Ashwin gives it as his opinion, that opiates were, at least, useless; and from the silence of a considerable portion of the returns respecting them, it may be inferred that they were by no means generally employed. Dr. Barlow, however, has the following observation upon the subject:—‘Some practitioners withheld opium, and had protracted disease, as I had occasion to witness. There being no counter-indications I combined it throughout, and with decided advantage.’ The exhibition of tonics and stimulants is also a point of practice upon which some diversity of opinion has existed. In consequence of an extensive empirical use of such remedies in the early stage of the disease, arising from the mischievous reliance too often placed upon the public press, serious and even fatal effects were in many instances observed. Dr. M’Cabe brings forward examples of this mischief, and other practitioners agree with him in pointing out the injurious tendency of the indiscriminate employment of these remedies. From the silence of the returns, it may be inferred that many practitioners, for the most part, withheld tonics and stimulants altogether. Others, however, state that considerable benefit was derived from the use of sulphate of quinine, in the debility remaining during the decline of the disease, and in the convalescence; and some even recommend ammonia, wine, and other more active stimulants, in cases where the debility was extreme and in aged persons. Mr. Myles says that in old people, when the cough was a prominent symptom, he found a blister to the chest, with the sulphate of quinine internally, to act as a specific in all the cases which he attended. Dr. Baird was in the habit of administering, in the more severe cases occurring among the aged, asthmatics, or those affected with chronic pulmonary complaints, a grain of the sulphate of quinine at intervals, alternately with calomel and tartarised antimony, continuing the quinine, or some other light tonic, without the mercurial when the mouth became affected; and states, that after the adoption of this plan of

treatment, he had no fatal case, nor had occasion to resort, in a single instance, to bleeding, leeching, or cupping. In the intermittent pains again, in which it might have been presumed that quinine would have proved most beneficial, Mr. Rice states that he found it positively injurious, the pains being aggravated rather than alleviated by its employment.

"There are two powerful remedial agents, mercury and antimony, which, in addition to their respective employment as cathartics and diaphoretics, were occasionally used with other views, either separately, or in combination with each other, or with other remedies. Dr. Baird's practice of giving these medicines in combination has been already alluded to; the mode of administration was in the form of powder, three grains of calomel, with one grain of tartarised antimony, twice, thrice, or even four times in the twenty-four hours, the sulphate of quinine being given during the interval, as before mentioned. 'The effect of the powder,' he says, 'was to produce extreme nausea for the space of an hour, and frequent vomiting; to cause a vast discharge of purulent-looking matter from the lungs, excite a copious diaphoresis, and procure several dark pitchy evacuations from the bowels. So soon as the mouth became slightly affected by the calomel, and in many instances before this was apparent, the cough and expectoration had been greatly diminished, the restlessness had ceased, the countenance and eyes had assumed a more natural expression, the tongue had begun to clean at the edges, and the pulse returned to its natural state.' Mr. Ceeley was in the habit of giving a combination of calomel, opium, and squill, in similarly severe cases, when the pulmonary organs were much congested; and several of the returns mention calomel, either alone or variously combined with James's powder, ipecacuanha, Dover's powder, opium and henbane, as being resorted to in the more severe cases. Antimony was also exhibited alone, either in the form of James's powder or of tartar emetic, to produce its nauseating and sedative effect, as appears from some of the replies. In others, however, a caution is given against its employment in this mode.

"In conjunction with these measures, a light, diluent, or farinaceous diet is very generally recommended, though from some of the returns, one rather more nutritious seems to have

been occasionally found necessary ; regulated temperature, rest, and in the more severe cases, confinement to bed, are also enjoined.

“ 18. *Did any peculiar atmospheric phenomena precede or accompany this epidemic?*—It is to be regretted that, with the exception of a valuable meteorological register forwarded by Dr. Black, of Bolton, and some important tables from Dr. Shapter, the information given in the answers to this question is expressed in general terms. In the subjoined analysis, the division into districts, formerly mentioned, has for obvious reasons been adhered to.

“ To commence with the northern district, it appears that in Sunderland and its neighbourhood, the autumn had been cold and wet, with frequent thunder and lightning ; and that at Liverpool, according to the statement of Dr. Macrorie, the weather preceding the outbreak was unusually cold and humid. The epidemic commenced at Sunderland during an intense frost, and cold frost and snow prevailed throughout its continuance. A similar state of weather was observed at Warrington, the atmosphere being cold and humid, with winds generally from the east and north-east. Dr. Fife, however, observed no peculiar atmospheric phenomena, the disease prevailing at Newcastle during the severest frost, and in the opposite state, without any perceptible mitigation.

“ In the midland counties there is less mention made of the coldness of the weather, but the returns from this district remark very generally upon the extreme humidity of the atmosphere immediately preceding or during the epidemic. At Aylesbury, according to Mr. Ceeley, ‘ the weather was very bleak, cold, and piercing, just before the epidemic, and the breaking up or thawing of the immense fall of snow, seemed to attend the increase of the epidemic ; but,’ he adds, ‘ I look upon these phenomena as merely aggravating causes, since influenza exists in summer, and I have observed it at all periods of the year, sporadically more or less, especially on atmospheric changes, or during the prevalence of south-east and north-east winds.’ At Tenbury, Mr. Davis noticed that the atmosphere was remarkably humid during the prevalence of the epidemic ; and an unusual quantity of rain fell in the months of January and February in that neighbourhood, producing the highest

floods which are remembered to have occurred during a period of forty years. The returns from Worcester and Evesham also mention the extreme humidity of the atmosphere, both before and during the prevalence of the disease. Mr. Rice, of Stratford-upon-Avon, remarks, that early in January there were two or three days of very mild weather, followed by a cold north-east wind, of which, however, he made no memorandum at the time; and Mr. Smith says, that at Stroud the epidemic was ushered in with a damp warm atmosphere, which was suddenly changed to cold rain, snow, or hail, scarcely a day passing without several changes of this kind, the disease abating as soon as the weather became more settled and warm.

"The returns from the western district, which includes Wales and the counties of Hereford and Monmouth, mention a similar humid state of the atmosphere. Mr. Ashwin states, that at Abergavenny severe storms of wind from the north, north-west, and north-east, with heavy rains, preceded the outbreak of the disease; and that unusual falls of snow with high winds accompanied it. Mr. Bird, of Hereford, observes, that the weather was wet and damp, with cold winds, and thinks that the disease prevailed most in exposed and elevated situations; he adds, that the cases were certainly more severe in the country than in the city. At Holywell, there were incessant and dense fogs, which prevailed also at Presteign. 'The atmosphere,' says Dr. Davis, 'was throughout dark and gloomy, with frequent fogs, and the wind, for the most part, from the east or north-east.' There are also two circumstances deserving of notice, alluded to in the returns from this part of the kingdom, of which no mention is made as having been observed elsewhere. One is the occurrence of the *aurora-borealis*, noticed by Mr. Bird, of Swansea. The other is contained in the following extract from Dr. Davis's letter:—'A gentleman in this neighbourhood, who is a naturalist, observed a large quantity of dead flies in hollow lanes and on the surface of the ponds, where they had evidently been drifted by the wind during the prevalence of the epidemic. The same thing was observed, I hear, in different places.' As we have just stated, no mention is made of such a phenomenon having been noticed elsewhere, in any of the returns sent in to the Council; but the circumstance itself deserves to be recorded,

especially since a similar occurrence is said to have taken place during other epidemics.

“In the replies sent in from the eastern counties, it is stated, that previous to the epidemic, the weather was cold and wet (according to Mr. Priest, of Burnham, cold and dry, with much snow), and the atmosphere hazy, the wind varying from north to north-east and east; and the disease appears to have made its appearance immediately after the commencement of a thaw, when the atmosphere was saturated with moisture. Mr. Hargraves of Wotton says, that there was a sudden change from cold to warmth, there having been severe storms of snow for some time previous; and Mr. Priest remarks, that the snow was succeeded by a mild and damp atmosphere, before which change the disease had not appeared.

“In the south-eastern counties a similar atmospheric state is noticed as having occurred. ‘The epidemic came on,’ says the Chichester report, ‘immediately after the melting of the snow, and certainly at a time of year not generally the most sickly, it having disappeared by the end of February, just when, in ordinary circumstances, there is most sickness.’ In the Isle of Wight, however, according to the statement of Mr. Bloxam, the snow appears to have been constantly on the ground, and the temperature of the atmosphere varying a few degrees above or below freezing point; but this, he observes, continued for some time after the subsidence of the epidemic. Several of the returns from the southern counties mention a long continuance of cold winds as preceding or accompanying the disease. At Croydon, Mr. Fletcher observed a moist state of the atmosphere, with a long continuance of cold winds. At Salisbury, Dr. Grove states, that easterly winds, frost and snow, preceded the epidemic; and Mr. Sampson, that those winds continued throughout. Mr. Smart, of Cranbourne, observes, that the outbreak of the epidemic was preceded by a sudden thaw, and its progress attended by easterly winds. At Bew Regis the disease was observed to follow after the occurrence of easterly winds, and the breaking up of the frost; and Dr. Clendinning says, that he observed no peculiar atmospheric phenomena in the neighbourhood of the metropolis, with the exception of an unusual prevalence of winds from the north, east, and north-east. One gentleman, Mr. Fox, of

Cerne, states, that the principal atmospheric phenomenon observed to precede the late epidemic in this neighbourhood, was a difference of twenty-six degrees in the temperature in a very few hours, but does not mention whether this difference proceeded from a change from a low to a higher temperature, or the reverse.

"The tabular reports of Dr. Shapter, referring to this part of the kingdom, and those of Dr. Black from the northern districts, will be found at length in the Appendix,¹ and together with the observations of Mr. Addison made at Malvern, in the midland district, afford valuable materials for comparison.

"Observations on the Meteorological Phenomena.

"The identity of the influenza so universally prevalent throughout all parts of Europe in the early months of 1837, with those epidemic catarrhs which, at various periods, have visited this and other parts of the globe, cannot be disputed, and it is highly important to determine, if we can, what are the exciting causes of this widely-extended malady. In endeavouring to bring this important question to as unexceptionable a test as an inquiry so doubtful will admit of, it is requisite that doubtful or uncertain points should be discarded, and those facts only which are established by general testimony and experience be made use of for the purpose.

"From all the documents we have seen relating to this subject, it is evident that catarrh, bronchitis, and other inflammatory disorders of the chest, were more than usually prevalent in many parts of England in the period just preceding the outbreak of influenza, and that this epidemic raged not only throughout the whole of England, but in most other parts of Europe, between the first week of January and the third week of February, forcing itself upon the attention of medical practitioners, in some places a little earlier, in others rather later; whilst again, influenced perhaps in some degree by local circumstances, it lingered among the population, in certain situations, for a more extended period than usual.

"It is quite uncertain what time elapses between the application of the exciting cause and the appearance of the disease; but supposing in the first place, that it had its origin

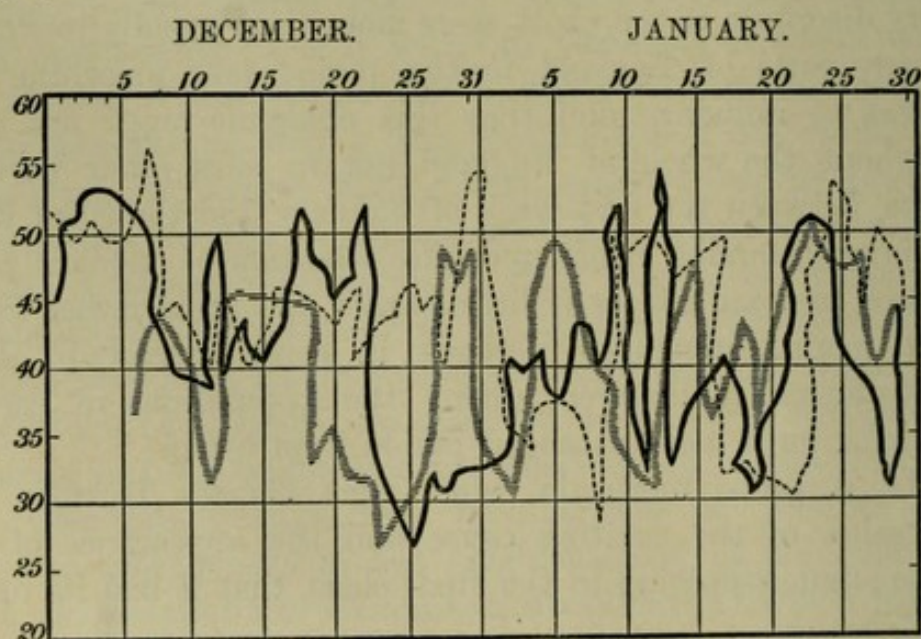
¹ See First Edition, pp. 334-339.

solely in the changes of temperature, of pressure, or of weight of the aqueous vapour of the atmosphere, such an origin ought to be detected by examining these phenomena for two consecutive months, the one being the month previous to, and the other the month including, the most active period of the disease, and comparing them with the same phenomena in the same months in preceding years.

"With regard to the actual weight or pressure of the air, this could only have been increased by the introduction of some foreign gaseous, or other extremely attenuated form of matter into the mass of our atmosphere. The quantity and weight of vapour is so closely connected, particularly during the winter season, to which our observations are restricted, with the temperature of the air, that a separate examination of this subject is uncalled for.

"It remains, then, to investigate the changes of temperature which took place in December 1836, and in January 1837, comparing them with the changes observed in December and January of the two preceding years, in order to discover whether any peculiarities characterise this period.

"In the annexed diagram, the dark line shews the variation of maximum temperature in December 1836, and January 1837; it may be called the influenza line: the lighter shaded line shews the temperature for December 1835, and January 1836, and the dotted line for December 1834, and January 1835:—



Upon attentively examining the dark line, there is nothing calling for remark until we arrive at a great depression of temperature between the 22d and 25th of December—a fall of 25° F. in three days. This depression was caused or accompanied by a change of wind from west or north-north-west to north-north-east. On the 25th the wind blew a gale from the latter point, and during the three subsequent days a very unusual quantity of snow fell, unequalled in this country for duration, severity, and extent. A rapid thaw commenced on the 2d day of January, the influenza appeared in London at the same time, and it was general throughout the country on the 7th, or at farthest on the 10th.

“The accounts from all parts of the country, of the disastrous gales, the drifting of the snow, the floods caused by the thaw, and the outbreak of influenza, rapidly succeeded each other.

“If we now examine the shaded line, which shews the variation of maximum temperature for December 1835, and January 1836, we shall find a great depression of temperature between the 18th and the 24th December, after which the thermometer rose quickly 20° F., and then fell again the last day of the month and during the first three days of January. The temperature then again rose 18° F. in two days, reaching 50° on the 5th. Snow fell on the evenings of the 19th and 20th of December, lying nearly two inches deep on the morning of the 21st. The weather was frosty on the 21st and 22d, with a north-east wind, then frosty and foggy until the 27th, when a thaw took place, which continued, with occasional rain and snow, to the 4th of January; and on the 8th I read the following remark, penned at the time in my journal:—‘A particularly sickly time, catarrhs, and other inflammatory affections of the chest and larynx, accompanied, in many instances, with neuralgic pains.’

“We will now shortly refer to the dotted line. Here we see a great change of temperature, amounting to 27° F., occurring between the last day of December 1834, and the 7th of January 1835. On the former day the thermometer stood at 55° , with rain and a south-west wind; frost began on the 2d of January, and it continued with fine weather and light north-east wind until the 8th, when the temperature rose

rapidly, and rain again fell. There was no snow during these changes. There is another considerable fall of the thermometer shewn between the 15th and 20th of January, and on this occasion it both rained and snowed. Scarlet fever prevailed at this time; but catarrhal diseases were not particularly remarked.

“From this examination—indeed, from the most casual survey of the foregoing lines—we may conclude, that very great variations of temperature may and do occur in a short time without producing any influenza, perhaps no unusual increase in the ordinary affections of the chest, to which all persons are more or less liable during spring and autumn, except when these sudden alterations are accompanied by melting snow, which does under certain circumstances appear sensibly to increase the prevalence of inflammatory affections of the air passages.

“This condition,—melting snow,—was operating at the breaking out of influenza in January 1837; but did it produce the disease, or did it only co-operate in giving greater effect to other causes? That it did not produce the disease is evident, because this occurred in situations on the Continent nearly about the same time, where there was no melting snow, and because the same disease has occurred before, in this and other countries, in summer months. In 1833 it was very general in this country in April and May, and again in June 1831, partially. Dr. Bardsley, speaking of the influenza of 1802, says, The present epidemic cannot have originated from any remarkable severity of the weather or sudden changes in the temperature of the atmosphere; no season has been apparently less unfriendly to the human constitution than the whole of the late winter and early part of spring. The epidemic catarrhs of 1762 and 1782 prevailed during uncommonly warm and steady weather, in the months of May and June. The remarkable epidemic catarrh of 1580, which, according to Sennertus, —‘*Totam fere Europam, uno fere omnes mundi regiones pervagata est,*’¹—raged chiefly during the sultry weather of autumn. In the month of September 1830, influenza prevailed at Manilla, with the thermometer varying from 78° to 92°.²

¹ Medical and Physical Journal, vol. ix. p. 527.

² Medical Gazette, vol. viii. p. 525.

"Without uselessly multiplying instances or authorities, it must be evident that the exciting cause of influenza cannot be found in sudden vicissitudes of temperature, great heat or cold, damp weather or melting snow, however much all or any of these circumstances may predispose to or originate the more ordinary catarrhs, eruptive fevers, and other disorders of spring, autumn, and winter."

A Meteorological Register for January, February, and March 1837, with a Nosometrical View of the Epidemic Influenza during the same months, as observed at Bolton-le-Moors, is inserted at p. 334 of the first edition.

In proceeding to communicate further particulars regarding this visitation, it may be mentioned that the disease made its appearance at Sydney on the second week of October 1836; and at Cape Town, Cape of Good Hope, on the 1st of November: much about the same time it was observed on the shores of the Baltic, and soon afterwards in the north of Scotland. Its simultaneous appearance in countries so distant from one another, and so different in climate, is well worthy of notice, and inconsistent with the opinions of practitioners, who would refer the epidemic to any variety of weather. In this country, indeed, it appeared in some places, as in Sunderland, during the frost; in others, as in Bury, not before the occurrence of thaw and sudden alternations of temperature, and in Dublin it raged during weather remarkable for its mildness and serenity.¹ The following table, given by Dr. Heberden² from the weekly bills of mortality, exhibits very clearly the progress of the epidemic in London.

1837.	Christenings.	Burials.	Christenings to Burials.	Influenza.	Age from 30 to 40.	50 to 60.	70 to 80.
January 3	363	228	4 to 2·5	0	14	20	22
" 10	487	284	4 to 2·5	0	23	42	30
" 17	384	477	4 to 5	13	49	70	53
" 24	520	871	4 to 6·6	106	69	95	122
" 31	307	860	4 to 11	99	71	54	113
February 7	532	589	4 to 4·4	63	41	69	77
" 14	474	558	4 to 4·7	35	54	70	59
" 21	316	350	4 to 4·4	20	36	36	31
" 28	809	321	4 to 1·6	8	32	24	37
March 7	480	262	4 to 2·2	4	23	23	19

¹ Lond. Med. Gaz. vol. xx. pp. 114, 118, 129, 224.

² Ibid. p. 786.

It is apparent from this table, that the disease began in London about the 10th of January, attained its height in about a fortnight, and ceased after six or seven weeks from its first appearance. It is also observable that, whilst the deaths at all ages were increased, those of the old were most sensibly altered.¹

The following return supplied by Dr. Graves, of the interments in Prospect Cemetery, Glasnevin, in the suburbs of Dublin, conveys an idea of the severity of the epidemic in that locality :

" In December 1835 .	352	In December 1836 .	413
January 1836 .	392	January 1837 .	821
February „ .	362	February „ .	537
March „ .	392	March „ .	477 "

" If, as is probable, less than a fourth of those dying in Dublin are buried there, three thousand persons died of influenza in Dublin, besides those who, although they got over the immediate attack, sank under diseases induced by this epidemic." ²

Dr. Greenhow, of North Shields, who was at first inclined to attribute the disease to the influence of the weather, gave up that opinion on observing that comfortable lodging, warm clothing, and good food, afforded no protection against the attack. He adds :

" In low situations near the river side, amongst narrow lanes and close alleys, the complaint was neither more frequent in its occurrence (in proportion to the population), nor more violent in its form, than it was in the upper town or in the adjacent country, amongst the villages and farmhouses. A gentleman who had been confined for some months to his chamber, the temperature of which never varied so much as one degree, was the only individual of the family who took the disease.

" Those people whose occupations were carried on in high temperatures, as the pitmen, glass-blowers, forgemen, and founders, were amongst the first who suffered from the epidemic, and great numbers of them were attacked while

¹ London Medical Gazette, vol. xx. p. 51.

² Ibid. p. 787.

at work, and consequently when the skin was in a state of great activity; from which we may fairly infer, that the morbid impression is exerted on the system through the medium of the skin. The people employed in the various soda manufactories, who work and live in an atmosphere impregnated with muriatic acid gas of such strength as to destroy vegetation in the immediate vicinity, enjoyed no exemption, but suffered in an equal proportion to the rest of the community, a circumstance calculated to make us a little sceptical as to the disinfecting power of any gaseous fluid. Of sailors, many were attacked at sea, but, as far as I can ascertain, not in harbour, who along with keelmen, watermen, and others, employed upon the river, suffered in a similar proportion to the rest of the inhabitants. The only class of people who enjoyed immunity from its attack were the dredgers, consisting entirely of females, amounting to about two hundred in number. Their occupation consists in wading up to the arm-pits in salt water for three or four hours at each ebb tide, to collect, with wooden rakes, the coals which fall into the river in loading the ships. These women enjoy a remarkable exemption from sickness, and generally attain to a very advanced age. On the late occasion they escaped the epidemic entirely.”¹

2. DR. GRAVES²

“The epidemic rarely attacked persons labouring under acute diseases until the period of convalescence arrived, when their immunity ceased, and they became just as liable to its invasion as others. Thus patients labouring under typhus escaped as long as the fever continued; but frequently on the very day the crisis occurred, and symptoms of returning convalescence appeared, they were seized with influenza.

“One of the most singular features³ in the history of the present influenza is the extraordinary degree of dyspnoea witnessed in most cases where the lung is extensively engaged, but particularly where the patients had been previously subject to pulmonary affection, and even in many cases where

¹ London Medical Gazette, vol. xx. p. 10. ² Idem, p. 786. ³ Idem, p. 856.

the bronchial mucous membrane is but slightly engaged the amount of dyspnœa is remarkably great. Indeed it might be said with much truth, that the dyspnœa was by no means proportioned to the extent of pulmonary inflammation. There is at present in the hospital a woman labouring under influenza whose chest sounds clear on percussion, and in whom every part of the lung is permeable, who presents nothing more than a few sonorous râles in the course of the larger bronchial tubes, and yet she is suffering from considerable dyspnœa, and the respiration amounts to forty-six in a minute. We cannot, therefore, attribute the difficulty of breathing to mere bronchitic lesion, for it is not in proportion to this lesion. Another patient, admitted into Sir P. Dun's hospital, exhibited a similar train of symptoms. He was a negro sailor, a native of New Brunswick, and was seized with the epidemic a few days after his ship arrived in Dublin. He was a man of Herculean form and finely-developed chest, and in the prime of life; his suffering from dyspnœa was intense; his chest heaved, he tossed about in bed in a constant state of agitation and restlessness, and yet the respiratory murmur was everywhere distinctly audible through the lung, and no râle could be heard, except here and there a few bronchitic wheezings. He also laboured under insomnia; and, though he had but little fever, his debility was extreme; indeed his pulse was so weak from the commencement, that I could not venture to treat him antiphlogistically, and I accordingly ordered extensive vesication over the chest, with the use of wine stimulants and narcotics. This man subsequently recovered, an event which could hardly have occurred under the plan of treatment adopted, had his dyspnœa depended on mere bronchitis. It should be also borne in mind that in many bad cases of influenza the dyspnœa is intermittent, or at least undergoes remarkable exacerbations and remissions at certain hours of the day and night. It would appear that the respiratory derangement depends on the same general cause which produces the whole train of symptoms, and that it might exist even where there was no bronchial inflammation at all. It is true, that where the bronchitis is present it adds to the distress of respiration, but the dyspnœa appears to be chiefly attributable to some impression made on the vital activity of the lung. That the lungs are endowed with an

inherent vitality necessary to the aeration of the blood has been long acknowledged by the Germans, who have described a dyspnœa from paralysis of the lungs; and this opinion is now generally adopted in Great Britain since the results of the experiments on the eighth pair of nerves have been duly appreciated. We have abundant illustrations of this truth in asthma, in which the greatest dyspnœa is often present without any appreciable lesion of the lung; and it would be a fortunate circumstance for the patients in influenza if this were not the case, for we could then treat the affection of the lung as ordinary bronchitis, and should expect to find it amenable to the ordinary remedies. You are aware that the mortality, in cases of ordinary bronchitis, is extremely small, if we except very young children and persons advanced in life. In adults, when met by prompt and appropriate treatment, it is in general a very manageable disease, and seldom proves fatal, unless combined with other unfavorable conditions. This, however, is not the case in influenza, nor is the pulmonary affection so easily treated, or the dyspnœa so readily controlled. I saw some time ago a fine young woman, servant to a gentleman in Fitzwilliam Street, for whom everything had been done which the best and most skilful practice could devise,—but her condition, when I saw her, was desperate, and she died the following day; yet her chest sounded well on percussion, and we could hear nothing over the whole lung except a few sonorous and sibilous râles; and the respiratory murmur seemed everywhere nearly as loud as natural. Of course such a lesion of the nervous influence could not last long without necessarily inducing pulmonary congestion,—an inevitable consequence of imperfect aeration of the blood. When the eighth pair of nerves is divided, the animal is slowly suffocated; and on dissection, the lungs are found engorged, and the bronchial mucous membrane congested and inflamed. May not the affection of these parts in influenza be sometimes induced by lesions of nervous power in the lungs? I am indebted to my friend Dr. George Green for the following results of his very numerous post-mortem examinations in this disease; and I feel great pleasure in being able to give them, as such examinations, at least in this country, are very rare. Dr. Green observes:

“ ‘ In the cases which proved fatal at the House of Industry

during the late epidemic, influenza occurred principally among the aged inmates of both sexes. I had an opportunity of examining several of these cases, and the following were the principal post-mortem appearances observed :

“The bronchial mucous membrane was found in every case more or less congested and inflamed. The colour varied considerably, being in some of a dull red, and in others of a much darker hue. The inflammation in most cases was found to occupy both the trachea and the bronchial tubes of both lungs ; in other instances it was confined to one lung alone. A sanguinolent frothy mucus occupied the area of the tubes, and increased in quantity as they were traced to their minuter divisions. The parenchymatous tissue of the lung was invariably discoloured, being generally of a dark or violet colour ; its specific gravity was increased, and it did not crepitate, or at least very feebly, when pressed between the fingers. The surface of its section was not rough to the touch, and when pressed in the hand a quantity of the mucus described above was driven out. In some cases the postero-inferior portions of one or both lungs were very dark coloured, and the finger could be passed easily through its substance. When the surface thus torn was examined, it did not appear to be granulated, it resembled more a portion of gangrenous lung, except that there was an absence of foetor. This last appearance was found principally in very aged persons. It was rare to find any traces of the second or third stages of ordinary pneumonia in these patients ; but in the young and robust, who were received into the Hardwick Fever Hospital from the neighbouring streets, these degenerations of the structure of the lung were observed, together with the same inflammation of the bronchial mucous membrane. In most of the aged patients the blood was found dark coloured and fluid in both cavities of the heart and in every vessel where it was examined. The cases in which fibrous concretions in the cavities of the heart were found were very few, and these invariably in the young or middle-aged. In the former classes of patients, also, the lung occasionally appeared to be cedematous ; and, in one or two cases, a considerable effusion of serum had taken place into the pleural cavities. The signs of recent pleuritis were very rare, but old adhesions, as might be expected in such subjects,

were very commonly found between the pulmonary and costal pleuræ. In one case of a lunatic who survived the immediate attack of influenza, tubercles appeared to have been rapidly developed in both lungs. In another lunatic two tuberculous cavities were found, in addition to the state of the lung and air-tubes already adverted to.

“ ‘ With respect to the nature and duration of symptoms of those cases which came under my own management, I have little to say in addition to what is already so familiarly known. The physical signs afforded by percussion and auscultation were almost universally as follows :—Dullness, more or less decidedly marked in the postero-inferior portion of the lungs, sonorous, or some form of the bronchial râles throughout the chest ; or, what was more common, a mixed sonorous and crepitating râle ; or, in the latter stage, a muco-crepitating râle. The sputa were seldom rusty coloured or tenacious, but rather resembled those of bronchitis. In many cases, the want of power to excrete them appeared to be the immediate cause of death ; but in others, the morbid cause, whatever it might be, appeared to have affected the entire respiratory and circulating systems, producing great congestion of the venous system, and a state not unlike asphyxia. The latter cases were almost all among the aged inmates of the House of Industry.

“ ‘ The appearances of the other viscera were not such as could in any way account for the result so often fatal, so that, so far as one could hazard a conjecture, the morbid cause appeared to have made its primary impression on the respiratory mucous surface, thereby interfering with the proper aeration of the blood, and inducing the changes in that fluid, and in the structure of the lungs above detailed.’

“ Such are the appearances observed by Dr. Green in his numerous dissections of persons who died of influenza. They may be relied on as perfectly accurate, for no one is better acquainted with pathological phenomena than Dr. Green ; and consequently, no one better able to furnish valuable evidence with respect to the appreciable changes produced by influenza in the pulmonary and other tissues. I have already advanced the opinion, that we should not hastily assume that influenza consists essentially in the morbid changes which dissection reveals—we should examine every side of the question, and

consider whether it is not possible that the alterations in the pulmonary tissue may not be, to some extent at least, the consequences of the disease. Let us consider for a moment the method we pursue in reasoning about the progress and causes of the symptoms in ordinary bronchitis. Here a patient is seized with a pectoral affection, attended by cough, dyspnœa, and more or less of fever. We find certain râles, and the expectoration is altered in quality and quantity. Further observing a number of such cases, we remark that the danger is proportioned to the degree of dyspnœa, and the dyspnœa to the extent and nature of the râles, together with the quantity and quality of the expectoration. To these the general constitutional affection, and the probable results of the disease, have certain definite relations, a knowledge of which is soon obtained by experience. But these râles, and this state of the respiration and expectoration, we have reason to believe arise from the presence of bronchial inflammation, and to this we refer all the symptoms observed. On this supposition, too, we proceed in our treatment, and the result most commonly justifies its correctness; and we have additional evidence of its truth furnished by *post-mortem* examinations. Now in such instances the chain of inductive evidence is complete; and we feel a conviction, that our practice is founded on correct notions of the nature of the disease. But how different is the case when we assume that influenza is caused by bronchial inflammation! In influenza, the dyspnœa is not always proportioned to the bronchitic affection; nay, in some cases, we have seen that difficulty of breathing was most urgent, in cases where the air entered into all parts of the lung with facility, and where few and unimportant râles existed. Again, although the presence of a copious viscid secretion in the bronchial tubes was sure to aggravate dyspnœa, yet it often occurred in patients whose air-passages were very little or not at all obstructed in this way. The effects of remedies, antiphlogistic, expectorant, and derivative, were very different from what they would have been, had the disease depended on a mere bronchitis. I have already stated my conviction, that the poison which produced influenza acted on the nervous system in general, and on the pulmonary nerves in particular, in such a way as to produce symptoms of

bronchial irritation and dyspnœa, to which bronchial congestion and inflammation were often superadded.

"In this view of the subject I am not singular, for I find that it has been advocated by Dr. Peyton Blakiston, in a short 'Treatise on Influenza,' as it occurred at Birmingham. He states, that his researches have led him to the conclusion, 'that influenza is an affection of the nervous system, with its concomitant derangements in the organs of digestion, circulation, etc., commonly known under the name of nervous fever, accompanied, throughout its whole course, by irritation of the pulmonary mucous membrane, which not unfrequently amounts to congestion and even to inflammation.'

"This distinction between influenza and feverish cold, with bronchitis, is, in a practical point of view, of great importance, and should never be lost sight of in the treatment of influenza, for it prevents us from placing our sole confidence in remedies adapted to mere bronchitic inflammation. Thus Dr. Blakiston asserts, and most physicians will agree with him, in this point at least, that it was often necessary to have recourse to diffusible stimulants at the commencement, and to administer tonic medicines in an early stage of the disease.

"In some cases, even where great dyspnœa exists, the cough is hard and dry, and the expectoration is copious, so as to cause constant efforts to cough it up; and, indeed, it is melancholy to look at the distress which patients suffer in this respect. You will hear the wheezing of the phlegm in the throat and air-passages before you enter the room, and you will see the patient exhausted by successive paroxysms of cough and ineffectual attempts to expectorate. In other cases, where the vitality of the lung is less injured, and the general tone of the system less deranged, the sputa, although copious, are expectorated with considerable facility. The sputa bear considerable analogy to those observed in ordinary bronchitis; they consist, at first, of a greyish mucus, which, as the disease proceeds, exhibits a globular appearance, or assumes a puriform character, and does not coalesce; in other cases they are extremely viscid and ropy, like solutions of gum or isinglass. A remarkable fact with respect to the sputa in influenza is, that they are very seldom mixed with air-bubbles. On mentioning this to-day to some persons attending my class, I was shewn some

sputa discharged by a patient labouring under influenza, in which there were some air-bubbles: this, however, is extremely rare.

“In a lecture which was delivered here some time ago, I took occasion to allude to the secretions of the bronchial mucous membrane, and stated my conviction that this subject had not received, as yet, the attention which its acknowledged importance demands. There is one point in particular, of which no adequate explanation has been as yet given, namely, why it is that in some cases of pulmonary inflammation the sputa are filled with air-bubbles, while in other instances there is no appearance of air-bubbles from the beginning to the end of the disease. The presence of the air-bubbles in the sputa has been explained, by supposing that air becomes incorporated with the mucus, while it is driven up and down in the bronchial tubes, during the acts of respiration and coughing, just as if you shake a solution of soap, or any other viscid fluid, in a half-empty bottle, it becomes impregnated with air-bubbles. There may be some truth in this, but I think it does not sufficiently explain the presence and intimate incorporation of air with the sputa, in certain affections of the lung; and it appears to me that we can scarcely understand this, unless we suppose that the air and mucus are secreted together. You are aware that air is secreted by the bronchial mucous membrane, and that, in some cases, this secretion is morbidly increased, in others morbidly diminished. Now it is not very unreasonable to suppose, that the mucous membrane may secrete air and mucus together in abnormal quantity; and that this, rather than any mechanical agitation, may be the cause of the intimate combination of air with the expectorated fluids.

“I need scarcely make any observation on the cough of influenza. It is in general very troublesome, particularly at night. Many persons are not much annoyed by it during the day, but at night it becomes very harassing and prevents them from sleeping. When severe, it continues both night and day, and even when persons have recovered from fever and dyspnoea, and are able to go about, the cough will continue extremely troublesome: this I have observed in the majority of cases. In this state medicines prove of very little service, and one of the best remedies is to change to a mild country air. Cases

of cough, in which I had tried every remedy without success, and which had resisted every form of treatment in the city, yielded in a few days to the salubrious influence of change of air.

"In influenza the urine is generally much loaded with lithates and superlithates, and contains a large quantity of erythric or purpuric acid. It is red when voided, deposits a good deal of sediment, and tinges the vessel in which it lies, with a pink film. It bears some resemblance to the urine which accompanies arthritic and gouty affections. In very bad cases this state of the urine continues up to the period of death. You recollect what I stated with regard to the condition of the blood ;—it is generally buffed, even where there is scarcely any febrile excitement in the system, and thus affords a very fallacious indication. The same observation holds good with respect to the state of the urine and the temperature of the skin. I may observe here, that the heat of the skin is very variable ; it is sometimes very high, sometimes natural, in fact, like the pulse, it falls and rises in a very remarkable manner at certain times of the day.

"I have already spoken of the affection of the mucous membrane of the bowels ; I may observe, that in some cases of influenza the morbid influence is translated to the brain, and symptoms of delirium and coma supervene. Thus, in two instances communicated to me by the surgeon-general, the patients fell into a state resembling coma, during the course of the disease. In three cases witnessed by Mr. Swift, the attack of influenza terminated in a train of symptoms bearing a close analogy to delirium tremens, and requiring the use of blisters to the head and neck, full doses of opium, purgative enemata, wine, and the occasional use of mercurials. The patients complained of great headache, noise in the ears, some intolerance of light, and more or less sleeplessness from the commencement, along with the usual pulmonary symptoms. After five or six days they became excessively nervous, lost all sleep, had continual subsultus and tremors, and talked very incoherently, particularly at night. During the prevalence of the cerebral symptoms, the pulmonary affection partially or wholly disappeared, but returned again in some degree, after the subsidence of the delirium. All these cases terminated

favorably. I believe I have already remarked, that many persons who have laboured under very severe pulmonary symptoms, will struggle through the disease; and I may mention here, that I have seen persons recover who have suffered from continued orthopnoea for three weeks. Still the mortality, peculiarly among the aged, is very great, and I fear that we shall shortly have but few octogenarians to tell the occurrences of the last century. Indeed, the mortality has not been confined exclusively to the aged, for many persons in the vigour of life have sunk under the attack. There have been several deaths among the soldiers in our garrisons, notwithstanding the excellent health which our troops generally enjoy, and the skilful and judicious treatment of our present army-surgeons. The results of the medical treatment and necroscopic observations in the different regiments in London, Dublin, and Edinburgh, will form a most valuable document, and I hope it will be made public for the benefit of the whole profession.

“It now remains for me to say a few words on treatment. First, as to bleeding. A great deal was expected from general bleeding, because the disease was sudden and violent in its onset, accompanied by symptoms which seemed to require active measures, such as an inflammatory state of the bronchial mucous membrane, accompanied by a quick pulse, hot skin, and high-coloured urine. This led persons to expect much benefit from venesection. The results, however, of its employment are, generally speaking, very unsatisfactory. Where venesection was employed promptly, and in the beginning of the disease, and where it seemed to be strongly indicated by the buffed and cupped state of the blood, even in such cases it failed to afford anything like material or permanent benefit, or to produce a decided amelioration of the existing symptoms. The general impression among practitioners in Dublin at present seems to be, that bleeding is doubtful in its effects, if not altogether improper. I am much inclined to think that bleeding, unless employed within the first twelve or twenty-four hours, will be likely to do as much or more harm than good. Bleeding on the second or third day, except to relieve congestion of the lungs, seems inadmissible. The same observation holds good with reference to other diseases. Thus, in scarlatina, if

you happen to be called in when the rigor commences, and while the disease is beginning to form, you will often accomplish much good by bleeding your patient; but after eighteen or twenty-four hours, when the disease is fully formed, venesection will not do. On this point I can speak from experience. In scarlatina the difference of a few hours renders venesection inapplicable and even injurious. It is the same thing with respect to influenza; general bleeding is useful, only in the commencement; and where the symptoms seem to demand it, it should be employed at least within the first twenty-four hours. Where I have been fortunate enough to find the disease just commencing, I bleed to the amount of twelve or fourteen ounces, order the patient to remain in bed and take some aperient, followed by the use of nitre. In this way, by timely bleeding, aperients, sudorifics, and confinement to bed, the attack generally passes over in two or three days. I could mention many instances of the success of this plan of treatment. In one family I treated all the individuals attacked in this way, and I have done the same thing in many cases of persons somewhat advanced in life. In the case of an old gentleman who was very severely attacked, I succeeded by these means in checking the disease at once. My experience therefore is, that bleeding is of service in the very commencement of the disease; but as it seldom happens that a physician is called in at this period, I would qualify my statement by saying, that, as a general measure, bleeding in influenza is seldom admissible. When you are called in to attend cases, you will most generally find that the patients have been ill for two or three days or more, and then the only mode of abstracting blood, which you can have recourse to with safety, is by leeching. About eight or ten leeches applied over the hollow of the neck, just above the sternum, and allowed to bleed pretty freely, will prove very serviceable; and if you apply them in the evening, you will often secure to your patient a good night's rest. This plan of leeching the hollow of the neck, in cases of tracheo-bronchial inflammation, is an excellent one: the leeches are applied at a spot which lies close to the trachea, and particularly to that point, to which the irritation accompanying bronchitic affections is chiefly referred. By the aid of leeching, the use of aperients, if necessary, and confine-

ment to bed, with sudorifics, you will frequently succeed in removing the fever and bronchial inflammation. You will derive much benefit, particularly in the early stage of influenza, from tartar emetic and nitre; but I must say, that neither leeching, nor tartar emetic and nitre, prove as valuable and as efficacious in influenza as they do in ordinary bronchitis. Some of my friends who used tartar emetic as a nauseant in the commencement of the disease, inform me that they have derived benefit from its use, and others have told me that they have used tartar emetic and opium in the commencement and during the course of the disease with advantage. I have not employed the first of these, but I have the latter, and with favorable results. You may, therefore, after using antiphlogistics for a day or two, proceed to the use of opiates in combination with tartar emetic or nitre. In some cases the camphorated tincture of opium will answer very well; in others you will find the acetate or muriate of morphia better. A mixture composed of six ounces of almond emulsion, a drachm of nitre, and half a drachm or more of the liquor muriatis morphiæ, will be found very useful. The muriate of morphia, which possesses many of the valuable properties of opium without its defects, will serve to tranquillise the system and produce sleep, two most important points in a disease like influenza connected with increased nervous irritability. A gentleman, on whom I place much reliance, tells me, that he has treated many bad cases successfully with camphor mixture, tincture of opium, and tartar emetic. I need not mention the various remedies which have been recommended in this disease, as Mindererus' spirit, Hoffman's anodyne, ipecacuanha—alone or combined with extract of conium and blue-pill,—and many other remedies belonging to the class of diaphoretics or expectorants. They are all more or less serviceable, but they have all the common defect of producing less relief than they usually do in cases where the pulmonary affection is simple and idiopathic. Towards the end of the disease you find it necessary to give stimulant expectorants and light tonics, as decoction of polygala, senega, infusion of calumba, etc. etc.

“One word about blisters before I conclude. They are useful in some cases, but in many of the severe ones they do

little or no good, and only add to the patient's sufferings. They do not relieve the pulmonary symptoms, and particularly the dyspnœa, in the manner you would be prepared to expect. I do not know a more remarkable circumstance in the present disease than the failure of blisters, and in many cases I do not employ them at all. Fomenting the trachea and chest with very hot water appears to be much more serviceable. This has proved extremely valuable in many cases of this as well as other affections of the air-passages; and on referring to the late American journals, I find that the plan of treating croup in its onset, by means of very hot water applied with a sponge to the throat,—a plan which I recommended some time ago in the *Dublin Medical Journal*—has been extensively employed in America, and with the most happy results. Sponging the throat and chest with water as hot as it can be borne, has been found, in many instances, capable of arresting all the threatening symptoms of croup at once. Several cases are mentioned in the American journals, in which the lives of the little patients were evidently saved by this application. I may state also, that not long since a child was saved in Dublin by the same means. By the advice of Mr. Smyly, who suspected the threatened attack, the child's mother had everything prepared, and by her promptitude and care arrested the disease before it had sufficient time to form."

3. DR. CLENDINNING¹

"Between Monday, January 9, and Saturday, February 4, 414 cases of influenza were admitted on the out-patient home list of the Marylebone Infirmary, as stated by Dr. Boyd, namely:

"Week ending 14th January	.	.	161
" 21st "	.	.	139
" 28th "	.	.	84
" 4th February	.	.	34

and the workhouse practice and morning out-patients' room practice advanced numerically, and receded apparently along

¹ Notice of the Influenza of January and February 1837, by Dr. Clendinning, in *London Medical Gazette*, Feb. 18, 1837, p. 781.

with the infirmary and home practices; so that the epidemic would appear to have begun with January, and declined in about the usual period of from five to six weeks.

"Symptoms.—Of course amongst such a number, various combinations of symptoms must have happened. Confining my remarks to those that were admitted into the Infirmary, of whom only I had personal cognizance, I should say that the cases varied principally according as they were simple or complicated,—the former being tolerably uniform in their symptoms, the latter various as the complicating diseases. Of the former the symptoms are familiar, and require no detailed description from me; namely, at first chilliness, lassitude, and depression or anxiety, followed in some hours by more or less of heat, gravedo, headache, coryza, pain of back and limbs, soreness, sometimes extreme of the chest and throat, with cough, smart fever, often coated tongue, nausea and vomiting, sometimes gastro-enteritic irritation, with diarrhœa, occasionally transient delirium, generally wandering pains of trunk, especially about the sides. Such were the principal symptoms of the uncomplicated cases for twenty-four, thirty-six, or forty-eight hours after admission; after which expectoration became easier, the skin softer and moister, and the cough and headache less troublesome, when the fever gave way, so that in three or four days nothing but weakness with a tiresome cough remained in the majority of instances,—a weakness, however, greatly disproportionate to the duration or danger of the disease. Two-fifths of the cases noted as influenza by the house surgeon, were of the kind just glanced at; the remaining three-fifths were complicated as follows, namely:

" With pleuropneumonia	36
„ bronchitis, mostly chronic, and combined with emphysema pulm., and morb. cord.	52
Phthisis	25
Pleuritis	5
Fever, in several instances typhoid	25
Rheumatism, chron.	2
Morb. chron. ventriculi	3
Croup	3
Ptyalism	1
Encephalitis	1
Morb. chron. cord.	3
Pericarditis	1

"Of course the symptoms must have varied very much in the second class or complicated cases. In numerous instances the complicating diseases were at first so masked by the influenza as not to be easily recognisable,—without the aid of the pleximeter or finger and ear tube; indeed, it appeared to me nearly impossible, in several cases, to arrive at a safe and satisfactory diagnosis, more especially in persons advanced in life. The irregularity observed in the course of the functional signs did not in any material degree of course extend to the physical signs, so that pneumonia, phthisis, diseases of the heart, and hypertrophy of the ramifications of the bronchus (or emphysema pulm. cum catarrh. chron.), which were the most frequent and formidable complications, were generally as easily identified as usual. In every case the influenza, if distinguished at all, was readily detected, whatever its complications, if attended to within the first day or two; after that period, it often in bad cases became absorbed in the effects of the graver complicating disease.

"*Mortality.*—The mortality with us or elsewhere, amongst populations embracing indifferently individuals of all ages, sound and unsound, was very considerable during the period so often specified above. I do not know that any simple case was lost from influenza unaided by previous disease or subsequent complication; but so large a portion of the subjects of our influenza had had previously tuberculated lung, diseased bronchial ramifications, or hypertrophy of the heart, and the instances in which pleuropneumonia was excited were so numerous, that we lost—

" In the six weeks from the 31st December, altogether	. 118
To which must be added deaths in the infirm wards of the workhouse, same period	. 21
In the out-door practice, also, there were some deaths amounting in the same period to	. 40
Giving a grand total mortality of	. 179

*"Table of cases of all ages treated in the wards of the St. Mary-lebone Infirmary from the 30th of December 1836, to the 10th of February 1837."*¹

Ages of Cases.	Living.		Dying.		Influenza in both sexes.
	Male.	Female.	Male.	Female.	
Under twelve months . . .	5	4	1	2	5
One to five years . . .	15	5	—	—	3
Five to ten years . . .	17	24	—	1	15
Ten to twenty years . . .	40	33	3	2	35
Twenty to thirty . . .	21	40	3	5	28
Thirty to forty . . .	34	26	11	4	33
Forty to fifty . . .	27	27	10	7	26
Fifty to sixty . . .	36	25	14	8	41
Sixty to seventy . . .	22	30	6	10	35
Seventy and upwards . . .	21	11	9	2	26

"Remarks on the Table of Ages.—From the preceding table it would appear, that aged persons have enjoyed no such immunities during the late epidemic, as they have been found, or, for want of counting, perhaps supposed to do, in former epidemics. More than half of the cases were above forty, while a fourth part nearly were above sixty. But the table represents the case too favorably of the other extreme of life, owing to the nursery and school children having usually not been so severely affected as to require hospital treatment. Another generally received opinion, however, is confirmed by our experience, namely, the potency of pectoral disease as a predisposing cause; this appears strikingly from the table of complications. For though the complicated cases were received into the infirmary in much larger proportion, of course, than the simple cases, yet the number of the former is too considerable to be overlooked or attributed to universality of diffusion of the epidemic causes rather than to peculiar susceptibility in the subjects. I have added the deaths of all the diseases, but none for influenza separately, for the obvious reason, that influenza proper produced no deaths. Amongst the causes, I have seen no reason to reckon contagion; perhaps I have not looked sufficiently, or inquired for it. Like all other epidemic diseases, the present, whether contagious or not, certainly commenced at first without contagion, and has probably, as I think,

¹ For corrected Table, *vide* 'Medical Gazette' 1837, p. 819.

been exclusively reproduced and continued by recurrences of one or more of its first causes. What those first and essential causes are, I think with Pringle (*Med. Observ. and Enq.*, vol. vi.), is still a problem for solution.¹

"Morbid appearances."—During the epidemic numerous opportunities presented themselves of investigating its anatomical characters; and in every instance I found that the fatal result might be attributed to previous disease, or to organic deterioration from lapse of years. The youngest was a female eight years old, who sank under double pneumonia, supervening on tuberculation. There were a male and a female between twenty and thirty; a male and a female between thirty and forty; a male and two females between forty and fifty; between fifty and sixty were five males and two females; and between sixty and seventy, six males and one female.

"The complicating diseases were:

"Chronic disease, with enlargement of the heart and bronchial ramifications, without acute pulmonic disease.	9
Chronic disease of the heart and bronchia, with recent pleuro-pneumonia	6
Chronic disease of the heart, with phthisis, or recent pericarditis	1
Pneumonia and pericarditis	1
Phthisis with pneumonia	1
Pneumonia	1
Pneumonia, with suppuration of the kidneys	1
Pneumonia, morb. cord. and arachnitis	1

"I observed nothing constant in the *post-mortem* appearances, but extreme injection of the trachea and all its branches, and in several places thickening of the mucous lining of the passages. But those are nothing more than are, according to my observation, to be met with in a greater or less degree in almost every case of asthma, chronic catarrh, and old disease of the heart. It may be thought singular, that disease of the heart should have occurred so often, much oftener than phthisis, being eighteen times out of twenty-two; and I should probably, some twelve months or more since, have been struck myself by such a statement. But it is undoubtedly true, that disease of the heart frequently escapes the observer who trusts

¹ *Vide supra*, p. 77.

to his eye as a means of admeasurement, when, as often happens, there is no pericarditis, nor any valvular disease, and when hypertrophy, if existing, is distributed pretty equally over the organ, there is a great chance of its escaping notice, unless very considerable; more especially if the inspector have defective information respecting the health of the deceased. To guard against error from that quarter, I have for some time weighed every subject inspected on account of disease of the heart, entire in the first instance, and then, after careful examination of the pectoral viscera, weighed the heart separately after washing, and in this way have satisfied myself that, amongst the labouring classes at least, hypertrophy of that organ is a still more common and fatal disorder than many or most physicians believe."

4. DR. BRYSON

During the month of January 1837, influenza prevailed epidemically in nearly every British vessel of war stationed at the following ports: namely, Sheerness, Portsmouth, Plymouth, and Falmouth.¹ In February it attacked the ships' companies of the vessels employed on the north coast of Spain and at Lisbon. In March it made its appearance on the south coast of Spain, and subsequently attacked the crews of several vessels at Barcelona. In April it reached Gibraltar, and in May, Malta. It appears, however, to have been prevalent also in January at Smyrna and at Trieste. With the exception of the 'Thunderer,' there is no evidence of its having broken out in any vessel at sea, unless the crew had been recently exposed in an infected locality. In the above vessel it suddenly made its appearance while she was on her homeward passage from Malta, four days before she arrived in Plymouth. The weather for some time previously had been wet, the wind varying from north-east to north-west. Catarrhal complaints had been for some weeks more than usually numerous amongst the crew, but they did not assume the epidemic form until the 3d of January. On that day, 3

¹ Compiled from 'Statistical Reports of the Health of the Navy,' 1837-43, and a MS. communication obligingly supplied by Dr. Bryson.

unequivocal cases of influenza were placed on the sick list; on the 4th, there were 7; on the 5th, 13; on the 6th, 11; on the 7th, 14; on the 8th, 17. After this the number of cases occurring daily began to decline until the 11th, when there were 2 only. On the following day, however, they again began to increase, and continued increasing until the 17th, when they amounted to 44. After this the number of cases gradually diminished, and the disease finally disappeared about the end of the month. It is rather remarkable that influenza did not appear in the 'Stag,' 'San Josef,' 'Talavera,' or 'Cornwallis,' all lying at the same port until about the 11th or 12th of January, eight or nine days after its appearance in the 'Thunderer' at sea, and four or five after her arrival in port.

Fever, apparently of a catarrhal nature, broke out in the 'Sapphire' about the middle of January, shortly after leaving Corfu, and while cruising to the southward, amongst the contiguous islands on the coast of Greece. It was supposed to have been occasioned by cold and moisture. The weather had been previously wet, and the awnings being much worn and defective, the whole of the main deck, and those parts of the lower deck near the hatchways, were almost constantly damp, thus proving a source of much discomfort to the men. Sixty-six cases occurred, all of which were cured on board.¹

"Catarrhal complaints prevailed in an epidemic form, and with an unwonted degree of severity in almost every vessel of war stationed on the coasts of Spain and Portugal.² In the majority of the returns these complaints have therefore been denominated influenza. It is first mentioned as having been prevalent at Lisbon, and amongst the merchant shipping, during the latter part of January.

"Early in February it appeared in the 'Russell' (72 guns), then at anchor in the Tagus (the disease at that time being prevalent at Lisbon, both in the town and amongst the merchant shipping). The first man attacked had been exposed the

¹ During the last quarter, 11 cases of what has been called typhus occurred in the 'Princess Charlotte;' two of these terminated fatally, after their removal to the hospital at Malta. Three of the 'Asia's' men also died in that establishment from febrile disease.

² Erysipelas also prevailed in the 'Caledonia' and 'Carysfort.'

greater part of the day in a boat and on shore. The disease rapidly spread until the cases amounted to 84. The greater number of attacks occurred on the 7th day; namely, on the 23d. The symptoms for the most part yielded readily to mild cathartics, sudorifics, and warm diluents.

"H.M.S. 'Canopus,' 84 guns, with a complement of 650 men (writes Dr. McWilliam¹), after being three years on the Mediterranean station, left Malta on the 1st January 1837; and having stopped twenty-four hours at Gibraltar and part of a day at Barcelona, arrived in Plymouth Sound on the 1st of February. The following day the ship proceeded into harbour. The weather was cold, rainy, and boisterous, and the influenza prevailed much on shore; yet the crew, although daily exposed in unrigging the ship, in boat duty and at the dockyard, continued in perfect health until the 15th, when the epidemic struck down two-thirds of the men in one day. Men in the prime and vigour of life and health, with their spirits in the highest degree elated at the prospect of being paid off, were in an hour or two prostrated in mind and body, as if by some sudden blow, or unexpected reverse of fortune. During the 16th and 17th, upwards of seventeen men were taken to the hospital at Plymouth.

"I was labouring under the disease myself; but the surgeon, and the other assistant-surgeon, being worse than I was, I managed to continue on duty, going to bed in the evening, and producing profuse diaphoresis by drinking plentifully of hot negus. Under this system, I got well in a week without confinement."

In March the disease raged at Barcelona, so generally that the public business was greatly interrupted, and every place of amusement closed. On the 9th or 10th, it attacked the ship's company of the 'Rodney,' then lying at anchor off the town. The seizures including cases of common catarrh, being at the rate of about three men per hour, for two or three days successively. After the 13th of the month it declined, and in eight more days ceased. At the same port it appeared in the 'Nautilus' on the 15th, culminated on the 17th, and disappeared on the 22d.

On the 4th or 5th of April, it attacked the 'Childers,'

¹ MS. letter to the Editor.

three or four days after she sailed from Barcelona, where the germs of the disease were undoubtedly contracted. On the 9th of the month it reached its acme, and on the 14th ceased to extend. This vessel arrived at Gibraltar on the 9th, while the disease was at its worst, and anchored near the 'Jasseur,' the crew of which was then perfectly healthy. They purposely avoided as long as possible having any communication with the 'Childers'; but on the 12th, a signal was made by the latter for assistance (her crew being, from weakness, unable to weigh the anchor), when a party of men was sent on board. On the 15th the disease made its appearance in the 'Jasseur,' the first man that suffered being one of the party sent to the affected vessel, thus affording evidence of the propagation of the disease by personal communication. The greatest number of attacks took place on the 21st and 22d; after the 25th, but few cases occurred, and these were of a mild character. The crew of the 'Asia' contracted the disease at Salamis, about the 15th of April. It attained the highest point of severity on the 22d, and ceased on the 29th. The vessel reached Malta on the 30th, but did not communicate the disease to the shore or shipping in the harbour.

On the 15th of May the 'Bellerophon' was affected at Tunis. The disease was at the worst on the 23d, and ceased after the 1st of June. A small vessel, called the 'Hind,' manned with a detachment from the crew of the 'Bellerophon,' was sent with despatches from the latter to Malta, where she arrived on the 16th, sailing again on the same day, in the course of which fifteen of her crew were attacked with the epidemic. It may be presumed that both these vessels contracted the disease at Tunis. Up to the 16th of May, Malta and the shipping in the harbour were unaffected. On the 17th, however, a case was entered on the sick list of the steamer 'Medea,' and the daily number of attacks occurring in her continued to increase till the 23d. After the 29th no fresh cases were entered. In the same anchorage the influenza attacked the crew of the 'Rapid' on the 20th; the daily number of attacks increasing, during the prevalence of the sirocco, until the 27th, when they began to decrease, and finally ceased about the 2d of June. On the 24th it attacked the ship's company of the 'Caledonia,' and acquired its greatest

intensity on the 29th, on which day 73 cases were added to the sick list. After the 31st the daily number of attacks diminished, but the disease did not entirely cease before the 20th of June. The 'Volage' (28 guns), on the 3d of May, sailed from the Bosphorus, arrived at Malta on the 19th, and again sailed on the 23d. On the 28th two cases occurred, thus marking a stage of incubation of at least five days, if the disease was contracted at Malta. Two days later it broke out suddenly in the 'Vanguard' (80 guns), which had sailed from the same harbour, and in the course of forty-eight hours attacked 200 men, so that the ship was obliged to return to Malta. The wind then changing from a bleak north-east to a mild north-west, was supposed to have occasioned a change for the better in the disease, the attacks becoming few and less severe.

In July the disease prevailed in the island of Corfu, where it again attacked the crew of the 'Sapphire.' The first case occurred on the 14th. The number of attacks daily increased till the 26th, and finally ceased on the 30th.

The influenza in the Mediterranean fleet was soon followed by diarrhœa and cholera. The 'Caledonia,' which suffered from influenza in May and June, was attacked with cholera, on the 7th of July, off the coast of Sicily, when 62 cases occurred. The 'Bellerophon,' during the same month, lost 10 out of 18 affected with this disease.

Some of the facts here related may be viewed in reference to the idea of atmospheric origin. If we were to assume such a source of this disease at Malta, how could we explain its appearance in some of the vessels before it arose in others exposed alike to the same atmosphere; or the fact, that some of the larger vessels, containing the greatest number of men and the greatest variety of constitution, were not the first to suffer? The exciting cause of the disease did not reach the 'Caledonia' till nearly a week after it invaded the 'Medea' and 'Rapid.' It does not appear that any advantage was gained by the vessels leaving the ports where they contracted the disease. Both the 'Caledonia' and 'Vanguard' left Malta harbour two days after their crews became affected; and while the daily number of attacks was on the increase, yet the change from a comparatively confined locality to the open sea, had not

the slightest influence in checking the progress of the malady or altering the symptoms. The proportional number of attacks occurring daily was nearly the same as in the 'Medea' and in other vessels that remained at anchor, whilst the amount of morbid action, judging from the cases in the aggregate, was also the same. Contrary to what might be expected, the number of men and the size of the vessel had no very observable effect in modifying the disease. In the 'Medea' and 'Rapid,' both small vessels, the former with a crew of 130, and the latter with about 60, the number of attacks, allowing for slight cases not entered on the sick list, was in nearly the same ratio as in the 'Caledonia' and 'Vanguard,' having respectively crews of 666 and 598. Although the disease prevailed with different degrees of severity in different vessels, still it seems to have displayed about the same degree of severity in different places. In the 'Rodney,' of 92 guns, there occurred at Barcelona 232 cases; whilst at Malta, in the 'Vanguard,' of 80 guns, there were 250, the number of cases in each vessel, including cases not entered, being about equal to half the crew. In the 'Nautilus,' a 10-gun brig; in the steamship 'Salamander'; in the 'Tweed' (18 guns), on the north coast of Spain; in the 'Magicienne' (24 guns), at Lisbon; and in the 'Pique' (36 guns), at Gibraltar, the same proportion of attacks obtained; still there seems some reason to doubt whether it did not prevail with somewhat greater virulence in the vessels stationed in the ports of Spain and Portugal and in the Mediterranean, than in those stationed in the ports of England. The disease, although rife in the Mediterranean station, was not very fatal. The number of cases of influenza and common catarrh amounted in 1837 to 3114, being 430·8 per 1000 of mean strength; 36·5 per 1000 were sent to hospital, but only 0·6 per 1000 died.

The symptoms were headache; a sense of tightness across the forehead; pain in the eyeballs, much increased on motion; lachrymation, coryza, and, in some cases, epistaxis; pain of the back and limbs, with languor and debility; inflammation of the fauces, with pain extending along the course of the trachea; dyspnœa; nausea; vomiting. The cough was extremely troublesome. In some cases, the bowels were constipated, in others, relaxed: rigors, alternating with flushes of heat, followed by

profuse perspiration. The state of the pulse varied: in general it was quicker than natural, soft, and easily compressed. The tongue had the appearance of being covered by cream. The treatment usually commenced with the exhibition of a dose of Calomel with Antimonial Powder, followed by a purgative, after the operation of which, Antimony with other diaphoretic and expectorant medicines was prescribed.

In the 'Bellerophon' different degrees of pneumonia so frequently accompanied the disease, that of 150 cases, bleeding was employed in 102, and sometimes repeated a second and a third time, it is said with the best effect. That venesection, and what is called the depletory system, were carried too far in several instances, may be inferred from the success attending the opposite and palliative plan of treatment; the immediate results thus obtained were at least equally satisfactory; in the more remote, there was this remarkable contrast, that those patients who came out of the disease without great physical prostration from the means used, recovered rapidly and satisfactorily, while those who had been subjected to an opposite plan of treatment, and who had lost much blood, recovered slowly and unsatisfactorily.

The epidemic influence of this year very much resembled that of 1831.

The deaths in London were quadrupled during the prevalence of the disease. In Berlin, during the month of January, they exceeded the births. The practitioners of the latter place found lemon-juice a useful medicine.

In June, nervous and gastric fevers were rife. In the beginning of August, the gastric fever took the form of synochus; and in the second week of the month cholera appeared, to which those convalescent from other diseases fell an easy prey.¹

In Prussia domestic animals, neat cattle, and horses, suffered at the same period from catarrhal and rheumatic affections. Rheumatism was especially prevalent amongst goats. At the end of the month there was much catarrhal ophthalmia and pleurisy. Horses were affected with quinsy and pneumonia, dogs and sheep with rheumatism. In April, goats were visited with gastric fever, and there was much disease among chickens

¹ Medicinische Zeitung, 1837.

and pheasants. In May, complaints of horses took the form of tetanus, apoplexy, and low fever; in August, of colic and enteritis.

On the continent, the spring equinox of this year was observed to be like the winter solstice. Cold, heat, dryness, and humidity, alternated previously to the visitation of influenza.¹ When the influenza was about to appear, the ordinary characteristic diseases of the season became less rife, but neuralgia and other diseases of the nervous system (in Geneva, rheumatism) prevailed; but soon influenza reigned alone, as if it absorbed all pathological elements. At Galgou, cattle suffered from loss of appetite, weakness of limbs, injected eyes, and perspiration. In Medoc, horses were also affected.²

Large populations suffered most. Geneva was attacked some days before the environs, and Lausanne before Morges. In Lyons, the St. Just district first. At Geneva, the military were first affected; and the gendarmes, who are much exposed to the weather, before the artillerymen. The liability was modified by the elevation. In a prison at Geneva, in an elevated situation, only 6 out of 35 inmates suffered; in another prison near the water, 23 out of 60.

At Paris, Piedagnel observed more men than women affected. The duration and fatality of the disorder increased with the age of the patient. Petrequin, who suffered from the disease at Paris, subsequently got it again at Lyons. Strangers coming to Lyons were frequently attacked on the same or the next day. The epidemic catarrh, as it appeared in Paris, was described under four varieties, viz., the anginose, bronchial, pneumonic, and gastro-enteric.³

During the month of April 1836, Capt. Burnett observed, to the west of Africa, between the 4th and 8th degree of north latitude, an extensive shower of red dust. In February 1837, the same observer remarked, for four consecutive days, a fall of dust resembling that of red bricks, attending the north-east trade wind, and prevailing over an extent of 300 miles from 4° 20' to 8° north latitude, and in 27° 20' west longitude. The shower commenced as the wind, which had been south-east, veered by E.S.E. to N.E.⁴

¹ Gazette Médicale, p. 82.

² Journ. de Médecine Pratique de Bourdeaux, Avril 1837.

³ Gazette Médicale.

⁴ Nautical Mag., 1837, p. 291. Darwin, in 'Geological Transactions,' 1845, p. 30.

"TABLE
Showing the Daily number of Men placed on the Sick List with Influenza, in the following Vessels, from the
commencement of the Epidemic in each, until it entirely ceased.

	DAY.																											
	1st	2d	3d	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	21st	22d	23d	24th	25th	26th	27th	28th
Thunderer (84 guns), at Sea, and at Devonport	3	7	13	11	14	17	10	7	2	9	6	4	7	28	44	30	20	13	6	2	7	4	4	1	3	1	-	-
Talavera (72), Devonport	3	2	4	24	8	3	5	6	1	3	3	4	1	2	1	-	1	3	3	-	-	-	-	-	-	-	-	-
Cornwallis (72), " "	2	-	7	7	12	19	19	4	2	1	2	1	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Inconstant (36), " "	3	2	13	18	10	6	4	2	3	-	-	-	-	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
Ringdove (18), N. Coast of Spain .	1	-	4	5	4	7	10	7	-	1	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Tweed (18), " "	1	2	6	8	10	6	9	1	1	-	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
Russell (72), Lisbon .	2	10	11	9	18	23	6	2	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rodney, (92), Barcelona	3	54	53	40	43	14	6	5	5	2	-	3	2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Childers (16), " "	1	2	3	4	16	12	2	4	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nautilus (6), " "	3	3	8	3	2	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Jasseur (18), Gibraltar .	1	-	-	6	3	4	7	7	2	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Medea (Steamer), Malta .	1	1	4	7	15	15	9	6	3	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Rapid (8), " "	1	3	-	11	3	5	8	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Caledonia (120), " "	3	20	23	68	66	73	45	24	8	10	5	4	3	2	5	1	4	3	1	17	1	2	3	5	-	-	-	-
Vanguard (80), " "	2	2	-	2	14	63	69	38	18	9	8	7	4	-	3	5	1	2	1	-	2	-	-	-	-	-	-	-
Bellerophon (78), Tunis .	1	-	2	-	6	-	9	30	38	23	9	4	4	2	2	2	2	2	-	-	-	-	-	-	-	-	-	-
Tribune (28), Smyrna .	1	1	-	-	-	-	-	-	-	1	-	-	1	-	-	-	-	1	2	-	-	2	4	1	4	3	-	-

"The disease generally reached its acme between the third and seventh days."

EPIDEMIC OF 1847-48

DR. PEACOCK'S ACCOUNT

INTRODUCTORY NOTICE OF EPIDEMIC IN LONDON

"The influenza of 1847-48 first became epidemic in London in November 1847, between the 6th and 22d of that month, the date of the attacks differing widely in different parts of the country. During the summer and early autumn of 1846 dysenteric affections were unusually frequent, followed, later in the season, by typhoid fever, connected with intestinal disease, and characterised by prolonged duration, great prostration of strength, depression of the vital powers, torpor of mind, and tendency to coma. At the same time there was catarrhal complication, and a more than ordinary tendency to idiopathic bronchitis, pneumonia, and other chest affections. Throughout the summer intermittent fevers were common, purpura, and hepatic disorders. The latter, combined with pulmonary affections, continued to the end of the winter of 1847-48.

"During the months of October and November, cases of chest affection, distinguished by an unusual degree of febrile disturbance, were frequent amongst the out-patients of the Royal Free Hospital. Up to the 18th of November, however, the number of applicants labouring under those symptoms, though larger than usual, did not attract much attention; but it was otherwise on Monday the 22d, when the fresh recommendations rose from an average of 50 or 60 to 126, and a great proportion of these proved cases of influenza. On the subsequent Thursday, the 25th, the new patients amounted to 137, and on Monday the 29th, to not less than 166. The applications now began to decline in number, and the new patients on Thursday, December 2d, were only 111 in number, and on Monday the 6th, 95.

"Mr. Stone informs me, that the disease first showed itself among the boys at Christ's Hospital, on Sunday the 21st November, and that for three or four days previously, catarrhal affections, with fever and headache, had been unusually numerous.

On the 21st, 9 boys labouring under the ordinary symptoms of influenza, were admitted into the infirmary; on the 22d, 32; and on the 23d, 43. The disease maintained its activity during eight days, in the course of which 112 boys were received either into the infirmary, or into a ward set apart for their treatment, while a much larger number were more slightly affected. Cases of influenza continued to occur till the middle of December, and in all about 350 of the boys suffered more or less from its attacks.

“By information with which Mr. Carey has favoured me, it appears that at the Infant Orphan Asylum, at Wanstead, eight miles north-east of London, the disease commenced on the 14th November, and lasted till the 26th, during which time 44 of the children, and 11 of the adults in the establishment, were attacked. The greater number of cases occurred between the 18th and 24th.

“It is clear, from the preceding statements, that the epidemic in the metropolis was most active from the 22d to the 30th of November, having commenced about the 16th or 18th of that month, and ceased to be very prevalent by the 6th or 8th of December. Though, however, the disease in its intensity may thus be said to have raged more particularly during this period, it continued its ravages throughout the whole of December 1847, and the early months of 1848. To the end of the winter quarter, indeed, various febrile and inflammatory affections, having more or less of the peculiar features which characterised all the forms of the epidemic disease during its prevalence, were constantly presenting themselves.

“The report of the Registrar-General shows that mild weather characterised the opening of the year 1846, and that the rate of mortality was considerably below the average, and continued low to the beginning of summer, when there was a slight excess of deaths, chiefly from diarrhœa, dysentery, and other intestinal disorders, owing to the warm, moist season. This summer, in fact, was remarkable for heavy rain and thunderstorms. The weather continued warm and damp until the middle of November, when the winter set in suddenly. Both summer and autumn showed great increase in mortality, from the various forms of eruptive fever, diarrhœa, and dysentery, and, later in the season, from acute affections of the lungs. Typhus,

also, was unusually fatal. The weather continued cold from November until the following May, intensely so from the 8th to the 13th of February; and the spring of 1847 was as unhealthy as the preceding summer and autumn, and the diseases were of a similar character, and equally fatal. May and June of 1847 were unusually warm, while July opened cold, but became warmer, and the mean temperature in August was 62° . September was cold throughout and dry, and the mortality in London during the quarter exceeded that of previous years. The temperature was high through October and half of November, and the weather calm and dry. Between the 15th and 19th of November the temperature fell from 54.3° to 32.1° , while on the 20th a dense fog covered the Thames. On the 21st the air was moist, and the wind changed from north to south-east. On the 22d the mean temperature had risen to 44.7° , and the wind was south-west. The air was damp, and rain fell on the 22d, 23d, 26th, and 27th, the temperature being still high, but becoming very low on the last of these days. For the next week, ending December 4th, the average temperature was 47.9° , the wind generally south-west, with much rain. During part of the following week the weather continued similar, but there was a remarkable fall in the barometer, which on December 7th stood at 28.381, or lower than at any period since the great storm of January 13th, 1843. On Monday the 20th the weather again changed, the wind shifted from south-east to north-east, and the temperature fell to 38.1° , continuing low to the end of the month. For the month of November the average temperature had been 46.9° , for December, 42.8° ; both considerably above the mean of several years. The amount of rain which fell in the quarter was two inches less than in the same period during previous years. The whole year, indeed, was unusually dry. During September, October, November, and to the 20th of December, the amount of electricity was very small. A brilliant aurora was visible on October 24th, and on several other occasions during the quarter.

“In the beginning of October the deaths registered scarcely exceeded the average. In early November, however, the mortality slightly exceeded the average, and kept advancing until the week ending November 27th, when it suddenly rose

from 1086 to 1677 deaths. For the week ending December 4th, the deaths registered amounted to 2454; and for that ending December 11th, they were 2416. For the following weeks, ending December the 18th and 25th, 1847, and January 1st, 1848, the numbers registered were 1946, 1247, and 1599. The high mortality with which 1847 thus ended continued to characterise the early part of 1848. The deaths registered in the week ending January 8th were 1364, and there was little variation in the numbers till the end of February. For the week ending March 4th, however, a rapid decline in the mortality was perceptible, the registered deaths having fallen to 1114, and for the following week to 1070; while the average for the quarter in the six previous years had been 1107.

“The proportion of deaths registered as from influenza, during each week of the six months, commencing October 1st, 1847, and terminating on the 1st April 1848, afford a good criterion of the relative prevalence of the epidemic. The number of deaths attributed to it, from the commencement of the quarter to the week ending November 20th, are registered as in the whole 14, and for the last week only 4. In the week ending November 27th, the deaths are 36; and in those ending December 4th, 11th, 18th, and 25th, and January 1st, 1848, they are stated as 198, 374, 270, 142, and 127. On the 8th, 15th, 22d, and 29th of January, and the 5th of February, the weekly returns are 102, 89, 56, 59, and 47. In the month of February, the decline was still more perceptible, the deaths registered in the weeks ending the 12th, 19th, and 26th, and the 4th of March, being only 27, 33, 18, and 18. March exhibited the further reduction, for the weeks ending the 11th, 18th, and 25th, and the 1st of April, of 11, 10, 6, and 8 respectively. The deaths registered, as from influenza, amounted, for the entire six months, to 1739. The Registrar-General has however remarked, that during the six weeks the epidemic was at its height, not less than 5000 persons died, in the metropolitan districts, in excess of the average mortality of the period, an excess which shows itself in nearly every class of disease; the local maladies which had been the most predominant affections being doubtless, in many cases, assigned as the cause of death.

“ There was also, during the period of the influenza, a great increase in the number of deaths from the various descriptions of eruptive fever, small-pox, measles, and scarlet fever, as likewise from hooping-cough and different forms of combined cardiac and pulmonary disease, asthma, hydrothorax, etc., with affections of the fauces and larynx. The deaths from erysipelas and rheumatism, and from different forms of cerebral disease, were considerably augmented in number, as were those from childbirth, consequent on the frequency of puerperal fever. It would appear, however, that diarrhoea and dysentery were less extensively fatal during the epidemic than previous to its breaking out, unless, as is probably the case, those affections, being generally combined with other manifestations of the reigning disease, have been registered under other designations.

“ The facts cited from the Registrar-General's report, if the ordinary period of death be regarded as from the seventh to the tenth day, are confirmatory of the date previously assigned as that of the first appearance of the influenza in its epidemic form. It will be observed that the earliest marked increase of the mortality is shown in the week ending November 27th; that it went on increasing up to December 4th; that it became somewhat less in the course of the third week, ending December 11th; and that by the termination of the fourth week, December 18th, it had fallen off considerably. The excessive mortality continued, however, throughout the remainder of December, the whole of January, and to the middle of February; nearly six thousand persons beyond the ordinary number of the period having died in the course of the nine weeks, from November 20th, 1847, to January 22d, 1848.

“ From the notes of the Registrars of the sub-districts, and from other facts embraced in the Report, it appears that there was considerable variety in the period at which the epidemic commenced its attacks in different parts of the country. In some places it was at its height previous to its outbreak in the metropolis, in others not till long afterwards; and others again seem altogether to have escaped. We are informed by Dr. Stark that the disease was raging in Edinburgh on the 18th and 28th November. In Bradford, Yorkshire, it prevailed during the ten days commencing November 27th. In Cheshire, Lancashire, and Derbyshire, it was most felt during the last

two weeks of December. In Northampton, it was committing its ravages when the Registrar's notes for the quarter were written. In Bath, Bristol, Brighton, Plymouth, and Penzance, it prevailed during December.

"The epidemic was raging at Constantinople in August, and it affected the south of France and the shores of the Mediterranean in October. In Paris,¹ it commenced about November the 27th, and was at its height on December the 4th; in Madrid, it was very general on the 11th and 19th of January; and in Geneva,² it appeared as a casual disease in the first week in December, suddenly became very prevalent about the 20th, declined during the course of January, and had almost disappeared by the commencement of February.

"It would be highly interesting to ascertain the proportion of the population of the metropolis who were attacked with the disease during the recent epidemic: for the full elucidation of this question we are not, however, in possession of the requisite information. It has been already stated, that about 350 of the 1000 boys at Christ's Hospital, or about one-third, were more or less affected with the disease. At the Infant Orphan Asylum, 44 of the children, out of the 275 resident, were attacked, about the proportion of one-sixth; and 11 adults, or about one-third of the 38 at the time in the Institution, also had the disease. In the City Police Force, out of 470 adults, between 25 and 50 years of age, 100 were affected, being in the proportion of more than one-fifth.

"In the report of the Registrar-General, it is stated that, taking the deaths at two per cent—the rate of mortality deduced from observations on the epidemic of 1837—it may be estimated that 250,000 persons were more or less affected by the disease in the metropolis; but this, the writer suggests, is probably not more than half the true number, the total proportion being probably one-fourth of the whole population. In Paris,³ between one-fourth and one-half of the population is said to have been attacked by the recent epidemic; and in Geneva,⁴ the proportion affected is stated to have been not

¹ Gazette Médicale de Paris, 1847, p. 958.

³ Ibid. 1847, p. 958.

² Ibid. 1848, p. 472.

⁴ Ibid. 1848, p. 372.

less than one-third. The epidemic of 1837, we are informed, affected fully half the inhabitants of London¹ and Paris;² and in the prison at Rennes, M. Toulmouche³ states that one-third of the inmates were attacked. In Geneva, the different epidemics which have preceded that of 1847 are said to have variously affected from one-tenth to two-thirds of the inhabitants. So far, therefore, as calculations based upon observations of the disease in another locality and during another epidemic can be depended upon, the estimate of the Registrar-General may probably not be far from correct.

“In the boys at Christ’s Hospital, and the younger children at the Infant Orphan Asylum, as also in the adults at the latter institution, and in the City Police Force, the disease was uniformly of a mild character, and in no single instance proved fatal. In fact, notwithstanding the mortality occasioned by the influenza was so formidable, it was chiefly confined to persons who were previously in unsound health, or of advanced age. This not only appears from the above statement, but more conclusively from calculations contained in the report of the Registrar-General. In the three weeks, ending November 13th, which preceded the outbreak of the disease, the number of deaths in persons under 15 years of age was 1553; in the three weeks of the prevalence of the epidemic it rose to 2846. In the same two periods, the deaths of persons from 15 to 60 were 966 and 1970; and at the age of 60 and upwards, 576 and 1999. The mortality in childhood was, therefore, raised 83 per cent, in manhood 104 per cent, and in old age 247 per cent.

“SIMPLE CATARRHAL FEVER

“In this form of the complaint, the attack was most usually sudden, the patient experiencing a sense of cold down the back and between the shoulders, lapsing into general chilliness or complete rigors, and succeeded by flushes of heat and dryness of the skin, pain in the head, chest, and extremities, and prostration of strength. Generally these symptoms followed

¹ Holland’s Notes and Reflections, p. 198.

² Gazette Méd. 1837, p. 81.

³ Ibid. 1847, p. 801.

some exposure to damp and cold, but occasionally they appeared without being traceable to any immediately exciting cause, and more rarely, the attack came on gradually, with a general feeling of indisposition of two or three days' duration.

"At first, there was dryness of the nostrils, and soreness of the throat, with a sense of tightness or constriction of the chest, and a dry hard cough. As the disease advanced, copious defluxion from the nostrils took place; the throat was generally more decidedly affected, and the cough more frequent. The expectoration was at first scanty, and consisted chiefly of a pale glairy fluid; but at a later period, there was a more copious discharge of the usual opaque mucus. At the same time, some degree of difficulty of breathing and soreness at the chest were experienced, and occasionally slight lividity of the face was perceived. The respiration was, in most instances, accelerated, and, on auscultation, the respiratory sounds were usually dry and harsh, especially in the posterior and inferior regions of the chest, and sibilant and sonorous rhonchi were audible on forced inspiration. In some instances, no morbid sounds were detected, and the vesicular murmur was extremely indistinct.

"Throughout the course of the disease there was distressing headache, particularly in the forehead, across one or both eyebrows, and in the balls of the eyes, increasing ordinarily in severity towards evening, and often undergoing considerable intermission during the day. With these symptoms there was commonly much mental depression, listlessness, inability for intellectual exertion, and nocturnal restlessness. In some cases, epistaxis occurred and produced alleviation of the symptoms. The tongue was usually moist, and covered with a whitish creamy fur, but occasionally it was morbidly red at the tip and edges, and thickly coated towards the centre and root, with a fur of the colour popularly termed whity-brown;—more rarely, it was dry. In the greater number of cases, entire loss of appetite, with some little nausea and a confined state of the bowels, was experienced at the commencement; but, occasionally, diarrhoea was observed at an early period, and not unfrequently, it came on during the progress of the disease. A sense of weight, tenderness, or pain, in the right hypochondrium were frequent symptoms, and were generally combined

with some degree of icteroid tinging of the conjunctivæ, or of the general complexion.

“Prostration of strength was throughout one of the most marked and distressing features of the complaint, accompanied as it was with a general feeling of soreness and lassitude, and with dull aching pains in the chest, back, and limbs. The pulse was but little increased in frequency, generally ranging from eighty to ninety, and rarely exceeding a hundred beats in the minute. Though occasionally full, it was uniformly very compressible, and, after the first day or two, feeble. The skin was seldom very hot or dry, or, if so at the commencement of the disease, it soon became cool and moist, and generally the complaint subsided with free perspiration. A sense of chilliness, alternating with transient flushes of heat, was a very constant symptom in every stage of the disease. At first, the urine was usually somewhat scanty and high coloured, but after a day or two, it flowed more copiously, and deposited, more or less, sediment.

“The cases of simple catarrhal fever were usually too slight to require much medical aid, so that though the number of persons prescribed for, at the Royal Free Hospital, from the 22d November to the 6th December inclusive, could not have been less than several hundreds, only twenty persons thus affected were admitted into the wards, during the three or four months in which the disease was prevalent, and these were all cases either of unusual severity, or of persons utterly destitute. The patients were under treatment in the hospital, on an average, nine days; two were detained for four days only, three for five, and three for six days; but in one case, the period of residence was extended to seventeen, and in another, to twenty days, the remainder being resident between seven and fourteen days. Owing to the difficulty of collecting correct histories of the illness of hospital-patients before they come under personal observation, it is difficult to give a satisfactory estimate of the probable total duration of the disease in these cases. Of thirteen, however, in which the length of illness, previous to admission, seems to have been ascertained with exactitude, it averaged six days, so that the total duration of the cases may be stated at fifteen days. In three instances, the patients were only ill seven days, and in the three others,

the illness extended to twenty-one, twenty-two, and twenty-five days. In the police force the average period of invaliding from service was three days, and in eleven only, out of one hundred cases of the epidemic, which occurred in about two months, did the period of illness exceed a week. The ordinary duration of indisposition in this form of influenza may, therefore, be stated at from three to five days in the milder cases, and at from seven to ten, in those of a more severe description. The disease, however, on its subsidence, usually left the patient for some time much reduced, and suffering from general debility, inaptitude for exertion, either of body or mind, with loss of appetite, or entire distaste for food, and a troublesome cough; and in this state there was a great tendency to relapse.

“Not unfrequently, towards the termination of the complaint, the transient pains, which had been troublesome during its course, increased in severity, and rheumatic affections of an obstinate and painful character supervened. These often assumed a distinctly intermittent type, returning regularly at the same hour for several days in succession, and not unfrequently affecting one side of the head, or one eye-brow, or eye-ball, and occasionally the intercostal muscles of one side of the chest.

“Among the children at Christ's Hospital, the disease was much milder than in the cases just described, and probably assumed the form which characterised it in most instances. The attack usually commenced with a sense of cold, sometimes amounting to actual shivering, followed by heat of skin, and the ordinary symptoms of fever. In several cases, the disease was ushered in by nausea and vomiting, and in one or two by diarrhoea and gastrodynia. At an early period, there was usually a hoarse, barking cough, with intense frontal headache, much prostration of strength, a hot dry skin, and quick pulse. About the third day, the disease began to subside, and generally passed off with perspiration. The most frequent complications were affections of the throat and larynx. The laryngeal affection usually assumed the form of a croupy cough, and in three cases was developed into decided croup. In two cases, slight erysipelatous eruptions appeared on the face. The boys were not ordinarily detained in the infirmary more than four or five days; but the three affected with croup were under treatment eleven, fourteen, and eighteen days. All the cases

terminated favourably; but in several instances, the attacks were succeeded by considerable debility and a troublesome cough. The cases at the Infant Orphan Asylum, and in the police force, were likewise of a mild character.

"CATARRHAL FEVER WITH PULMONARY COMPLICATIONS

"1. ACUTE CAPILLARY BRONCHITIS

"The mode of invasion in cases of influenza complicated with acute capillary bronchitis, was very similar to that in the other severe forms of the epidemic. In eight cases the disease commenced suddenly, for the most part with a feeling of cold between the shoulders and down the back, increasing to slight shivering or severe rigors, and followed by heat of skin, more or less intense, and in some by perspiration. To these symptoms succeeded pains in the head, chest, and loins, a sense of tightness across the chest, difficulty of breathing, and cough, with usually some soreness of the throat.

"The *symptoms in the early stage*, of the cases complicated with capillary bronchitis, differed in no material point from those characterising the more severe forms of influenza. There was usually increased frequency, and some difficulty of breathing, and constriction of the chest, with soreness or stiffness of the throat. The cough, though slight, was troublesome from its frequency. The expectoration, if any, was scanty and of a glairy character. The tongue was usually red at the tip and edges, and covered with a creamy mucus, or with a whity-brown fur; occasionally, it was morbidly red throughout. The pulse was accelerated, beating generally from 100 to 112 or 116 in the minute; but in one case, it rose to 132 on the third day of the disease. The skin was not usually hot, or if so at first, the heat declined after two or three days.

"With these symptoms, there were the marked prostration of strength, the severe frontal headache, the pain in the back and limbs, and the general soreness of the body, which characterised the ordinary cases of influenza. Herpetic eruptions

appeared in three cases around the mouth; in two, on the second day from seizure, and in the other, on the fifth day. In three other cases, in which emetics had been given at the commencement of the attack, obstinate vomiting continued for two or three days.

"When the chest was examined in this stage of the disease, the only morbid phenomena detected, were a rough character of the inspiratory sound, particularly when a forcible inspiration was drawn, with some slight crepitation, audible more especially towards the lower part of each dorsal region, and general feebleness of the vesicular murmur, with sibilant rhonchus occasionally heard in other parts of the chest. The respiration was, however, quicker and shorter than natural, averaging 28, 32, or 40 respirations in the minute; the dyspnoea was greater than could be explained by any apparent physical signs, and most generally there was some lividity of the face.

"*In the second stage*, all these symptoms were much aggravated. There was great difficulty of breathing, and the respiratory acts were performed quickly and imperfectly, the respirations in the minute varying from 30 to 40 or 50. The cheeks were much flushed, and the lips were of a purple colour. Generally there was no acute pain in the chest, but rather a sense of constriction and soreness; and the cough, though frequent, and often occurring in paroxysms, was not usually severe. The expectoration still continued scanty, and consisted of small, yellowish-white pellets, forming tenacious masses of a peculiarly nodulated or botryoidal form, very nearly resembling, when floating in water, some of the larger oolitic limestones. The tongue, mostly covered with a thick whitish-brown fur, was somewhat dry and often red at the tip and edges, or morbidly red and glazed. The pulse was much accelerated, beating 120 to 130 or 140 times in the minute; but was generally small and very compressible. In some instances, after being low and feeble at the outset of the disease, it acquired a more sthenic character at the commencement of the second stage. The skin was rarely very dry, or much above the natural temperature, and the hands and feet were generally cool. The former were much congested, so that when the skin was blanched by pressure, the colour did not readily return. There was, in most cases, an increase of

the general prostration in this stage, much headache and often transient delirium, especially during the night.

"On percussion, the chest did not present any alteration in the degree of resonance proper to its several regions, unless when there existed other disease of the lungs or heart. On auscultation, crepitation of a more or less fine character was audible with the inspiration, first, in the inferior part of one or both dorsal regions, and thence spreading rapidly higher up in the back, and towards the bases of the lungs, laterally and anteriorly, while occasional sibilant rhonchus was heard in other parts of the chest, especially on forced inspiration. During this stage the patients usually lay on the back, with the head more or less elevated, and slightly inclined to one side; occasionally the difficulty of breathing prevented their lying down with ease.

"*The third stage* of the disease was marked by the dyspnoea becoming so severe, that the patients were compelled to sit constantly upright in bed, or to lean forwards, resting on their arms and elbows. At intervals, the respiration became even still more laborious. The lividity of the cheeks, lips and hands increased, the eyes became prominent, and the expression of countenance extremely anxious. The cough was frequent, and of a short abortive character, giving the impression of the presence of viscid secretion in the lungs, which the patient had not the power to expectorate. Its frequency also occasioned much fatigue, and it often caused pain in the head and great general distress, and during the paroxysms, the lividity of the face was much increased. The sputum was generally expectorated in large quantity. It was of a greenish yellow colour, of a very viscid consistence, contained little air, and was occasionally streaked with blood. The respirations amounted to 50, 60, and in one case to 72 in a minute, and the expiration was difficult and prolonged. The pulse, uniformly very feeble, was either extremely quick, 140 to 150 or 160 in a minute, or intermittent, so as to number only 100 or 120 beats. The tongue was covered with a thick yellowish, white, or brown fur, and was generally dry; sordes also formed on the teeth. The general surface of the body now became cool and bathed in perspiration, and the hands and feet were decidedly cold. The transient delirium before

noticed grew more constant, and in one case there was active mania at the earlier period, lapsing, with the progress of the disease, into low muttering delirium, with deafness and tendency to coma. With the decreasing strength, the cough became slight, the expectoration nearly or entirely ceased, and the patients died, either gradually from increasing exhaustion, or suddenly from suffocation.

"With the progress of the disease, the physical signs underwent a corresponding change. The chest, which had been naturally resonant on percussion, now yielded a morbidly clear sound, almost tympanitic, except when portions of the lungs were the seat of old or recent condensation. The crepitation gradually extended over larger portions of the lung, being of a finer character in the parts more recently involved, and giving place to sub-crepitant and mucous rhonchi, in the situations in which it was first heard, and, finally, becoming of a gurgling character in the neighbourhood of the larger bronchial tubes. The sub-crepitant rhonchus towards the later stages of the disease, when the respiration was very laborious, became audible with the expiratory, as well as with the inspiratory, act. When there was any local condensation, more or less decided bronchial respiration was also heard in the parts so affected.

"Such was the course of the disease in the cases which proved fatal; in those which terminated more favourably, the improvement took place in three instances, after the disease had reached the stage of secretion, as evidenced by the presence of fine crepitation in the dorsal regions, and in three others, after effusion had taken place, so extensively, that crepitant and sub-crepitant rhonchi were audible in all parts of the lungs.

"The amendment was marked by the respiration becoming less hurried and laborious, by the expression of countenance appearing less anxious, and the face less livid, and by the diminution of the general prostration. The pulse beat slower and stronger, and the paroxysms of coughing were less severe. The sputum lost its viscid character, and became more mucopurulent, having a greater tendency to coalesce into a homogeneous mass, involving the presence of more air, in the form of large bubbles. At a still later period, the mucopurulent

secretion was combined with serous and spumous fluid, occasionally slightly streaked with blood. Subsequently, it consisted chiefly of this fluid, and finally declined in quantity.

"The improvement in the general symptoms was attended by an alteration also in the character of the physical signs. The mucous and sub-crepitant rhonchi gave place to crepitation of a finer character, and the space over which the morbid sounds had been audible gradually contracted. The latter disappeared, first, in the upper parts of the chest, then, in the lower portions of the front and sides, and, lastly, at the lower dorsal regions, until they were at length merely audible even there on forced inspiration. A considerable period, however, elapsed in all cases after amendment was visible, before convalescence could be regarded as fully established, during which the patients continued to suffer from cough and dyspnœa, and were subject to sudden returns of the difficulty of breathing and pain in the chest. The muco-crepitating sounds could still be detected, on examination, long after the general symptoms had in a great degree disappeared; and at a later period, after decided crepitation had ceased to be audible, the inspiration continued to possess a somewhat harsh or rough character, especially at the bases of the lungs, and the expiratory sound was more distinct and prolonged than natural. The unusual clearness of the resonance on percussion, especially in the dorsal regions, was also observed for some time after the more marked physical signs had disappeared, and then gave place, in some cases, to a slight degree of general dulness.

"After the subsidence of the general symptoms, rheumatic affections not unfrequently appeared, most commonly in the form of pains in the head and face, or in the intercostal muscles; and in some cases materially prolonged the convalescence.

" 2. EPIDEMIC CATARRHAL FEVER COMPLICATED WITH PNEUMONIA

"The cases in which the predominant local complication of influenza assumed the form of pneumonia were seven, or excluding one for reasons afterwards specified, only six in number.

"The disease, in these cases, assumed a very different character from that which pneumonia ordinarily presents, being attended by an unusual degree of depression of strength, and combined with various indications of disorder of the chylopoetic viscera, and more or less general bronchial inflammation.

"Five out of the six cases of pneumonia treated in the hospital commenced with symptoms common to the more severe forms of influenza, chilliness or actual rigors, followed by heat of skin, pain in the head, and, in three patients, with pain also in the chest, and difficulty of breathing. In four cases the period of attack preceded that of admission by from two to four days; in another, the patient had been ill thirteen days before application; and the sixth had an attack of the more ordinary form of influenza six weeks previous to his reception, from which he recovered sufficiently to resume his employment as a dock-labourer, when the symptoms of inflammation of the chest re-appeared, and he was admitted after an interval of four days.

"In all of these six cases the pneumonia co-existed with more or less general bronchitis. Where pain in the chest existed from the commencement of the disease, the patients shewed decided evidences of pneumonia when received into the hospital, while the bronchitic symptoms were slight, and did not become marked till after the disappearance of the local condensation; in these cases, therefore, the disease may be inferred to have commenced in the parenchyma of the lungs. In the remaining three cases, the catarrhal symptoms probably preceded the occurrence of inflammation in the tissue of the lungs. In four instances, the disease extended to the production of more or less extensive consolidation of one lung, and in two there were evidences of condensation in portions of both lungs. When observed throughout their whole course, the cases presented the usual physical signs of pneumonia. First crepitation without material impairment of the natural sound on percussion, and subsequently bronchial respiration, and increased resonance of the cough and voice, with more or less decided dulness. The process of amendment was marked by the re-appearance of crepitation of a coarser character, the gradual disappearance of the dulness on percussion, and the

return of natural vesicular breathing. With these signs were also combined those of bronchitis of the smaller tubes.

“Of the general symptoms by which the cases of pneumonia were characterised, the cough was one of the most troublesome. In three patients, all young persons from eleven to fifteen years of age, and in whom there was extreme prostration of strength, there was throughout no expectoration; while in the others the matters expectorated combined the characters of the sputa of pneumonia with those of bronchitis, consisting of brownish coloured and viscid masses, containing small air-bubbles, intermixed with glairy fluid, either transparent or opaque, and with large bubbles of air.

“Pain in the chest, though in three cases experienced at the invasion of the disease, was not generally present to any great extent, or only induced complaint during the paroxysms of coughing. Dyspnœa, also, could not be regarded as a very decided symptom. In two cases, however, in which the disease was combined with extensive bronchial inflammation, there was considerable difficulty of breathing, and lividity of the face; while two patients continued to lie in the recumbent position, either on the back or partly turned to one side, without experiencing material dyspnœa, though the local disease was very extensive. The respiratory acts were not generally much accelerated, having only ranged from 28 to 44 in the minute. In one case, the respiration was remarkably slow, and the sounds so feeble as to be scarcely audible.

“The pulse was usually, but slightly, quicker than natural, numbering not more than 80, 90, or 100 beats in the minute. In one case, however, it was 144 at the commencement of the disease, and, in a second, 136 during a relapse. It was uniformly either soft and compressible, or decidedly small and feeble. The skin was rarely dry or very hot, and if so at the earlier periods, as in the other forms of influenza, soon became cool and moist. During a relapse, in one case, the skin was, however, intensely hot and dry, and in one or two others, though the temperature was not above the natural standard, there was a peculiar dryness and harshness of the skin.

“The cases of pneumonia occurring during the epidemic of influenza, were very generally complicated with evidences of gastro-enteric and hepatic disease. The tongue was usually

red at the tip and edges, with a whity-brown fur at the centre and root; it was moist in the early stage and became dryer with the progress of the disease: in one case only was it very dry or brown. In two cases, there was decided jaundice, and in the others some degree of tinging of the conjunctivæ, and of the surface of the body generally. Loss of appetite, nausea and vomiting, in various degrees, were also early symptoms; to which diarrhœa, with tenderness and inflation of the abdomen, succeeded. The prostration of strength, which was much greater than in ordinary cases of pneumonia, was also usually present at the commencement of the attack, before the local affection had attained much importance. In several cases, particularly in two where relapses occurred, the depression of strength was extreme, while in two others it was combined with great and peculiar torpor of mind, almost amounting to coma.

“Notwithstanding that the cases of pneumonia observed during the epidemic presented a most threatening character, from the severity of the local affection, the complication with serious disease of other organs, and the extreme depression and prostration of strength with which they were attended, their result cannot be regarded as unfavourable, since of the seven cases one only proved fatal.

“ 3. LARYNGEAL COMPLICATIONS OF INFLUENZA

“In the notice of the epidemic as it prevailed among the children in Christ’s Hospital, I have mentioned the frequent occurrence of some degree of laryngeal affection, indicated by a hoarse barking cough, and ending in three cases in decided croup. Among adults, too, a degree of sore throat, with a harsh cough and hoarseness, were very general symptoms. Though no case came under my own observation in which the patient laboured under acute laryngitis, or other severe affection of the throat, it would appear that these affections were prevalent at the time. From the tables of mortality, it will be seen that the deaths from croup, quinsey, and laryngitis, were during the epidemic much more numerous than usual. The deaths from the former disease, instead of 8 per week, the

quarterly average, were only 6, 9, 5, and 7, in the several weeks during November, and rose to 11, 16, and 10, in the weeks ending December the 4th, 11th, and 18th; and those from quinsey and laryngitis rose from the average 4, to 11, 8, 6, and 9, on the 6th, 13th, 20th, and 27th of November; and to 7, 12, 11, and 12, on the 4th, 11th, 18th, and 25th of December. This fatality, however, appears to have been chiefly among children.

"4. RESULTS OF CATARRHAL FEVER WITH PULMONARY COMPLICATION

"*Mortality*.—In the following table all the cases of the pulmonary form of the disease are arranged, without reference to the precise kind of local complication, so as to show the mortality in each sex, and at the several periods of life.

AGE.	Cases.	Deaths.	MALES.		FEMALES.	
			Cases.	Deaths.	Cases.	Deaths.
11 and 14	2	—	1	—	1	—
15 to 20	12	3	7	1	5	2
20 to 30	14	1	3	—	11	1
30 to 40	10	1	7	—	3	1
40 to 50	3	2	2	1	1	1
50 to 60	4	1	3	1	1	—
60 to 70	3	1	1	—	2	1
	48	9	24	3	24	6

"The remark made in reference to the respective frequency of the two forms of the disease, applies equally to its fatality. Though from the very general prevalence of the disease, the mortality in the whole population was very greatly increased, yet, there can be no doubt that the proportion of deaths relative to the number of cases which occurred, was far from large. The facts here collected do not, it is true, appear to countenance this assertion, one-fifth nearly of the cases admitted into the hospital having proved fatal. It must, however, be remembered that the persons under treatment, were either such

as presented the disease in its most severe form, or who were in a state of entire destitution before their reception, and, consequently, that no inference as to the ordinary mortality of the epidemic can be deduced from the result of the disease under such circumstances. The cases are, also, too few to form a satisfactory basis for generalisation, and a reference to the preceding statements will show that all those which proved fatal were either complicated by organic disease, or by the presence of other serious affections. The facts can, indeed, only be regarded as showing the very unfavourable result of the disease when it attacks those previously in unsound health, or who have long been suffering from depressing causes. On the other hand, the character of the epidemic in the young children at the Infant Orphan Asylum; in the boys at Christ's Hospital; in the adults at Wanstead, and in the police force, sufficiently demonstrates its mildness under favourable circumstances.

"It is obviously extremely fallacious to apply inferences, deduced from observations in one epidemic, to explain the rate of mortality in another; yet it is probable that the recent disease was not ordinarily more fatal than the epidemic of 1837, and certainly were an approximative statement to be made, founded on the whole of the cases under my own observation, it would be, that the mortality of the epidemic of 1847 did not at the highest estimate exceed 3 or 4 per cent.

"Of the cases complicated with different forms of acute pulmonary inflammation, the class in which the disease assumed the form of acute capillary bronchitis was the most numerous: eight examples of the idiopathic affection, three in which it appeared as a complication of phthisis, and two in which it was combined with ileac typhus, in all, thirteen cases of that form of disease, having fallen under my notice during the period of greatest prevalence of the influenza, or between the 19th of November and the 15th of December. Subsequently, four other cases were admitted into the hospital, in which the disease assumed the sub-acute form, and which dated their commencement from the same period, as did several cases visited in my private practice. These details show the remarkable tendency to the occurrence of this form of disease, as a complication of influenza, a fact not without interest, when the extreme in-

frequency of acute capillary bronchitis as a sporadic affection, at least, among adults, is considered. M. Fauvel's researches show, that in Paris the disease very rarely occurs in ordinary seasons; and during the period of nearly two years preceding the appearance of the influenza epidemic, with my attention specially directed to the subject, I met with but seven cases, in my hospital practice, and of these, three only were examples of the acute idiopathic type. Pneumonia, on the other hand, does not appear to have been a frequent complication of the epidemic, only six cases of it having fallen under my view, during the period specified; three of which were preceded by more or less general bronchial inflammation, while in the three others, the disappearance of consolidation in the pulmonary tissue was followed by general capillary bronchitis. It will also be seen, that the inflammation of the mucous membrane of the smaller bronchial tubes, was invariably a most alarming, and, in a large proportion of cases, a fatal malady; while all the cases of pneumonia which occurred, however threatening in appearance, were readily amenable to treatment, and terminated favourably.

"EPIDEMIC CATARRHAL FEVER WITH ABDOMINAL COMPLICATION

"1. CATARRHAL FEVER, WITH DISORDER OF THE GASTRO-ENTERIC MUCOUS MEMBRANE

"Patients affected with this form of disease, in a mild degree, usually stated, on their admission, that they had been more or less indisposed for periods varying from three or four, to ten or fifteen days. The symptoms, in these cases, were throughout of a slight character, or if at first more urgent, generally subsided into a mild form at the end of a few days. The pulse was seldom materially accelerated, unless at the commencement of the attack. The skin was not generally very hot or dry, and soon showed a tendency to become moist. The tongue usually continued moist, and was covered with a creamy mucous, or whitish fur, and was red towards the

extremity. There was generally some slight cough and difficulty of breathing. The bowels were usually torpid, but occasionally, and especially when the disease was about to subside, there was slight diarrhoea, which sometimes also appeared at an early period. There was often troublesome vomiting. With these were combined the ordinary febrile symptoms, prostration of strength, pain in the head, back, and loins, loss of appetite, restlessness, etc. This form of disease was ordinarily of short duration, the convalescence being established from four to seven days from the commencement of the attack; so that of fifteen cases under treatment in the hospital, the mean period of detention was between seven and eight days.

"The more severe cases of this description usually commenced very gradually, so that it was difficult to ascertain the precise period of invasion. The symptoms, at first of a mild character, after the disease had continued to advance for a week or ten days, began to assume a more threatening aspect; the pulse became feeble and quick, rising to 120, 130, or 140 in the minute, the tongue became dry, acquired a thick brown coating and was morbidly red at the tip and edges, and often chapped and painful. The teeth were covered with yellowish brown sordes. The skin was hot, dry and harsh, and continued free from moisture when its temperature had declined. From an early period there was much restlessness and inability to sleep, often combined with torpor, so that the patient was with difficulty aroused; and, subsequently, delirium made its appearance, generally of the low muttering form, but in several cases so active as to require restraint.

"Some degree of pulmonary disorder, characterised by hurried respiration, cough, and the usual signs of febrile bronchitis, was also very generally observed.

"2. CATARRHAL FEVER, WITH AFFECTION OF THE GASTRO-ENTERIC MUCOUS MEMBRANE AND LIVER, AND CHARACTERISED BY TENDENCY TO RELAPSE OR TO ASSUME A REMITTENT CHARACTER.

"These cases were usually ushered in by severe febrile symptoms, such as rigors, followed by great heat of skin and

depression of strength, which led the patient to apply early for admission into the hospital, as on the third or fourth day. In some instances, however, the invasion was more gradual, one or two weeks having elapsed from the commencement of indisposition, before the symptoms became urgent.

“When the attack was sudden, the symptoms usually assumed a sthenic type, the pulse being full and bounding, 110 to 120 or 130 in the minute, the skin hot and dry, and the mouth and tongue dry and parched. There was thirst and loss of appetite, with often bilious vomiting, pain in the head and loins, and general oppression and prostration of strength. When these symptoms had continued for an interval, varying from a week to ten days, improvement began to take place, and the patient became so rapidly convalescent, as to be able to leave the bed in a much shorter time than, from the urgency of the previous symptoms, could have been supposed. After the lapse of a few days, however, in different cases, on the eleventh, twelfth, thirteenth, and fourteenth days from the commencement of the attack, sudden relapses occurred. The patient was seized with violent rigors, followed by pungent heat of skin, dryness of the surface, throbbing and pain in the head and loins, and a full bounding pulse, to which succeeded profuse perspiration, continuing from a few hours to a day, or a day and a half, and attended with extreme prostration of strength. The pulse then became small, feeble, and faltering, and was often unusually slow, not numbering more than 60, 50, or even 40, beats in the minute. The tongue again acquired a dryish and thick whitish-brown, or yellowish coating. The skin became cool, or absolutely cold, and assumed, with remarkable rapidity, a jaundiced hue of varying intensity, and there was pain or tenderness, on pressure, in the right hypochondrium. The abdomen was generally distended, and most frequently diarrhoea supervened, with copious liquid stools, often containing considerable quantities of more or less altered blood. These symptoms continued for three or four days or more, when the patient would again begin to recover, and usually regained his strength rapidly. In some cases, relapses of this description occurred two or three times, with well-defined intermissions of one or two days' duration; in others,

the febrile symptoms, though slighter in the intervals between the paroxysms, never entirely intermitted.

"In the cases of remittent fever, in which the febrile symptoms were more gradually developed, the disease generally assumed a low type. The skin was at an early period cool, but not particularly dry, and from the first slightly jaundiced. The tongue was covered with a thick fur of a yellowish white colour, and was somewhat dry. The pulse was feeble and quick, numbering 130 to 140 or 150 in the minute, and there was great prostration of strength, with a torpid and oppressed state of mind. . . . Diarrhœa was very generally present, and large quantities of nearly pure blood were often voided by stool; epistaxis was also a frequent symptom.

"3. CATARRHAL FEVER, WITH AFFECTION OF THE GASTRO-ENTERIC MUCOUS MEMBRANE AND LIVER, COMPLICATED WITH RHEUMATISM.

"The only remaining class of cases observed during the recent epidemic, to which I shall have occasion to allude, is that in which the low form of fever, with hepatic and enteric disorder, was complicated with severe rheumatic symptoms.

"In these cases the pains in the head, back, loins, and extremities, which were present with more or less severity in all the forms of influenza, were from the first of a severe character, or increased with the progress of the disease, till they constituted its predominant feature. The pain was usually most distressing in the head, especially in the forehead, and in some cases was limited to one temple, or to one eyebrow or eyeball. It was generally of an intermittent or remittent character, coming on every night, after a more or less distinct intermission during the day, and attended with ringing in the ears, distressing restlessness, agitation, and inability to sleep. Delirium was most generally present. In some cases, it only amounted to a little excitement or incoherence during the evening exacerbation; but, in others, it was so active as to require the employment of restraint to retain the patient in bed, and continued, with little intermission, for many hours. With these symptoms, there was usually much tremor of the hands, and

the eye was pale and glassy. . . . Diarrhœa, with discharge of blood, was very general, and epistaxis frequently occurred, in one case to an alarming extent.

"In the cases which assumed a paroxysmal character the collapse succeeding the exacerbations was often extreme, the perspiration being so profuse as to soak through the bedclothes, whilst the hands and feet became cold and livid.

"On referring to the reports of the Registrar-General, I find that the deaths from rheumatism, during the period of prevalence of influenza, exceeded considerably the average of the previous six years. In the weeks ending November the 6th, 13th, 20th, and 27th, and December the 4th, 11th, 18th, and 25th, the deaths registered under this head were 6, 9, 6, 7, 6, 6, 7, and 5 respectively, while the weekly average for the quarter amounts to only 4.1.

"*Otitis*.—Among the complications of the several forms of febrile affection, that of purulent discharges from the ears must also be mentioned as of frequent occurrence, particularly where there had been erysipelas of the head and face. They also, however, happened independent of any such eruption. In these cases, the formation of matter was preceded by singing in the ears, deep-seated pain extending thence to the forehead and face, tenderness on pressure beneath, and in front of, the ear, and deafness, with, in some cases, delirium or torpor of mind. These symptoms occasionally occurred without being succeeded by any discharge; but more frequently they were followed by an escape of yellowish fetid pus in considerable quantity, a day or two after their commencement. Sometimes the discharge was confined to one ear, in others it affected both, and it generally continued for several days.

"REVIEW OF THE TREATMENT ADOPTED IN THE DIFFERENT FORMS OF THE EPIDEMIC

"1. TREATMENT OF THE CASES OF SIMPLE CATARRHAL FEVER

"Of the method of treatment pursued in the cases of simple catarrhal fever, it is not necessary to say much. The patient

was usually directed to be confined to the room or bed, to take some form of antimonial or diaphoretic medicine, to use the foot-bath, and to restrain himself to a low diet. At the end of a day or two, according to the urgency of the symptoms, a more nutritious diet was allowed, and some form of tonic, or slight stimulant medicine, with anodynes and expectorants, was prescribed. Under this treatment, the attack commonly passed off readily, with more or less decided diaphoresis. If, however, at the commencement of the complaint, the chest-symptoms were of a more urgent character, the cough being hard and painful, and the breathing much affected, an emetic of the potassio-tartrate of antimony and ipecacuan, followed by a full dose of opium, or by a diaphoretic, consisting of Dover's powder and nitrate of potash, not unfrequently arrested the severe symptoms, and the disease pursued a mild course. When the attack was succeeded by rheumatic pains, small doses of colchicum were usually prescribed in combination with a tonic remedy, quinine being especially given when the pains assumed a periodic character.

"On the whole, the treatment adopted was similar to that which would be enjoined in a case of severe catarrh, with this difference, however, that tonics and stimulants were employed more freely, and at an earlier period, than would in simple catarrh have been either necessary or desirable.

" 2. TREATMENT OF THE CASES OF INFLUENZA WITH PULMONARY COMPLICATION

"*Of the cases complicated with acute capillary bronchitis.*—Of eleven cases of this form of affection, which fell under my observation, in which the disease was, so far as is known, free from any serious organic complication, two only were bled from the arm, and in both of these, the depletion was practised before they came under my care. . . . In each instance, the general depletion was accompanied with, or preceded by, the exhibition of contra-stimulant remedies, such as calomel and opium, and antimony.

"The depression occasioned by the loss of blood was extreme, and the free employment of stimulants was shortly after had recourse to, but without success.

" Besides cupping, the remedies resorted to were, calomel with opium, or Dover's powder, which were exhibited so as slightly to affect the mouth, in five out of the nine cases. In some instances, 2 or 4 grains of calomel, with 1 grain of opium, were given immediately after the cupping, and repeated once or twice a day: in others, smaller doses of opium, as one-third or one-quarter of a grain, were given with the calomel at shorter intervals. Of the cases in which this treatment was followed, one proved fatal, but in this instance, the specific action of the mercury was not developed. A sixth case also terminated fatally, where one dose only of calomel and Dover's powder had been taken.

" In most of these cases, anodynes, expectorants, anti-spasmodics and diffusible stimulants, such as the compound tincture of camphor, or hyoscyamus, Dover's powder and camphor, ipecacuan or squills; the sesqui-carbonate or aromatic spirits of ammonia; the compound sulphuric æther, and the alcoholic or ætherial tincture of lobelia, and brandy, with the infusion or decoction of bark, were given in the later stages; and in three cases, where depression was from the first very great, these remedies were persisted in throughout, though only one of the three reached a favourable termination. Counter irritants, consisting of blisters and mustard cataplasms, were employed in all cases, and were generally several times repeated.

" The great tendency of inflammation in any portion of the bronchial mucous membrane to become diffused over the whole of the lungs, and the general obstruction to the circulation which results, renders it most important that a correct view should be early taken of the nature of the affection, and an appropriate system of treatment speedily adopted. The experience which I have had of this form of pulmonary disease, both recently, in its epidemic shape, and previously, as a sporadic affection, justifies I think the conclusion, that it may, in a large proportion of cases, be entirely arrested, if appropriately treated in the early stage. At this period, effusion has taken place only to a limited extent, and the disease is merely indicated by a slight roughness or harshness of the respiratory sounds in the posterior regions of the lungs, with fine crepitation at their bases, and sibilant rhonchus in other

parts, on forced inspiration. If, however, the first signs of pulmonary disorder be misconceived or neglected, and the disease be allowed to proceed to extensive effusion in the smaller bronchial tubes, before an efficient course of treatment is pursued, it becomes almost necessarily and unavoidably fatal.

“As in the earlier periods of all forms of inflammation of the pulmonary tissue, antimonial medicines appear more effectual than mercury, I would commence the treatment of cases of acute capillary bronchitis by the exhibition of an antimonial emetic; and so long as the strength of the patient permitted, and the local inflammation required it, would continue the use of antimony, either as an occasional emetic, or in smaller doses, more frequently repeated, as a nauseant. I am inclined to believe that while in the sthenic form of pneumonia, the frequent repetition of small doses of antimony, so as to keep up continued nausea, is the most efficacious mode of employing that medicine; in capillary bronchitis, in which there is so great a tendency to depression of strength, the occasional administration of emetics is preferable, and that the use of antimony in this latter mode may be continued when its constant nauseating operation could not be borne by the patient.

“In the second stage of the disease, when crepitation is extensively audible over different parts of the lungs, the prospect of recovery becomes small, and the available means are necessarily very limited. The depression of strength precludes the employment of antimonials; but an attempt may still be made to get rid of the redundant secretion from the bronchial tubes, by the exhibition of emetics; and this seems effected, with the least exhaustion to the patient, by the combination of sulphate of zinc with ipecacuan. . . . The strength must be supported by animal broths and jellies; and wine, brandy, or other form of stimulant be administered.

“*Of pneumonia as a complication of Influenza.*—In the cases of pneumonia which occurred as a complication of influenza, depletion was practised in only one case, in which, though the patient was much prostrated, and exhibited great torpor of mind, 8 ounces of blood were abstracted by cupping between the shoulders on the eighth day from the

commencement of the symptoms. The bleeding was followed by a full opiate with calomel, and nauseating doses of antimony were given as long as the patient's strength admitted; the calomel being continued till slight salivation was produced: subsequently stimulants were had recourse to. In two other cases, emetics of antimony were first given, and nauseating doses repeated at intervals; and in a third, small doses of antimony were employed from the first. In one other case only, that in which a circumscribed pleurisy supervened on the pneumonia, was any form of mercurial prescribed; and then small doses of mercury with chalk were given for a secondary disease, and for the relief of a diarrhoea. In two patients, one of whom was jaundiced, the treatment was throughout of a stimulant and expectorant character; and in all others diffusible stimulants, anti-spasmodics and anodynes, were given in the later stages, a nutritious diet being at the same time ordered. Counter irritation, by blisters and sinapisms, was employed in all cases.

"A review of the treatment pursued in this form of the disease, and of the success which attended its employment, for the only case which proved fatal, was not sufficiently long in the hospital to be subjected to any specific treatment, fully supports the assertion already made, that the pneumonic complication of influenza during the late epidemic was by no means so serious as the cases in which the local disease assumed the form of capillary bronchitis. The facts, though too few in number to be regarded as conclusive, tend nevertheless to show that this form of inflammation of the lungs is mostly a very tractable disease; a remark previously made by M. Lassere when describing an epidemic of a similar kind, observed by him in one of the Parisian hospitals, and of which he has published an account under the name of Catarrhal or Broncho Pneumonia.

"3. REMARKS ON THE NATURE AND CAUSES OF THE EPIDEMIC

* "Though the catarrhal form was undoubtedly that most characteristic of the recent epidemic, there were various contemporaneous affections, of such frequent occurrence, and of so

peculiar a character, as, on the most superficial view, to suggest that the connexion between them and the more typical forms of the epidemic was other than accidental.

“By reference to the reports of the mortality of the metropolis, it has previously been shown, that when towards the end of November, the total number of deaths registered became much larger than usual, the increased mortality was scarcely greater from pulmonary diseases than from typhus, remittent fever, erysipelas, rheumatism, etc. If it be true, that in some cases the pulmonary mucous membrane was almost the sole seat of disorder, and that in others the abdominal organs were the leading parts involved, still, so far as my observation extended, these cases were comparatively few in number, and trivial in their nature, while in all those of any severity, both the pulmonary and abdominal organs were implicated.

“The close analogy perceptible amid the variations of the individual cases is, however, a feature not confined to the recent influenza. The records of former visitations clearly indicate, that in them also the coincidence of the pulmonary with the various other affections referred to, was not less frequent. So common indeed has been the combination of the epidemic with enteric disorder, that Dr. Hancock remarks: ‘It is scarcely possible to look over the histories of influenza without perceiving a connexion between this disease and morbid affections of the mucous membrane of the stomach and intestines.’ Dr. Hooper, also, in a small treatise on the epidemic of 1803, which I have only recently met with, suggests a classification of the several forms of the malady, very similar, in some respects, to mine.

“Extensive and carefully conducted investigations of the phenomena of fever, during life, and of the morbid appearances visible after death, in the bodies of persons who have fallen victims to that malady, have clearly established:—

“1st, That though in certain localities and seasons, the solitary and aggregate glands of the intestine are very constantly diseased, yet, that in the fevers of other localities, and in other seasons, they are but rarely affected; and, further, that when disease of the intestine is detected, it does not always bear a proportionate relation to the intensity of the symptoms during life.

"2ndly, That evidences of true inflammatory action, in any organ, are by no means generally observable after death from fever, which may have raged in such intensity as to destroy life, without leaving a trace of morbid action behind. The only change which may invariably be predicated of such cases, is an alteration in the qualities of the blood, by which it loses more or less of its power of coagulating.

"3rdly, And, consequently, that decided evidences of morbid action, when found in the bodies of those who have died from fever, can only be regarded as accidental complications, affording no explanation of the essential nature of the disease. The only supposition, therefore, which is applicable to the explanation of the phenomena of fever, is that of a deleterious influence operating upon the nervous system, deranging all the vital powers, and so poisoning the blood as to excite a predisposition to local congestion or inflammation in different organs.

"These views, if applicable to the phenomena of the more intense forms of febrile disease, no less apply to those of a slighter description."

STATE OF THE PUBLIC HEALTH IN THE AUTUMN QUARTER OF THE YEAR 1847 (OCTOBER, NOVEMBER, DECEMBER).

"57,925 deaths were registered in the quarter ending December 31st. The average number of deaths deduced from the returns of the corresponding quarter of nine preceding years, and corrected for increase of population, is 46,549. There is consequently an excess of 11,376 deaths in the quarter. The deaths registered in the December quarters of 1845, 1846, and 1847, are 39,293, 53,055, 57,925; the mortality in the first is to that of the last quarter nearly 2-3. The mortality was below the average in the autumn quarters of the 5 years 1841-5 and above the average in the 5 years 1838-40, 1846-7.

"A slight increase in the mortality was noted in the returns of the JUNE quarter, 1846; the mortality in the following hot *summer*, when the potato crop failed, was excessive: *cholera*

and *diarrhœa* were epidemic: in the *autumn* of 1846, as well as the winter and spring quarters of 1847, the mortality was still higher: scurvy prevailed in the beginning of the year, but in the summer the public health appeared to be slightly improved. Epidemics of typhus and influenza, however, set in; and made the mortality in the last quarter of 1847 higher than in any quarter in any year since the new system of registration commenced.

“Deaths registered in each of the four quarters of the nine years 1839-47, in 117 of the districts of England and Wales.

Years.	1839.	1840.	1841.	1842.	1843.	1844.	1845.	1846.	1847.
Qtr. ending									
March .	42,410	46,376	46,967	44,903	43,748	46,136	49,996	43,850	56,105
June .	41,244	42,074	39,133	38,569	40,343	38,977	40,847	43,737	51,585
September	37,317	39,498	36,058	39,409	36,953	38,933	36,139	51,405	49,479
December	41,740	44,186	39,292	39,662	42,608	44,080	39,293	53,055	57,925
Total .	162,711	172,134	161,450	162,543	163,652	168,126	166,275	192,047	215,094

“The deaths in the year 1845 were 166,000; in 1847, *two hundred and fifteen thousand*. The excess in 1847 is *forty-nine thousand!* or not less than 35,000 over the corrected average of 1839-45. The districts from which the Quarterly Table is made up, have hitherto returned less than half the deaths in England; but it is not probable that the country districts have suffered to the same extent as most of those in the return.

“In London the deaths registered in the quarters ending December 1845-6-7, were 11,838, 13,221, and 18,553 (13 weeks). The greatest number registered in any quarter of the nine previous years was 14,686 in the severe winter of 1845.

“It was shown in the last Quarterly Report on the State of the Public Health, that if the chance that a child in Dorsetshire under 15 years of age will die in the summer quarter be represented by 1, the chance that a child under 15 in London will die in the same time is represented by 2. It was also shown that the chance of dying among men above 35 in London, is to that in the country as 3 to 2: and it was remarked that ‘if the chance of dying is increased from 2 in the country to 3 in London, *the liability to suffer FROM EPI-*

DEMICS *is raised still more.*' The truth of this proposition has unfortunately been too soon exemplified. The population was inadequately supplied with potatoes, and scurvy was prevalent in the beginning of the year. Meat and bread were dear, distress was rife; vagrants flocked in from the country, the poor Irish came to their kindred, the workhouses were crowded. In April and May typhus became epidemic; instead of the average 34, *fifty* died weekly in London; it steadily spread and burnt on until it killed a hundred and eleven victims in a single week. Diarrhœa, dysentery, and cholera had been a little more fatal than usual throughout the year: 17, however, only died of these diseases in the first week of July; the mean temperature of the air was above 60°; the number of deaths rose to 38, 47, 67, 125, 128, 188, by the middle of August, and then gradually subsided. Notwithstanding the continued prevalence of typhus and scarlatina, the deaths in the last week of October were only 945; one person died of influenza, 36 of bronchitis (inflammation of the air-tubes), and 62 of pneumonia (inflammation of the substance of the lungs). In the three weeks following, ending November 20, the total deaths were 1052, 1098, and 1086; of which 2, 4, and 4, were by influenza; 49, 58, and 61, by bronchitis; 68, 79, and 95, by pneumonia. The wind had generally been blowing S.S.W. and S.W. since the first week of October; the weather was unusually warm; a brilliant aurora was observed, and shook the magnets on October 24; it appeared eight times during the quarter; on Tuesday, November 16, there was a remarkable darkness; the wind changed to N.W., and amidst various changes still blew from the north over Greenwich at the rate of 160 and 250 miles a day. The mean temperature of the air suddenly fell from 11° above, to 10° below the average; on Monday it was 54°, Friday 32°; the air on Friday night was 27°; the earth was frozen; the wind was calm three days, and on Saturday evening a dense fog lay over the Thames and London for the space of five hours. No electricity stirred in the air during the week. All was still: as if Nature held her breath at the sight of the destroyer, come forth to sacrifice her children. On Sunday the sky was overcast, the air damp, the wind changed in the night to S. by E., and passed for four days over Greenwich at the rate of

200 and 300 miles daily; the temperature suddenly rose, and remained from 2° to 9° above the average through the week ending November 27th: when the deaths of 1677 persons—819 males, and 858 females—were registered in London; 771 persons under 15 years of age, 518 aged 15-60, and 388 of the age of 60 and upwards. Influenza was epidemic. On the first week of December two thousand four hundred and fifty-four persons died: 1141 were males, 1313 females; 1012 children, 712 persons in the prime of life, 730 of the age of 60 and upwards. On the week following two thousand four hundred and sixteen persons died: 1175 males, 1241 females; 1016 under the age of 15; 698 at the age of 15-60, and 702 at the age of 60 and upwards. The deaths in the weeks ending Saturday, December 18, December 25, and January 1, were 1946, 1247, and 1599. 11,339 persons died in six weeks, and altogether the epidemic carried off more than 5000 souls over and above the mortality of the season. The epidemic attained the greatest intensity in the second week of its course; raged with nearly equal violence through the third week; declined in the fourth, and then partly subsided; but the temperature falling, the mortality remained high not only through December, but through the month of January.

“The epidemic was most fatal to adults and to the aged: thus in the three weeks ending November 13, the deaths under 15 years of age were 1553; in the three weeks of the epidemic ending December 18, the deaths under the age of 15 were 2846. In the same two periods the deaths at the ages 15-60 were 966 and 1970; at the age of 60 and upwards, 576 and 1999. The mortality in childhood was raised 83 per cent, in manhood 104 per cent, in old age 247 per cent. From the age of 4 to 25, however, the mortality was comparatively not very much increased; at the age of 10 to 15, the healthiest period of life, it was scarcely increased at all in girls.

“During the 7 years 1838-44, the deaths of the males in London were more numerous than those of females in the proportion of 1749 males, to 1677 females; in the second week of the influenza epidemic the proportions were reversed, for 1141 males, and 1313 females died; in the six weeks

ending January 1, the deaths of 5580 males and 5759 females were registered. Looking, however, at particular ages, the deaths in the six weeks under 5 years of age were—2321 males, 2009 females; from 5 to 55, males 1580, females 1507; 55 and upwards, 1678 males, 2241 females. At all ages there are more females than males living in London; at 55 and upwards the males in 1841 were 71,021, the females 90,143; at 75 and upwards, males living 6754, females 11,124. A disease much more deadly in the old than in middle-aged and young people, therefore necessarily increases the total deaths of females more than the total deaths of males, without for that reason being more fatal to the female than to the male sex. The difference in the mortality of males and females from the epidemic is but slight, and can only be determined by nice calculation—into which I shall not enter here.

“Influenza attacked those labouring under all sorts of diseases, as well as the healthy. The vital force was extinguished in old age and chronic diseases. The poison, permeating the whole system, fastens chiefly on the mucous membrane lining the sinuses of the face and head, and the air-tubes of the lungs. Hence it is fatal to the asthmatic; the deaths directly ascribed to asthma in October and November were 12 weekly; in the six weeks of the influenza epidemic, 77, 86, 78, 52, 14, 26, besides the numerous cases classed under influenza. 36 deaths were ascribed to bronchitis in the week ending October 30th, and 49, 58, 61, 196, 343, 299, 234, 107, and 138 in the nine following weeks. 62 deaths were ascribed to pneumonia in the same week, and 68, 79, 95, 170, 306, 294, 189, 131, 148, in the nine weeks following. In some of these cases the inflammation specified was the primary disease, in others secondary, and in many it was purely influenza—misreported. There is a strong disposition among some English practitioners, not only to localize disease, but to see nothing but a local disease; hence although it is certain that the high mortality on record was the immediate result of the epidemic of influenza, the deaths referred to that cause are only 1157; namely in the first week of November, 2, and in the eight weeks following, 4, 4, 36, 198, 374, 270, 142, 127; and these include nearly all the cases in which

influenza was returned, whether as primary or secondary in conjunction with other diseases. A similar defect has hitherto been found in the returns of all great epidemics; in 1665, the Great Plague year, 97,306 burials were returned in the London Bills of Mortality, only 68,596 of which were ascribed to plague. Influenza attacked persons labouring under other zymotic diseases: thus the deaths from hooping-cough rose from 12 and 25, to 65 and 71 during the epidemic; the deaths from measles rose from 43 to 96, 89, 69, 75, during the first four weeks of the epidemic, and then subsided to 37 and 58. Typhus, which had been fatal to 70 and 80 weekly, rose to 132, 136, and 131, in the second, third, and fourth weeks of the influenza epidemic, and then fell to 83 and 74. Although influenza is not mentioned in these cases it is in others, and there can be little doubt that two or more zymotic processes do often go on simultaneously in the blood and body; a fact of profound interest to the pathologist, and worthy of attentive investigation.

“The epidemic was much more fatal in some districts of London than in others. To show this, I take the deaths in each of the London districts during the six weeks from November 21st, 1847, to January 1st, 1848, and comparing them with the population, obtain the relative mortality. It was at the rate of 46 per annum to 1000 living in London; the mortality in the seven years, 1838-44, was at the rate of 25 annually to 1000: the mortality was consequently raised for 6 weeks, by the epidemic, about 80 per cent above the average. Lewisham, including Blackheath, Sydenham, and Eltham, is one of the healthiest districts in London; the ordinary rate of mortality is 17 annually, during the epidemic it was 27. St. George in the East is one of the unhealthiest districts; the ordinary rate of mortality is 29 in 1000, the rate of mortality during the epidemic was 73: the increase in Lewisham was 10; in St. George in the East 44; the latter district suffered four times as much from influenza as the former. Excluding districts which contain hospitals or the workhouses of other districts, we have the following result:—

"Deaths to 1000 annually.

	Mean Annual Rate of Mor- tality 1838-44.	Annual Rate of Mortality during the last 6 weeks of 1847.	Difference in the Mortality ascribable to the Epidemic.
LEAST UNHEALTHY DISTRICTS OF LONDON.			
6 Districts of London in which the ordinary mortality of Females is low	20	38	18
UNHEALTHIEST DISTRICTS OF LONDON.			
6 Districts of London in which the ordinary mortality of Females is high	27	61	34

"The epidemic of influenza killed twice as many people in the insalubrious parts of London as it did in those less unhealthy: its fatality in Lewisham and St. George in the East was, as we have seen, 1 to 4. The annual average rate of mortality for London, in 1730-39, was 41 in 1000; the rate in the 6 weeks of the epidemic of 1733 was 72 in 1000; the increase was 31 in 1733; the increase in 1847 was 21.

"Let us look to the few country and small town districts in the present return. The deaths in St. Albans (population 17,000 in 1841), during the last quarters of the four years 1844-47, were 94, 75, 91, and 76. The Registrar of the sub-district of St. Albans says, 'No epidemic has visited this district.' The deaths in the Kendal district (population, 35,000) during the last quarters of the four years were 160, 213, 268, and 155; in Anglesea (population 38,000) the deaths were 155, 163, 206, 158. The Registrar of Llandausaint, Anglesea, says, 'Latterly influenza has been prevalent,' but it was, as has been seen, not very fatal. In the Isle of Wight (population 43,000), the deaths in the December quarters of the last four years were 235, 167, 201, 179. The Registrar of the Godshill sub-district says, 'The district would be healthy but for influenza, which has just made its appearance; but no case has as yet been fatal.' Epidemic influenza is mentioned in the notes by the Registrars of Maidstone, Brighton, Portsea Island, Northampton, Cambridge, Norwich (mild—'fatal to few'), Yarmouth, Exeter, St. Thomas (this is

the district round Exeter; influenza has just made its appearance at Topsham), Plymouth (very fatal in St. Andrew's sub-district, deaths in October, 48; November, 49; December, 103. Charles the Martyr, sub-district, deaths in October, 17; November, 26; December, 63), Redruth, Penzance, Bath (Landsdown, sub-district, deaths in the three months, 16, 21, 47; the Abbey, 18, 19, 58), Bristol, Clifton, Stroud, Hereford City ('influenza is just appearing'), Shrewsbury, Walsall, Wolverhampton, Burslem, Birmingham, Aston, Coventry, Leicester, Lincoln, Nottingham (St. Ann, sub-district, deaths in three months, 35, 33, 76), Basford, Derby, Stockport, Macclesfield, Great Broughton, with Chester, Liverpool, West Derby, Preston ('influenza prevailed during the last two weeks of December'), Bury, Bolton, Wigan, Prescott, Chorlton, Manchester (Ancoats, deaths in October, 169; November, 135; December, 270), Salford, Ashton and Oldham, Sheffield (West sub-district, deaths in October, 27; November, 27; December, 85), Huddersfield, Halifax, Bradford (Hornton sub-district, 'no particular disease, except in 10 days commencing November 27, when influenza was prevalent'), Leeds, Hunslet, York (Walmgate, sub-district, deaths, October, 61; November, 52; December, 99), Sunderland, Tynemouth, Newcastle-upon-Tyne, Carlisle ('no epidemic disease prevalent at present in Dalston, Carlisle'), Pontypool, Wrexham, Anglesea. The Quarterly Return includes few of the country districts; but it is evident that influenza pervaded England generally; in many places it appeared later than in London; some places it has not yet reached at all, or its visitation has been so slight as not to attract attention. The mortality was raised in the unhealthiest towns; but, on the whole, much less in the mixed town and country districts than in London. The deaths in the December quarters of the four years 1844-47 were in the district of London, 13,819, 11,838, 13,221, 18,553 (thirteen weeks):—in the other districts, 30,261, 27,455, 39,834, and 38,320. In the latter districts, notwithstanding the epidemic influenza, the mortality on the whole was lower in 1847 than in 1846. The weather did not differ much in any part of the country.

"EDINBURGH.—Dr. Stark, to whom Edinburgh is indebted for tables of mortality, states that in that city influenza

suddenly attacked great masses of the population twice during the course of November; first on the 18th, and again on the 28th day of the month. It appeared, in both cases, during keen frost, and an excessively damp, thick fog, which came on rather suddenly after a few days of very mild weather. The total deaths returned, exclusive of still-born, were in October 521, November 728, December 1001. The mean temperature of Edinburgh in December was 39° ; the highest 57° , the lowest 21° .¹

"Our knowledge of the progress of the epidemic in other countries is necessarily imperfect, as no weekly tables are yet published in any of the great continental cities. We learn, however, from the medical and other journals, that the 'grippe,' which had prevailed for a week, was at its height in Paris about December 4th, when one fourth or one half of the population were ill ('un quart, si non la moitié de la population est couchée.'—Gaz. Médicale). It is stated that 50,000 of the inhabitants of Madrid were in bed, suffering from influenza, on January 11th. The epidemic still prevailed on the 19th, and was exceedingly fatal. London was probably attacked a few days before Paris; Madrid a month later. In a former epidemic (1782), influenza attacked London at the end of May, France in June, Italy in July, and Spain in August. It travels faster now. The present epidemic reigned in Rennes October 30th (Prof. Toulmache, in Gaz. Méd.) . Influenza attacked the crew of the 'Lousquor' French packet in the Mediterranean in October, and was so general that, in difficult circumstances, the surgeon believes the vessel must have been lost. The epidemic did not prevail in Marseilles when the 'Lousquor' left. The 'Albatross' and 'Nile' had cases at sea, but the epidemic was in full force at Toulon and Marseilles when they left port.² Dr. Laval, a member of the Council of Health at Constantinople, states that influenza broke out in that city towards the end of August (1847), and prevailed, though not to a very great extent, for a month or six weeks.³ A slight epidemic of cholera broke out in October, and still

¹ Report by J. Stark, M.D.

² Bulletin de l'Acad. Royale de Med. T. 13, n. 12, 13. Mem. from Dr Renault, Surgeon of the 'Lousquor.'

³ Letter dated 25th Nov. 1847, in the Gazette Médicale.

reigns in Constantinople. Respecting the influenza epidemic in Germany, Russia, and Italy, no authentic information has come to hand.

"By returns already received at the office of the Medical Department of the Navy, and with which I have been favoured by Sir William Burnett, it appears that epidemic catarrh or influenza prevailed on foreign stations during the year 1847, as under noted:—In January and February, on the coast of Portugal and south coast of Spain; January, February, March, in Newfoundland and New Zealand; February, March, at Valparaiso; April, coast of Syria; July, August, September, west coast of Africa south of the equator; August, Hong-Kong.

"Coryza, gravedo, destillatio, and other forms of catarrh are described by the ancients. The disease is called Pose by old English writers, from the Anglo-Saxon Gepose (heaviness, stupor). Epidemic catarrh is mentioned by Targioni Tozzetti in the *Cronica Meteorologica* of Tuscany under the years 1323, 1328, 1358, 1387. Cullen cites other instances in his *Nosology*¹ under the years 1510, 1575, 1580, 1591, 1658, 1675, 1679, 1708-9, 1712, 1729, 1732-33, 1737, 1742-43, 1748, 1758, 1762, 1767, 1775, 1779-80. Ozanam adds the years 1239, 1311, 1327, 1400, 1403, 1438, 1482, 1505, 1557, 1597, 1627, 1669, 1691, 1695. Some of these epidemics, and others which he describes, were apparently local.²

"The disease, when severe, runs into inflammation of the lungs and pleuræ, and there can be no doubt that several of the epidemic pleurisies and pleuro-pneumonias of the middle ages were what is now known as influenza. The malignant pleurisy at Venice in 1535, which pervaded Brescia and Lombardy in 1537, as well as the epidemic pleurisy of Switzerland and Upper Italy in 1551, are examples.³ The more celebrated epidemic of 1564 is said to have appeared first in England; to have spread thence to the Netherlands, Holland, and Switzerland. Patients died in 3-6 days, after violent delirium, coma, apoplexy. Vast numbers were victims of the epidemic, and physicians, who at that time began to examine bodies after death, learnt that 'inflammation of the substance

¹ Art. 39, *Catarrhus a contagio*.

² *Histoire Med. des Maladies épidémiques*, tome 1, pp. 93-218.

³ Sprengel, *Histoire de la Med.*, vol. iii. p. 88. And authors cited.

of the lungs may be combined with pleurisy.' Sydenham notices that peripneumonia and pleurisies committed great slaughter at the end of March 1665—the year of the Great Plague.¹ The winter had been excessively cold, and with a dry frost lasted till spring; a sudden thaw took place in March. Influenza was epidemic in England in 1657; it broke out in April (Willis, *de Febris*). Influenza, described tolerably well by Sydenham as 'Tusses epidemicæ anni 1675, cum pleuritide et peripneumonia supervenientibus,' and distinguished by him from pure pleurisy, spared scarcely anybody, attacked all ages and temperaments, and seized whole families, together—'integras simul familias pervadentes.' It was dangerous. The previous years 1674, 1675, are referred to as a period of great dearth; the harvest of 1673 proved defective, and wheat, which was 36s. per quarter on Lady-day 1673, was 64s. on Lady-day 1674. The epidemics of 1709 and 1729-30 in Germany appear to have been well described by Hoffman. Epidemics in 1728, 1733, 1742, 1758, 1762, 1775, 1782, 1788, 1803, 1831, 1833, and 1837 have been mentioned; several have been fully described by English writers. An abridged account of them is given elsewhere from the original accounts. The symptoms in these epidemics only differed in severity, and from complications with other maladies.

"Influenza, like small-pox, probably always exists; in ordinary circumstances it is confounded with inflammation of the air-tubes, yet in London from one to five deaths have been directly referred to it nearly every week since the new London tables were published. Like other zymotic diseases it becomes, at intervals of some years, epidemic; that is, it attacks the people generally of all classes. Its epidemics are distinguished by the numbers they assail; by affecting the same persons more than once; by being most fatal to the aged of both sexes, and, therefore, where there are more old women than old men, causing the deaths of females to exceed those of males during their prevalence; by great difference in the severity and fatality of their attacks; by the rapidity of their course, and passage from place to place. After the mortality they occasion becomes apparent in London, it attains a maximum in

¹ Syd. Opera Obs., sect. 2, cap. i.; sect. 4, cap. v.

the second or third week; and the mortality falls to the average in the sixth or seventh week. (See table, p. xlii.) Influenza appears to be generated in ill-organized camps, in crowded ill-cleansed cities, and to be most fatal among people who have for some time before been depressed, ill-fed, or ill-supplied with vegetables, as after hard winters and in war.¹ It rages in cold and hot, moist and dry weather, but most frequently breaks out after a thaw, or with violence after a fog, generally the result of cold streams of air mixed with warm air, and a calm. The saturation of the atmosphere favours the transformation of all organic matters; and those of a zymotic character among the rest. Extreme cold alone never raises the weekly mortality in London above 1500; extreme heat still less. Intermediate changes affect the mortality but slightly under ordinary circumstances. November fogs occur every year without giving rise to influenza. In November 1847, the weather was nearly the same all over England, yet influenza did not break out simultaneously. When once generated, the epidemic spreads through the air. The great epidemics generally travel from (1) Russia, over (2) Germany; (3) Denmark, Sweden, England, France; (4) Italy, Spain, in from three to six months; and then reach America. Influenza is often associated with other epidemics. It appears to have preceded, or accompanied the Plague, in the Black Death of the 14th century;² it preceded the Great Plague of London (1665); it followed epidemic typhus in London 1803, preceded it in 1837, occurred in the midst of the typhus epidemic of 1847, preceded and followed the epidemic cholera in 1831-32-33. It carries off asthmatic persons, and those suffering from chronic disease; it affects those labouring under other zymotic

¹ "Morbi præsentēs á præterita temporum conditione fluunt accipiunt veró etiam differentiam á conditione præsentis: quare utriusque oportet habere rationem." The first part of this profound Hippocratic aphorism, which applies to revolutions as well as epidemics, is often overlooked.

² See Hecker ('Epidemics of Middle Ages'). The symptoms were not, as he assumes, those of simple bubo plague. The pulmonary symptoms are always dwelt on by the contemporary writers; and Fracastorius, referring to the Black Death, specifies them exclusively:—

"Insolita exarsit febris, quæ pectore anhelò,
Sanguineum sputum exagitans (miserabile visu!),
Quarta luce frequens fato perdebat acerbo."—

Fracastorius, Syph. Lib. i. v. 189.

diseases ; in the healthy it quickens the seeds of other maladies, particularly of the lungs. The fatality and duration of attacks vary with age. In some of the late epidemics 2 in 100 cases attended by medical men are said to have died.¹ If 2 per cent was the rate of mortality in London, for 5000 deaths there must have been 250,000 cases of sickness of not less than seven days' duration. This would be little more than one in eight of the population ; but nearly all were affected more or less, and without taking slight instances, it is probable that not less than 500,000 persons in 2,100,000 suffered in London from the epidemic of 1847.

"The English physicians of the 18th century agreed in pronouncing influenza contagious. They did not mean that it was propagated by contact, but that it was introduced into cities, institutions, and houses in England by persons actually affected by the disease. This notion is, however, too exclusive ; the word 'contagion,' applied to influenza or cholera, is apt to mislead, and to have practically a bad effect. When people ask if a disease is contagious, they generally mean, 'Are we more likely to have influenza or cholera if we touch or go near persons labouring under these diseases?' Now if the matter of contagion is very diffusible, and is distributed equally through the room, the house, the street, the city in which a patient is lodged, no one living in the house, street, or city is much more likely to be infected if he approach the sufferer than if he remain in absolute solitude, shut up like the grocer of Wood Street in the Plague. The matters which excite influenza and cholera are evidently highly diffusible ; in a few days influenza spread all over London ; it met you everywhere : nobody, therefore, has attempted to show that medical men, nurses, or others in attendance on the sick suffered more than other people. If such should ever be the case, either in influenza or the cholera epidemics, it will be in rare circumstances, and should never deter the most timid from discharging their duties to the sick.

¹ See a return by Dr. Dain of the mortality at different ages among 317 persons, and a lucid description of the epidemic of 1837, as it appeared in London ; British Annals of Med., vol. i. p. 265 ; and the able Report on the Influenza of 1837, by Prov. Med. Assoc. Trans., vol. vi. Data might now be procured for determining the exact mortality at different ages of complicated and uncomplicated cases.

“The earth, it is well known, is surrounded by an atmosphere of organic matter, as well as of oxygen, nitrogen, carbonic acid, and watery vapour. This matter varies, and is constantly undergoing transformations from organic into inorganic elements: it can neither be seen, weighed, nor measured. The chemists cannot yet test its qualities. Liebig, with all the appliances of the Giessen laboratory, cannot yet detect any difference between the pure air of the Alps and the air through which the hound can tell a hare, a fox, or a man has passed; or the air which observation shows will produce small-pox, measles, scarlatina, hooping-cough, dysentery, cholera, influenza, typhus, plague. These matters may either be in a state of vapour—that is elastic, or they may be inelastic; or like water, they may exist in both states. They are most probably in a state of suspension—hang, like the smoke in cities, over the places in which they are produced, but are spread and driven about like vesicular water in clouds. A stream of aqueous vapour of the same elasticity from the Atlantic—passing over England—is, in one place, perfectly transparent; in another, mist; in another, rain; so clouds of infectious matter may fleet over the country, and in one place pass harmless by, in another (as influenza in London) destroy thousands of lives. The emanations from the living, the graves, the slaughter-houses, the heaps of filth, the Thames—into which the sewers still empty—raise over London a canopy which is constantly pervaded by zymotic matters—in one season this, in another that, preponderating; and the epidemic influenza may easily be conceived, either to have broken out spontaneously, to have been conveyed here by ships, or to have been carried over by the winds;—as the cases of the *Indiaman* infected in the Chinese seas, our own fleets, and the ‘*Lousquor*’ in the Mediterranean, seem to imply that influenzine may be carried great distances over the ocean from the place of its origin.

“*Proinde ubi se cœlum, quod nobis forte alienum est
Commovet, atque aer inimicus serpere cœpit;
Ut nebula ac nubes paulatim repit, et omne
Qua graditur, conturbat et immutare coactat;
Fit quoque ut in nostrum quum venit denique cœlum,
Corrumpat, reddatque sui simile, atque alienum.*’

"The zymotic hypothesis, here so well stated, explains the phenomena to a certain extent. Still epidemics afford a vast field for research; for much remains to be investigated.¹ The mariner, however, steers his ship without knowing whence the winds come, whither they are going, or why they are blowing; so, as the returns adduced above established beyond a doubt the fact that influenza was four times as fatal in one part of the population of London as it was in another, and that it is much more fatal in a part commonly insalubrious than in a part usually healthy, the course to be pursued is plain. If the means which improve the public health are applied with intelligence and energy, the general mortality can be reduced; and the ravages, either of any future influenza, or of the coming cholera,² can be rendered inconsiderable.

"The piety of the ancients, and of our ancestors, made them consider all plagues the immediate visitation of God's wrath.³ And there can be no doubt, that though as affecting individuals there is nothing now judicial in plagues, they are the results of great national violations of the laws by which the Almighty is pleased to govern the universe. It has been shown, year after year, that the impure air of London destroys thousands of lives—that it makes epidemics fatal: the causes of the excessive mortality have been pointed out; and it has been proved that they admit, to a considerable extent, of removal. Yet the efforts of Her Majesty's governments to introduce sanitary measures were strenuously opposed up to the close of the last session of Parliament. The population of London was left at the mercy of any epidemic that should break out in any part of the world. During six weeks influenza interrupted business, afflicted hundreds of thousands by sickness, implanted fatal diseases in the breasts of many, and destroyed five thousand of the inhabitants. Are the men who opposed sanitary measures, and declared so loudly that the 'City of

¹ The inquiry would be greatly facilitated if such meteorological returns as the Astronomer-Royal now supplies, and weekly tables of the causes of death were published on a uniform plan in Paris, Berlin, Stockholm, Petersburg, Moscow, Vienna, Venice, Rome, Naples, Madrid, Lisbon, Cairo, Constantinople, and Calcutta.

² Asiatic cholera broke out in October 1848: it will be recollected that this passage was written in January 1848.

³ "Morbos tum ad iram Deorum immortalium relatos esse."—Celsus.

London, for health, cleanliness, effective drainage, lighting, and for supply of water to its inhabitants, cannot be surpassed, satisfied? or will they fight against the public good till cholera drive away their best customers, and decimate their own families? Let us hope that, instead of pursuing such a course, they will assist in supplying London with the necessities of city life, which they have enumerated, and which they now know are wanted.

"Influenza was slightly epidemic from February 20th to April 24th, 1841; but the weekly deaths by the new tables never exceeded 1079, and ranged from 780 to 1079 during that time. Influenza prevailed to a slight extent at the end of 1846 and the beginning of 1847.

"Deaths from all causes returned in each of five series of Nine Weeks when Influenza was Epidemic and most fatal.

No. of Week.	1733.	1743.	1833.	1837.	1847.
1.	529	478	321	228	1098
2.	531	579	587	284	1086
3.	783	1013	796	477	1676
4.	1588	1448	961	871	2454
5.	1166	1026	940	860	2416
6.	628	629	874	598	1946
7.	591	537	575	558	1247
8.	613	500	311	350	1599
9.	507	423	479	321	1364
Weekly average return .	502	501	429	429	980

“Number of Deaths that would have been returned in each Week if the Population had been the same as in 1847, viz., 2,139,209.

No. of Week.	1733.	1743.	1833.	1837.	1847.
1.	1767	1561	684	486	1098
2.	1773	1891	1251	605	1086
3.	2615	3309	1696	1016	1676
4.	5304	4730	2047	1856	2454
5.	3894	3351	2003	1832	2416
6.	2097	2054	1862	1274	1946
7.	1974	1754	1225	1189	1247
8.	2047	1633	663	746	1599
9.	1693	1382	1021	684	1364
Weekly average return . . .	1677	1636	914	914	980
Total deaths in 9 weeks . . .	23,164	21,665	12,452	9688	14,886
Number of deaths that would have happened if the average mortality had prevailed in the 9 weeks	15,093	14,724	8226	8226	8820
Difference	8071	6941	4226	1462	6066”

EPIDEMIC OF 1889-90

INTRODUCTORY REMARKS

In endeavouring to give a concise and accurate account of the epidemic of 1889-90, it has been thought best to give a faithful statement of facts and figures, incorporating such observations as are suggested by the circumstances, to enable observers to collate for their future guidance the main features of the epidemic, in respect of both nature and incidence, and to form conclusions of their own.

The statistics given have been selected on account of their representative character, and they are substantiated in every instance by the name of their author.

We have not abstained from recording suggestions and hypotheses merely on the ground that they did not fit in

with our own views; but, on the other hand, it must not be assumed that their mention involves any expression of opinion as to their value or merits.

NOMENCLATURE

The nomenclature of the disease now definitely known as influenza is not of the clearest. It is said that the word was originally introduced by the Italians at a time when less was understood of its nature and origin than at present, if, indeed, this be possible. Stellar pathology being then current, they attributed the capricious and astonishing rapidity with which it spread (though we do not desire by speaking of its spreading to infer that it really does *spread* in the usual sense of the term) to some peculiar "influence" of the stars. Hence the word, in common with so many others of a like nature, reflects faithfully the erroneous tenets of departed schools of thought. Although not in any sense a scientific appellation, yet the word influenza would have answered its purpose well enough had it not come to have a totally different meaning in damp cold climates where coryzal symptoms are common. Owing to the accidental association of these coryzal symptoms in previous epidemics, the term has been currently employed to designate an acute catarrhal condition of the mucous membranes of the eyes and nose, assumed to be contagious, and possibly infectious. Hence, when the epidemic first broke out, its victims often declined to believe that their malady could rightly be called influenza, seeing that the most salient features of the English affection of that name were conspicuous by their absence. For some years to come, at any rate, we shall have learned to disassociate the name from any necessary connection with a cold in the head.

We need not do more than allude to the names which have been assigned to it in different countries according to its prevailing characteristic or based on its supposed geographical source. The Russians call it the "Chinese distemper," while other European nations call it the "Russian influenza."

Some further confusion has been caused in this country by

the careless use of such expressions as "epidemic catarrh," etc. This is distinctly ill-chosen, since catarrh is not necessarily present. On the whole, perhaps the term "influenza," or epidemic catarrhal fever, is open to least objection pending definite knowledge as to its pathology.

DIFFERENTIAL DIAGNOSIS

While there can be little doubt as to the identity of the disease in this country with that of previous epidemics, as well as with that which has overrun Europe during the last months of 1889, the comparative absence of catarrh of the conjunctival and nasal mucous membranes, the occasional appearance of a measly or scarlatiniform eruption, and other circumstances, gave rise for a time to a doubt as to whether the epidemic was really one of influenza. It has been pointed out that for the last eighteen months a widespread epidemic of dengue or dandy fever has prevailed in Asia Minor, Smyrna, and south-east Europe, and it has been suggested that the epidemic which reached our shores *via* Russia and France was dengue modified by conditions of environment. The symptoms of dengue fever do occur with the same curiously sudden onset, hence the appellation of "knock-me-down" fever which has been applied to it, and, as in influenza, pains in the eyeballs and limbs and headache soon follow. The tongue in dengue is furred, and there is sometimes vomiting and diarrhoea. On the other hand, the fact that influenza did not spare regions in which dengue fever had recently prevailed, tends to negative the idea of their being the same disease, for although isolated cases of repeated attacks in the same individual have been noted, this is distinctly unusual. The points of difference between the two maladies are clearly made out in a communication from Dr. Limaricis, of Constantinople, reproduced in the *British Medical Journal* of January 1890, which we have modified so as to correspond to influenza as observed in this country:—

*Comparative Table of Characteristics of Dengue Fever
and Influenza.*

	DENGUE.	INFLUENZA.
Localisation.	Hot countries.	All latitudes.
Duration of Epidemic.	3 to 5 months.	1 to 2 months.
Extension.	Slow, and from circumscribed areas.	Rapid, and invading large tracts at the same time.
Commencement.	Always sudden.	Usually sudden—sometimes strikingly so.
Temperature.	Always very high.	Uncertain—not usually very high.
Nervous symptoms.	Lassitude, pains in head and limbs.	Same, often with tendency to somnolence.
Larynx and Trachea.	Seldom affected.	Frequently affected.
Dyspnœa.	Seldom or never.	Frequent.
Gastric symptoms.	Violent and persistent.	Often absent.
Exanthema.	Constant, beginning in face and descending—erythematous, followed by desquamation.	Seldom—irregular in presence and description.
Headache.	Feeling of tension.	Sharp, internal, often neuralgic in character.
Complications.	Rarely the heart, liver, or kidneys. Lungs may be affected.	Lung affections frequent—principally bronchitis and broncho-pneumonia.
Convalescence.	Very tedious.	Usually quick—sometimes protracted.
Prognosis.	Always favourable.	Usually favourable in absence of complications.
Lower animals affected.	Dogs and cats.	Horses especially, but also dogs, and possibly cats.
Incidence as to age.	All ages indifferently.	Principally adults—more rarely children.

The resemblance to malaria reposes on even less plausible bases. The mode and rapidity of propagation, the prevalence of the disease in districts far removed from any possible source of malarial poisoning, its non-amenability to the influence of quinine, and the general course of the affection, distinguish it clearly from all known malarial diseases. Moreover, the spleen is only occasionally enlarged in influenza, and the tendency to relapse, so marked in diseases of malarial origin, is far less so in influenza.

SYMPTOMATOLOGY

The onset of the malady is usually sudden, and marked by shivering. The victim thinks he has "caught a cold," to use the consecrated expression; he experiences the same aching lassitude as that which characterises the "bad cold," and there is an intense feeling of depression, both mental and physical. The face feels flushed and uncomfortable, and little shudders creep up the spine, the integument wrinkling up into the condition known as "goose skin." Before very long, perhaps even coincidently with the shivering, violent headache, with giddiness, supervenes, more or less limited to the frontal region and behind the eyeballs, often of a neuralgic character. In rare cases this preliminary shivering assumes the aspect of a typical rigor. The prostration is immediate and extreme, and in the majority of cases it is the most salient clinical feature of the affection. The sensation of cold is persistent and distressful. The temperature is very variable. In some cases the attack begins with, or shortly attains, a high degree of fever, but during the first twenty-four hours it does not usually exceed 100° or 101° . The pain in the limbs is general, and seems more of the nature of an ache, though it may be associated with local neuralgic manifestations. The muscles feel sore on pressure, but the tenderness is not localised to any particular structure, partaking of the nature of a general cutaneous hyperæsthesia. It is always well marked and severe in the back, and the backache is often one of the earliest indications of an attack. The pulse is small and rapid. Coryzal symptoms, so commonly known under the name of influenza in this country, have been comparatively little marked during the last epidemic, and have only been observed in from a third to a half of the cases, though conjunctival hyperæmia was sometimes present. The tongue is furred and tremulous, and there is, for a time, complete anorexia. Thirst, however, is not marked. The bowels are usually confined, and the urine high coloured, scanty, loaded with lithates, and with an occasional trace of albumen. While these symptoms represent the average type of the disease, there has been an extreme and remarkable diversity in the manner of the onset,

as well as in the subsequent course, of the malady. In a number of recorded instances a violent attack of pain has been the first intimation, so severe sometimes as to cause the person to fall down under the impression that he has been struck. In others, wild transient delirium has ushered in the symptoms; indeed, a very interesting chapter might be written on the eccentricities of the disease in this respect. In children, delirium was almost the rule.

However the malady commences, within a few hours the patients are unable to be still on account of the aching, and unwilling to move on account of the pain. The prostration becomes very intense, and the patient manifests indifference to his surroundings and is wrapped up, so to speak, in the contemplation of his own misery.

The back pain simulates a severe attack of lumbago, while that in the limbs has been mistaken for rheumatic fever.

On the second day the temperature sometimes rises to 103° or 104° , and occasionally veritable hyperpyrexia has been noted, the thermometer marking 107° or 108° . Sweating occurred in about half the cases, and when present was "cold" and abundant, necessitating several changes of linen during the night, and adding greatly to the discomfort of the patient. In a second category of cases this phenomenon was conspicuous by its absence, the skin remaining hot, harsh, and dry.

The bronchial mucous membrane and the lungs were not, as a rule, affected during the early stages of the disease, though the presence of tonsillitis, laryngitis, and hoarseness was noted in a certain proportion of the cases. Occasionally a few sibilant sounds were detected on auscultation. As the disease progressed, however, a dry hacking cough supervened, unaccompanied by expectoration, and presenting, in its irritating iteration, some resemblance to that of whooping-cough. There was sometimes herpes labialis or nasalis, erythema or urticaria, and, more rarely and as a later complication, meningitis or pneumonia.

In a certain but variable proportion of the cases a rash of some kind has been noted, resembling that of measles or scarlatina, erythematous or papular in character, and generally described as "rose-coloured," disappearing on pressure, and lasting for from one to four days, usually followed by some desquama-

tion. A rash only appears to have been noticed in a comparatively small number of cases, and when present it has occasionally been the means of causing an error in diagnosis, only cleared up by subsequent events. Even in mild cases in which auscultatory signs were absent, urgent dyspnoea of an asthmatic character with cyanosis has been remarked.

The liver and the spleen were found to have undergone enlargement in a small and uncertain proportion of the cases, and in some rare instances symptoms of a paralytic nature were noted.

The temperature continued high (102° to 103°) for a period variously stated as from three to five days, when it subsided more or less suddenly. In the majority of cases, however, the temperature had returned to normal by the third day, at which period the pains began to diminish in severity. At the expiration of from seven to ten days the patient was well, save for the physical prostration which the attack almost invariably left behind it. Considering the mildness of the disease in general, the loss in weight which resulted in so short a time is remarkable.

The rash most frequently made its appearance on the second or third day, affecting the face (cheeks) and neck, sometimes extending to the trunk and the inner aspect of the limbs (especially the legs), and desquamation commenced within 48 hours of its appearance. The amount of desquamation varied exceedingly, in some being so slight as hardly to be noticeable, in others rivalling and even surpassing that following a severe attack of scarlet fever. In some cases the rash has been of a papular character, more or less closely set, and associated with a good deal of itching on the chest, back, arms, and legs, lasting for two or three weeks, and followed by desquamation.

Dr. H. P. Hawkins, of St. Thomas's Hospital, has recorded seven interesting cases of rash in the course of influenza, of which over 1000 cases applied at St. Thomas's Hospital for treatment. Of these a large number were carefully examined, and all were asked if they had had any rash. As the result, six cases have been seen with an eruption presenting a certain degree of similarity in appearance and position, and the patient in a seventh case described an eruption which seems to have

been of the same nature. One man was covered with well-marked urticaria, and a large number had labial herpes.

CASE 1. J. C—— came to the hospital as an out-patient. He had a roughly circular patch slightly raised over the back of each elbow, passing at its periphery into patches and spots of similar appearance, especially numerous along the back of the forearm. The colour was bluish-red, such as is seen on the cheeks in measles, disappearing completely on pressure. A similar condition existed on the legs; there was a large patch on the patella, with smaller patches and spots down the shins. There was a slight blush on the chest, but nothing more than is often seen in fever from any cause. This patient had had eighty grains of salicylate of soda before the rash appeared. A few days later, while the rash on the arms was fading, a crop of spots arose on the backs of the hands, of urticarial appearance, considerably raised, and paler than the surrounding skin, but not attended with itching.

CASE 2. W. B—— had a similar rash to Case 1 on the front of the knees and shins, with a slight blush on the chest, but nothing on the arms; he had no medicine before its appearance.

CASE 3. H. D. L——. The arms showed the same rash, but it was on the flexor surface, and there were a few spots on the legs. The patient had had no medicine.

CASE 4. H. S——. The chest, abdomen, and back of this patient were covered with a continuous bluish-red rash, which, judging from the edges and outlying spots, was probably composed of confluent patches; it ceased abruptly at the level of the clavicles. The elbows and knees had the same appearance as those of Case 1; there was the same patch on the olecranon and patella, with discrete spots around; the colour was the same, but it was rather fainter. This patient had had a saline draught, but no quinine, antipyrin, or salicylate of soda, the three chief erythema-producing drugs.

CASE 5. H. T——. The elbows and backs of the fore-arms exhibited an eruption having the colour, appearance, and arrangement described under Case 1. This patient had had no medicine.

CASE 6. N. B——. The elbows and backs of the fore-arms were spotted as in Case 1. From the middle of the

front of the thigh to the ankle on both sides, having its greatest intensity and degree of confluence over the patella, was a livid, slightly raised hæmorrhagic eruption in spots and patches; there was not a single spot to be seen on the backs of his legs. This patient had had no medicine, and had never suffered from purpura before.

CASE 7. This patient, a woman, did not come to the hospital until she began to suffer from the secondary bronchitis. She said that on the day after the onset of the illness her chest and abdomen became covered with large "red blotches and spots," without itching; but she had noticed nothing on her arms or legs.

Dr. Hawkins adds that these seven cases certainly bore a family resemblance, but observes that their number (7 out of 900) is so small that one would hesitate to admit for the rash any relationship to the specific disease influenza, in the absence of further observations.

A curious fact was elicited, in reply to a suggestion made in the *British Medical Journal* by Dr. Barnes, bearing on the influence exerted by sex upon the malady. Dr. Evershed of Hampstead states that in a home for girls of which he is the medical officer, out of 36 girls of the age of 15 and upwards, 10 were attacked between January 15th and 27th, of which number, 8 were either menstruating or menstruation appeared during the attack. The other 26 inmates who were not attacked were not at the time menstruating. In these cases a high temperature (101° to 105° Fahr.) was the rule.

The difference in the manner of onset of the malady is not more remarkable than the variation in its severity as experienced by different individuals. In a few it has manifested itself solely by an extreme somnolence, and after one or two days' complete repose the attack has passed off. In some of these cases a tendency was noted to the occurrence of muscular pain and lassitude at periodical intervals after the first attack, continuing for two or three weeks.

Dr. Farbstein, of Hull (*Lancet*, February 22d, 1890), claims to have remarked the coexistence, in the early stages, of high temperature (101° to 103° Fahr.) with a slow pulse (80 and under). He says he made it a rule to take the temperature in all cases seen within twenty-four hours of the onset of

symptoms, and in no case did he find a temperature below $100^{\circ}\cdot4$ Fahr., or a pulse above 88. After the first twenty-four hours the pulse-temperature ratio becomes variable, and may have returned to normal. He suggests that this curious departure from the normal ratio may serve as a diagnostic guide in doubtful cases.

Sir Peter Eade, M.D., in a contribution on "The Influenza in East Anglia" (*Lancet*, February 1st, 1890), dwells upon the fact that in one respect this epidemic would seem to differ from preceding ones in that it appears to have travelled and spread irrespective of winds and uninfluenced by temperature or the mild weather; whilst certainly on some former occasions it has broken out so suddenly upon the giving way of a frost or the melting of snow as to point to the probability of a close connection between the two circumstances.

He insists that the morbid influence was more especially exerted upon the nervous system, and secondarily on the pulmonary apparatus. He points out that in many cases in which thoracic oppression and diaphragmatic pain were complained of, the dyspnœa was much in excess of that warranted by the amount of lung tissue involved, and he ascribes it to "pulmonary paralysis." He noticed, too, in respect of the decubitus, that even when a considerable part of one lung or portions of both has or have been choked by congestion, and when the difficulty of breathing has been considerable, he had seen patients lying almost flat down upon the bed, perspiring, pale, and evidently thus seeking relief from the cardiac asthenia and difficulty, more than from the effects of the pulmonary inflammation.

He observes that in most cases of fatal influenza the post-mortem appearances have been those of broncho- or catarrhal pneumonia. The lungs were studded with patches of congestion, from which, on section, exuded a yellowish, purulent, or dark red material. The mucous membrane lining the bronchi was usually swollen and hyperæmic, and in some cases there was œdema of the lungs and hyperæmia of the pleuræ. Engorgement of the spleen and liver were noted in some cases, but this was by no means constant or even frequent.

RELAPSE AND RECURRENCE

Relapses have occurred in many of the cases, especially when due care has not been taken to provide against exposure during convalescence, hence they have occurred more frequently in males. When this has been the case the liability to pulmonary complications has appeared to be markedly increased. The temperature rises again, and the shivering, headache, and pain return, and the symptoms thus revived do not tend to resolution as promptly as at first.

The protection afforded by one attack against subsequent attacks does not appear to have been so complete as is usually the case with specific fevers generally. A few instances of a second or even a third attack at varying intervals of from four to eight weeks, after an interval of complete restoration to health, have been reported, but the proportion has been extremely small.

The case is reported of one aged gentleman who was known to have had, and to have survived, three well-marked attacks during the last three epidemics, 1837, 1848, and 1890.

COMPLICATIONS

The complications have been numerous and varied, and so much has this been the case that it is difficult to avoid the conclusion that the malady has a tendency to graft itself on to other maladies, so to speak, and to seize upon the idiosyncrasies of the patient.

By far the most frequent and serious complications have been catarrhal or inflammatory affections of the air passages and lungs, and most of the deaths have been due to a peculiar creeping form of lobular (catarrhal) pneumonia. This, though frequently the result of exposure during convalescence, has, in spite of every precaution, in elderly or enfeebled persons, directly determined a rapidly fatal result. Apart from the cases in which the poison appeared to concentrate itself on the respiratory apparatus, the pulmonary affection rarely

became serious before the fourth day, and often only declared itself much later. The signs and symptoms were those of catarrhal pneumonia, with rapid shallow breathing, a small rapid pulse, cyanosis, and prostration, culminating in a comatose condition followed by death.

Laryngitis and bronchitis were also fairly common, especially among those unable to protect themselves from atmospheric vicissitudes, or who returned too early to their work.

In rare cases, meningitis, pleurisy, chorea, etc., have supervened. Hæmorrhages from the nose, lungs, and stomach, either during the period of invasion or during convalescence, were noted as less common complications. From an examination of cases reported by practitioners who saw a good deal of the epidemic, pneumonia occurred in about 16 per cent of the cases, bronchitis in 2 per cent, rheumatic and gouty complications in 6 per cent.

The conjunctival irritation, which was a common symptom of the disease, not unfrequently left after it a chronic condition of inflammation requiring special treatment for its relief. The catarrhal condition occasionally extended into the ears and nose, but seldom to the extent of causing more than passing discomfort.

Not unfrequently some congestion of the kidneys has been present, the urine being scanty, more or less (generally less) albuminous, and in rare instances suppression of urine for several hours has been noted.

Neuralgic troubles were frequent, both as a complication and as a sequel.

Complications were most frequent in persons between the ages of 30 and 40, and rather more in males than females.

A special feature of the recent epidemic was the great heart weakness occasionally present, especially in elderly or middle-aged patients. Cardiac failure was moreover the immediate cause of death in many cases of relapse. In one case under the care of the author recovery had taken place from a second and severe relapse occasioning gastro-intestinal, as well as pulmonary symptoms. When convalescence was setting in the patient got out of bed for the first time without permission and immediately fell dead. In another instance the

cardiac weakness was so great, and the action of the heart so rapid, that rest in the recumbent position had to be rigidly maintained for weeks.

It has been a subject of general remark that a large number of cases of phthisis, apparently consecutive to influenza, have come under notice, but it is only fair to assume that the attack of influenza, like any other debilitating influence, only precipitated a latent tendency or aggravated a condition which had until then escaped attention.

VARIETIES

A tendency has been noticed on the part of the virus to attack particular parts of the organism, thus giving a special aspect to the attack. The varieties have been roughly classified according as the maximum effect was produced on the nervous, the respiratory, or the digestive system. A more accurate subdivision may be made, as suggested by Dr. Norman Kerr, as follows—

1. The general type, with acute headache, pains in limbs, and fever.
2. The catarrhal variety, attacking the mucous membranes of the nose, eyes, and bronchi.
3. A gastro-intestinal form, in which nausea, vomiting, diarrhoea, and abdominal pain prevail.
4. The nervous type, characterised by extreme depression and somnolence, followed by harsh dry cough.
5. The arthritic variety, in which joint pain was the prominent symptom.

TREATMENT

Although, if properly attended to, influenza is usually a mild and ephemeral malady, we have abundant evidence that it is not to be trifled with. The first and most important part of the treatment is rest and warmth—two conditions with which sufferers are usually very willing to comply. Antipyrin, salicin, and the salicylates have been very extensively resorted to, often by the patients themselves, and not

rarely with the effect of producing inconvenient and even disquieting symptoms. We have not, however, heard of any fatalities due to the abuse of such drugs as antipyrin and the salicylates, possibly because a becoming prudence had been engendered in the public and among dispensing chemists by the serious mortality (17 cases) directly attributed to overdoses of antipyrin in Vienna. The general consensus of opinion is in favour of a laxative, followed by a stimulating diaphoretic, though antipyrin and the salicylates have not been without benefit when judiciously administered for the relief of the pain and headache. Dover's powder was also much used to relieve the distressing insomnia, but opium in any form seems to have been badly borne. On the second or third day, and during recovery and convalescence, quinine was unquestionably of service, and markedly hastened the return to a normal condition of health.

The complications had of course to be treated *secundum artem*, the only principle to be borne in mind being the necessity for the use of sustaining rather than lowering remedies.

Alcohol, undesirable in the early stage, was sometimes taken with advantage when the febrile symptoms had subsided.

It is worthy of note that the bronchial catarrh was not relieved by the ordinary expectorants, and the cough, dyspnoea, and wheezing were best controlled by the iodides or bromides, or a mixture of the two.

No special precautions appeared to be necessary in regard to diet, and the greatest difference existed in the degree of anorexia present, the appetite indeed being often but little affected.

During convalescence a tonic preparation containing iron and quinine gave the best results, and was as a rule highly appreciated by patients.

As is invariably the case during the prevalence of an epidemic, a large number of so-called specifics were brought before the public, but though some of them, such as menthol, eucalyptol, pumiline, etc., may have been useful in virtue of their disinfectant properties, no known drug or method of treatment proved to be possessed of the power to cause the attack to abort or be sensibly abridged.

The Turkish vapour baths failed to afford the relief they may usually be relied upon to procure in ordinary "cold," and attempts to procure diaphoresis by active exercise—a variety of treatment which very few sufferers had the courage or the resolution to put to the test—culminated in acute and even dangerous prostration.

MORTALITY

The mortality in this country, so far as one can judge, does not appear to have exceeded, even if it attained, 1 per cent of the cases. No deaths were registered as due to influenza until the week ending January 4th, when four were recorded, the mortality from respiratory diseases having risen from 5·6 per thousand deaths, which is below the average, to 9·9 per thousand, which is considerably above it. The following week (ending January 11th) the number of deaths from influenza was 67, and that of diseases of the respiratory organs 12·6 per thousand—more than double the average. The deaths directly attributable to influenza attained their maximum during the week ending January 18th, their number being 127, the deaths from respiratory affections having declined to 11·9 per thousand deaths. During the week ending January 25th, there were 105 deaths from influenza, and the proportion of deaths from respiratory diseases, 8·7 per thousand. During the same period the total mortality per thousand for the twenty-eight large towns rose from 21·9 per thousand for the week ending December 28th to 28·1 for the week ending January 11th. The following week it was 27 per thousand, falling to 24·2 during the week ending January 25th.

The following are the returns of the Registrar-General for the five weeks during which the epidemic was at its height:—

REGISTRAR-GENERAL'S RETURN FOR LONDON.

Week ending	Death-rate per 1000.	Mortality.		Mortality due to						
				Influenza.	Respir. Diseases.		Bronchitis.		Pneumonia.	
		Total.	Corr. Av.		Total.	Corr. Av.	Total.	Corr. Av.	Total.	Corr. Av.
Jan. 4 .	26·5	2,371	1947·6	4	843	532	530	350·8	215	118·8
Jan. 11 .	32·2	2,747	1937	67	1069	547	715	332·5	253	122·9
Jan. 18 .	30·2	2,720	1955	127	1010	546	630	335·7	281	116·8
Jan. 25 .	25·2	2,227	1967·1	105	736	569	468	372·6	193	117·8
Feb. 1 .	20·9	1,849	2059·8	75	550	630	339	426·6	145	128·0
Totals .	...	11,914	9866·5	378	4208	2824	2682	1818·2	1087	604·3

During these five weeks, therefore, 378 persons died of influenza, many no doubt of some respiratory complication, and, in addition, no less than 1384 persons succumbed to some affection of the respiratory organs who would not under normal conditions have perished, and of this excess 844 persons died of bronchitis and 483 of pneumonia.

The Registrar-General's returns for the first quarter of 1890 showed the same remarkable general increase in the rate of mortality in the larger towns, which cannot be accounted for by the meteorological conditions. Excluding the death-rate from zymotic diseases, which was only 2·04 per 1000, the rate from all other causes was 22·7. Compared with the recorded rate in the first quarter of 1889, which was exceptionally low, the mean rate in the twenty-eight towns during the preceding quarter showed an increase equal to 18 per cent; in London the increase was 21 per cent, whereas the mean rate of increase in the twenty-seven provincial towns did not exceed 16 per cent. In three of these towns the death-rate during that quarter showed an actual decline from the rate in the first quarter of 1889; the decrease being 5 per cent in Birkenhead, 9 per cent in Cardiff, and 12 per cent in Blackburn. The decline in Blackburn, it should be pointed out, was from 32·3 to 28·5,

and was more than explained by a marked fall in the zymotic death-rate. In each of the twenty-three other provincial towns under notice the death-rate last quarter showed an increase. The increase was, however, less than 10 per cent in Oldham, Nottingham, Salford, Preston, Huddersfield, Norwich, Leicester, and Liverpool; it was between 10 and 20 per cent in Derby, Sunderland, Newcastle-on-Tyne, Plymouth, and Manchester; and between 20 and 30 per cent in Birmingham, Halifax, Sheffield, Portsmouth, Bolton, Wolverhampton, and Leeds. The highest proportional increases were 30 per cent in Brighton, 32 per cent in Bradford, 33 per cent in Bristol, and 37 per cent in Hull.

To what extent this varying increase in mortality corresponds to the intensity of the epidemic, we are at present unable to ascertain. Although the above high death-rates have been surpassed during non-epidemic times in London, under exceptionally unfavourable climatic conditions (third week of 1880, 46·7; sixth week in 1882, 34·5), it must be noted that the mortality was then chiefly among the very young and the old, and not, as during the recent epidemic, between the ages of 20 and 60, the increase being 70 per cent between the ages of 20 and 40, and 93 per cent between 40 and 60. This extraordinary rise in the mortality was due almost entirely to an increase in the deaths due to disease of the respiratory organs.

In spite of the fact that the proportional mortality was exceedingly small, it is worthy of note, as showing how deadly the disease has proved in the aggregate, that there is no other disease except cholera which has so serious an effect on the death-rate while it lasts.

INCIDENCE

The epidemic does not seem to have evinced any predilection for sex—males and females suffering in about the same proportion, though the former seemed to be the first to contract the malady. With respect to age, the greater number of patients were between 15 and 40, children and infants being apparently less amenable to the action of the poison, though in

this respect the returns show the most curious differences. Numerous cases, however, have occurred among the aged, and of these a large proportion proved fatal. On the other hand, neither youth nor extreme infancy appears to have afforded more than a relative immunity. Dr. Kingston Barton, of South Kensington, reported a fatal case of an affection which bore every appearance of being influenza in a new-born child, delivery having taken place on the fourth day of a well-marked attack of influenza on the part of the mother.

It has been remarked during this epidemic that even when persons did not, properly speaking, contract influenza, any existing malady assumed an influenzoid character. Thus a person who contracted a cold in the head, proved very apt to experience lassitude, etc., out of proportion to the local affection, and a greater tendency existed to subsequent bronchial catarrh. There is every reason to believe that measles and scarlatina have in exceptional cases coincided with influenza and thus caused the medical attendant a good deal of anxiety and uncertainty.

BACTERIOLOGY

Notwithstanding the sensational announcements which from time to time found their way into the public press, it is more than doubtful whether the relationship of any particular micro-organism, or organisms, to influenza has been satisfactorily proved. Most of the best known bacteriologists of the world devoted themselves to the task, and many of them succeeded in isolating an organism whose presence strongly suggested that it was "loitering for the purpose of committing a felony." The verification experiments, however, did not in any case, so far as we are aware, conclusively demonstrate the pathogenetic properties of the incriminated microbe.

Dr. Jolles, of Vienna, noted numerous capsuled cocci in the sputa of patients who had suffered from influenza, and by isolation and cultivation he claimed to have demonstrated their identity with the bacillus of Friedländer.

Professor Weichselbaum, of the Vienna Bacteriological Institute, examined the sputa of eighteen living persons

suffering from influenza, and found in them, as well as in the diseased organs of patients who have died from the disease, a micro-organism resembling Fränkel's diplococcus of pneumonia; but he was unable to detect in any of the pathological products of the disease, Friedländer's pneumococcus. The same micro-organisms have been found by Professor Weichselbaum in the intestines of a girl who died from enteritis during the epidemic, but he was unable to establish the connection of these micro-organisms with the spread of influenza to his satisfaction. He expressed the opinion that influenza may be caused by a microbe as yet unknown, and that the complications of the disease may be due to the micro-organism of pneumonia finding favourable conditions for development in the diseased body. The results of Professor Weichselbaum's investigations have been corroborated by the examinations of sputa made during the epidemic at the Vienna Hygienic Institute.

Professor Klebs, the well-known pathologist of Zurich, found in the blood of influenza patients great numbers of monads similar to the organisms credited with giving rise to the symptoms of malarial fever.

In a critical article on this subject in *La Province Médicale* of February 1st, Dr. G. Roux calls attention to the fact that in 1884 Otto Seifert described a streptococcus in the nasal secretions of influenza. Dr. Ribbert asserted that he had found a streptococcus in eight cases of influenza, six of which were suffering from pneumonia, identical in every respect with the streptococcus pyogenes, and his observations are in part confirmed by those of M. Vaillard of the Val-de-Grâce Laboratory. None of these researches, however, have been able to satisfactorily explain the cause of influenza, but it may be that the presence of such micro-organisms is favoured by antecedent conditions induced by the general "influence," and that the key to the varying degrees of intensity of the disease, the variety of its manifestations, and its complications, is to be found in this suggestion.

ÆTIOLOGY

The erratic and always unexpected outbreak of the disease, and the promptness with which it appears and disappears, may account for the fact that we are still strangely ignorant of the causes which preside over its origin and dissemination. We are not even in a position to affirm authoritatively whether or not it is transmissible, or whether, if transmissible, the virus is conveyed through the air, the water, or other vehicle. Careful inquiry points to the disease being in the first instance dependent on some general condition—though whether atmospheric, electrical, or miasmatic, we know not—which affects populations in their entirety, and either confers the disease or prepares the way for it.

The theories advanced to explain what has always been mysterious, are as numerous as some of them are ingenious. Several of them merit attention, and it may not be unprofitable to briefly discuss one or two of the more striking.

It has more than once been noticed by Italian physicians that the incidence of the disease has appeared to vary according to the proportion of ozone in the atmosphere, and attempts have been made to trace a distinct relationship between the presence of an excess of ozone and the prevalence of the affection. In *Nature* of January 24th, 1890, Mr. Augustus Harvey mentions a case in support of this view. He says that forty years ago he paid a visit with a friend to the laboratory of the celebrated chemist Professor Schönlein, the discoverer of ozone. Just prior to his visit the Professor had obtained some ozone and had inhaled it "for the purpose of giving himself influenza," and they both distinctly observed most of the ordinary symptoms of the malady. Ozone, it is true, even in attenuated proportions, acts as a powerful irritant to the bronchial mucous membranes, but it is preposterous to pretend that its inhalation would give rise to an affection which has every appearance of being a specific malady. Moreover, the epidemic has been most marked in cities and large towns where ozone is rarely present in perceptible quantities. Moreover, were such the case, sporadic cases of influenza would be of common occurrence among employees

in electrical works, where the smell of ozone is invariably very marked.

Rather more to the point—for it has at any rate some elements of possibility, not to say probability, in its favour—is the suggestion that dust may be the vehicle which serves to transmit the contagion, whatever its nature may be. It is well known that the dust swept up by the sirocco or thrown into the air by volcanoes may be, and has been, blown incredible distances over land and sea. If, then, it can be shown that the disease, or something analogous to it, was prevalent in the country whence the dust is derived, and, secondly, that the occurrence of the disease elsewhere coincided with the distribution of the incriminated dust, then we have data which admit of serious discussion. This theory was well brought forward in a long and interesting letter addressed to the *Times* in January 1890 by the Hon. Rollo Russell, who points out that “in the *Times* of January 11th, 1888, it was reported that a great flood had occurred in China through the bursting of the banks of the Hoang Ho, or Yellow River, and that an immense extent of thickly inhabited country had been inundated, causing a loss of life by drowning estimated at between one and seven millions. A letter from the Professor of Chinese at Oxford and others, appeared on February 24th, 1888, calling attention to the famine following this disastrous calamity, and estimating the flooded area as fully equal to that of Wales. On October 9th, 1888, it was reported that the new embankment, constructed at enormous cost, had been swept away by a summer flood, and that the low-lying fertile land had for a second time been inundated. On January 1st, 1889, news arrived of terrible floods in Manchuria, by which 2000 lives were lost, and of an outbreak of cholera at Quilon. In the *Times* of April 26th, 1889, it was stated that 170,000 persons were receiving relief in the desolated province, and that there was much illness and fever. During the winter an epidemic had been feared among the vast stricken population of the flooded districts (*Times*, January 6th, 1889), and in the following summer there was great distress in the towns and villages elevated above the plain and spared by the flood, but deprived of their means of living, the fertile land having been covered by the yellow mud brought down by the swollen river. The

heat of summer is intense in this region, and the great level area was dried up, but had ceased to be capable of supporting a teeming population, so that the survivors lived upon roots, grasses, and anything that could be picked up, until the relief provided by the famine fund and native aid came to minister to their most pressing wants. In the Loess district, which seems to have been partially subject to the floods, the fine powdery yellow soil is carried up during the dry winds of summer in such quantities into the atmosphere as to obscure the landscape and almost hide the sun. Something of the kind probably occurred when the province, covered by the same thick yellow deposit, lay under the burning heat of the summer of 1889. Countless millions of organic spores, developed in the marshy water of the flooded area which must have been saturated with the dejections and refuse of a dense population, would thus be carried into the air and disseminated by the strong winds which there prevail. It would not have been surprising if some malarious disease had been strongly developed in these unusual conditions, and the peculiar character of the rich earth from which the Yellow River derives its name would be likely to give rise to infective organisms differing from those common to marshy districts in tropical and temperate climates. Whether any distinct disease of an epidemic character fastened upon the distressed population in China at this time does not clearly appear. But there does seem to be some reason—slight, perhaps, at present—for supposing that the present epidemic of influenza has its source in the dried-up surface of the sodden soil of the province of Honan. . . . There are only two distinct records of the dates of great deluges in that part of China; these occurred in the few years preceding 1833 (Davis's *Chinese*, vols. iii. and iv. p. 180) and in 1851-53 (Keith Johnston, *Physical Geography*). In 1832-33 and in 1854-55 Europe was to some extent affected with influenza (see Reynolds's *System of Medicine*; also article on influenza in *Health*, by Dr. Wilson, January 3d, 1890)." The writer concludes by suggesting that "it might be desirable to investigate further the possible connection of floods in China with epidemic influenza, for present data barely suffice to mark out China and Siberia as the breeding-ground of the disease."

This suggestion called forth some statements from a writer

in *Nature*, to the effect that the Hoang Ho could not burst its banks, as it ran at a lower level than the surrounding country, that the soil was all sand, devoid of vegetation or cultivation, and that, as a matter of fact, malaria was not prevalent there.

The author, in a communication to the *Medical Press and Circular* (May 7th, 1890), found it necessary to disclaim the credit of this "dust theory," as also for entertaining the suggestion that the micro-organism of influenza was generated in China and thence conveyed by winds, by upper currents, or by cyclonic or anticyclonic action. He admitted, however, having been bold enough to throw out the suggestion that dust in the air, whether Chinese dust or meteoric dust, might supply the "raft" for the conveyance of the microbe, and that the presence and diffusion of dust in the air might be the condition which determined the prevalence of the disease, and might be adequate to convert a local epidemic into a universally distributed or pandemic wave.

These data, interesting as they are, are scarcely sufficient to do more than stimulate investigation and inquiry in this direction. They open up a wide field for original research for epidemiologists and sanitarians.

The dust which is always present in the atmosphere inland is largely composed of organic particles which, even if not themselves possessed of pathogenetic properties, are admirably suited to serve as a vehicle for spores or poisons of a different kind. Many diseases are known to be thus conveyed, and it may be that further inquiry will elicit information of value in this respect.

Although we are not in possession of data which permit the exact nature of influenza to be accurately defined, a large number of clinical observations are now available which throw further light on a problem which has always been remarkably obscure. Graves held that the symptoms of the disease were referable to the action of some virus on the nervous system, and it must be admitted that many of the features of this affection are more readily to be explained on that hypothesis than on any other. This, however, even if admitted, does not help us to elucidate the nature of the poison, its source, or the path by which it enters the organism. Dr. Bezley Thorne has carried this theory a step farther, and has made out a very plausible

case in favour of the view that influenza is essentially an inflammation of the cerebro-spinal meninges. In a communication on this subject addressed to the *Lancet*, he says: "The signs of local inflammation commencing in the eyes, pass backwards, possibly through the medium of the optic nerve, to the cranial nerve centres, and within a few hours portions of the spinal cord, notably the lower lumbar and sacral portions, are sensitive to deep percussion. The pains in the limbs, which are felt early in the attack, are characteristic of central irritation. On the subsidence of the fever and even before, the following symptoms, all or some of them, become manifest: insomnia, mental depression and confusion, with impaired power of mental concentration, neuroses of both arms and legs with pains and twitching at night, hyperæsthesia and a sense of intense cold, intercostal neuralgia and myalgia of the scapular, dorsal, and lumbar muscles, feebleness of the hand-grasp, with perspiration and sense of exhaustion on making the effort to increase its force, marked alteration in the handwriting, which becomes juvenile and straggling, feebleness of gait and tremor of the muscles of the lower extremities, præcordial distress, with a sense of faintness and even syncope, and the occasional secretion of abundant so-called 'hysterical' urine."

The epidemicity of influenza is a difficulty which has to be grappled with from another point of view. We have to ask ourselves how it is that it sometimes spreads with such wonderful rapidity while at others it remains confined for a time within a more or less narrowly circumscribed area? Evidently the only possible explanation is that there must be something in the conditions of environment which either favours the evolution of the virus or renders persons abnormally and unusually susceptible to its influence. Something analogous in the vegetable kingdom has been observed in certain districts of South Africa, where plants exist the flowers of which only make their appearance at odd times, and seldom much oftener than once in a decade. This means that they can only develop under certain coincident meteorological and physical conditions, failing which they remain dormant. Given the required moisture, heat, or what not, forthwith the country is covered with the blossom, and persons who have

been but a few years in the country are surprised to see a flower which they do not remember to have met with before. There are many circumstances in the history of the present epidemic which suggest the possibility of a similar condition of things in regard to the spread of influenza. There is every reason to believe that isolated cases of the disease occur in districts which, later on, are ravaged, but in which, it is to be assumed, the conditions are not such as, for a time, to favour its evolution or distribution.

Another interesting fact is, that a malady which affects many points of resemblance with influenza in human beings has been observed in the lower animals. This has been repeatedly noticed in past epidemics, more particularly with regard to horses, in which it is known among veterinary surgeons as "pink-eye." A good deal of trouble has been taken to investigate this point, and careful inquiry has been made among veterinary practitioners with the view of ascertaining what was the exact relationship in point of dates and symptoms between the existence of "pink-eye" in horses and the prevalence of influenza among human beings. Mr. W. Burr, who was thus applied to, writes as follows:—

"A serious outbreak of that form of equine influenza which has received in America the name of 'pink-eye,' appeared in the west of England in September of this year (1889) and in Glasgow a little later. The outbreak has been characterised, as was the case with many of its predecessors, by the suddenness of its appearance, the epizootic rapidity of its spread, and by its attacking all classes of horses under all manner of surroundings.

"The onset of the disease is sudden. An animal may be at work one day, to be the next discovered with legs filled and stiff, eyelids swollen, the conjunctivæ exhibiting the characteristic congestion and discoloration; rapid nervous and muscular prostration ensue, and the patient is languid and depressed; the heart's action is feeble, the appetite fails, and the secretions of the skin, kidneys, and bowels are impaired; the temperature rises sometimes to 104° or 106° ; the pulse is nearly double the ordinary rate, remaining so for several days. The loss has been about 5 per cent. Some patients have died from exhaustion, others apparently from the cedematous swellings

about the head and throat interfering with respiration. We have no sufficient information as to the first cases, nor have we learned whence the malady came. Cart, carriers', and omnibus horses have suffered most. Much checked since recent frosts. Fatal cases only happen when work is continued after the disease has appeared. In 1881 it was much more severe, and accompanied by violent diarrhoea, which seldom yielded to treatment. This year there is very little catarrhal disturbance, no sneezing or cough, and but slight sore throat.

"When the malady gets into a stable it tends to spread, but seldom is a whole stable affected at once.

"A healthy horse, if placed in an affected stable, will in most instances take it; but in my opinion a diseased animal will not communicate it to others in a healthy situation."

In the address on "Influenza" delivered by Professor W. T. Gairdner at the annual meeting at Glasgow of the Glasgow Branch of the British Medical Association, he alludes to the recent occurrence, both in Glasgow and Edinburgh, of a "very severe and widespread epidemic of influenza, or 'pink eye' in horses for a month or more prior to the outbreak of the disease in man, whole stables holding large studs having been down with it, as, for instance, was the case with the largest railway carriers and tramway companies." It is, however, only fair to add that, according to Dr. Russell, the medical officer of health, in the large establishment of Messrs. Wylie and Lochhead, while there has been abundance of "pink eye," the men who had to do with their very extensive stables were almost exempt from the disease, and certainly in no degree specially prone to the epidemic.

According to Bollinger, the horse is subject to three different affections, all of which are known as influenza: 1, a catarrhal form, which affects the mucous membrane of the nose, larynx, trachea, and bronchi, and may go on to a fatal termination from bronchitis or broncho-pneumonia; 2, epidemic erysipelas, or horse typhoid, which in some respects stands in closer relationship to anthrax or splenic fever; and 3, pectoral influenza, or contagious pleuro-pneumonia—*i.e.* horse influenza in the old and large sense. The last two forms are never communicated to man, and it is the first only that stands in any possible relationship to human influenza. Yet it would be hazard-

ous to say that there is any direct relation between the human and the equine malady, for influenza is very often rife among horses when there is none in man and *vice versa*, while the occasional coincidence of the two, of course, proves nothing of itself. In the great horse epizootic which in 1872-73 spread over the whole of Northern America, the symptoms were like those of human influenza and bore a close resemblance clinically to the recent epidemic, but, as at that time there was no similar epidemic among human beings, Bollinger believes that the two affections are essentially distinct. Still it seems that in November of last year there was an epidemic catarrh raging among horses to a greater extent than at any period since 1882. It was attended with very great prostration, so that the horses could hardly stand, and if worked during the first day of illness they were very likely to die. The pulse was so feeble as hardly to be felt, and there was a little catarrh. The affection lasted about a month, and that at a time when the ordinary winter catarrh was not specially prevalent among horses. Although veterinary authorities, therefore, are inclined to believe that horse and human influenza are distinct, it is at any rate certain that human influenza may spread to some of the domestic animals. Horses, dogs, cats, and even birds have been described as suffering in previous epidemics, and in the present several fairly conclusive cases have been recorded, but chiefly among cats.

Domestic animals are said to have suffered coincidently from influenza, and Dr. John J. Redfern of Croydon records a typical instance of possible contagion from man to animal. On January 7th last, the elder daughter of a family he was attending was suddenly prostrated with a typical attack, from which she recovered without relapse. On the 14th (seven days later) her father was struck down, and had a serious relapse. On the 21st (seven days later) the son was attacked, but after a slight illness resumed work. On the 16th their cat was taken with violent running from the eyes and general depression and apparent illness, which in the course of a few days subsided. The cat had never suffered from anything of the kind before. These facts are interesting, inasmuch as both the daughter and son excluded the cat from their rooms entirely, but the father permitted the cat to lie on his bed during the greater part of the day.

Dr. Regius Thornton, of Canterbury, reports (*Lancet*, March 29th, 1890) that "in this part of the country, as early as October 14th, lambs began to suffer from a malady 'the like of which' has certainly not been known for more than twenty years. In one farm not one lamb out of 500 escaped, and at first, until skilled treatment was brought in, more than twenty died. This epidemic amongst the lambs having finished, every horse on the farm was seized with undoubted influenza. The horses having finished, then the owner, his wife, his son, and his servants were all ill with the influenza, and this sequel of events was the same on two adjoining farms."

If the influence of contagion be admitted in this case, the converse would also be likely to hold good, and it would be very desirable to possess comprehensive and accurate data as to the existence of the disease in domestic animals *before* its appearance in human beings.

So strongly impressed were we with the intimate connection between "pink eye" in horses and human influenza, that in the early part of December 1889—some weeks before the disease had gained a footing in London—the author wrote to the *British Medical Journal*, calling attention to the prevalence of an epidemic among horses, and suggesting that it would not improbably prove the forerunner of an outbreak in man. Subsequent events fully justified this forecast, and though it would not be wise to attach too great an importance to what may later prove to be a mere coincidence, the association is one which ought to be borne in mind.

We know that the virus of certain diseases can be attenuated or intensified at pleasure by their passage through the organisms of different animals, and possibly the virus of influenza, at first unable to attack man, may by spontaneous cultivation in the organisms of the lower animals become endowed with increased virulence until, under favourable circumstances, it is enabled to overcome the resistance offered to its entry by the human tissues.

The disease is asserted by Dr. Norman Kerr to be endemic in the territories bordering the lower Danube, with occasional exacerbations, as we have already pointed out. Hence he regards it as essentially of a malarial nature. The objections to this view are numerous and weighty. In the first place, no

known malarial affection is transmitted or spreads in the way which is characteristic of the spread of influenza, and the disease fails to show that amenability to quinine which is so marked a feature of malarial affections. Moreover, the splenic enlargement which is so typical of malarial diseases is but an occasional and fortuitous symptom in influenza.

METEOROLOGY

During the first three weeks of December there was a rising temperature from a mean of 38° Fahr. to one of $43^{\circ}\cdot4$ Fahr. and at Christmas there was a moderate fall of $2^{\circ}\cdot5$, and a further fall of nearly 1° in the succeeding week. Both November and December were months of extraordinary mildness, with a low degree of humidity, and a rainfall below the average.

The month of January, which is generally the coldest month of the year, was so exceptionally warm this year, and in other ways the whole period was so unusual, that a few of the leading features in connection with the weather may not be without interest. The month opened with a short spell of frost, but after the first few days mild weather set in and continued until the close of the month.

The stations used by the Meteorological Office in the compilation of the Daily Weather Report scarcely represent sufficiently the weather at inland stations, but they will give an approximate idea of the prevailing conditions. These reports show that the warmest weather was experienced in the south-western parts of the kingdom, the stations in the north-east of Scotland being about 5° colder than in the south-west of England. On the east coast the mean temperatures of Wick, Aberdeen, Spurn Head, and Yarmouth were each about $41^{\circ}\cdot0$.¹

¹ The excessive drought to which attention has been called by Dr. R. Assman, of Berlin, as having prevailed throughout Europe during the months of November and December 1889, is of interest in connection with the hypothesis of influenza being due to the presence in the air of a specific micro-organism. It is quite conceivable that the effect of heavy rain would be to wash the atmosphere and precipitate the dust and dust-borne spores which, it has been suggested, may serve to propagate influenza, as is the case with pollen in the causation of hay-fever. On the other hand, the resulting humidity of the superficial layer of the soil possibly favours the evolution of the organisms, which may be once more diffused abroad when the mud becomes dust again.

The following table gives the mean temperature results for a number of stations in all parts of the British Isles—

Station.	Mean of max. and min.	Difference from average 15 years, 1871-1885.	Mean maximum.	Difference from average 15 years, 1871-1885.	Mean minimum, °	Difference from average 15 years, 1871-1885.	Number of days with 50° and above.	Number of nights with 32° and below.
Wick	40·5	+2·8	45·2	+3·0	35·7	+2·7	4	8
Nairn	41·6	+4·3	47·1	+5·2	36·1	+3·4	13	4
Aberdeen	41·1	+3·2	45·6	+3·2	36·5	+3·2	7	4
Leith	42·2	+3·0	48·2	+3·6	36·2	+2·5	15	9
Shields	42·3	+3·4	47·8	+4·7	36·8	+2·1	14	5
York	41·8	+3·6	47·9	+4·7	35·6	+2·5	15	8
Loughborough	42·2	+4·0	48·4	+4·9	36·0	+3·1	17	6
Ardrossan	43·6	+3·2	47·3	+2·9	39·8	+3·4	6	3
Donaghadee	42·6	+2·2	47·7	+3·3	37·5	+1·2	15	2
Holyhead	44·7	+2·2	48·7	+2·8	40·7	+1·7	18	0
Liverpool	43·2	+3·4	48·5	+4·6	37·8	+2·2	16	4
Parsonstown	42·2	+1·9	48·8	+2·8	35·5	+0·9	16	7
Valencia	45·6	+0·4	51·1	+1·3	40·0	-0·5	21	3
Roche's Point	45·7	+1·9	50·2	+2·3	41·2	+1·5	23	1
Pembroke	46·0	+3·1	49·2	+3·4	42·8	+2·9	17	0
Scilly	48·3	+2·1	51·5	+2·4	45·0	+1·7	25	0
Jersey	46·6	+4·2	50·5	+4·5	42·6	+3·9	24	1
Hurst Castle	45·4	+4·2	49·8	+4·5	40·9	+3·9	23	2
London	43·7	+4·1	49·5	+4·7	37·8	+3·4	20	5
Oxford	42·5	+3·4	48·1	+4·3	36·8	+2·4	15	4
Cambridge	41·9	+3·6	48·9	+5·0	34·9	+2·3	19	10
Yarmouth	40·8	+2·6	45·6	+3·7	36·0	+1·5	6	7

From this it is seen that the excess of temperature was least at the extreme western stations, the mean at Valencia only exceeding the average for 15 years by 0°·4, whilst the night temperature was even below the average. In nearly every case it is seen that the excess of the day temperatures over the average was larger than that of the night temperatures. A feature of especial interest in the table is the large number of days on which the temperature reached 50° or above.

It is interesting to notice the very great difference between the temperature in January this year, in comparison with that which occurred in January 1881, when the weather was exceptionally cold. At Loughborough, the mean temperature

this year exceeded that in 1881 by 17° , which is 4° in excess of the difference between the average temperature for January and May; there were also several stations in nearly all parts of the kingdom with an excess of 12° and 13° .

At Greenwich Observatory the mean temperature obtained from the mean of the maximum and minimum readings was $43^{\circ}\cdot4$; and with the exception of $43^{\circ}\cdot5$ in 1884 and $43^{\circ}\cdot6$ in 1846, this has not been exceeded in January during the last half-century. The mean of the highest day temperatures was $48^{\circ}\cdot5$, which is higher than any January during the last fifty years, and the only other instances of 48° , or above, were $48^{\circ}\cdot1$ in 1877 and 1851, and $48^{\circ}\cdot0$ in 1846. There were six years with the mean maximum between 47° and 48° , but only eighteen in all above 45° , whilst in January 1879 the mean of the maxima was only $35^{\circ}\cdot1$, or $13^{\circ}\cdot4$ colder than this year, and in 1881 it was only $36^{\circ}\cdot2$. There have been three Januarys during the last half-century with a higher mean night temperature, but in no year was the excess more than 1° . In January this year the mean minimum was $38^{\circ}\cdot2$, and in 1884 it was $39^{\circ}\cdot2$. The Greenwich observations also show that there were in January seventeen days with a temperature of 50° or above, whereas in the corresponding period during the last fifty years there has been no similarly high number of days with this temperature. It was reached fourteen times in 1877, 1853, and 1846; thirteen times in 1873 and 1849; twelve times in 1884; eleven times in 1874, 1869, 1852, and 1851; and in twenty-eight Januarys, 50° or above was only attained five times or less.

The warm weather was very intimately connected with the heavy wind storms which occurred throughout the month, the storm systems which so frequently arrived on our coasts from off the Atlantic being the natural carriers of warm moist air. Scarcely a day passed during the month without the arrival of some fresh disturbance from the westward, but, with one or two exceptions, the central areas of the storm system skirted the western and northern coasts, and did not pass directly over our islands. In London, curiously enough, a dead calm prevailed during the earlier part of the month of January, the weather being decidedly "muggy." Several well-marked fogs

testified to the unwonted and phenomenal stillness of the atmosphere, and it was only towards the latter half of the month that the advent of westerly gales brushed away the accumulations of aerial filth due to atmospheric stagnation.

The month was also marked by the prevalence of influenza, and, in addition to this, a general unhealthiness pervaded all classes of the community. The death-rate from all causes in London, for the four weeks ending January 25th, corresponded to an annual rate of 29·7 per 1000 of the total population, which is excessively high. The rates for the corresponding period in the last four years were 21·7 in 1889, 23·2 in 1888, 22·7 in 1887, and 22·6 in 1886.

In an interesting contribution to the *St. James's Gazette* of January 21st, an anonymous writer directs attention to the fact that the spread of epidemic influenza was preceded and accompanied by unusual stillness of the atmosphere, and that its decline was coincident with, and very probably due to, the replacement of the pre-existing stagnation by aerial movement. The writer suggests that this may serve to explain the vagaries of the geographical distribution of the epidemic, seeing that the distribution might naturally be expected to coincide more or less with the zones of atmospheric stagnation.

We cannot do more at present than chronicle these suggestions and the meteorological data upon which they are based, hoping that further and more extended observations may at some time in the future show more clearly what relationship, if any, exists between atmospheric conditions and the spread of this and other diseases. The meteorological relations of influenza are very complex, and the individual factors which make up "the weather" vary to such an extraordinary degree, every year, without causing influenza, that the establishment of any causal relationship between the two must be a matter of difficulty, though not necessarily an impossibility. Such a relationship is perfectly consistent with what we know in respect of other zymotic diseases. That atmospheric conditions should have some effect in favouring or retarding the spread of influenza is only what our knowledge would lead us to anticipate, though what these states are, has not yet been determined. It is at least remarkable that epidemics of influenza have frequently been preceded and accompanied by

severe and prolonged fogs and marked changes in the weather. Here, however, as elsewhere, we are confronted by the danger of confounding cause and effect.

COURSE OF THE EPIDEMIC

Early in October 1889 there were rumours of another outbreak of influenza in Russia, and within a few days the rapid spread of the disease left little doubt as to the identity of the malady with that which has periodically ravaged eastern Europe as far back as history enables one to go. It seems to have been first recognised in Siberia, undoubted cases occurring at Tomsk on October 15th. Almost at the same time its appearance was announced in the Caucasus, St. Petersburg, Poland, Moscow, Sevastopol, and Merv. In the middle of November it was raging at Berlin, and by the beginning of December it had invaded the German provinces, and was present in every important town from Hamburg in the north to Munich in the south. It broke out in Dresden on December 23d, and had got as far as Prague on December 27th. The disease seems to have reached Vienna early in December, although it was officially denied on the 11th, and it was undoubtedly rampant in Belgrade, Bucharest, and Sophia between the 15th and the 25th of that month. Meanwhile the epidemic had also extended westward, reaching Brussels about December 12th, and Antwerp on the 16th, having broken out in Amsterdam somewhat earlier. The progress of the epidemic did not follow any regular line of march; for while it was extending methodically in Central Europe, it made a rapid stride to Paris, where cases were observed as early as November 17th, and where, by the 25th, it had already assumed formidable proportions. It then rapidly overran the French provinces, but does not appear to have attained anywhere the same degree of intensity as at Paris. The epidemic was first heard of south of the Pyrenees on December 12th at Malaga, and two days later at Madrid, soon afterwards making itself felt throughout Spain and Portugal. It appeared in Italy at about the same date as at Spain, but though extremely prevalent in many of the large towns, the

inhabitants of Rome seem to have suffered less than those of the other capitals of Europe.

For a time, although every one was on the look-out, no cases of influenza were observed, or at any rate identified, in this country, and even at the end of December doubts were entertained as to its presence. Careful inquiry has elicited the fact that on October 15th a family living in Kensington were attacked by symptoms which, in the light of subsequent experience, point strongly to the disease being influenza, and curiously enough the onset is said to have followed closely on the arrival of a parcel from Russia. Dr. Gilbert-Smith saw a young lady on October 22d, who had just arrived from Berlin, presenting the characteristic symptoms, although so far as is known the disease was not then epidemic in that city. Numerous observers claim to have noticed cases of undoubted influenza in West London during the month of December, but it was not until the end of December that the presence of the disease in an epidemic form was formally recognised.

In endeavouring to establish the date of the earliest cases, it must be remembered that comparatively few medical men now in active practice can have had any experience of the disease, so that it is highly probable they escaped notice, the symptoms being variously interpreted according to circumstances. Moreover, as we shall subsequently have occasion to point out, the earliest cases were for the most part of a very mild and benignant character, and were thus all the more likely to evade recognition.

Its appearance in the provinces soon followed the announcement of the outbreak in the metropolis; indeed, it may be said to have declared itself simultaneously in many of the large towns, such as Manchester, Liverpool, etc.

According to details kindly supplied by Dr. James Greig Soutar, the disease, as it presented itself at the Barnwood House Asylum at Gloucester, occurred exclusively among the attendants. The interest of the observation lies in there having been but few cases, and in the evidence which is afforded of the possibility of preventing the spread of the disease by rigorous isolation. In every instance the patient was isolated, all intercourse with the other inmates being intercepted, except

what was absolutely necessary for purposes of attendance. The isolation was maintained for at least a week after the temperature had fallen to normal. Only eight cases occurred in all. Seven of these developed the first symptoms within two days after the matrons had been off duty and in Gloucester, where at that time the epidemic was at its height. Dr. Soutar has tabulated the cases as follows:—

- 1st Case. Off duty afternoon and evening, Feb. 10.
First symptoms showed themselves, Feb. 12.
- 2d Case. Off duty afternoon and evening, Feb. 13.
First symptoms showed themselves, Feb. 15.
- 3d Case. Off duty afternoon and evening, Feb. 17.
First symptoms showed themselves, Feb. 19.
- 4th Case. Off duty afternoon and evening, Feb. 21.
First symptoms showed themselves, Feb. 22.

Three other cases showed the same record—"off duty two days before onset of attack." The eighth case, the last of the series, was that of an attendant who had been told off to nurse three of the patients affected. She had not been off duty for a week, but she had been in daily attendance on those who were ill.

There was nothing remarkable in the symptoms—the usual frontal headache, pain in back, high temperature for a few days, extreme (mental) depression and great muscular prostration.

Dr. Soutar, while allowing that so small a number of cases does not justify any categorical inferences, ventures to conclude:—

- 1. That the Asylum was not an influenza centre.
- 2. That the disease was imported from the city.
- 3. That its spread among the inmates was prevented by the rigorous measures of isolation which were enforced from the very commencement.

He points out that whether or not the disease be contagious, the fact remains that the only inmate not exposed to outside influences who contracted the malady was the nurse in attendance on the influenza patients, and it is unlikely that she alone would have been affected had the disease come in any other way than by direct communication.

It reached Dublin about the middle of January, but only invaded the Irish provinces during the following month. There,

however, it appears to have proved fully as virulent, so far as the proportion of persons attacked, as in the cities, though accurate statistical data are naturally very difficult to obtain. Wherever it passed "everybody was down with it," which, allowing for exaggeration, may be taken as evidence that a very large proportion of the population suffered.

According to Dr. J. W. Moore, the Registrar-General for Ireland—(1) the epidemic of influenza was more pernicious to the population of Dublin than the extreme cold of January 1881; (2) it slew its victims chiefly by complications and sequelæ affecting the breathing organs and the heart; (3) it was less fatal to children of tender years than to the adult and elderly; (4) its effect upon the death-rate was sudden and pronounced, and lasted throughout the month of January and the first half of February. Dr. Moore argued that it was an acute specific infective disease of the miasmatic rather than the miasmatic-contagious class. Its virus acted primarily on the nervous system. It was pandemic rather than epidemic, and its prevalence was independent of season and weather, a fact which distinguished it from epidemic bronchial catarrh. There was often an interval of one or more days between the reception of the poison and the development of the symptoms; but this pseudo-incubation period might be explained on the supposition that in certain individuals an intact condition of the mucous membranes might present an obstacle to the entrance of the virus into the blood. He had observed several cases of apparent communication of the disease from person to person, but without being able to calculate the duration of a supposed period of incubation. The symptoms and complications were then described; among the latter, Dr. Moore had observed epistaxis (one case), facial neuralgia (several cases), profuse sweatings (several cases), skin rashes (four cases—three were examples of papular sweat rashes, with sudamina; one was an erythema fugax), herpetic eruptions (several cases); cystitis, followed by mild orchitis (one case). Dr. Moore believed that, in contrast to dengue fever, influenza was a non-eruptive fever. Rashes were accidental, and resulted from hyperpyrexia, or profuse sweating, or from the ingestion of such drugs as quinine antipyrin, or salicylate of sodium. He observes that in the

epidemic of 1847 the death-rate was estimated at 2 per cent of the cases observed in London, and he says it was certainly not higher in the last one. He adds that he knows of no specific for influenza, but the most useful drugs were (1) quinine, (2) antipyrin, except in young children and the weakly, (3) salicylate of sodium, especially in effervescence, (4) phenacetin, and (5) effervescing citrate of caffeine.

The disease thus seems to have attained its maximum during the first fortnight in January, but continued to be severely felt until the end of the month, when fresh cases became rarer.

It is an interesting fact that the Pope granted a dispensation in the matter of abstinence to persons who had suffered from influenza during Lent 1890.

As late as the beginning of March, the disease was raging in the south-west of England and elsewhere, and a slight recrudescence of the epidemic seems to have taken place in London (and possibly in the provinces) at the end of March and during the month of April, most of the later victims being those who had escaped the malady when it was general. It has not been possible to obtain reliable data as to the extent of the prevalence at those dates, but the disease seems to have been decidedly "patchy" in its redistribution.

It appears from the *Orkney Journal* for February 26th, 1890, that in the Hebrides "most people in the islands have lately suffered, or are now suffering, from a mild influenza, scarcely more severe than what the Scotch call a 'hoast.' No very serious cases have been reported, although the epidemic has been present amongst us for three weeks."

The Shetlands have often escaped in previous pandemics, but we find in the diary of the Rev. J. Mill, minister of Dunrossness, Shetland, for 1782 the following entry: "There is a strange distemper called influenza raging through Brittain as it did in Russia and Denmark, etc., though as yet not proved so mortal. People are variously affected with swelled faces, sore throats, breasts, and stomachs, dizzy heads, coughs, violent pains, and feverishness." Writing at a time when newspapers were practically unknown, we may assume that Mr. Mill derived his information from personal experience, and that "Brittain" included Orkney and the Shetland Islands.

In the Royal Edinburgh Asylum the percentage of cases was 25 per cent of the inmates and staff. Dr. Clouston has classified the 170 cases into four leading groups:—1. The feverish type, with bad headache, and pains in limbs, and sometimes giddiness. 2. The rheumatic, where symptoms of subacute rheumatism are present. 3. The respiratory, with affection of the respiratory mucous membrane, from the nose to the minutest bronchials. 4. The gastric, where gastric and intestinal symptoms predominate. Five deaths were reported at the Asylum from influenza of the respiratory type.

According to Dr. William Tibbles, medical officer of health, Nottingham (*British Medical Journal*, April 12th, 1890), the disease seemed to spread from various centres to the neighbouring villages.

(a) It made its appearance in Melton Mowbray, according to this observer, on December 18th. From this place it spread rapidly to many of the villages of his district, namely, Sysonby, Asfordby, Burton, Kirby, Frisby, Freeby, Great Dalby, etc.

(b) In the south of the district a centre seems to have been formed at Twyford, where it appeared on December 20th (J. Jackson).

(c) In the north-west of the district it appeared at Upper Broughton on December 18th (E. F. Trevor), spreading to Nether Broughton by the 23d (Trevor), to Old Dalby by January 1st (Trevor), arriving also at Long Clawson on January 1st (J. M. Swain), and later at Stathern on the 20th (Swain), and by February 1st at Hose, Harby, and Wycombe (Swain).

(d) In the eastern side of the district it appeared at Eaton on December 30th (Swain), spreading rapidly to Eastwell and Branstone. It does not seem to have shown any great tendency to cross the marlstone ridge, as on one side of it the villages were attacked thus early, but on the western side of the ridge it did not appear until three weeks later at Stathern, and four weeks later at Hose, Harby, Scalford, and Holwell. Whether these villages have been thus favoured on account of their being more elevated or because the subsoil is a rocky one (ironstone) he declined to say, but he suggests that probably both factors enter into the problem.

(e) At Wymondham it appeared on December 30th (H.

Hamilton), and spread to Saxby, Garthorpe, Coston, Buckminster, Stonesby, Waltham, etc.

The first appearance of the disease was, in every quarter of the district, in villages which lie low, and have a clay sub-soil (middle lias); from these it radiated in every direction, attacking villages on the ironstone last of all. By about the middle of January the epidemic was getting pretty general, and "the cases were very numerous and widespread." This observer believes the incubation to be about two days.

He observed a rash in a few cases, not always, however, of the same kind; thus—(1) several cases had a papular eruption on the head, face, neck, back, chest, and arms, the itching of which was excessive, the eruption lasted about three or four days, and terminated by desquamation around the papules. In two instances the desquamation was rather more general, extending to the hands and feet. (2) A rose-coloured rash and spots have been observed. (3) Herpetic eruptions about the face were common.

He observes that hæmorrhages were met with in a certain proportion of the cases, the discharge of blood being usually the forerunner of a severe attack, often accompanied by some complication. Among the uncommon cases, four set in with hæmoptysis, one with epistaxis, two with hæmaturia, and several with bloody stools. In cases with hæmoptysis and epistaxis, premonitory symptoms preceded the illness by a few hours; but in the cases of hæmaturia the patients observed that, after a rigor, the next urine passed was bloody. In one instance a clot of blood was formed round the utensil of the thickness of a shilling. Bloody stools, along with diarrhœa, were also not uncommon.

Among other complications, he thinks pneumonia was the most frequent; but chest symptoms of a catarrhal or bronchitic kind were common, as well as meningitis, severe neuralgias, otalgia, etc.

Dr. Jackson, of Somerby, informed him that horses in his neighbourhood had been affected with cough, profuse discharge from the nostrils, swollen sub-maxillary glands, and inability to work, lasting about ten days. The same thing has been observed in other parts of the district. Bronchial attacks in horses had also been common.

The deaths from influenza were few in number.

After a very able summary of the principal symptoms and features of the epidemic in his district, the author concludes—

1. That it is a disease *per se*.
2. That it is of miasmatic origin, the specific germ being an unknown bacillus.
3. That it is severely infectious, and but mildly contagious.
4. That it spreads by atmospheric influence, and by development in external media.
5. That its development outside the body is the cause of its being so rapidly and widely epidemic.
6. That one attack is not protective against future attacks ; though it has not been under observation long enough to decide this, we may judge from analogy with other diseases of this class that such is the case.
7. The cause of the origin of this world-wide epidemic is unknown, and that, in a given district, the epidemic probably fails from want of numbers or some change in the atmospheric conditions.

The disease was extremely prevalent among the members of the London Stock Exchange from about the middle of December 1889. Dr. Whitehead, of Ventnor, was called in on Christmas Day to see a stockbroker just arrived at Ventnor from London. He had felt chills on the journey down. He was found to be feverish, his temperature being 102° Fahr., with a hacking cough, moist skin, and strongly-smelling, musty, sour perspiration. On listening over the patient's back Dr. Whitehead felt that he had inhaled very noxious emanations. Four days later he was himself seized with the same symptoms, and in four days more his four children were "down" with the epidemic, which then became prevalent. Dr. Whitehead believes that the stockbroker's case was the first in Ventnor.

Dr. Charles Pridhaur has kindly furnished the following account of an epidemic of influenza at Bideford, North Devon, in the autumn of 1853. A vessel arrived at that port from Riga laden with tallow and hemp. A man suffering from Asiatic cholera was brought on shore and placed in a lodging-house at the upper part of the town. This disease spread at once over the town, following the course of the natural watershed. Concurrently with the existence of cholera a severe epidemic of

influenza prevailed, though no one at the time thought of associating it with the Russian vessel. The disease commenced with catarrh of the air passages, severe pain in the brow and back, extreme exhaustion, and apprehension of death. It was the invariable rule that, in persons who had previously exhibited delicacy of any particular organ, that organ was the part to suffer most, and the disease proved fatal in a large number of the cases.

There was very little fever present, but exposure to the external air before the disease had entirely subsided was almost invariably followed by relapse and recurrence of the disease in an aggravated form. The disease usually ran its course in from a week to ten days, but convalescence was frequently protracted, extending in some instances to a month or more.

The treatment which gave the best results consisted in the administration of saline diaphoretics and purgatives.

STATISTICS

Since one of the most salient features of the epidemic (as indeed of all epidemics) is the fact of a large number of persons being affected within a very short space of time, it is easier to trace its course in offices and administrations where a large number of persons are employed. It was first noticed among the employees at the General Post Office between the 21st and the 24th December. The average number of persons on the sick list, out of a total number of 12,000, is 250. On December 24th the number was 216, but on the 26th it had risen to 343, and then rapidly increased day by day, until on January 4th the number was 1160; on the 5th, 1300; and on the 6th, 1800; after which the numbers gradually decreased—1740, 1300, 1200, and so on, until on February 1st the normal figure was almost reached, there being only 280 absentees from illness.

The outbreak among the troops quartered in the Home District, numbering 8131 men, commenced on December 30th, and down to January 17th, at which date the epidemic was rapidly abating, 860 cases were admitted into hospital, this being equal to a rate of 10·57 per cent.

According to a report issued by Mr. Talbot, the medical officer of health for Bow and Bromley, the workmen at the various factories, etc., were very differently affected. The proportions were as follows:—in bagging works, 2 in 9; in breweries, 1 in 5; in ammonia works, 1 in 6; water-proofers and lamp-black makers, 1 in 7; nitric acid works, 1 in 9; jam makers, 1 in 9; gasworks, 1 in 11·5; colour works, 1 in 13; paper-hanging makers, 1 in 14; sawmills and printers, 1 in 15; engineers, 1 in 17; sulphuric acid works, 1 in 18; flour mills, 1 in 20.

The tramway companies were obliged to reduce the number of cars running, and the Metropolitan Police Force suffered very severely, the first cases occurring on January 3d. During the week ending January 11th, some 1660 were disabled out of a total of 14,000. The troops also suffered severely, and in the Home District especially, the number of cases severely taxed the resources of the military hospitals. Numerous cases occurred at the Wellington and Kensington Barracks and at Hounslow, and for two or three weeks the Herbert Hospital at Woolwich was full to repletion.

At the Plymouth Post Office, from January 5th to the 20th, there were 29 cases of influenza out of a total of 290 employees.

Mr. Horace Hart, Controller of the University Press at Oxford, has published the following report of the incidence of the disease among the employees:—

“The number of persons employed here at the beginning of January was 562, and out of these about four are usually absent daily through sickness. But from January 6th onwards a very different account has to be given. On that day the absences rose to 29; on the following Saturday they were 67; on Monday the 13th there was a slight decrease (owing to some of the persons affected coming back too soon); and on Saturday the 18th the epidemic reached its highest point—70 persons being away ill. On Monday the 20th we started with 54 absentees, but from that time the number has steadily decreased until we are now almost back again to the normal number. This state of affairs is shown by the following table:—

"Number of Persons absent because of Illness from Monday, January 6th, to Saturday, February 1st, 1890, both inclusive.

DATE.	Men.	Boys.	Women and Girls.	Total.
First Week.				
January 6	12	16	1	29
January 7	18	22	1	41
January 8	20	27	3	50
January 9	25	25	4	54
January 10	27	30	4	61
January 11	31	32	4	67
Second Week.				
January 13	28	28	2	58
January 14	30	21	3	54
January 15	34	27	5	66
January 16	36	22	8	66
January 17	33	26	8	67
January 18	38	24	8	70
Third Week.				
January 20	31	22	1	54
January 21	26	21	3	50
January 22	24	16	5	45
January 23	28	17	4	49
January 24	27	15	5	47
January 25	26	15	4	45
Fourth Week.				
January 27	15	8	5	28
January 28	16	11	3	30
January 29	14	7	1	22
January 30	14	8	1	23
January 31	14	6	2	22
February 1	13	2	2	17

"The total number of persons affected during the four weeks was as below:—Men, 108; boys, 103; women and girls, 25; total, 236."

OUTBREAK OF INFLUENZA ON BOARD THE INDUSTRIAL TRAINING SHIP "MOUNT EDGCUMBE."

(British Medical Journal, 1st March.)

"The first case occurred on January 31st, and the subsequent progress of the epidemic was as follows:—

"February 2,	6 fresh cases.
" 3,	8 " "
" 4,	16 " "
" 5,	16 " "
" 6,	16 " "

"February 7,	10 fresh cases.
" 8,	4 " "
" 9,	7 " "
" 10,	0 " "
" 11,	1 " "

—85 in all, out of 196 boys, or 43 per cent. The ages of the boys ranged from 12 to 16, and the average duration of the attack was three days. Four of the officers out of twelve were also attacked, and Dr. Preston, the medical officer in charge, remarks on the greater severity of the pain in the adults as compared with the boys.

"Dr. Preston tabulates the symptoms thus:—

"Frontal headache	49
Pain in head, back, and limbs	20
Pain in head and chest	7
Pain in head and epigastrium	3
Papular rash	3
Herpes labialis	4
Sickness at onset	3
Sore throat	5
Cough	10
Eyes suffused	14
Running from nose	7
Relapses	3
Complications (catarrhal pneumonia 11 days after commencement of attack)	1 "

Dr. Gilbert-Smith has prepared the following return of the number of those who applied for relief in the out-patient department of the London Hospital on account of influenza:—

	Male.	Female.
January 1,	37	50
" 2,	45	38
" 3,	62	49
" 4,	76	58
" 5 (Sunday),	27	46
" 6,	161	194
" 7,	160	256
" 8,	148	138
" 9,	51	62
" 10,	47	55
" 11,	62	34
" 12 (Sunday),	22	21

	Male.	Female.
January 13,	73	81
„ 14,	44	80
„ 15,	76	74
„ 16,	53	68
„ 17,	54	57
„ 18,	41	40
„ 19 (Sunday),	20	13
„ 20,	48	65
„ 21,	27	9
„ 22,	15	21
„ 23,	23	26
„ 24,	16	15
„ 25,	11	14
„ 26 (Sunday),	6	4
„ 27,	14	33
„ 28,	13	20
„ 29,	1	24
„ 30,	12	18
„ 31,	14	18

He remarks that some uncertainty prevailed as to when patients first presented themselves at the London Hospital with symptoms of influenza, owing to the fact that the earlier cases probably passed unrecognised. Taking, however, such symptoms as pyrexia, cold, pain in back, weakness, etc., as indicative of the complaint being influenza, the date of the earliest cases, according to Mr. Robertson, the receiving-room officer, may be taken to be between the 20th and 22d December, the number of cases at that time being about a dozen daily. This continued until the 30th December, when the number suddenly increased to 86 (46 males and 40 females).

The following table gives the deaths from zymotic and respiratory diseases, phthisis, circulatory diseases, and influenza, as given in the Registrar-General's Report:—

WEEKS ENDING	7,	December				January			February	
		14,	21,	28,	4,	11,	18,	25,	1,	8,
Zymotic . . .	181	155	170	170	203	199	193	160	134	148
Respiratory . .	432	552	518	467	843	1069	1010	736	550	485
Phthisis . . .	161	182	161	180	247	267	312	239	220	209
Circulatory . .	165	163	189	158	222	275	209	193	116	154
Influenza . . .	...	...	...	...	4	67	127	105	75	38

From an interesting analysis of cases with dates, contributed to the *British Medical Journal* (March 15th, 1890) by Mr. E.

C. Barnes, of Hammersmith, we gather that the first case occurred December 28th, 1889, and the last February 21st, 1890—a period of 8 weeks. No fewer than 140 of the cases were in the 8 days from January 3d to 10th.

One hundred and eleven cases (53 males and 58 females) were private patients, 52 were policemen at Hammersmith and Shepherd's Bush, 36 were Post Office employees (letter carriers and telegraph messengers), 91 were resident in the Convent of the Good Shepherd. This gives 141 males and 149 female patients. The 111 private patients include 14 children under 12 years old, one being a small twin infant of 9 months. The rest of the private patients were between the ages of 12 years and 75 years.

In the table he places the police in two columns, because there is nearly one mile and a half distance between Hammersmith and Shepherd's Bush Stations. He also places the convent inmates in three columns, because the Sisters, Magdalens, and Penitents occupy different parts of the house, and have but little to do with one another, except for nursing in sickness.

The Convent inmates	are	260	} 179 were attacked. 27·3 per cent.
„ Hammersmith police	„	124	
„ Shepherd's Bush	„	77	
„ Post Office employees	„	193	

All recovered, if we except the only patient who has died since, under the following circumstances—for it is doubtful if her death in any way resulted from influenza—

A girl at the convent, aged 23, unhealthy, strumous, and anæmic, who had one eyeball removed a year ago at West London Hospital, had influenza on January 3d, with eight of her companions. All apparently recovered equally well, and she was not under treatment more than ten days. She had resumed her work, and manifested her usual activity and good spirits until 1 A.M. on February 3d, when she complained of pain and dyspnœa, and died before 8 A.M., when he was sent for. Post-mortem examination revealed right pleuritic effusion, pericardial effusion, and congestion of right kidney.

Table of 290 Cases of Influenza.

DATE.	CASES.	POLICE (52).		CONVENT (91).			POST OFFICE (36).	PRIVATE PATIENTS (111).
		Hammer-smith.	Shepherd's Bush.	Sisters.	Magdalens.	Penitents.		
1889.								
Dec. 8 .	1	...	...	...	...	...	...	1
" 11 .	2	...	...	...	...	...	...	2
" 20 .	1	...	...	...	...	...	...	1
" 28 .	2	...	1	...	...	...	...	1
" 30 .	5	...	...	...	...	...	...	5
" 31 .	8	...	3	...	...	3	...	2
1890.								
Jan. 1 .	4	1	...	...	...	...	...	3
" 2 .	5	...	...	...	...	...	2	3
" 3 .	28	3	1	2	3	9	3	7
" 4 .	10	5	2	...	...	...	2	1
" 5 .	1	...	...	...	...	...	...	1
" 6 .	21	2	3	...	...	...	7	9
" 7 .	14	2	...	...	...	...	1	11
" 8 .	28	5	...	4	...	8	2	9
" 9 .	14	4	...	...	...	...	4	6
" 10 .	24	1	...	...	4	16	2	1
" 11 .	9	2	...	...	...	...	2	5
" 12 .	6	...	...	...	...	4	...	2
" 13 .	10	2	3	...	...	...	3	2
" 14 .	13	1	...	2	...	4	...	6
" 15 .	8	1	...	...	...	...	4	3
" 16 .	12	2	1	3	...	5	...	1
" 17 .	5	...	2	...	...	...	...	3
" 18 .	3	...	...	1	...	...	...	2
" 19 .	1	...	1	...	...	...	...	...
" 20 .	2	...	...	...	...	...	2	...
" 21 .	9	...	1	1	...	1	...	6
" 22 .	4	...	...	...	...	...	1	3
" 23 .	1	...	1	...	...	...	...	...
" 24 .	4	...	...	...	...	3	...	1
" 27 .	4	...	...	...	...	...	...	4
" 28 .	2	...	...	...	...	...	...	2
" 29 .	1	...	...	...	...	...	...	1
Feb. 1 .	1	...	...	...	...	...	...	1
" 2 .	1	...	1	...	...	...	...	...
" 4 .	1	...	...	...	...	...	...	1
" 7 .	4	...	...	...	...	4	...	...
" 8 .	4	...	...	...	...	2	...	2
" 9 .	1	...	...	...	...	...	1	...
" 10 .	6	...	...	...	...	5	...	1
" 12 .	5	...	...	2	...	2	...	1
" 15 .	1	...	...	...	...	...	...	1
" 18 .	3	...	...	...	...	3	...	...
" 21 .	1	...	1	...	...	...	...	...
	290	31	21	15	7	69	36	111

Private patients include 1 child of 9 months, 13 children under 12 years ; the rest are from 12 to 75 years.

The sudden pressure of so many cases fell hardly upon him, for he was himself ill with influenza on December 28th, and before he was convalescent he was pressed by as many as 28 new cases in one day, January 3d, the first day of the eight above alluded to.

With reference to the period of incubation and contagion, he observed that the Hammersmith police fell in quick succession day by day; the Shepherd's Bush police and the Convent patients at intervals of from 3 to 7 days. The Post Office cases were scattered in residence at long distances apart, but one telegraph messenger fell on January 6th, and his brother on the 13th.

In private practice he found—

In 4 families, 2 cases in each, both ill same day.

„ 3 „ 1 case „ and another after 1 clear day.

„ 1 family 2 cases „ „ two others „ 1 „ „

„ 1 „ 2 „ „ „ another „ 2 clear days.

„ 1 „ 1 case „ „ „ „ 3 „ „

„ 1 „ 1 „ „ „ „ „ 4 „ „

„ 3 families 1 „ „ „ „ 6 „ „

After two	{	4 cases in 1 family, Jan. 7th, 9th, 12th, 15th.
or three		„ „ „ 6th (2 cases), 9th, 11th.
days' interval		„ „ „ 6th (2 cases), „ „
		„ „ Dec. 20th, Jan. 7th, 10th, 28th.
8 cases in 1 family, Dec. 30th (2), Jan. 1st, 3d (2), 12th, 18th, 28th.		
2 „ „ Jan. 3d, 24th.		
2 „ „ „ 7th, 29th.		
3 „ „ „ 10th (2), 21st.		

The same tendency to hæmorrhages (nose and lungs) was noted, and two patients developed orchitis. A rash was not unfrequent, being like that of scarlet fever but generally paler and brighter in colour, more like an erythema, the forehead and face often being œdematous. It was in several instances followed by desquamation.

Dr. Hubert C. Bristowe (*British Medical Journal*, February 22d, 1890) gives some notes on the outbreak as it presented itself at King Edward's School for Girls, and his observations are interesting as showing the behaviour of children to the malady. The institution contains in all 240 girls, varying from the age of eleven to sixteen; of these 175 were affected, making about 73 per cent of the total number. Two mistresses are also included in this number. Before January 17th

there had been one or two cases, of which, however, no special notes were taken. On the morning of January 17th there were 4 cases, by the 20th there were 76, and by the 24th, 162; after which only a few cases appeared daily till the 29th, since which date there have been no fresh ones. These girls spend a great deal of time in the open air, but only in the grounds connected with the schools, and have practically no communication with the outside world, except through the mistresses and medical officers, who might, of course, have carried the infection. In almost all cases the disease was mild, and there were no deaths amongst them.

After epitomising the symptoms, Dr. Bristowe goes on to speak as to the rash.

Besides what appeared to him to be the true rash, in seventeen cases there was labial herpes. In thirty-six cases, or over 20 per cent, there was a distinct rash; it was papular in character, the papules being slightly larger than the darker elements in the rash of scarlet fever, and of much the same colour. The papules often contained serum, which occasionally became purulent. The skin round the papules was of a bright scarlet colour. In most cases the rash was confined to the face and neck, though it often appeared on the arms and hands as well, and in two cases on the shoulders and chest; it itched a good deal, and generally after two or three days the bright colour faded and it became scaly. In one case the rash extended all over the neck, chest, legs, shoulders, and arms, and was at the time thought to be that of scarlet fever; but the temperature never rose above $100^{\circ}\cdot4$, and the other symptoms of influenza, including pains in all the limbs, were present. There was no sore throat, and the tongue was only slightly furred. In two days the rash had almost completely gone.

A simple erythematous blush on the face was present in nine cases. In the cases in which the rash was best marked no drugs had been given, the rash appearing as one of the earliest symptoms. In the other cases salicylate of soda, in $2\frac{1}{2}$ grain doses, had been given three times a day, and only in cases in which the temperature had been high was antipyrin given, and then only in small doses of 2 grains.

In all cases the symptoms rapidly subsided, the worst symptoms—that is, pain and high temperature—being over in

two days, the watering of the eyes generally lasting two days longer, and convalescence was completed in a week, except in the nine cases of bronchitis and the three of pneumonia. Weakness and giddiness were greatly complained of during the first day or two of convalescence.

The author tabulates the result of his observations as follows :—

	Total.	Per cent.
Headache	175	98·305
Backache	25	14·124
Sideache	27	15·254
Chest pain	6	3·338
Stomach pain	13	7·344
Leg-ache	29	16·384
Arms-ache	2	1·130
General pain	176	99·435
Watery eyes	170	96·000
Sick	61	34·463
Bowels normal	127	71·751
„ confined	19	10·734
„ diarrhoea	21	11·864
Tongue normal	19	10·734
„ furred	73	41·243
„ red and dry	7	3·954
„ pale and flabby	78	44·067
Rash, herpes labialis	17	9·600
„ erythema	9	5·085
„ papular	36	20·339
Lungs, cough	72	40·676
„ bronchitis	9	5·085
„ pneumonia	3	1·700
Sore throat	5	2·825
Epistaxis	4	2·260
Drowsiness	9	5·085
Face pale	34	19·709
„ flushed	143	80·800
Shivering	4	2·260
Total	177	
Total in schools	240	
Per cent affected	73·75	

Dr. Alder Smith, medical officer to Christ's Hospital, reports that altogether upwards of 200 boys were affected, equal to 33 per cent. There were no cases of pneumonia as a complication, but in several instances the lads were too debilitated to return to school.

At Messrs. Spottiswoode's establishment we learn that the number of men absent on account of influenza was as follows:—

STATISTICS AT MESSRS. SPOTTISWOODE'S

	No. of Cases.
December 28, 1889	8
January 4, 1890	125
„ 11, „	150
„ 27, „	12

A fortnight later the disease had practically disappeared.

It is observed that the distribution was very erratic, the malady not affecting men working side by side, but attacking them indiscriminately. The out-door messengers suffered, if anything, rather less severely than those employed in-doors.

In his report for the first quarter of 1890, Dr. Cameron, the medical officer for the borough of Leeds, gives figures showing the extent to which influenza prevailed in Leeds. He says: "While the mortality from the seven zymotic diseases has been below the average mortality of the twenty-eight large towns, the mortality from diseases of the air passages has shown a marked increase on that of the corresponding quarter of 1889. The deaths from consumption in the first thirteen weeks of 1889 were 155, and in the corresponding part of the present year they were 189, an increase of nearly 22 per cent. From other diseases of the air passages the deaths in the first quarter of 1889 were 432; during the quarter ending 29th March, including those from influenza, they were 800, corresponding to death-rates respectively of 4·85 and 8·83 per 1000 of the estimated population, or an increase at the rate of 82 per cent on the rate of mortality from this group of diseases. He observes that the prevalence of influenza in the borough during the quarter accounts largely for the excessive mortality from this group. Commencing with a few sporadic cases in the last week of December, the disease did not attain any great hold upon the town till the close of January. The number of new cases of influenza which came under medical treatment during the seven weeks ended 15th March, as returned by thirty-eight medical gentlemen out of 144 in practice in the borough, was 1773. Dr. Cameron thinks it would be tolerably safe to conclude that somewhere about 7000 cases of

influenza came under medical treatment between the 26th January and the 15th March; and as these were by no means the dates of either the commencement or the conclusion of the epidemic, and as the cases treated by medical men would form but a small part of the whole of the cases, he does not think it would be an over-estimate to suppose that some 50,000 cases of influenza occurred in Leeds.

COLCHESTER MILITARY HOSPITAL

Supplied by Surgeon R. Caldwell

ADMISSIONS FOR INFLUENZA

1890.	Officers.	Men.	Women.	Children.	1890.	Officers.	Men.	Women.	Children.
Jan. 1	...	3	...	...	Brought forward }	6	331	10	18
" 2	...	8	...	...	Jan. 14	...	9	2	4
" 3	...	43	...	...	" 15	1	11	...	4
" 4	1	29	2	4	" 16	...	7	...	1
" 5	1	41	2	5	" 17	1	2	...	2
" 6	1	41	1	3	" 18	...	5	...	...
" 7	1	49	2	3	" 19	...	...	2	...
" 8	...	41	3	1	" 20	...	...	1	...
" 9	...	18	...	1	" 21	1	...	3	1
" 10	...	26	...	1	" 22	2	...	1	...
" 11	2	14	...	...	" 24	...	...	1	1
" 12	...	8	...	...	Feb. 4	1	...	...	...
" 13	...	10	...	...	" 7	1	...	...	...
Carry forward }	6	331	10	18	Total .	13	365	20	31
					Average strength }	86	2512	217	403
					per cent)	15	14	9	7

In the Glasgow City Police Force (numbering about 1000 men), Dr. M'Gill reported that during the five or six weeks of the epidemic the sick-rate rose from 3 per cent (the average) to 8 per cent at the maximum (January 21st), the average duration of absence being 9 days (5 to 15 days).

In the barracks at Maryhill, with an average strength of 24 officers, 800 non-commissioned officers and men, 81 women,

and 159 children, only thirteen cases were reported between the 14th and the 21st January.

At the prison in Duke Street, Dr. Sutherland reported 15 cases of influenza in the 31 days preceding January 20th, 1890, besides 22 of coryza which may or may not have partaken of the epidemic influence. The total population among which these cases occurred numbered 1280. Five of the 15 cases occurred among the temporary inmates (1140), and 10 among the attendants and their families (140).

At the Boys' Reformatory at West Thorn, Dr. Scott, of Tollcross, gives the following figures of the number of cases under treatment, bearing on a population of 200 inmates, from December 20th-27th, 1889 :—

December 20	.	.	2	December 24	.	.	52
„ 21	.	.	20	„ 25	.	.	22
„ 22	.	.	76	„ 26	.	.	9
„ 23	.	.	96	„ 27	.	.	4

According to this observation the outbreak in Scotland considerably antedated its appearance elsewhere.

At the Royal Asylum for the insane at Gartnavel, Dr Yellowlees recognised 30 cases of varying severity, only 3 of which occurred among the insane, who are, as a rule, little susceptible to epidemic influences.

At the Royal Asylum, Morningside, Edinburgh, Dr. Clouston reports that out of a total population of 990, 11 per cent had the disease, or, including officials, servants, etc. (170), 25 per cent have suffered. There were five deaths due to broncho-pneumonia, occurring in weak and elderly patients.

At Galashiels, where the proportion of cases is reported to have been unusually large (60 to 70 per cent), it was remarked that the workers in the dye-works were comparatively exempt, only 7 per cent having been affected.

THE COST OF THE EPIDEMIC

According to Mr. Smee, the chief medical adviser of the Gresham Life Assurance Society, we may assume that the insurance companies and friendly societies will have paid for

increased mortality and increase of sickness not far short of £1,000,000. He claims to have made this statement from facts which have come under his own immediate notice. The editor of *Unity*, the organ of the friendly societies, states that the two great Orders have been paying £5000 per day, and the London District of Foresters alone has paid £300 per week for death claims, and the Hearts of Oak in one week in January had 8715 claims. In addition to this, he is of opinion that the loss of earning power by loss of wages, disorganisation of business and factories, cannot be much less than another £1,000,000, and the total cost is not unlikely to have reached £3,000,000 before the epidemic finally left these shores. From facts which are in his possession, he believes that he is understating the case when he assumes that over 8 per cent of the total population of England has been attacked.

The outbreak of influenza among the labourers of Kent during the weeks of epidemic cost the Labourers' Union in sick pay at the rate of £600 a week; while, as showing the incidence of the epidemic among medical men, the returns of the Medical Sickness, Annuity, and Life Assurance Society, for the quarter ending March 25th, 1890, indicate a marked increase in the number of claims.

Dr. J. Beresford Ryley, consulting physician to the Hearts of Oak Benefit Society, which numbers 130,000 adherents, has been good enough to ascertain that the amount disbursed as sick pay for the quarter ending March 27th was £61,000, as compared with £35,000 for the corresponding period in 1889. The maximum was reached on January 23d, when there were 9074 members on the fund, as against 3964 on the same date in January of the preceding year. The cost of the epidemic to this society is thus represented by an excess of disbursements amounting to £26,000.

While these figures are remarkable evidence of the cost of the outbreak to the community, the experience of the Health Assurance Corporation, a sickness and accident insurance society, is still more striking. The claims in January 1890 were five times, and in February four times, as numerous as in the corresponding periods of the year preceding.

INFLUENZA IN SCHOOLS

The discussion which was initiated by the author at the April meeting of the Medical Officers of Schools Association possesses a special and peculiar importance as showing the extent to which the epidemic affected the inmates of schools. It has therefore been thought desirable to give the abstract report as it stands, representing as it does the experience of responsible medical men, having under their immediate observation a very large number of children of both sexes, and belonging to all classes of society.

After reviewing the origin, course, or principal features of the epidemic, the author asked for information as to the proportion of children affected, as to the symptoms and duration compared with adults, and lastly as to the transmissibility of the disease by contagion or otherwise, and the possibility of preventing its spread in schools.

Mr. Adams Clarke, of Bushey (Herts), said that at his school, out of 600 children, he had 157 cases of influenza marked enough to find their way into the infirmary. There were probably many other cases that escaped attention. The first case was noticed at the end of December, the outbreak attaining its maximum during the month of January, and it was still going on (April 1890). As late as the preceding Saturday the head nurse had contracted the disease. The later cases had been the more severe. Of these 157 cases two had proved fatal, one from pneumonia, and one from meningitis. He remarked on the much more rapid course of the disease in children as compared with adults. He had been unable to make up his mind as to the question of contagiousness. It first appeared amongst the boys, then among the girls, and then among the infants. It was not confined in the beginning to special dormitories, nor did it spread at once to those in most immediate contact with the sick. He could not speak positively as to the period of incubation, but he thought it was probably from three to five days. One attack certainly did not confer an immunity. He had seen many relapses, and in most cases the second attack was the more severe. He had seen several cases of severe and even alarming dyspnoea, but in every in-

stance it had yielded to ordinary treatment. He regarded rest in bed as the most necessary part of the treatment. Most of the cases recovered within three days, whereas in adults the duration of the attack was much longer. The absence of subsequent prostration in children was itself a rather remarkable feature.

Dr. Statham, of the Foundling Hospital, explained that the boys were located in one wing and the girls in another, while there was a mixed school for the two sexes. The epidemic commenced on January 2d and ended on or about February 3d. It commenced in the boys' wing, and for a time was limited exclusively to that side of the building. Most of the cases were from the infant school where the sexes were mixed. Then it broke out among the girls, and the number soon equalled that on the boys' side. Altogether they had 95 cases—47 boys and 48 girls—out of 317 inmates. The officers and servants numbered 32, of which number 10 were affected, being about the same proportion as among the children. As a rule the children recovered in three days. In two of the cases he gave no medicine at all, and these seemed to do better than those in which he had administered antifebrin. With reference to the action of antifebrin, he observed that in two cases it had given rise to remarkable depression of the pulse rate, reducing it in one instance from 120 to 76 pulsations per minute. One of the girls took ten grains of antifebrin three times a day and continued the medicine longer than he had intended, and she developed cyanosis, headache, and an intermittent pulse. These symptoms, however, passed off under ammonia and bark. This epidemic was followed by one of measles, which attacked 107 of the children; 35 of those who contracted measles had previously had influenza. One girl who had had influenza eight weeks before, developed chorea, and on the fourth day the rash of measles appeared and the chorea ceased. He remarked that eight young women were employed in the laundry, and none of these took the influenza. They had two cases of very severe dyspnoea with cyanosis, but this symptom, alarming as it was, disappeared by the following day.

Dr. Armstrong, of Wellington College, said that at Easter of last year (1889) he had seen a local epidemic of undoubted influenza in a neighbouring private school. There were 42 boys

with 17 cases, and of that number 7 developed pneumonia, but all recovered. With reference to the question of contagion, he had come to the conclusion that it was distinctly contagious, if indeed this was not the only method of transmission. He had seen several cases which distinctly proved contagion. The disease was introduced into the neighbourhood by one of the masters' wives, who came down from town on Friday, 28th December, and had been seized with shivering and headache in the train. In spite of this she fulfilled an engagement to dinner that evening, and both the gentlemen who sat on either side of her were the next to develop the malady. He himself was the next to succumb, and he felt sure he had contracted it from one of these gentlemen with whom he had sat for two hours. A boarder at the college got it on Friday, and on the succeeding Monday the wife and children of the head master were down with it. Nearly all the boys in the sanatorium got it, and in most cases one could trace an interval of four or five days between exposure to condensed poison and their taking the disease. All the persons engaged in the sanatorium got it—seven in number—and it was nothing like so severe among the staff employed in the other parts of the building. Altogether 130 boys were down with it, and he saw in addition 130 cases outside, but of them all only one developed serious lung symptoms. The question of the rash had a particular interest to him, since it was a difficulty which might prove serious to them as medical officers of schools. He saw a good many cases of rash, most of them of the herpetic form. In one instance, however, it was papular, and was followed by very marked peeling—more so indeed than he had ever seen after scarlet fever. He consulted with the Medical Officer of Health, and they agreed to suspend their diagnosis, keeping the patient isolated in the meanwhile. Peeling was complete on the 23d day, which he said was never the case with scarlet fever. In another case a boy had a high temperature, 104° , and the next day developed a measly rash. The lad was isolated, and the rash ran its course. With it there was profound prostration, sordes, rheumatism in all the joints, etc. The next day, however, he was comparatively well. He thought it would be very useful to collect the mortality rates for schools.

Dr. Richards, of the Hanwell Lunatic Asylum, explained that although he was not attached to a school he had a large number of grown-up children under his care. The total number of patients in the Asylum was 1894, of which 1142 were on the female side, over which he had control. They were subjected to a very severe epidemic of influenza, which came on during the second week of January, the nurses and the staff being affected in the first instance. There was a definite period of time between the staff being attacked and the outbreak among the patients. Out of 144 attendants on the female side 63 were attacked, or 43 per cent. He only included well-marked cases in this number, excluding the doubtful cases, of which there were a good many. On the male side, out of 73 attendants 30 were attacked, or 43 per cent. Of the 1142 patients under his care 178 suffered, or 16 per cent; while on the male side only 40 out of 753, or 5 per cent, contracted it. He thought this fact was of some little interest, because it had been supposed that persons who were much in the open air were more liable than others to contract the disease. His observations seemed to prove the contrary, for while the male patients were engaged mostly in outdoor work, the females had been obliged to stay at home in consequence of the large number of attendants who had been disabled. He fancied from the distinct interval between the occurrence of cases of the disease among the nurses and the outbreak among the patients, that the latter must have caught it from the former, and that the nurses had brought it from outside. At the end of the epidemic it seemed to him as if a pandemic wave had gone over the place, smiting down a certain proportion of the inhabitants, subsequently spreading to the others. They had the ordinary types of the disease, the most marked being the nervous symptoms. The general view as to the influence of depressing emotions was not exactly borne out among his patients, for most of them were demented and had no emotions at all. He had noticed a rash in a large number of the cases very like that of scarlet fever, but none of the children in the Asylum had caught the disease.

Dr. Squire said he had noticed several rashes, and in one case the skin split and came off. At the same time there

were some herpetic spots. The rash was distinguished from scarlet fever by the fact that it was not very marked at first, and disappeared earlier than would have been the case had it been scarlet fever. The measly rash was a little more difficult to deal with, except that it came out at an earlier period of the disease. He did not think that there was any relationship between the influenza and any subsequent epidemic of other diseases. He observed that antifebrin was a very dangerous drug, and was far more depressing than antipyrin. He had seen three instances of relapse in persons who were most carefully nursed. In two cases the disease had apparently been contracted in passing through London, the symptoms developing two days later. In several instances the persons first attacked were the only ones in the family who suffered. He thought that the appearances pointed to malaria.

Dr. Alfred Brett, of the London Orphan Asylum, said that they had 500 inmates, of whom 70 boys and 30 girls did not go home for the holidays. None of these contracted the complaint. The absentees returned on January 13th, and the very next day one of the boys developed influenza, then after an interval of a few days some of the others were down with it, followed still later by a general outbreak. Altogether they had 115 cases out of the 500, equal to 25 per cent. Only four among the staff, which numbered 80, took the disease. At the beginning of the year the Local Government Board sent down a series of questions to be answered, and they made a weekly report of the progress of the epidemic in their neighbourhood. He had gone very carefully into the matter with Dr. Parsons, and they came to the conclusion that contagion could be traced. There were several cases of children suffering from hip-joint disease, etc., in the infirmary, and curiously enough none of them took it. So far as his experience went, the period of incubation was rather less than five days, nearer two. With respect to treatment, the patients were kept in bed four days on a light diet. Antipyrin was given if the temperature exceeded 102° F. He had only two cases of pneumonia and seven relapses. He had seen a few rashes, but nothing of a very definite character. The proportion of cases in the school was greater than obtained in the town, where it did not exceed from 10 to 15 per cent. Many of the cases appeared to date from a visit to London.

The onset was sometimes very sudden, attacking persons half way on a journey and obliging them to return. He had two deaths from pneumonia in private practice.

Dr. Lever suggested that they should ask themselves what were the lessons that had to be learned from the history of the epidemic. He had noticed a case of sudden loss of memory which was not traceable to any other cause. He did not think that the course of the epidemic pointed to contagion, and speaking as a medical officer of schools, he thought it was at most only slightly contagious. He knew of cases in which the husband had it, and the wife who nursed him escaped. On the other hand, he had seen it spread through a family from one first case. The great question was as to whether it was necessary to adopt any quarantine measures in regard to the spread of the disease in schools.

Dr. C. E. Shelley, of Hertford, pointed out that so far as statistics went, not more than 2 per cent of the boys who went home from Christ's Hospital had suffered from the disease, but when they reassembled there was an outbreak which assumed considerable proportions, 60 per cent of the boys having been down with it. One might indeed regard the school as filled with explosive material with some slow matches in it. Dr. MacAlister had told him there were 70 cases at St. John's College at Cambridge. At first the infection went by sets of rooms, but after a time the men went down irregularly. There was only one death, and that occurred in a young gentleman who was suffering from Addison's disease. The disease depended a good deal on the resistance of the individual, both in regard to escaping the disease and in modifying its character. He had seen persons who took large doses of *nux vomica* as a prophylactic. Some of them had a severe attack, but recovered completely within eight hours. A rash of some kind was common on the cheeks and neck, in some instances markedly papular. He had noted the occurrence of epistaxis on several occasions during convalescence. Moreover, they had had more rheumatism in the neighbourhood of Hertford than had been seen for years, also an unusual number of cases of jaundice. He had seen 25 cases of jaundice in ten days in private practice, and he had heard that schools had had to be closed on account of this epidemic of jaundice. Another point that had attracted

his attention was the prevalence during the last few months of alopecia areata, but whether this was due to mere debility or indirectly to the influenza he could not say. The contagiousness of the disease had been admirably shown, as for instance in the case of some ladies living in an isolated country house, with no case of the disease within four miles. One of them had been to see her dentist in town, who was himself struggling in the throes of an attack, and the very next morning she was utterly prostrated with the complaint. His impression, after observing 400 cases, was that severe cases were capable of infecting others, but that the zone of infection was a narrow one. Moreover, the period of contagiousness was soon over.

A paper read by Dr. Thresh, medical officer of health for the Chelmsford and Maldon R. S. Districts, on the epidemic as it affected public elementary schools in the Chelmsford and Maldon R. and W. S. Districts, casts a further light on this interesting and important branch of inquiry.

The total area of these Districts is about 300 square miles, and the population about 57,000. Early in March a circular letter asking for certain information was sent to the head master or mistress of every Parish School, and after receipt of the replies many districts were visited in order to verify statements or obtain further particulars. In this manner particulars have been obtained from 74 schools, varying in average attendance from 30 to 200, and embracing altogether about 6000 scholars at ages ranging from 4 to 13 years. The district is a purely agricultural one, is almost entirely on the London clay, very flat towards the east and south, more undulating near centre and in north and west.

About the time of the invasion by the influenza, whooping-cough was very prevalent in many parishes, measles had broken out in one parish, and there was a considerable amount of sickness amongst children generally. In mid-December one school was closed for lack of scholars. Nearly all were ill, and a medical man who was consulted said the sickness was of an indefinable character, the symptoms being slight feverishness and malaise, sometimes associated with nausea or cough and catarrh. Many other districts suffered in a similar manner and caused the teachers to assert that the influenza was

prevalent early in December or even in November. In one group of parishes at extreme N.W. of his districts, the master of each school gave mid-November as the date of invasion, and the report from one village was so definite that he was inclined to fully investigate the matter. The schoolmistress of Pleshey stated that the epidemic commenced on 18th November 1889, and reached its acme in the last week of that month, that the school children suffered severely, but especially the infants. About half the children were attacked. That recently the epidemic had returned, but was attacking adults only. The medical practitioner who attended many of the early cases believed that two-thirds of the children in the village were attacked. The children were taken ill in rapid succession, the symptoms being fever, headache, cough, and bronchitis, little or no limb pains, and rarely any catarrh of eyes or nose. Several deaths occurred from bronchitis and broncho-pneumonia. Similar cases occurred in all the surrounding villages. The true influenza invaded the village in February and attacked a large proportion of adults but very few children.

Dates when schools were first affected.—The date of the week-end during which the influenza first made its presence felt amongst the school children in each school having been ascertained, he found there was only evidence of three parishes being attacked prior to week ending 3d January 1890. The dates for the parishes are given in the following table:—

Date of week-end.	No. of parishes attacked.	Total number in which influenza appeared.
January 3	...	3
„ 10	9	12
„ 17	25	37
„ 24	6	43
„ 31	3	46
February 7	4	50
„ 14	2	52

In four parishes very few cases have occurred and no date can be given, and in one parish no case has been recorded.

During January it was a common occurrence for children to be suddenly attacked in school with nausea or vomiting, headache, fainting, etc.

The rapidity with which the epidemic reached its acme

varied in an extraordinary degree. In some cases the schools had to be closed for lack of scholars within a week from the onset, in others no acme was discoverable, a few cases only occurring at a time. In one large village only about a dozen children had the influenza, whilst the adult population suffered severely. As at Pleshey, the invasion of the adults did not take place until February. In a few other villages the epidemic seems to have shown a marked preference for those above school age.

In those cases where the school attendance was considerably affected, the period which elapsed between the onset and the reduction of the attendance to a minimum is given in the following table:—

Interval between onset and acme.	No. of parishes.
1 week	13
2 weeks	13
3 weeks	7
4 weeks and over	6

In the majority of the cases in which the acme was reached within a fortnight the onset was during the week ending 17th January. Where the acme was later the outbreak was usually reported to have occurred earlier. This would seem to indicate that the type of the disease in those districts in which it first appeared was not so virulent as in the districts invaded a week later.

The proportion of children attacked is given in the sub-joined table:—

No. of parishes.	Proportion of children attacked.
7	Less than 5 per cent
4	„ 5·25 „
18	„ 25·50 „
28	Over 50 „

The length of time which the children were away from school varied from 2 days to 2 or 3 weeks. About 3 or 4 days seems to have been the average.

The Boys', Girls', and Infants' Departments seem on the whole to have been pretty equally affected, though the reports from different districts varied considerably. In some places

the boys had suffered most, in others the girls, and in still others the infants.

In nearly all cases the teachers observed afterwards in the children a "general weariness and lack of interest," which made teaching for some weeks a most disheartening task.

Dr. Thresh estimates that not less than one half of the population in these districts under 15 years of age (estimated at 16,000) were victims of the epidemic, yet only 3 deaths below this age have been certified as due directly to the disease. This would give a mortality of 4 per 10,000 cases. He estimates the excessive mortality during the 3 months ending 31st March of children under 15 as being such that, if all of it be attributed to the direct or indirect influence of the epidemic, the mortality would be 4·5 per 1000.

Mr. H. F. Elliot gives the following details of the epidemic of influenza which occurred at the Infant Orphan Asylum at Wanstead, which commenced on 15th January 1890, and terminated on or about 12th February 1890:

The total number of children in the institution was 553, and the total number attacked was 164, including 22 pupil teachers and servants.

The school is divided into seniors, infants, and nursery children. All children under 5 are styled "nursery children," while those over 5 but under 8 are described as "infants," those above 8 and under 15 are "seniors."

Number of cases in each division—

Nursery	4 out of 28
Infant Children	12 out of 162
Senior Boys	110 out of 227
Senior Girls	16 out of 136
Staff	22 out of 86

Complications—

Out of the total number

3	suffered from acute rheumatism.
1	„ from broncho pneumonia.
1	„ from hypnotism.

Average temperature 101° to 102°.

Average period of incubation seemed to be from 12 to 24 hours.

With the above exceptions, in no single case did the temperature exceed normal on the following morning.

In all cases the tongue presented a foul appearance, breath most offensive, severe frontal headache, pain in thighs and calves of legs. A very few complained of pain in the lumbar region. There was no diarrhoea, but occasional vomiting. The average absence from school was four days.

The rheumatic fever cases supervened some few days after they had convalesced from the influenza, and were accompanied by a great many typhoid symptoms—tongue parched and presented a glazed appearance, teeth coated with sordes, excessive sickness and delirium, tenderness over abdomen and diarrhoea.

One boy had nearly every point at one time or another affected. He also suffered from pericarditis; in his case the delirium was very great, and he presented a most cadaverous appearance, but ultimately recovered.

Another lad was also most dangerously ill, and suffered much from the hips and knees, but had no cardiac complication, although the heart's action was for a considerable period much accelerated. Some three weeks after he was attacked with rheumatism. Very considerable swelling of the left thigh set in, the difference between the right and left exceeding five inches, particularly tense, and accompanied by very great pain, appeared to be due to an attack of thrombosis, and the prognosis seemed most unfavourable. Numerous leeches were applied; fomentations were kept on day and night well sprinkled with laudanum. About a fortnight afterwards, fluctuation being distinctly marked, he aspirated and removed about ten ounces of most offensive pus, but as it rapidly refilled, he determined to make a free incision, and placed a fair-sized drainage tube, which gave great relief to the symptoms, and the boy ultimately did well.

The broncho-pneumonia case presented no unusual symptoms. A boy who suffered from somnolence, aged ten years, was sent over to the infirmary suffering from the prevailing epidemic, but in his case the temperature registered 104° , tongue parched, teeth coated with sordes, no delirium, but most profound sleep, was with difficulty roused to take liquid or relieve bladder, did not after the first day complain of pain anywhere; anticipating brain mischief, he had his hair cut

close, applied ice compresses, and had the bowel well cleaned out. On the fourth day the temperature suddenly came down to normal; the boy awoke, said he felt perfectly well when asked how he felt, and had no further disturbance whatever.

The shortest case of incubation occurred in regard to the secretary of the institution. He had occasion to go over to the infirmary in the morning at 10 A.M., and whilst talking to the nurse, who was suffering from the epidemic, was much affected at the state of her health, but thought no more of it at the time, went to his office feeling perfectly well, transacted business till four o'clock, then, affected with severe frontal headache, came home to Marlsbrook, and at seven o'clock same night was very ill, temperature 103° , and all the usual symptoms. Next morning *temperature normal*, but felt utterly weak and good for nothing. This case was followed by a sharp attack of articular rheumatism.

OBSERVATIONS ON THE SPREAD OF INFLUENZA

In an interesting contribution to the *Practitioner* (April 1890) Dr. Sheridan Delépine, of St. George's Hospital, discusses the question as to whether influenza is to be considered a contagious or a miasmatic disease. He admits that the records of previous epidemics had led him to regard the malady as of a miasmatic nature, and he mentions, as bearing on this point, that during the first three weeks of January almost all the specimens of urine which he had to examine became rapidly turbid, owing to the growth of bacteria of all sorts, a phenomenon which, he observes, is very seldom the case, especially at that time of the year. Between the 8th and the 18th of January, only one out of 14 specimens remained tolerably clear, and this fact acquires additional interest from the fact that Sir Andrew Clark, whose attention was called to the fact, remembers a similar state of things during the cholera epidemic of 1866. It is worth noticing too, if only *à titre de renseignement*, that this period of unusual tendency to decomposition on the part of the specimens of urine coincided with the period during which the number of deaths attributed to influenza reached its maximum.

He gives very detailed notes of two cases of influenza between the 18th and the 26th January, in both of which the patients were in a state of high fever within twenty-four hours of coming into contact with persons who had previously suffered from the disease. His belief in the miasmatic nature of influenza was shaken by the facts which came under his observation, according to which the length of the period of infectiousness cannot be much under from seven to ten days.

It then occurred to him to investigate the matter further, and he turned his attention to the disease as it presented itself among the workmen employed at Messrs. Broadwood and Sons' pianoforte manufactory, which, for several reasons, offered peculiarly favourable opportunities for observation. The employees are picked men, working under very satisfactory sanitary conditions, and their number was sufficiently large (460) to allow of averages being taken.

He points out that, owing to the fact that all the workshops open on a limited number of staircases, and that either on the staircases or at the gate all the men are liable to meet several times in the day, he could not hope to trace exactly how the disease had spread through the factory. It was evident, however, that if the disease was of miasmatic origin, the cases of illness would be pretty equally distributed through the factory, and that irregularities of distribution, if found, would correspond to local circumstances, such as the height of the workshops above the ground, their exposure to certain winds, etc., or to certain predisposing influences of the occupations carried on in them.

On the other hand, if the disorder were contagious, certain groups of workshops would be found to be much more affected than others, and that more or less independently of the local circumstances above mentioned.

At first only a few men left their work. During the first days of January a few of those who had left from illness came back to work. By Saturday, January 4th, about six convalescents had resumed work: this was followed on the following Monday by a considerable increase in the number of absences attributed to influenza. During that second week the number of men absenting themselves

was much greater than during the preceding week, and all the while a few convalescents were returning daily. The third week showed a still greater number of men leaving, this increase corresponding to a similar increase in the number of men coming back to the place. It may therefore be said that *so long as the epidemic was on the increase in the factory, the number of men falling ill was proportional to the number of convalescents coming back to work.* It may be also noticed that the *number of men leaving was greater than that of men coming back.*

During the fourth week the epidemic abated almost completely, and it can be noticed that the tabulated results show an *inverse proportion, between the number of men coming back and that of men leaving, to what had taken place before.*

It was noticed that at the onset the cases were of greater duration than those that followed. The average duration of the cases beginning during the first week was from 7 to 10 days, while the average duration of the cases beginning during the second and third weeks was from 3 to 5 days, and during the next week the average fell to $2\frac{1}{2}$ days.

He showed by diagrams that when one of the workshops belonging to a set of four or of two was much affected, one, two, or three of the others were much affected also. On the contrary, some groups of workshops were but little affected. The fact that the men were constantly meeting on the staircases and elsewhere rendered it impracticable to follow the contagion further—if contagion there be. No connection could be shown to exist between the number of men employed in each place and the amount of illness, nor did there appear to be any relation between the kind of work and the amount of illness, except that while the clerks were the first to be attacked, the metal workers and the men employed in the mill were comparatively little affected, and the engineers, stokers, carpenters, carmen, etc., escaped altogether.

Under normal circumstances, the number of men absent from the factory through illness is seldom above six during the week at this time of the year. During the month of January, however, this number rose gradually to 5, 6, 10, 13, 14, 15, 22, 25, 29, 34, 38, till it reached 40 in one day. Besides these men, a few suffered as usual from

On 5th day after acme the proportion became	{	8 men leaving
		11 coming back
„ 6th „ „ „ „	{	0 men leaving
		9 coming back

If for the sake of comparison one expresses the proportion of men leaving to that of men coming back by similar fractions, the following proportions are obtained :

1 day before the acme	.	.	.	.	{	6 leaving
						7 returning
2 days	„	„	.	.	{	20 leaving
						15 returning
3 „	„	„	.	.	{	0 leaving
						1 returning
4 „	„	„	.	.	{	7 leaving
						1 returning
5 „	„	„	.	.	{	2 leaving
						3 returning
6 „	„	„	.	.	{	5 leaving
						1 returning
7 „	„	„	.	.	{	4 leaving
						4 returning
8 „	„	„	.	.	{	5 leaving
						2 returning
9 „	„	„	.	.	{	12 leaving
						5 returning

Dr. Delépine observes that if the disease were of a miasmatic nature it would be very difficult to account for this relation between the number of men falling ill and those resuming work during convalescence. It might be said that after settling in a place the virus increased in virulence for a certain number of days and then gradually died out, and that, the few people first affected coming back to the factory just as a new set of persons became overpowered by the more virulent poison, there was only an apparent relation between the number of old and new cases. He admits that it is difficult to answer such an argument, but he urges that it is evident, on looking at the figures, that during the last days of

the first week the first distinct batch of convalescents returned to work, and on the following Monday the first great exodus is observed. During the second week, on the days following those on which a large number of convalescents had come back, there was a marked increase in the number of men leaving. The turning-point occurring during the third week, the relations are slightly altered, yet the figures still pointed in the same direction.

He feels therefore strongly inclined to consider the course of the epidemic in the Broadwood factory as supporting rather than invalidating the view that influenza is contagious. The theory of contagion is still further supported by the length of time which elapsed between the beginning of the outbreak in the Broadwood factory and in the Oxford Press.

The remarkable similarity of course in two communities, composed of about the same number of persons of very much the same classes, seems also to indicate that there is a relation between the spread of the virus and the size of the community attacked—a relation which would perhaps be not so clear if the disease were the result of atmospheric conditions or the development of some miasma. There still remains to be accounted for, the extreme rapidity with which the epidemic attacks not only a considerable number of individuals in any locality, but also places very distant from each other.

He concludes that if the facts which he has brought forward are correct there can be no difficulty in explaining this by the contagion theory, for in two carefully-observed cases the illness seemed to follow within twenty-four hours of the first exposure of the patient to contamination. The sequence on these two cases is so remarkably clear that it would be necessary to admit a most extraordinary coincidence in order to deny the existence of contagion.

What renders this denial still more difficult is that (1) the two patients had passed through the worst period of the epidemic unaffected, and a few days later, when coming for the first time in contact with persons who had had the disease, they contracted it; (2) the two patients were not taken ill at the same time, but each one fell ill after coming independ-

ently in contact with affected persons; (3) the time elapsing between the beginning of the attack in the first and second case was longer than the whole length of the illness in the first case.

This therefore points not only to a very short period of incubation, but also to a long period of infectiousness (considering the length of the illness); for in one case the contagion was transmitted about ten days after the onset of the illness, *i.e.* about six or seven days after apparent recovery.

The factory returns also point to a very short incubation process, for there was a remarkable correspondence between the number of convalescents resuming work and of men obliged to leave work on each day.

With these two factors—shortness of incubation and length of the period of infectiousness—the rapid and complete diffusion of the disease from one person, one town, or one country to another can easily be explained.

It follows from what precedes that, whether cases of influenza are studied singly or collectively, one is driven to the conclusion that the disease is a contagious fever, which, when typical, has a very short latent period (twelve to twenty-four hours), an equally short initial stage leading to a fastigium lasting at most a few hours, followed by a sudden defervescence, taking the form of a crisis. Then a comparatively tedious convalescence begins, during which the patient continues to diffuse the contagium for about one week or perhaps a longer time. This of course refers only to uncomplicated cases.

The author adds that he has been careful to avoid introducing into this discussion any of the facts which were not recorded in his paper, otherwise he might have added many more supporting the view that influenza is a contagious disease.

The greatest difference has prevailed, and still prevails, upon the apparently simple question of the contagiousness of influenza. A careful review of the evidence and opinions of competent observers, however, authorises the belief that the disease *is* contagious, but it does not of course follow—nor does the author believe—that contagion is the only, or even

the most frequent, method of communication. The assertion that the malady had been imported into this country by direct contagion from parcels, letters, etc., emanating from infected districts, is not borne out by facts; at any rate the history of the outbreak as it affected the Post Office and Foreign Office employees affords the idea no kind of support. The fact that the disease does not spread more rapidly now than of yore, in spite of the present rapid methods of transit, and the fact, too, that it does not necessarily spread along the main lines of travel, suffice to demonstrate the fallacy of the assumption of the disease being spread principally by contagion. Contagion, such as it is, seems to act more promptly on persons engaged in the open air, but there are so many apparent exceptions to this rule that it would be imprudent to insist upon it.

EPIDEMICS OF 1510-1837

SUMMARY

The previous annals bring under our review about twenty visitations of epidemic catarrh. The distinctive features of each important visitation may here be briefly recapitulated.

August
1510. *Course.*—North-westerly from Malta to Sicily Spain, Italy, France, Britain, raging over all Europe, and scarcely missing an individual.

Meteorological Conditions.—It was preceded by a long continuance of moisture, and followed by remarkable storms.

Symptoms.—In addition to ordinary symptoms, violent pain over the eye, delirium, gastrodynia. Sometimes from the seventh to the eleventh day, syncope, and snatching of the tendons. Diarrhœa or sweating on the decline.

Treatment.—Five blisters: two to the arms, two to the legs, one to the back of the head. Bleeding and purging said to have been injurious.

Coincident Phenomena.—Signacula on linen and food. Blood rain; great swarms of locusts in Seville, in 1507, 1508, and 1510. Great devastation by caterpillars in Germany. Mur-

rain among cattle at Meissen. A damp season. Eruption of Hecla. Earthquakes. In the following year a comet.

1557. *Course.*—This epidemic took a westerly course from Asia, by Constantinople to Europe, and afterwards visited America.

Symptoms.—The attendant fever is said to have been a double tertian. There was severe pain of side, relieved by bleeding, if adopted early.

Meteorological Conditions.—It was preceded by ill-smelling fogs, and followed by great inundations. There was great dearth in England, in consequence of the wet season which preceded harvest. The disease commenced in October, after a month of unusually cold winds. A comet. The previous year an eruption of Etna. In 1561, the plague.

1580. *Course.*—From east and south, to west and north, raging chiefly in autumn.

Symptoms.—Epistaxis. Vigilance or somnolency, giddiness resembling intoxication, parotid swellings, bilious vomitings.

Meteorological Conditions.—It commenced in October, after a cold dry wind, preceded by two or three years of a moist, rainy, southerly constitution. Earthquakes in Yorkshire and Kent. Remarkable meteors in November.

Phenomena among Animals.—Plague of insects, birds migrating prematurely, and cattle deserting their pastures, plague of mice, flight of owls, and murrain among beasts in Kent.

Measles and smallpox speedily followed. In 1583, dysentery. In 1584, plague.

1658. In April, in the midst of a winterly spring.

Peculiar Symptoms.—Epistaxis, much cephalic affection, hæmoptysis, often dysenteric affections.

In the summer, a new fever affecting the "brain and nervous stock."

1675. *In Autumn*, after pungent fogs, and cold moist weather following a hot summer. An eruption of Etna.

Symptoms and Treatment.—Those of “pleuritic fever,” rather than pleurisy; bilious derangement.

Smallpox shortly followed, and in 1677 dysentery.

1710. *In the Spring.*—During a moist southerly constitution, preceded by a long-continued, intense frost.

Symptoms.—Severe cough, quick pulse, headache.

Plague broke out the year following.

1729. After a rainy November, with high tides.

Symptoms.—Loss of appetite; rheumatic pains.

1732-33. *Course.*—In England, during a damp chilly spring. Southerly. At Edinburgh, in November; in Cornwall, not till the following February.

Symptoms.—Sanguineous discharges frequent from the nose, lungs, and bowels; bilious derangement; occasionally swellings of the parotid and salivary glands and testes.

Meteorological and other Phenomena.—Dry southerly, wet northern winds. Volcanic eruptions. Vivid aurora borealis. A comet. Prevalence of the arctia phæorrhœa. At the decline of the disease, remarkable meteor exploding in the air, and a fetid fog. Measles previously epidemic; subsequently cholera and diarrhœa, much nervous disorder; pain in the head; and delirium without fever. Coincident cough, and other diseases among horses.

1737-38. Commenced in November.

Peculiar Symptoms.—Much sickness; bilious derangement; affection of salivary glands; rheumatic pains, toothache, and hemicrania.

Meteorological Conditions, etc.—An eruption of Vesuvius. Earthquakes and a comet. Remarkable meteors.

Coincident and subsequent Phenomena.—Much disease among horses. Lumbago. After the decline of the epidemic, nervous fevers, apoplexy, and palsy prevalent.

1743. Occurred in the spring.

Symptoms.—Lassitude; shivering; pain of head, limbs, and back; loss of taste and appetite; inflamed eyes;

epistaxis; at the decline, often diarrhoea, sometimes pustules on the skin; subsequently dysentery, and worms prevalent; also apoplexy.

In 1741 and 1742, smallpox, measles, and hooping-cough.

Meteorological Phenomena.—Aurora borealis frequent. Soldiers fighting in the air. Great atmospheric vicissitudes. In 1743, very severe easterly winds for months before the visitation. Earthquakes and a comet, and a stinking fog. The previous year remarkable abundance of fruit. Mange, glanders, and cough among horses.

1758. Commenced in September, during easterly winds. Universal in Scotland; irregular in course.

Symptoms.—The most characteristic was a sensation of tracheal excoriation; profuse epistaxis was also frequent.

Meteorological Phenomena.—An unusual prevalence of easterly winds, but sky clear. In 1759, earthquakes. The *Bostrichos typographicus* singularly destructive.

Previously much dysentery, and a bad kind of smallpox.

1762. Commenced in September, after severe and variable weather.

Symptoms.—Affection of head; harassing cough, and pain under sternum; bilious derangement; crisis by perspiration. Fatality extremely different in different places.

Phenomena.—Uncommon vicissitudes of heat and cold. *Bostrichos typographicus* prevalent, as in 1757-58. The *Charæas graminis* very destructive. A comet. In 1763, an eruption of Etna.

Subsequently dysentery prevailed, and bilious fevers.

1767. Raged in *June* and *July*, after cold weather.

Symptoms.—Characterised by lassitude, loss of appetite; fever.

1775. Prevailed during a wet autumn.

Symptoms.—Some, a sudden giddiness and pain of head; some, nausea and intestinal disturbance; pain in the loins and sides; cramps; prurigo; erysipelas; pustules. This epidemic was followed by diarrhoea.

Coincident Phenomena.—Sudden changes of temperature.

Thick noisome fogs. These phenomena, and the occurrence of the epidemic respectively later in Britain than on the Continent. Earthquakes and volcanic eruptions. Much disease among dogs and horses.

1782. Perhaps the most widely diffused of all recorded visitations.

Course.—Commenced at sea between Malacca and Canton, travelled westward through Russia, Denmark, and Holland, to England, where it appeared in May.

Symptoms.—Languor; loss of smell and taste; sensation of contusion of limbs, and of soreness of cheek bones; pain in chest and sides, and sometimes delirium, occasionally diarrhoea.

Meteorological and other conditions.—In 1781, summer very dry, autumn very rainy, winter changeable. Spring of 1782 late, then gloomy, cold, and humid, with occasional dry fogs and peculiar storms. An eruption of Hecla.

The brown-tail moth, and the *Bostrichos typographicus* very destructive.

1803. *Course.*—During the spring in England, from south to north, preceded by epidemic diarrhoea.

Symptoms.—Much bilious derangement and affection of the head. Epistaxis; often interchanging with scarlatina or superseding it. Low fever frequently prevalent.

Meteorological coincidences.—North-east winds, fetid acrid fogs, aurora borealis, sudden atmospheric changes. Shocks of earthquake. Excessive mortality among insects, and disease of cattle and domestic animals.

1831. In June, after great vicissitudes of weather, having been a year in its passage from China.

Symptoms.—Much affection of head, loss of taste, and soreness behind the sternum.

Coincident Phenomena.—Dysentery concurrently and subsequently; a gradual transition to cholera. Much disease among the lower animals.

1833. In April, after damp weather succeeding to cold; characterised by much nervous disturbance, and slow convalescence. Extensive concurrent disease among horses.

1837. Commenced at Sydney, October 1836, reached London, January 1837, after great humidity and considerable atmospheric vicissitudes. Those most exposed to the weather most severely attacked.

Symptoms.—Much weight and pain of forehead, sometimes of vertex and occiput; soreness of sternum; discharge of tears, and acrid distillation from the nostrils; severe pain of the back; tendency to diarrhoea.

Coincident Phenomena.—Disease of cattle and sheep. Much nervous fever. Transition in some instances to diarrhoea and cholera.

1847-48. Prevailed from October to January.

Symptoms.—Catarrhal form characteristic. Pneumonia, erysipelas, and rheumatism common as complications. Enteric symptoms frequent. Capillary bronchitis very fatal.

Phenomena.—Aurora eight times, magnetic disturbance. Fogs and darkness.

1889-90. Prevailed December to March. Extended from Siberia to Russia, Europe, America, and later, India and Australia.

Symptoms.—Coryza generally absent. Prostration and nervous complications varied and severe. Broncho-pneumonia common and fatal. Rashes of various kinds, followed by desquamation, of frequent occurrence.

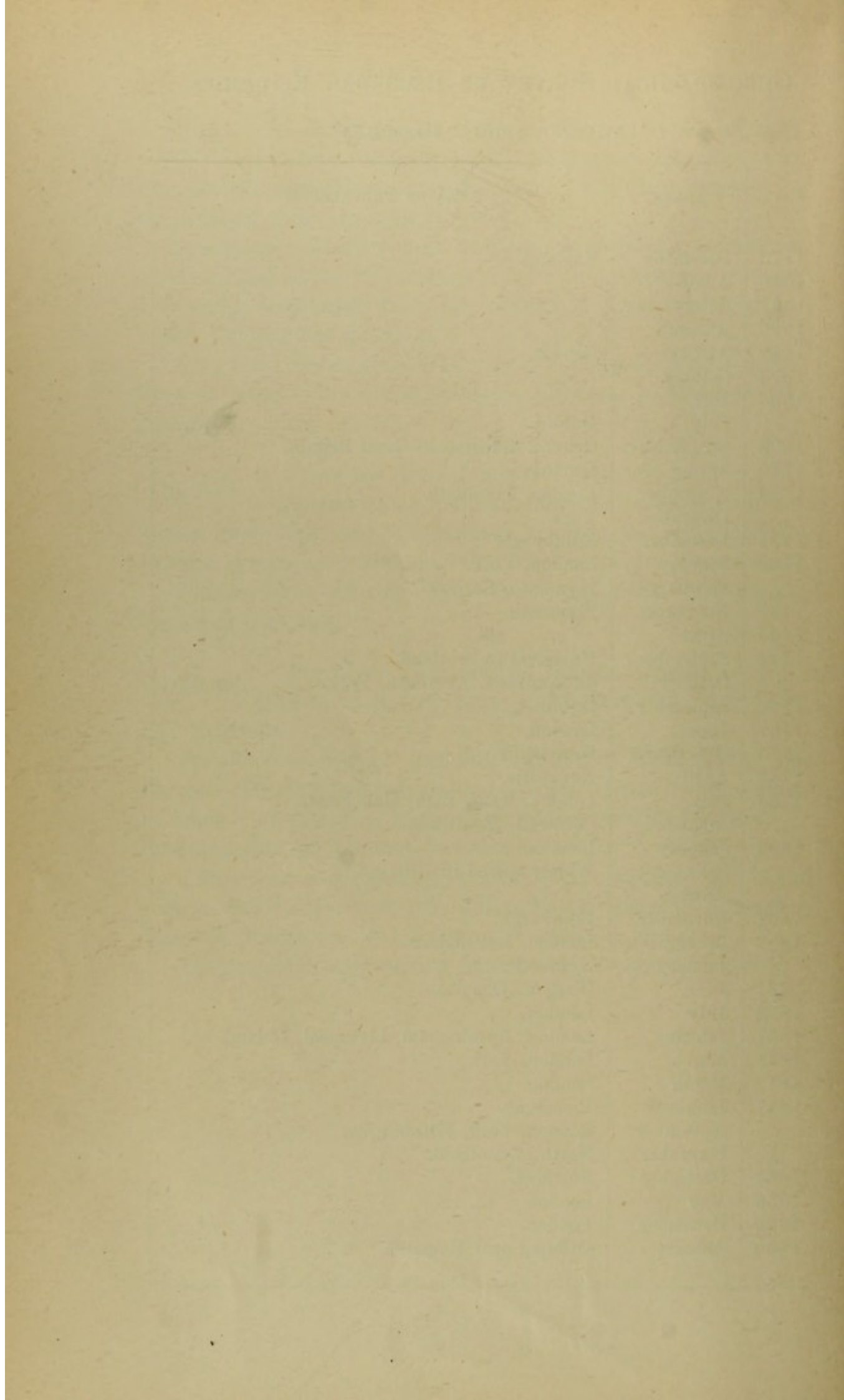
Phenomena.—Unusually warm moist weather for some months previously, with fogs during active phase of epidemic; lessened prevalence in London after strong gales.

Disease (pink-eye) among horses well marked and severe.

CHRONOLOGICAL SURVEY OF RECORDED EPIDEMICS.

(ADAPTED FROM "HIRSCH.")

YEAR.	MONTH.	AREA OF PREVALENCE.
1173	December	England.
1510	August	"
1557	October	"
1580	Autumn	"
1658	April	London.
1675	October	"
1688	May	"
"	July	Dublin.
1693	Oct. & Nov.	General diffusion in Great Britain.
1710	Spring	London.
1729	November	London, Plymouth.
"	December	York.
1732	December	Edinburgh.
1733	January	London, York.
"	February	Plymouth, Cornwall.
1737	November	Plymouth.
1743	April	" etc.
1758	September	Universal in Scotland.
"	October	St. Andrews, Aberdeen, York.
1762	September	Dublin.
1767	June	London.
1775	Oct.-Decr.	Devonshire.
1782	April	Newcastle.
1788	July	London, Kent, Bath, Manchester.
"	August	Cornwall, Montrose.
1803	January	London.
"	February	Widely spread in Britain.
"	April	" "
1807	November	Edinburgh.
1808	December	London, Nottingham.
"	January	Newcastle.
1831	June	Glasgow, Douglas.
1833	July	London.
1837	January	London, Birmingham, Liverpool, Ireland.
1842	March	London, York.
1843	March	London.
1847	January	Richmond.
"	November	London, York, Edinburgh.
"	December	North of Scotland.
1853	December	Bideford.
1866	May	London.
1889	December	London.
1890	January	Diffused over England.



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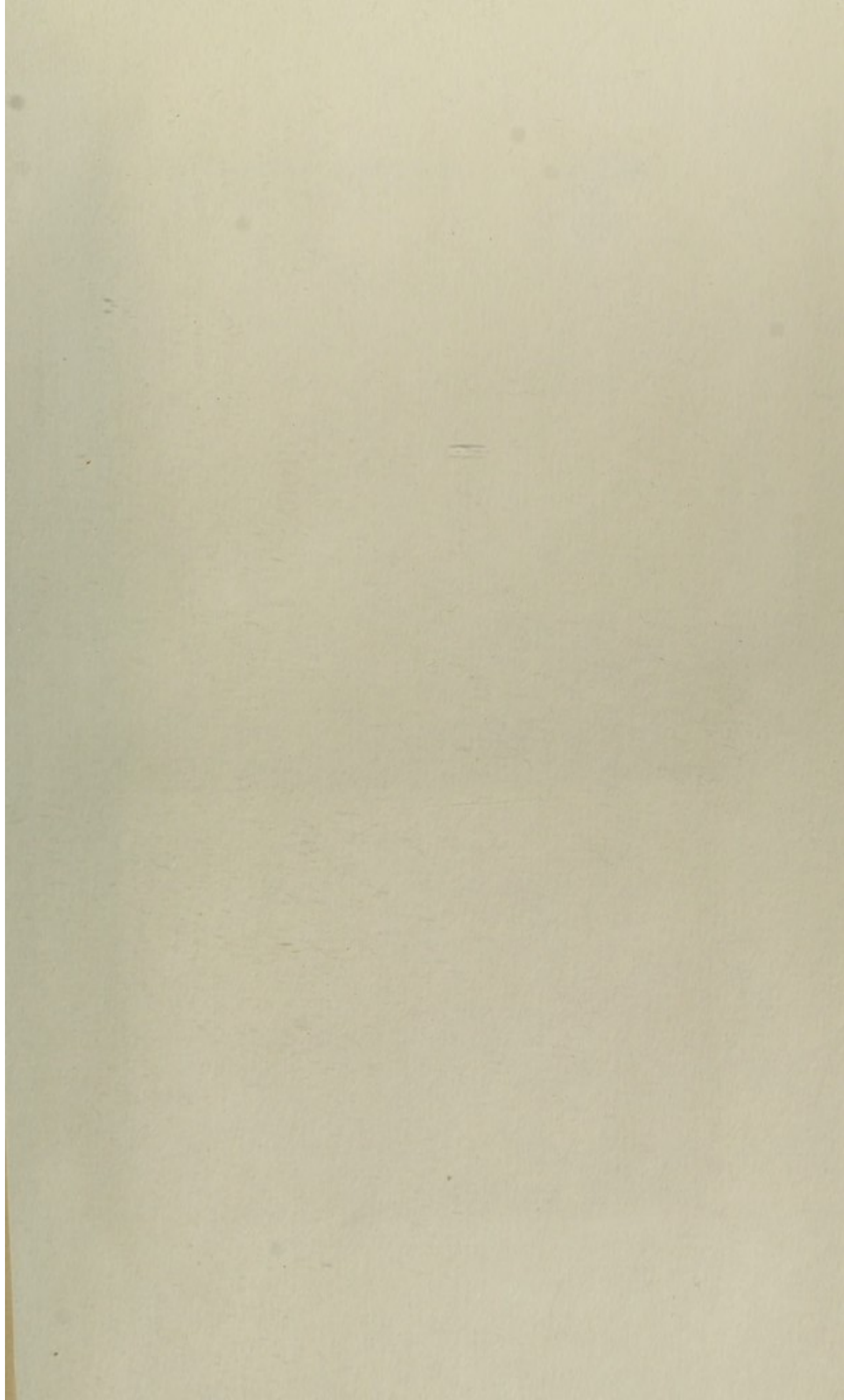
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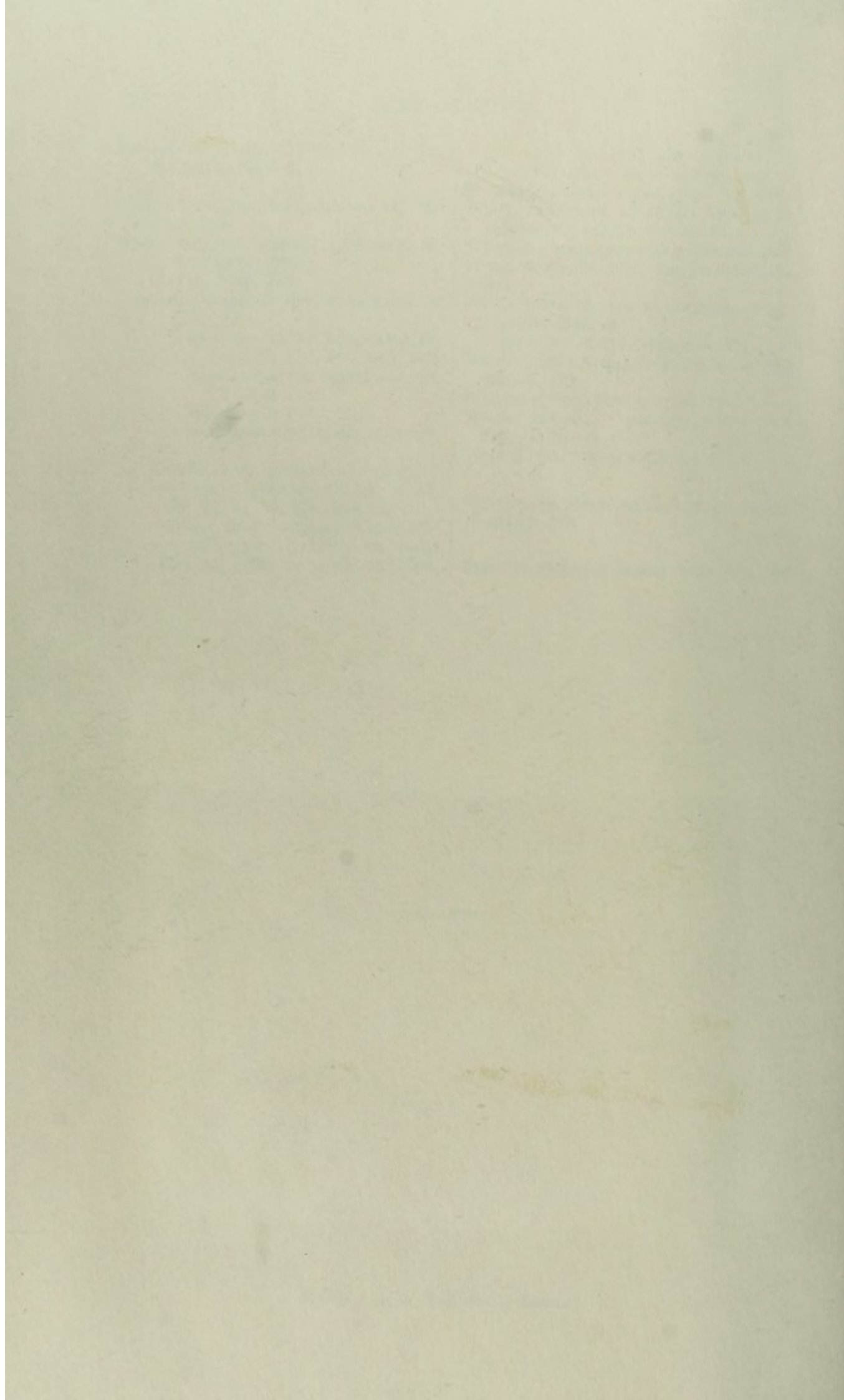
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THE END





Influenza or epidemic
catarrhal fever

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