Medical notes and essays / by Peter Eade.

MEDICAL NOTES AND ESSAYS

INFLUENZA.

SIR. P. EADE.

SECOND EDITION

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Fasciculus II.

BY

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SECOND EDITION.

LONDON:

JARROLD & SONS, 10 & 11, WARWICK LANE, E.C.;

AND LONDON AND EXCHANGE STREETS, NORWICH.

1896.

Fasciculus II.

INFLUENZA IN EAST ANGLIA,

1847, 1848, & 1890 to 1896.

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INFLUENZA IN EAST ANGLIA,

1847 to 1891.*

INTRODUCTION.

The great epidemic of Influenza, which during the past two years has passed over this country like a great wave, and has affected to a greater or less extent nearly every portion of England, has been proportionately experienced in this district of East Anglia.

As appears to have been usually the case, the disease travelled to us from the east, and, to quote Dr. Graves, it soon "like a cloud, overshadowed the whole country."

Writing in the late autumn of 1891, it is impossible to say whether the disease has disappeared entirely from this district, or whether the epidemic has simply "died down," as it did for several months in the autumn of last year and

* The contents of this little book deal almost exclusively with Influenza as observed in this district. The method of arrangement is mainly that adopted in the first Fasciculus of my "Notes and Essays" on "Diphtheria in Norfolk;" the present publication constituting Fasciculus II. of these Notes.

the spring of the present year, only to revive again, and again to rage with great severity during the second quarter of this year.* Probably at no time during this interval was Influenza really absent, but it certainly did not then exist as an epidemic. And although during this period of quiescence numerous ailments were met with, which chiefly affected the nerves and nerve centres, and which were often essentially sequelæ of the primary disorder, yet clearly a distinct interval existed, during which Influenza was practically absent.

This great epidemic invasion of Influenza began in this district in the two latter months of 1889, with a few isolated or scattered cases. It became severe and widely extended in January and February of 1890; and it continued with varying severity until May or June. A large number of the patients suffered afterwards from prolonged debility, and from various neurotic or neuralgic affections, many of which commenced after an interval of several weeks from the original seizure, and often when the thought of the illness had almost passed away. And so marked was this, that it was often difficult medically to account for the ailment complained of. And its nature was often only to be understood through the experience derived from the investigation of many similar cases.

From about July, 1890, to the end of that year, the Influenza was only evidenced by a few scattered cases; nor did it recrudesce in 1891 as a severe and epidemic affection until a much later period than in 1890. Indeed,

* Quite recently, local outbreaks of Influenza have been reported from several districts of Scotland and England.

it did not develop itself on a large scale until March or April, when it again affected a large proportion of the population. Its symptoms were essentially those of the preceding years, although many and marked variations of the more urgent ones were noticeable, and many of which are noted in my paper on "Influenza in 1891."

Upon the whole, the disease has been less severe this year than last. The acute pleurisies and empyemas, the severe primary neurotic or neuritic pains and other nerve disturbances, have been less prominent, and the secondary nervous sequelæ somewhat less marked, though yet very common.

The general symptoms have been described by many observers. Though varying to a certain extent, they have been essentially alike in this and former epidemics; their definite characters, as noted from 1510 to 1890, being well and fully displayed in a collected form in that great store-house of Influenza facts, Dr. Thompson's "Annals of Influenza." They contrast sharply with those of the bad "head cold" which is so common in our autumns and winters, and which is largely prevalent in this present month of November. In this latter, there is at first some soreness of the throat, with swelling and relaxation of the uvula; then in one or two days follows sneezing, coryza, and mucous secretion from the nostrils (head cold), with a general sense of illness or misery; and then, after about two days more, the disease appears to extend into the bronchial tubes, when there is wheezing, some cough, and mucous expectoration, with a general sense of fulness and stuffiness of the air tubes, added to that of the nose and frontal sinuses. In these cases there is usually no rise of

temperature; and the characteristic pains of the head and back seen in true Influenza are absent. Is there any essential connection between such a mild epidemic of "bad colds" and that of the more serious disease now happily latent?

But accurate and general as have been the observations, and numerous and practical as have been the writings of various authors upon this disease, yet all that we are even now justified in saying that we know positively about it, is that it is epidemic and spreading, which practically means that it is multipliable and communicable, and therefore due to a living germ cause; and that this cause, entering the system, exerts its morbid influence specially upon the nerve centres and nerves, and secondarily affects and produces disease in various other portions of the living tissues and organs; also that the disease not only runs a primary acute course, but is apt to be prolonged either as continuing debility, or in the form of more distinct and definite sequelæ or nervous disorders, to a very considerable period, of weeks, or even months.

Bacteriology.—Notwithstanding the laborious and skilled investigations of many observers, both in England and abroad; and notwithstanding the discovery of various micro-organisms in the secretions or fluids of influenzal patients, yet it would appear that the exact and certain microbal cause of this disease has not yet been positively and satisfactorily demonstrated. Professor Weichselbaum has expressed the opinion that the secondary pneumonia which is so common, may be due to the invasion of the

well-known essential Diplococcus of this inflammation, which has found favourable conditions for development in such diseased bodies.* And Ribbert thinks that the Streptococcus plays a very important part in the etiology of Influenza, if not its specific germ.† But whether this be so or no, the life history of the bacterium is by no means satisfactorily shown, nor are all the facts connected with the spread of the disease clearly elucidated.

We know that typhoid and other infective bacilli can be artificially cultivated and grown upon various external media, and so be shown to be capable of having a fructifying existence outside the human body. May it not be that the Influenza microbe may also have a double existence—one in the human subject, and the other in or upon other and external substances; in the latter case, throwing off its volatile reproductive spores into the atmosphere, from whence the disease may be inhaled or contracted, exactly as when it is taken from a sick person's breath. Personal contagion would seem to be well proven by the examples given, but such a double source of infection would seem also to explain many of the yet unexplained facts as to its mode of spread and conveyance, and would harmonize with the views so long held as to its aerial existence. The extremely rapid spread of an Influenza epidemic through a district or country almost implies an intense and virulent *contagium*, and yet the history of the disease in the various public institutions which I give herewith, shows that no such intense contagiousness neces-

* See "Annals of Influenza," by Dr. Symes Thompson, 1891. Page 413.

† Dr. Parsons' Report on Influenza, 1891.

sarily exists, even for those in close association; whilst the fact that stands out most prominently in the records is the comparatively small proportion of the inmates attacked, and that even those brought into close contact with each other, or sleeping in contiguous beds, by no means *necessarily* became infected by their sick neighbours.

Preface to Second Edition.

Since the first edition of this little book was published, four more years have passed, in each of which a recrudescence of Influenza has taken place. This has always begun in November or December, generally with scattered cases. The disease has prevailed with varying severity during some of the four or five spring months. It has then gradually diminished, both in extent and intensity, and has practically died out by the end of the second quarter of the year. In all these years the months from June to November have been comparatively free, isolated cases only, at the most, being then met with.

As in the first edition, I have thought it well to publish my observations of the successive years in the form in which I noted them, or related them to our medical society, or in the columns of the medical journals, adding only any illustrative facts which I have since been able to supply. These notes will thus record, year by year, the special local features of this great Epidemic of Influenza for the six years, 1890 to 1895, inclusive.

Very much has been said and written with regard to Influenza during these years, and its nature and effects have been most carefully observed and studied. Indeed,

it may be said of this disease, that we are now quite familiar with its usual course, and also with many of its variations and secondary effects. Its exact bacterial cause may also now be considered to be well ascertained; for, thanks to the researches, especially of Pfeiffer and Kitisato, confirmed by those of Dr. Klein,* the actual bacillus of Influenza may now be regarded as demonstrated and identified. Pfeiffer describes its bacilli as "minute and non-mobile; as occurring only during the acute stages, and gradually diminishing in numbers as the disease abates; as about the thickness of the well-known bacilli of Koch's mouse septicæmia, and only half their length;† as staining with some difficulty in aniline dyes, requiring a prolonged application of the dye. In stained specimens, these bacilli have a characteristic appearance, inasmuch as their protoplasm is segregated into a stained granule at each end, while the middle portion remains unstained and shows only the outline of the sheath. Thus the bacillus looks like a diplo-coccus, and where two such bacilli are placed end to end they look like a chain (streptococcus) of four spherical cocci. In the sputum these bacilli occur in smaller and larger masses, occasionally almost as a pure culture. In severe cases they form continuous masses in the peri-bronchial tissue, and also in the sub-pleural lymphatics, and they are also met with inside the leucocytes of the sputum. These bacilli are constantly present in Influenza, but do not occur in the bronchial

* Report on Epidemic Influenza to the Local Government Board, 1893.

† Klein says their actual measurements are, in thickness, 0·4 μ. in length, 0·8 μ.

secretion of other bronchial or pulmonary affections." Kitisato adds that they do not thrive, in cultivations, at temperatures below 28° C. (=82.4° of Fahr.), but grow well in broth or on agar at 37° C. (=98·6° Fahr.), or thereabouts. They show the same characters as those of the bacilli of sputum, *viz.*, the characteristic bipolar staining.

Dr. Klein states that these bacilli are only found occasionally in the blood, and then only in small quantities, and as dead bacilli.

Dr. Thorne Thorne has well pointed out, as a result of Klein's study of Influenza, that the sputa of the sick, especially in the acute stages of the disease, are invariably charged with the bacterial micro-organism special to Influenza, and are therefore highly infectious. They are also often to be found in the mucus of the mouth.

It appears that the bacterial growths found in empyemic and secondary abscesses have rather been of the streptococcal class than the ordinary bacilli influenzæ.

I have added, in this edition, a few more illustrative cases, especially some remarkable ones, in which the nervous system was specially and acutely affected. And I have also related at some length my own attack of Influenza, complicated with pneumonia, partly because it presented several noticeable features, and partly because I was able to record accurately, and, with the aid of my personal skilled observation, those peculiar daily symptoms and conditions which accompany a severe attack of the malady.

The general survey of the Influenza Epidemic, which has been given in the Report presented in 1893 to the Local Government Board by their medical officers, is

most comprehensive and valuable, as well as full of statistical and bacteriological facts and observations recorded by Drs. Parsons and Klein. A very full account of the disease and its complications, by Dr. Stewart Grainger, has also been published in the *Lancet* (1894), whilst learned papers by Drs. Maywell and S. West, also published in the *Lancet*, may well be consulted.

NOTES ON INFLUENZA.

Having carefully watched the course and progress of the Influenza in this district during this epidemic of 1889—91, and having recorded some of its most salient features in the public journals when the observations were still fresh and recent, I have thought it might be of interest to reprint these papers, together with such additional notes concerning the disease as I have subsequently made. If for nothing else, they may at least prove useful for reference hereafter.

The periodical or occasional recurrence of epidemics of Influenza, their early fatality, their wide-spread diffusion, the frequent seriousness of the illness caused thereby, even when not mortal, and our continuing ignorance either to its precise cause or its prevention, or its cure, are sufficient to invest the disease with a deep interest, and to lead us to concentrate our thoughts upon both its direct and indirect phenomena and manifestations. The recent observations of Dr. Parsons tend strongly to show that its mode of propagation is at least frequently by contagion directly from person to person; also that its period of incubation does not exceed two or three days,—this latter fact being strongly confirmed by a notable case mentioned as occurring in my practice in the early part of this year, as well as by other observations given herewith. An observation of my own regarding the special secondary or tertiary incidence of the Influenza poison upon the sensory nervous

system (as contrasted with the more motor secondary paralytic influences of the diphtheric poison) is endorsed by Dr. Symes Thompson in a recent Gresham lecture on the subject of "Influenza."

I perfectly well remember the great Influenza epidemic of 1847-8, as I was at that time assisting in the surgery of my father, then a practitioner in this East Anglian district; and I have a lively remembrance of the widespread prevalence of severe illness, and of the excessive amount of work entailed thereby upon him, as well as the very large amount of dispensing of medicines which fell to my lot in consequence of this. A large portion of the population in his district was then more or less affected by the prevailing disease, and I also well remember how largely severe nasal and frontal catarrh, with headache, formed a main symptom of the cases; how urgent was often the sensation of severe illness produced; and how much more was "bronchitis" and free bronchial secretion a constant phenomenon of the attack (as also stated by Sir Thomas Watson of the epidemic of 1837) than has been observed in the epidemics of either 1878 or 1890-1. How severe was this 1847 epidemic may be noted by the fact that the deaths attributed to Influenza in 1847 were 4,881, and in 1848,—7,963,—numbers enormously in excess of those of any other years from 1838 to 1889. Indeed, in this latter year, just preceding this recent outbreak, such deaths were at their mininum, and were only 55. As in 1847, so in 1890, the first cases appeared in the month of November.

The Symptoms observed* in this district in 1890-1 have been essentially the same as those which are recorded as having marked the disease in other parts of England as well as abroad, and which are briefly described in the following reprinted papers.

The typical ones have been, generally, a sudden seizure, occasionally with chill or slight rigor, or quick feeling of severe illness and prostration, pains of the head and of the back of the eyes, pains of the back and limbs, general bruised feelings, and fever. This latter has varied greatly, sometimes it has been very slight, but usually the thermometer has ranged from 100° Fahrenheit, to 104° or 105°; and where there has been no complication, this has generally subsided at the end of either one or two or of four days. In a few cases, great and faint perspiration has been a marked symptom. The pulse has usually been small and quickened, but not always.

There has often also been in some cases, redness or irritability of the mucous membrane of the eyes, nose, and throat; and, doubtless, the same condition of the bronchial mucous membrane, as evidenced by the sibilant and mucous rales so constantly present in the lungs, though in varying degree, almost from the first. The cough has frequently been almost dry, often almost asthmatic in character; and the expectoration has usually been scanty, but has varied

* In 1891, in some localities the children seem at first to have been more largely attacked.

in every degree, from a few small viscid pieces of mucus to a copious, almost bronchorhœal, secretion. True catarrh has generally been conspicuous by its absence.* Cardiac asthenia has occasionally been a marked symptom.

In a certain class of cases the influence of the poison appears to have been specially exerted upon the gastro-intestinal mucous membrane, and in these vomiting, diarrhœa, and occasionally severe abdominal pain, have been marked symptoms.†

Pains often very severe in the pleural, intercostal, and diaphragmatic regions, were very common in the earlier periods of 1890, and appeared to be of the neuralgic or neuritic class.

The urine was not unfrequently albuminous, and now and then, though rarely, a little blood appeared in it for a short time.

Herpes Labialis was recorded by some observers, but I have not personally seen it.

In uncomplicated cases the febrile symptoms have usually subsided at the end of two or three or four days, but a large number have occurred in which the illness was prolonged by the supervention or co-occurrence of *complications* or *secondary* morbid phenomena.

The principal of these were congestive pneumonia, single or double; pleurisy with effusion, occasionally becoming a purulent empyema; otitis; eustachian deafness;

* In this respect forming a marked contrast to so large a proportion of the cases in 1847.

† Dr. Simon has reported some cases in which extreme though non-fatal collapse followed such abdominal pain.—(*British Medical Journal, June 13th*, 1891.)

glandular swellings; enlargement of the liver or spleen; phlebitis, of the femoral vein; delirium; somnolence; and an eruption on the skin, erythematous, scarlatinoid, or papular,—occasionally with dark or livid apices to the papules.*

Dr. Norman Kerr and others have suggested the subdivision of these cases according as the respiratory, the gastro-intestinal, or the nervous systems, or the joints, were specially affected; but I have scarcely found that such a true separation of the cases into distinct types was practically possible.

Sequelæ. Following the subsidence of the more active symptoms of the Influenza, a class of cases has been largely met with to which the term "*sequelæ*" has been most properly applied. Such *tertiary* troubles have been frequently alluded to by many writers on previous epidemics, but these notices have usually been limited almost to the mere mention of the fact, and that these later disorders have usually been of the nervine class. I think I am right in saying that a full description of them is nowhere given in any published volume, although they have been more carefully observed and noted by writers in the medical journals and elsewhere, during the present epidemic, than hitherto.

These sequelæ have usually occurred some few weeks

* Bloody dysentery, chorea, simple or purulent meningitis, epistaxis, and many other symptoms, have been recorded by others, and in other localities.

(often about eight or ten) after recovery or apparent recovery from the primary illness, and they have varied from a mere return of general debility or asthenia, which has then often been tedious and prolonged,—to a condition in which definite nervous affections, more especially of the sensory nervous system, have been present and have constituted distinct ailments or illnesses. They all confirm the view now generally entertained that the poisonous and irritant effect of the Influenza poison is mainly exerted upon the nervous system at its centres and (in the form of quasi-neuritic affections) upon the peripheral systems of nerves.

Examples of some more severe cases of this class are given in the Appendix, but besides these a multitude of indefinite and tedious nerve ailments have been met with, which it has been only possible to diagnose accurately, by a knowledge of the prevalent epidemic condition of the district, and by a reference to other similar cases.

It has appeared to me, that whilst prolonged debility and other of the neurasthenic class of these affections have been very common this year, yet that the more active and severe forms of tertiary nerve disturbance were much more marked in 1890.

In both years, the temperature, when observed, has always been found to be normal, or subnormal; and the reflexes have often been diminished.

These sequelæ often partake largely of the character of the initial symptoms, at least so far as their influence upon the nervous system is concerned. The principal of those which have been noted by me and others in this district may be roughly classified, as thus:—

(*a*). Asthenia and abiding debility; general sense of muscular weakness and languor; protracted loss of energy and power of exertion; loss of sexual power.

(*b*). Spasmodic or irritative affections of the pulmonary or circulating organs, such as persistent bronchitis, *quasi*-asthmatic affections, and cardiac distresses; but these latter are more rare.

(*c*). Dullness and sleepiness by day, varying from the drowsiness so often seen in anæmic and chlorotic conditions, to that of true "Nona" or "sleeping sickness."

(*d*). Mental disorders, varying from slight derangement or weakness of brain power, up to maniacal excitement, or temporary true mania or melancholia. (True insanity appears also to have been unusually frequent in these years.)*

(*e*). Affections of the sensory nerves; neuritic pains, or true local neuralgias; various neuroses, especially of the abdomen or limbs, tinglings, sensations of "pins and needles;" or, on the other hand, of numbness, and more or less local coldness or anæsthesia, as in spots of skin, of the nose, elbow, etc.

(*f*). Purulent catarrhal affections of mucous membranes, especially of those of the ear (otorrhœa); of the nose (ozœna), or of the naso-pharynx (post nasal catarrh).

(*g*). The increased frequency of cases of Phthisis has been very marked, and has been apparently a result of the Influenzal poison.

* Dr. Railton has reported in *The Lancet* for October, 1891, a remarkable case of post-influenzal hysteria in a child, aged only six years.

(*h*). Various affections of the lymphatic glands; inflammation of the parotid gland, and of the epididymis; also enlargement of the thyroid body.

(*j*). Desquamations of the skin; also shedding of the cuticular appendages, or of the hair of the scalp (acute alopecia).

The Treatment of the Influenza attack found by all to be most appropriate has been essentially tonic, either from the first, or after a short use of antipyrin, or of salicine or salicylate of soda. In mild cases, little has been needed besides an effervescing draught with hydrocyanic acid, or some aromatic spirit of ammonia, conjoined with warmth and rest in bed. But even in somewhat more severe cases, so much relief has often ensued from the sudden subsidence of active symptoms at the end of 24, 48, or 72 hours, that little further treatment has been required. But in feeble or elderly patients, or where congestive or inflammatory complications have supervened, then measures calculated to support the system against the nervous shock thereby caused, have seemed necessary, and indeed have proved most successful in practice.

Suitable remedies in these cases have been the combinations of ammonia, with quinine or tincture of bark, or strychnine; and in other cases iron with the quinine. In cases of very old and feeble hearts, a combination of the compound infusion of orange peel, with digitalis, and compound spirit of sulphuric ether, is a most valuable help.

The value of alcoholic stimulants has varied greatly. In some cases, sparkling wines, especially champagne, have been both grateful and helpful. In other cases, brandy in large doses has aided very much in removing the extreme sense of prostration, the heart feebleness, and the relaxed sweatings. But in other cases, not only have such stimulants not been required, but they have been positively distasteful and objected to by the patient, and in such cases they have been properly omitted altogether. In feeble persons during convalescence, matured port wine or a little spirit and water, has been often found to be not only comforting, but has appeared to aid the taking and digesting of food.

It would seem that ordinary Influenza by itself has scarcely been so fatal as on some former occasions. But where pneumonia or other severe pulmonary complications were present, then a fatal result has been not uncommon. But even in very acute pulmonary congestions or inflammations, where there has been a fairly sound body, the rapidity with which these and other acute conditions have sometimes passed away, and convalescence been established, has been very remarkable. Still on the other hand, the mortality returns for Influenza periods show how large is often the increase of deaths referred purely to chest inflammations, but which there is little doubt are in a large proportion of the cases due to the specific influence then prevailing, and doubtless the same will be found to be the case now.*

* In consequence of the Registrar General's returns not being yet available, I am unable to give the figures for 1889-91 bearing upon this point.

Of the prophylactive treatment of Influenza I have no experience, as I have not had to deal with cases in their earliest stages. The washing of the conjunctivæ with boracic acid water, as recommended by Dr. Besley Thorne, may possibly be helpful, but I have by no means generally seen marked irritation of the conjunctival mucous membrane; whilst, theoretically, one would doubt the sufficient potency of such a mild antiseptic to destroy, or to prevent the development of, so rapidly growing a germ.*

The treatment of the sequelæ has been on the whole satisfactory. The various tonics, markedly iron, quinine, and strychnine, have usually been very serviceable, especially when combined with that excellent nervine sedative, bromide of potassium; and in some cases, the phosphoric or other mineral acids have given support and comfort. It has appeared essential in some of the more severe neuritic cases, especially when abdominal "misery," and its frequent attendant mental depression and anxiety, have been marked features, to give nocturnal anodynes—chloral, sulphonal, or Dover's powder. And I have seen much comfort afforded by the gentle use of outside anodyne embrocations,—especially such as is formed by the combination of equal parts of the liniments of belladonna, chloroform, and opium. In very protracted cases, galvanism to the lower extremities has been reported to have been occasionally of service.

* Dr. Handfield Jones has expressed the opinion ("On Functional Nervous Disorders," p. 121) that "the catarrhal symptoms are for the most part such as indicate vaso-motor nerve paralysis, and atony of the capillary walls, rather than actual tissue irritation."

Moral remedies, such as change from home, have been also of advantage in promoting recovery, especially where there has been more than usual disturbance of the mental faculties.

EPIDEMIC OF INFLUENZA IN 1878.

The following note which I published in 1878 is worthy of a short notice.* At that time no such severe and general disease existed as has recently overspread a large portion of Europe, as well as other parts of the world; and, moreover, some of the more familiar phenomena of Influenza were undoubtedly absent. But, nevertheless, an undoubted minor epidemic did at that time exist in this district (as doubtless in many other portions of England), quite sufficient to attract attention, and which presented many of the features generally recognised as those of Influenza, and which are there described by me; the chief difference appearing to consist in the large amount of ordinary catarrhal and bronchitic symptoms, as compared with the features of the disease as seen in 1890–1. These have been strikingly less marked in both of these years than they are described to have been in this and some others of the earlier epidemics.

Still, on the whole, the type of the disease was the same. The characteristic nervous prostration was present,

* It is quoted by Dr. Parsons in his most able and comprehensive Report (1891) on the Influenza Epidemic of 1889-90 to the Local Government Board.

and it was clear that a real or modified Influenza epidemic was present in the district.

The chief importance of such a minor epidemic thus recognised and described at the time, would appear to be its bearing upon the much discussed question whether Influenza is always a new importation at each outbreak; whether it entirely dies out and disappears after each great epidemic; or whether its seeds are always amongst us, showing themselves in a greater or less degree on favourable occasions, and ready to burst out into a wide-spread disorder whenever either the conditions of the atmosphere or of the animal system, or the *renaissant* vitality of the seed-germs, should furnish the appropriate conditions for the revival and renewal of the more virulent disease.

There is little doubt that an atmospheric influence not very different from that prevailing in this year, 1878, has occasionally been present in the spring of other years, when epidemic pneumonia and other respiratory diseases have extensively prevailed in certain parishes and localities;—as, for example, in one case in which these conditions were existent some twelve or fourteen years ago in a village some ten miles from Norwich. I was called at that time to a household in this parish in which four adults in one house were at one time suffering from acute pneumonia, all with very high temperature, but all of whom recovered. It is clear, nevertheless, that however nearly related "epidemic pneumonia" and "influenza" may be, yet that they are not identical, seeing that some of the specialized symptoms distinctive of the latter are always wanting in the former.

I have further noted that the prevailing winds in 1878 were westerly, instead of easterly, as is usual in this district in the spring months of the year. It has been noticed that with a severe visitation of Influenza, the prevailing winds have generally been easterly or north-easterly, and that the disease has advanced from China, Russia, or other eastern countries in a westerly direction. It is a fair suggestion, whether it is possible that the contrary direction of the current of the atmosphere at this season of 1878 had much to do with the mildness of the disease in this year, and with the variations of the phenomena which it presented. It should be further mentioned that this epidemic was not only comparatively mild, but was of very limited duration; and, moreover, does not appear to have been followed by many or very special nervous sequelæ.

INFLUENZA IN EAST ANGLIA, 1878.

(*Reprinted from* THE LANCET *of March* 16*th*, 1878.)

"DURING the past four or five weeks a wave of epidemic disease has been passing over this district. It has affected more or less a considerable proportion of the community, whether old or young, and has produced symptoms and effects which, though varying greatly in intensity, have been distinctly and manifestly of the same type throughout. This epidemic disorder has been regarded as 'Influenza,' and in many of its features resembles the former epidemics to which this name has been applied; but it has differed from these in some particulars, and especially in the fact of the frontal oppression and the true catarrhal symptoms being generally less marked and pronounced. In many cases, it is true, 'a bad cold' has been the most noticeable feature of the disorder; but, in a large proportion, cough, either dry and irritable, or moister and with some expectoration—rarely abundant—has been a more prominent symptom. In all the cases languor and depression have been much complained of; and there has frequently been present a peculiar damp, sodden, and per-

spiring condition of the skin, which has attracted the patient's attention, and which has either recurred several times in the day, or has been more or less present both by day and night for several consecutive days.

"The invasion of the disease has usually been sudden, and marked by more or less of chilliness or shivering, soon followed by the catarrhal symptoms or the cough previously alluded to. In some cases one member of a family has had 'a bad cold,' whilst the others, less severely affected, have only felt weak and perspiring, or have been merely teazed with a troublesome and irritating cough, which has been slow to pass away, and whose persistence has been apparently causeless and inexplicable. The apparent duration of these 'colds' has usually been about a fortnight, and they have in some cases disappeared rather suddenly, convalescence, when once begun, having gone on unexpectedly rapidly.

"In the majority of cases the disease has passed harmlessly away, but not in all; for many children and elderly adults have, during the presence of the epidemic, succumbed to the bronchitis, the congestions of the lungs, and the pneumonias which have been largely prevalent, and which have doubtless been due to the same morbid atmospheric influence. The severest types of the disease were seen at its commencement a few weeks ago. It has lately—though more extensively diffused and often affecting whole households—become more mild, and would appear now to be gradually passing away.

"It should be recorded that the season has been, as a whole, both damp and mild, and that the prevailing winds have been from the west. During this same period

whooping-cough and false measles have been present in the district.

"It is unnecessary to dwell minutely upon the other symptoms, since these are in broad outline like to those observed in other similar epidemics, and so ably described by Sir T. Watson; but I have thought it well to record the fact of the present existence of the disorder, and to note the slight peculiarities which have marked its passage through this district, as they have come under my observation. It has doubtless prevailed in a similar way in other districts of the country.

"The treatment which has been found most appropriate has been, speaking generally, a supporting treatment. Nourishing broths and other light but nutritious foods have been necessary, and champagne or other fermented liquors have frequently been found useful. Sinapisms and hot applications to the chest, &c., have usually given some relief; and small doses of opium or morphia have often greatly comforted, and allayed the irritating cough. For the general symptoms, ammonia, with nitric or chloric ether, or compound tincture of bark, or with expectorants, appeared well suited, and has usually afforded distinct relief to the feeling of general *malaise*."

INFLUENZA IN EAST ANGLIA

IN 1890.

(*Reprinted from* THE LANCET *of Feb.* 1*st*, 1890.)

"THE epidemic of Influenza has now fully invaded and spread through this district, and a large section of the population has been suffering from illness of greater or less severity. In consequence, we as practitioners have had to deal with a large number of cases of acute disease, respiratory or otherwise, attributable to its influence. Its early presence in this county has already been noted by Dr. Manby, but the results of further and localised observation appear to be worthy of a short record in your columns. From personal observation of various epidemics of Influenza in Norfolk, from that of 1847 downwards, I am able to say that the symptoms of the disease now present amongst us, although differing in some special and important respects from those of previous invasions, yet have a strong family likeness to them. On some former occasions the naso-frontal and catarrhal symptoms have usually been more pronounced than now, and it would almost seem as if in each succeeding epidemic these features of the disease have been less marked and essential.

Still the same type remains, and what I wrote in THE LANCET of 1878* of the then prevailing disease would fairly well describe that now existing in this neighbourhood. 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 connexion between the two circumstances.

"As to the present disease, single or isolated cases of it have frequently occurred, but more often the 'whole house' has been more or less affected, and its various members have all suffered, though in very different degrees. Some of them have had 'bad colds,' others chills and temporary feverishness, others have had scarcely any cold or cough, but much general pain and temporary fever; whilst occasionally one or more members of the household have been seriously ill, with oppressed breathing and pulmonary or pleuritic inflammations. In one family recently visited there were three suffering and dangerously affected, whilst the rest of the numerous party were scarcely importantly ill.

"It is, I believe, generally accepted that the cause of this disease is an atmospheric miasmatic germ; and whether the reported discovery at Vienna of the specific germ itself be confirmed or not, certain it is that in all essential particulars the invasion of the disease occurs in

* Vol. I., page 378.

the same way as does that of many of our well-known specific fevers, in which the presence of a microbal or bacillary cause is undisputed. For example, the initial rigor in severe cases, or the lesser chill in the slighter ones, with frontal headache, occasional vomiting or diarrhœa, and rapid and considerable rise of temperature, are all exactly what we are familiar with in other acute zymotic diseases, and are all unquestionably due to the sudden and rapid development in the body of fructifying germ life. In many of our cases, although there has been at first a little sneezing or a little 'cold in the head,' yet as a rule there has not been the active demand for pocket handkerchiefs and the strain upon the resources of this department witnessed on some former occasions. It has been plain that, although some local effect has been produced upon the nasal, naso-frontal, and pharyngeal mucous membranes, the morbid influence has been more especially exerted upon the system through the blood or the nerve centres, and then secondly upon the pulmonary organs. I say secondarily, because in some of the cases capillary bronchitis, pulmonary congestion, or inflammation and localised pleurisy have arisen or shown themselves more than a week after the attack, and where there could have been no possible exposure to chill after the seizure. To this condition we have, I think, some sort of analogy in the bronchitic or pneumonic trouble usually appearing in the second week of typhoid fever.

"As elsewhere, the invasion of the disease has often been extremely sudden, in the midst of perfect health. Besides the chill or rigor, there has then been usually a sudden sense of extreme illness, and of prostration of nerve power,

the patient instinctively feeling that he *must* go to bed and get warm; and if a thermometer be used, the temperature is soon found to range from 101° to 104°, according to the severity of the seizure. Besides these, the patient has generally complained of pain, often severe, of the forehead, or more generally behind the eyeballs, of pain 'all over him,' or of the limbs, or not infrequently of pain of and below the waist and in the upper abdomen, this last being in many cases a marked and noticeable symptom. In a large number of cases these acute symptoms have passed off in from twenty-four to forty-eight hours, and the patient, though feeling poorly, has begun to convalesce. But out of a large household there has frequently been one member of the family, or more, in whom the illness has not so subsided, in whom the sensations of illness have continued, and in whom thoracic oppression, diaphragmatic pain, and some cough have gradually supervened.

"The dyspnœa in these cases has sometimes been a striking feature, disproportionate to the extent of lung tissue affected, and occasionally of itself becoming a most formidable symptom. It is doubtless due to a condition of partial 'pulmonary paralysis,' and has been accompanied with a sense of extreme feebleness and helpless prostration. In these cases it has been noted that the muscular sound and the action of the heart have been extremely feeble, whilst the pulse at the wrist has been small and even thready. In the capillary bronchitis, the congestive pneumonia, or the pleurisy which has followed, the same sense of dyspnœa and prostration has continued in a marked degree; and although the pulse has been quick and the temperature high, yet there has sometimes been marked

pallor of the skin, with a cool and clammy perspiration, and a cold feeling of the extremities, much as was noted by me as occurring in 1878—this condition pointing to cardiac asthenia more than to the apnœal and dyspnœal results of the pulmonary engorgement. Occasionally some limited pleurisy has developed itself at the base of the lung, and in these cases it has been noted how unusually acute has been the pain which accompanied it—a pain greater and more lasting than that of ordinary pleurisy (almost as if acute neuralgia of the part were superadded), and sometimes requiring considerable doses of opium or even injections of morphia for its alleviation.

"The expectoration has varied greatly, sometimes scanty and colourless, at other times abundant, rusty, viscid, and truly pneumonic. The cough has rarely been severe or distressing. The decubitus, unlike that of ordinary pneumonia, has sometimes been remarkable. Even when a considerable part of one lung or portions of both have been choked by congestion, and when the difficulty of breathing has been considerable, I have seen patients lying almost flat down upon the bed, perspiring, pale, and evidently thus seeking relief to the cardiac asthenia and difficulty, more than to the effects of the pulmonary inflammation.

"As to treatment. As might be expected when the cause is so definitely specific, it has not been always so immediately effective as might be wished. The slighter cases have soon got well of themselves, but many of them have required considerable nursing care afterwards. In the severer ones, without the addition of thoracic inflammation, prolonged rest in bed, warm liquid or semi-liquid feeding, a little wine, and some cinchona or quinine with

ammonia or ether, have appeared to be suitable and helpful.

"Antipyrin, when given, reduced the temperature one or two degrees, and sometimes relieved the headache, but it has not appeared to produce any markedly good effect upon the course or duration of the disease. Ammonia, ether, bark, quinine, or salicine, and other remedies have variably been given during the inflammatory illness, and these, or some of them, have apparently at times been of some service; whilst sulphuric ether has occasionally helped the dyspnœa. Mild terebinthinate inhalations also have somewhat comforted the nasal and throat troubles. But the most marked and the most real advantage has been derived from the free and continued use of fluid nutriment of all varieties, with champagne or other wine or brandy. Perhaps the champagne (iced or not, as preferred) has been most useful as well as grateful; but brandy in considerable quantities has sometimes been given with manifest advantages, especially where the asthenic condition has been very marked.

"Upon the whole, my experience is that the treatment has been most effective when conducted on the theory of our having a specific fever to deal with, and of attempting to sustain the life and to guide the patient through it, rather than from active or violent attempts to subjugate the disease or its inflammatory complications. I have not seen any of these suddenly or even distinctly successful."

INFLUENZA IN 1891.

(*Read in the Section of Public Medicine at the Annual Meeting of the British Medical Association held in Bournemouth, July*, 1891, *and reprinted from* The British Medical Journal *of August 8th*, 1891.)

"Although the disease, Influenza, appears to be now again rapidly abating, yet it has recently prevailed so extensively and has occupied so large a portion of our professional attention that we may well at the present time give it the very fullest consideration; and this the more because not only does its study throw light upon other epidemic diseases, but the disease itself will probably soon have disappeared, and so the opportunity of investigating it will have gone for an indefinite period.

"Influenza has been so widely and severely present, both this year and last year, that medical thought has necessarily been largely concentrated upon it; and, thanks not only to the efforts of the medical officers of the Local Government Board, but also to those of many other observers, our exact knowledge and understanding of the disease have been very materially increased. In one notable respect, however, our knowledge has not yet become

so exact as could be wished, for, although Drs. Jolles, Weichelbaum, and others have claimed to have defined and differentiated the bacillus of Influenza, yet I fear we are unable to say that its special identification is yet assured, although we must all feel certain that the specific bacillus is present awaiting demonstration, inasmuch as a contagious and multiplying germ must be a living one and have a material presence.

"In East Anglia we last year suffered largely and widely from Influenza, and we have again in the present year (1891) been visited with an extensive outbreak of the disease, after a distinct and prolonged period of quiescence. Although similar in general features, yet in many respects this year's visitation has differed from that of 1890. In the first place, the period of its recrudescence in a widely-diffused or epidemic form was considerably later in the present year. In 1890 it began to prevail in January and February, and in scattered cases as early as December and November of 1889. But in this year in this district the disease did not become common or severe until the months of April, May, and June. On the other hand, its epidemic prevalence in 1891 was preceded by severe influenzal, or 'pink-eye,' disease amongst horses, which was not the case last year. Further, I think that, although the Influenza of last year showed far less affection of the lachrymal and naso-oral mucous membranes than had been observed in several previous epidemics—and I can well remember the profuse nasal and bronchial catarrhs so common in 1847—yet that this special symptom has this year been still less prominent than even in 1890.

"I have said that there has been less pure catarrh in the

Influenza cases this year. But, on the other hand, the irritative affection of the bronchial mucous membranes has been very constant, and often very extensive. In my experience, it has varied from the slightest development of wheeziness or scattered sibilant *râles* to the most extensive and general affection of the bronchial tract—often so general and producing so much mucous and nervous irritation that it caused profuse bronchorrhœal osmosis; or, on the other hand, the attack might almost have been mistaken for one of acute but dry spasmodic asthma. Often the bronchial affection has, here as elsewhere, been accompanied or followed by inflammation of the lung tissue or of the pleural surface, the pulmonary inflammation being generally lobular, of the congestive form, and not very prone to run into dense consolidation; whilst the pleurisy has often been acute, and very often leading to considerable pleural effusion, frequently of a purulent character.

"In considering these inflammatory cases no doubt some caution is necessary. Doubtless most of them are true influenzal inflammations, and probably all of them are influenced or modified by the specialised condition of the atmosphere. Still, we should remember that pneumonias and pleurisies are common in England in the earlier half of every year; and possibly not every chest inflammation lately seen has been of this class. On the other hand, the type of these cases, where no special guiding symptoms have been present, has usually been such as to incline to the influenzal view. And certainly the disastrous results which I have occasionally witnessed, where depleting measures and other such attempts to 'cure' the inflammations have been resorted to, have influenced my mind to

the strong conviction that the only safe course at present is to regard them as all of the epidemic type, and to act accordingly.

"In this year, as in the last, the special influence of the influenzal poison appears to have been very variously exerted. Almost any organ or function of the body has seemed liable to be affected, that special tissue or organ suffering the most according to the varying susceptibility of the individual or the weakness or peculiarity of the part. But as in other epidemics, not only of this but of other widespread disorders, the entire resistance of many human organisms to the disease has been very remarkable, certain individuals having very constantly escaped in a house quite full of the disease; and from this entire immunity to extreme susceptibility there would appear to have been every degree of liability. As an example of the susceptibility of weakened tissue to such infection, I have recently seen a case of an elderly lady suffering from one-sided chronic emphysematous bronchitis, limited to the base of one lung, and who, on being suddenly seized with influenza, developed the usual moist and sibilant bronchial *râles* over the whole of the rest of this lung, the other lung remaining unaffected throughout the attack.

"In another and very important respect our experiences of this year differ materially from those of 1890, namely, in the far lesser prominence of acute nerve pains of the trunk at the commencement of the illness, and the less frequency and severity of those nervous sequelæ which were then so common and so distressing. Many of those specialised nervous sequelæ were described by me at length in a paper which I read before the East Anglian

Branch of this Association, and, amongst others, I mentioned painful local affections or neuralgias; hyperæsthesia or anæsthesia of the arms, hands, back, legs, feet, gums, nose, or other portions of the skin; a sleepy or dulled condition of the brain; and many other secondary or allied affections.

"On the other hand, it has appeared to me and to those with whom I have conferred, that during the present year primary disorders of the brain and mind have been exceptionally common, much more so than in 1890. Every degree of mental disturbance has been observed, from simple apathy, drowsiness, or dulness of mind, through various degrees of mental depression or of excitement, up to delirium and absolute mania, and this latter so frequently as to constitute a special feature of this year's epidemic.

"It is here worthy of notice that these nervous sequelæ were almost entirely of the sensory nerves, in this respect forming a marked contrast to the paralytic sequelæ of diphtheria, in which disease the motor system is more especially involved; also, whilst in diphtheria the paralysis of the throat and head often showed themselves early after the commencement of the illness, and in the extremities usually within six weeks, in Influenza the truly nervous sequelæ rarely appeared before eight weeks after seizure.

"From the remarks of various writers upon Influenza, I judge that after many of the epidemics these nervous phenomena have not been very prominent conditions, as, although generally mentioned, they are scarcely described at all fully by any modern author except Dr. Theophilus Thompson, writing in 1840 in the *Library of Medicine*.

"Then as to the fatality. Although, if anything, more general and diffused, I think the disease has this year been sensibly milder, and has claimed on the whole fewer victims. Pulmonary inflammation, so-called, has been the most common cause of death, but in the very old and the previously diseased, unquestionably cardiac and general nervous asthenia has been often the apparent cause of failure. But neither as to 1890 or 1891 do I think we should be justified in repeating the assertion made by one writer on this subject as to the epidemic of 1738, that 'the Influenza was specially fatal in Norwich.'

"It has been observed by several most competent practitioners in this district that although one attack has not appeared absolutely to protect those who suffered last year from illness again this season, yet that in the most remarkable way villages in which the Influenza prevailed extensively in 1890 have been almost or quite free from the disease in this present year, whilst adjacent villages scarcely affected before have quite recently been generally and severely attacked.

"The question of the communicability of Influenza has been so fully and so ably discussed by Dr. Parsons in his recent report to the Local Government Board, that I will only say that the general experience of the epidemic in this eastern district tends to confirm the views he has there expressed. No doubt many peculiar facts connected with its propagation remain to be explained; but, beyond this, the mere discussion of its contagiousness or of its infectiousness is clearly superfluous, seeing that these two terms merely imply a varying volatility of the seeds or germs.

"A very curious circumstance bearing upon this point

was mentioned to me a few days ago. A gentleman called upon me suffering from distinct but mild Influenza, who told me that he traced his attack to having licked with his tongue for the purpose of sealing it the gum of an envelope sent to him for return in a letter from a correspondent, who wrote that he was suffering severely from the disease. He said that he immediately felt that he had done a foolish thing; and curiously enough in about forty-eight hours from this time he was himself seized with Influenza. If he was correct in his view, this simple incident would show positively (1) that the disease-germ is capable of adhering to solid substances, which may thus become the medium of its communication; (2) that it is communicable by contact with the mucous membrane of the mouth; and (3) that the period of its incubation is, or may be, about two days.

"The experience of us all has doubtless shown the most infinite variety of so-called seizures. As last year, and as always, I believe sudden headache, pain of the back and lower limbs, fever, and more or less irritation of the respiratory membranes, have been the usual initial signs, with not infrequently some nausea, vomiting, or diarrhœa, superadded. But none of these have been absolutely constant, and they severally have varied greatly in degree and intensity. Chills and rigors have been not infrequent at the commencement of the attack, but these have not been necessarily present, although a sense of shock, of great prostration and debility have been so nearly always, in greater or less degree. Neither has any special lachrymal irritation been observed, as stated by Dr. Besly Thorne.

"These introductory or primary symptoms have, as

usual, been followed after an interval of hours or days by other signs which may well be called secondary; such as catarrh, tonsillitis, bronchitis, pneumonia, pleurisy, or, indeed, irritation or inflammation of almost any or every viscus, as well as of the skin and of the nerves or nerve centres. An excellent summary of these various affections has recently been given in the *British Medical Journal* by Dr. Nicholson.

"Amongst the rarer secondary affections of which I have recently seen examples may be mentioned profuse bronchorrhœa; inflammation and swelling of the throat glands; a scarlatina-like eruption; swelling of and effusion into the knee-joint; acute alopecia (?); intense sleepiness—the so-called 'nona;' and puerperal symptoms, scarcely distinguishable from those of ordinary septicæmia; whilst other and later affections have been not uncommon, though scarcely so much so as last year, such as empyema, purulent mucous discharges from the nose or ear, albuminous or bloody urine, or a recrudescence or revival of the disease from slight causes, and a markedly abiding cardiac and general asthenia.

"Several cases of a most distressing nature have recently occurred in this district, and in the practice of different and widely separated medical men, where the patient was located in a house or district in which Influenza was prevalent, and who developed symptoms indistinguishable from ordinary puerperal septicæmia or so-called 'puerperal fever' within one, two, or more days after a prosperous confinement. The seizure was attended with shivering, high temperature, more or less altered uterine discharges and mammary secretions, and other indications of blood

contamination; and in at least one of these cases the termination was a fatal one. In these patients no ordinary cause of septic poisoning could be detected, and the infection appeared to be fairly attributable to the prevailing epidemic influence.

"As to the probable causes of these variations of the disease as seen in 1890 and 1891—as we have not yet had time to forget, the winter and spring of this year, have been singularly cold and dull, the temperature has been persistently low, and there has been a minimum of sunshine; and these assumed unfavourable atmospheric conditions may very possibly have modified the vitality and the infecting power of the germ cause. They may, in fact, have delayed its appearance by lowering its vital activity. Or, again, other possible causes more referable to the human subject may have been the potent factors in the case. Suitable and abundant food, no doubt, are as essential to the full activity and potentiality of minute germs as of larger animated beings. And how such matters as appropriate food and other conditions do affect and modify some bacillary growths will be well remembered by those now present who were able to attend the demonstration on this subject in the Cambridge laboratory at the conjoint meeting of the East Anglian, Cambs and Hunts and South Midland branches in June; for we were there able to see with our own eyes the remarkable differences of colour and appearance produced by growing certain bacilli under different conditions and in different media. So that it may well be that a different condition of the human prey may have had the larger influence over the variability of this year's phenomena.

"This disease being doubtless, like other infectious disorders, due to the implantation upon the mucous membrane of living germs, which subsequently multiply, and infect the system after a period of so-called incubation—this being the case, it would appear to be highly probable that the so-called seizure, the sudden attack, is due rather to a commencing secondary poisoning of the blood, nerve centres, and tissues, than to the mere shock from the reception of the living cause upon the surface membranes.

"We all know that the ordinary symptoms of an Influenzal attack are headache, pains of the back and lower limbs, fever, and various other indications of systemic irritation and alarm; and Dr. Theodore Williams quite recently, in describing the effects of the injection of Koch's tuberculin, stated them as 'rigors, fever, pain in the limbs, languor, great fatigue, often vomiting, increase of cough and expectoration, and occasionally an eruption like measles;' whilst Virchow has further spoken of 'catarrhal pneumonia' as one of the effects of the injection.

"Professor Koch tells us that this tuberculin is a 'glycerine extract of pure cultivation of tubercle bacilli in which the parasites have been killed.' In other words, the product of bacilli is the active material injected as tuberculin.

"As the symptoms of these two morbid conditions are so similar, indeed, almost identical, I suggest that this fact lends strong probability to the view that the secretion of these bacilli is the lethal agent in producing the severe results both in Influenza and in other allied diseases, and that the early life and multiplication of the infecting parasite is represented by the comparatively innocuous

incubation period, which in the case of the Influenza germ has been passed on the mucous membrane of the invaded individual, but in the case of the tuberculin-bacillus has been passed in a prior host. And it is a further point for notice that as the injection of tuberculin appears often to set free tubercle bacilli, and to promote the fresh advance of phthisical disease, so unquestionably last year in the experience of practitioners in this district, phthisis was infinitely more prevalent than in many previous seasons. If this is the true order and sequence of the phenomena, and if the apparently primary symptoms are really but secondary, and the sign of absorption of bacillary products, then doubtless the same holds with the numerous other diseases due to these minute living bodies.

"I fear that our increased experience has not shown us any specific remedy capable of controlling the disease, unless salicin or the salicylates may in some degree possess this power. As its main effect is to depress nervous vitality, so the avoidance of any debilitating treatment has been the first essential principle, and all measures calculated to rest and comfort and support the patient the second. Of drugs, I think that antipyrin in five-grain doses has held its ground as the most effective remedy for the primary headache; whilst for the bronchial irritation and inflammation, nothing has appeared to be so generally useful as the carbonate, or the spirit of ammonia with tincture of bark, combined with chloric or sulphuric ether as required. Champagne, or other wine, or some spirit, has been most valuable; and warmth externally, anodyne embrocations, and inhalations of carbolic acid with conium have proved most useful in suitable cases; also, after the

existence of the disease for some days or longer, the tincture of iron with quinine and a mineral acid has occasionally given distinct relief. The treatment by iron has of late been specially recommended, but we must not forget that in 1847 Sir Thomas Watson wrote: 'I know no tonics so good as the sulphate of quinine or of iron for these patients.' The iron salt would appear to be specially useful in those cases where a suppurative or alkaline tendency has shown itself."

INFLUENZA IN LOCAL PUBLIC INSTITUTIONS.

It is interesting to note the varied way in which the Influenza has affected the inmates of our larger public Institutions:—the details of its occurrence in which have been kindly furnished to me by the respective medical officers or medical superintendents. It will be seen that the disease fell with varying force and incidence upon them, but nevertheless the type of the affection was very similar throughout, and usually the attack and special spmptoms noted were the typical ones observed amongst the general public.

As elsewhere and in private houses, the severity of the disease was as a rule greater in the first year of its appearance (1890) than in the second. The total direct mortality from it in these establishments appears to have been extremely small; while in several of them no death occurred. The cause of death when occurring, being pulmonary, and either pneumonic or broncho-pneumonic.

It is notable, that a larger proportion of the officers of the various establishments, as well as of the nurses or attendants and servants, was, as a rule, attacked, than of the patients or inmates. Relative local situation appears scarcely to have influenced its appearance or severity.

The chief points which these returns illustrate, are:—

1. The traceable introduction of the disease from without in the Norfolk and Norwich Hospital, and the Hellesdon City Asylum:

2. The general absence of *important* catarrh or of severe bronchial symptoms in a large number of the patients, and in all the mild cases.

3. The remarkably slight contagiousness of the disease noted, especially as observed amongst the prisoners in the Norwich prison.

4. The immunity of the *children* in the children's ward of the Norfolk and Norwich Hospital from the disease.

5. The peculiar and striking sleepiness observed amongst the little children attacked in the Jenny Lind Infirmary on the first day of their illness.

6. The larger proportion of the staff and servants attacked (as a rule) in the various Institutions, than of patients or other inmates.

Norfolk and Norwich Hospital. The usual number of patients in this Hospital varies considerably, but averages about 140. In addition there are about 35 nurses, 17 servants, and three resident officers. Total about 200 persons.

At no time in either 1890 or 1891, was there any large amount of Influenza present in this Institution, but a few patients were affected in the first half of 1890, commencing in January, but not very severely; whilst a considerable

number (about 12) of the staff and household were more or less ill with it.

In 1891, it may be said scarcely to have been present in the wards, but a few of the resident staff, etc., suffered slightly from it, chiefly in the month of April. In neither year were the young children in the large ward, devoted to them, and which usually contains about 35 patients, affected, but two or three adolescent girls in this ward did suffer mildly. A considerable number of cases of tertiary affections or sequelæ have since been admitted. They were chiefly of the neurasthenic class, markedly of the abdomen or abdominal organs, but there have also been cases of pleural effusion, and various paretic neuroses.

Dr. Bateman had no cases amongst his in-patients in either year.

Dr. Barton tells me that the first of his cases in 1890 was a young man who appeared to have been infected by his father, who visited him in the hospital whilst himself convalescing from an attack outside. This patient sickened with Influenza in twenty-four hours; and in three days five more cases in the same ward occurred.

He also says that neuritic sequelæ and nervine weaknesses have been exceedingly frequent amongst the hospital out-patients this year as well as last.

Dr. Burton-Fanning in 1891 had a specially curious sequela of Influenza in the case of a young girl who had acute and general alopecia of the scalp after each of two distinct attacks of this disease; but no cases of primary Influenza.

The abstracts of notes of ten cases carefully observed by Mr. Nance in 1890, whilst House Surgeon to the

Norfolk and Norwich Hospital, and the records of which have been kindly furnished to me by him, are given in the appendix. They are chiefly of female patients, whose seizures were more severe than those of the males. None of them were extremely bad cases, but they illustrate several peculiarities of the disease; as well as the slight amount of contagious influence upon neighbouring patients.

Mr. Reginald Crosse, the present House Surgeon, tells me that he has had no definite outbreak of Influenza amongst the patients in this present year—1891.

Jenny Lind Infirmary for Sick Children. Situated in Pottergate Street, on the lower level of the City: average number of inmates about 35:—patients, 25, household, nurses, and servants, 10.

Miss Wainwright, Lady Superintendent, informs me that in 1890, Influenza appeared in the Infirmary on January 5th. After this date thirteen children, and five nurses and servants, suffered from it. The single servant who was ill was the wardmaid, whilst the cook and housemaid (whose duties do not take them into the wards) escaped. The usual mode of seizure was, in the case of the children, sudden rise of temperature, headache, and *extreme drowsiness.* In the adults, the symptoms at the onset were, headache, backache and pains in the limbs, with fever. No death occurred from the disease.

There were no cases of Influenza in this Infirmary in 1891.

Norwich Bethel Asylum. Situated in Bethel Street, Norwich. Number of patients about 74. Number of household about 25.

Dr. Fielding, resident Medical Superintendent, tells me that neither in 1890 nor in 1891 did any of the patients suffer from Influenza.

In 1890, four of the household were attacked, thus:—

The cook became ill on March 10th. She was attended to by the matron of the Institution and the sewing-maid. On March 16th, the matron fell ill; on March 18th, the servant; and on March 24th, six days later, the master became affected with the disease. It then died out. In 1891, one attendant suffered from it, and no other person.

Dr. Fielding expresses the opinion, derived from his own observation, that the period during which a convalescent can impart or convey the disease to another individual is very short, and usually not exceeding a week from the subsidence of distinct illness.

Norwich Workhouse. This establishment is situated about a mile from Norwich, between the Earlham and Dereham roads. It is on a fairly high level, and is not closely approached by any number of houses.

Mr. Cecil Muriel, Surgeon to the House, informs me that in 1890, the first cases of Influenza occurred on January 23rd; but in 1891 not until the 29th of May.

The average number of inmates was, in 1890, about 665, namely, 641 poor persons, and 24 of the household and staff. In 1891, there was an average of 572 poor, and of 24 of other residents. In 1890, the number of per-

sons attacked was 43, namely, 35 poor inmates, and 8 of the household, and attendants and servants. And the usual initial symptoms were headache, with pains in the back and limbs; the high temperature generally lasting either two, or three, or four days. No death occurred in this year.

In 1891, only three of the poor, and none of the other inmates were attacked. The special symptoms noticed were much gastric disturbance, with catarrh, and bronchitic rales; and the duration of the primary symptoms was often prolonged to six or seven days. One death occurred, from pneumonia.

Norwich Grammar School. Situated in the Cathedral Close, Norwich.

1890. Number of resident pupils, 18; of other inmates, 15.

1891. Number of resident pupils, 25; of other inmates, 10.

The Head Master (Rev. E. F. Gilbard) informs me that in neither year were any of the pupils attacked; but that one member of the household suffered from Influenza in 1890.

St. Giles's (Old Man's) Hospital. Situated in the meadows of St. Helen's parish, almost on the level of and near to the river, and much overshadowed or protected by surrounding hills and buildings.

Usual number of old people resident, male and female, about 192; of staff with nurses and servants, 20. The age of the inmates when elected must be at least sixty-five years, and they vary from this age to ninety and upwards, many being very old.

Dr. Beverley, the Medical Officer of the Hospital, tells me that of the few cases of Influenza which occurred in it, the majority were comparatively mild; and no death resulted from it. In 1890, one inmate and one member of the household were attacked. In June, 1891, 4 male and 9 female inmates (distributed through six out of ten wards) and three members of the Master's household were ill with it. No nurses or servants were affected in either year.

Mr. Cox, the resident Master, observes upon the remarkable freedom of this St. Giles's Hospital from epidemic disease, both in the past two years, and in the presence of other and former epidemics. He notes this as the more remarkable, because the customs of the Hospital would appear to be favourable to the introduction of contagious disease; *i.e.*, the inmates enjoy the liberty of going out, and do daily visit houses in all parts of the city, and then return to the wards and cottages. He also thinks the somewhat close atmosphere of the wards might be expected to favour the occurrence of epidemic disease; a condition produced by the preference of the aged people for warmth instead of ventilation. The general immunity of the Hospital from contagion would therefore seem to be a noticeable fact.

Norwich Asylum for the Blind. Situated in Magdalen Street, in the lower level of the city. Number of inmates, in 1890, 41, and in 1891, 48 blind persons, and 11 of the staff and household.

Dr. Odhams, the medical attendant of the Hospital, says that in 1890 no case of Influenza occurred in the institution. In June, 1891, one (only) of the male inmates was attacked. The symptoms in this case were the usual ones, of frontal and dorsal pains, great feeling of general *malaise*, and a raised temperature (to 102·5°), which subsided in forty-eight hours, and the patient recovered.

The Cavalry and Infantry Barracks, Norwich. These Barracks are situated on the edge of Mousehold Hill, the Cavalry buildings being nearly at its foot, and the Britannia (Infantry) Barracks on a higher level. The great expanse of the Mousehold Heath is behind them both.

It will be observed that the proportion of individuals attacked with Influenza was very much greater in 1890 than in 1891.

The following table and noted facts have been furnished me by Surgeon-Major Morphew, in medical charge of the troops:—

1890.

	Cavalry.		Infantry.	
	Strength.	Admissions.	Strength.	Admissions.
Soldiers ...	281	63	173	50
Officers ...	19	2	6	1
Women ...	34	7	46	7
Children ...	42	12	140	2
	376	84	365	60

1891.

Soldiers ...	300	1	150	9
Officers ...	16	2	9	1
Women ...	33	1	55	4
Children ...	40	1	130	1
	389	5	344	15

In 1890 the Influenza made its first appearance among the troops on the 3rd of January, and did not terminate until the 26th March. This caused 114 admissions. There were rather more admissions amongst the cavalry than the infantry soldiers absolutely, namely 84 to 60, being a proportion of about 1 in 4½, but less relatively; the proportion of soldiers attacked of the Norfolk Infantry Battalion being about 1 in 3½. In 1891, the numbers in both barracks were much less, both as regards soldiers and other residents.

In all cases the disease was ushered in with great prostration, and heightened temperature—which in the majority of the patients ranged between 99° and 102°, but in a few instances reached 105°. There was an absence of catarrhal symptoms in very many of the cases, and in those in which they did appear, they followed the first days of pyrexia. In a few of the patients there was an erythematous rash on the face and chest, which lasted only a few days. Debility generally followed, and the pains in the back and extremities were in some of the cases very persistent. The treatment adopted was stimulating expectorants, diaphoretics, and during convalescence, quinine and iron. All the patients recovered.

Norwich Prison. Situated on Mousehold, on very high and open ground.

Average number of resident prisoners, about 100. Average number of officers, 12.

Mr. Robinson, Surgeon to the Prison, informs me that in 1890, the number of prisoners who suffered from Influenza was 12, and of officers 7. In 1891, 6 prisoners, and 2 officers, so suffered. The cases were in no instance very severe: no pneumonia developed itself; and no death occurred. The disease first appeared, in 1890, on January 26th; and in 1891, on April 23rd.

The average duration of real illness was three days. The symptoms were, pains in the head and back, cough—sometimes loud and "hacking," and almost dry—and sibilant rales, with very scanty expectoration. There was an almost entire absence of ordinary catarrh, and scarcely any coryza.

Mr. Robinson was struck with what appeared to be the small degree of contagiousness manifested. The prisoners are and were associated during illness in contiguous cells, on the corridors; and moreover, when convalescing, took exercise together in the prison yards, yet no necessary contagion or spread of the disease appeared to result.

Heigham Hall Asylum, Norwich. Dr. Compton, resident Medical Superintendent, has furnished me with the following particulars.

In 1890, the inmates were scarcely at all affected. They numbered rather more than one hundred, of which about 77 were patients and 25 officers, attendants, and others.

The numbers were practically the same in 1891, when, of the 45 ladies, 10 were attacked; and of the 32 gentlemen, 5. Of the attendants and servants, 17 were affected.

In 1891, he says "The patients and attendants on the male side of the establishment were first attacked in March and April. A fresh 'wave' seemed then to introduce Influenza to the female wing in June, when no less than 31 patients and attendants were attacked, and suffered more or less severely from its effects. All under treatment recovered, but the majority of those stricken were troubled for some time with bronchial catarrh, and neurasthenia, and great prostration. The mental condition of the insane was not in any way affected by the epidemic."

The usual mode of attack was with headache, aching of the limbs, pain of the back, and raised temperature. This last varied from 102° to 104° Fahr., and generally subsided to normal in forty-eight hours.

In one case, there was acute and recurring erythematous urticaria, with relapsing bronchitis, and congestion of the base of one lung, but the patient recovered.

In one very elderly lady (82 years) who had had previous attacks of bronchitis, bronchial rales, with congestive signs at the bases of the lungs, lasted three or four weeks; but with extreme care, warmth, and prolonged rest in bed, they slowly passed away, and she made a complete recovery.

No deaths occurred from the disease.

Norwich City Asylum.—This Asylum is located at Hellesdon, about two miles from Norwich, and stands upon high and open hill ground. In 1890 it contained 246 patients, and 38 officials and other residents. In 1891, the number of patients averaged 264, and of officers, attendants, and servants, 43.

The inmates were affected to a certain extent both in 1890 and 1891.

Dr. Harris, Resident Medical Superintendent, says, in 1890, 10 patients (4 male and 6 female) were attacked with Influenza; and no less than 36 of the officials and servants, besides 8 artizans employed about the establishment though not resident in it. Three or four deaths occurred, more or less entirely due to Influenza or its bronchitic or pneumonic complications.

He says:—The disease usually commenced with signs as of a severe cold, pains in the head and limbs and loins and back, and some coryza, and all those attacked complained of general lassitude. The usual duration of high

temperature was from twelve to twenty-four hours. Many of the cases were of the distinctly bilious type, and forcibly reminded me of cases of malarial fever formerly seen by me in the West Indies. Giddiness or a sensation of unsteadiness in standing or walking was frequently complained of. One or two of the patients presented a scarlatina-like rash. Convalescence was often very protracted.

Dr. Harris adds, that he believes he was personally the medium of introducing the disease into the asylum. He says, "On the night of January 2nd, 1890, I travelled from London to Norwich by the night mail, with only a single fellow passenger, who was then suffering from Influenza. I shortly fell ill with it; then my boy who slept with me; and in immediate succession, my daughter, her governess, some house servants, nurses and attendants, and the patients mentioned above."

In 1891, but few cases occurred. Three (female) patients only were attacked, in addition to two house servants, and one of the gardeners. This outbreak was in March, and it was noticed that there was much less coryza present than in the cases of the preceding year. The only mental change produced by the disease in either year appeared to be an increase of depression in the melancholic cases.

Norfolk County Lunatic Asylum, situated at Thorpe, three miles from Norwich.

This Asylum consists of two separate and detached buildings, the aggregate number of patients in the two

being 700, namely, 300 males and 400 females. There is besides a large staff of officers, attendants, and servants.

Dr. Thomson, Medical Superintendent of the Asylum, informs me—

With regard to the 1890 epidemic, that in this outbreak, which commenced in January, about 74 of the patients were attacked, and that of these two died, the cause of death being in both cases pneumonia. The prominent symptoms, as recorded by Dr. Little, Assistant Medical Officer, were—frontal headache, pain in the lumbar region and limbs, prostration, coryza, cough, nausea, constipation, hoarseness, redness of fauces, diarrhœa, melœna, colic, epistaxis, herpes of face, erythema of face, general rash, neuralgia, discharge from ear.

The complications of the attack, were bronchial catarrh, bronchitis, bronchial asthma, lobar pneumonia, ulceration of tonsils, erysipelas, menorrhagia, otorrhœa, erythema of leg.

The temperature was in all cases raised, in a few only slightly so, namely (in three cases) to 98·8° Fahr., whilst in the rest it varied from 99° to 104°, and in one case it rose to 104·6°. In every case the temperature was subnormal for some three or four days after its subsidence.

The duration of the illness was, of 61 cases specially noted—

1 day in 5 cases.
2 days in 16 cases.
3 days in 14 cases.
4 days in 6 cases.
5 days in 4 cases.
6 days in 3 cases.

7 days in 5 cases.
8 days in 2 cases.
9 days in 2 cases.
10 days in 2 cases.
17 days in 1 case.
5 weeks in 1 case.

Fourteen cases of "relapse" are mentioned.

The following extract from Dr. Thomson's Annual Report for 1890 gives a few additional particulars :—

"Influenza broke out about the middle of January, somewhat later than elsewhere in the neighbourhood, and lasted for two months. Cases occurred all over the establishment, here and there on an average one fresh case a day. The female patients suffered much more than the male. There were 60 female patients (out of 400) affected and only 14 male (out of 300). The only part of the building enjoying almost complete immunity was the female division at the Auxiliary Asylum. Of the 74 cases two died from secondary pneumonia. All ages and all forms of insanity were alike attacked. The staff also suffered, 2 out of 3 medical officers, all the other officers, all the nurses, and 17 out of 24 male attendants."

As regards 1891, Dr. Thomson says :—"We have had desultory and occasional cases, one or two at a time, dotted over the building ever since the 1890 attack till now."

The following table gives a summary of the figures contained in the above thirteen returns. Including as they do, the sick in the various hospitals, and the aged

inmates of St. Giles's Almshouse, they show conclusively, not only how slight is the mortality from Influenza in public institutions generally, but also how non-fatal it is in these homes even where other ailments or advanced years have necessarily more or less undermined the vital resisting powers.

It will be seen that, in 1890, of 3305 persons thus grouped together, 437 are reported as having suffered from Influenza, or a little more than 13 per cent.; of these only 6 (all inmates of asylums) died; *i.e.*, one death in about 73 cases. In 1891, out of 3253 inmates, and 126 cases of illness, *i.e.*, about 4 per cent., only one death is reported.

The returns also show the enormous disproportion between the numbers of the *special* inmates attacked, as compared with those of the staff and nurses and general household. The relative *ratio* being, in 1890, about one in ten of the patients, &c., and about one in three and a half of the other residents; whilst in 1891, the *ratios* are about one in thirty-three, and one in twelve, respectively.

They further tend to confirm the view that, although the Influenza was widely diffused in 1891, yet that it was distinctly milder, and a far less serious danger to those attacked, in this second year of its presence, than it was in the latter part of 1889 and the first half of 1890.

And as to treatment, they very strongly indicate the first importance of home cure, which implies that of rest, and warmth, irrespective of any other measures which may be thought to be desirable.

	Average Number of Patients or Inmates.		Average Number of General Household.		Number of Patients Attacked.		Number of Household, &c., Attacked.		Deaths.		Cause of Death.	
	1890	1891	1890	1891	1890	1891	1890	1891	1890	1891	1890	1891
Norfolk & Norwich Hospital	140	140	55	55	14	—	12	5	—	—		
Jenny Lind Infirmary ...	25	25	10	10	13	—	5	—	—	—		
Bethel	74	74	25	25	—	—	4	1	—	—		
Workhouse	641	572	24	24	35	3	8	—	—	1		Pneumonia
Grammar School	18	25	15	10	—	—	1	—	—	—		
Old Man's Hospital	192	192	20	20	1	13	1	3	—	—		
Blind Asylum	41	41	11	11	—	—	—	1	—	—		
Barracks, Cavalry	281	300	*95	*89	63	1	21	4	—	—		
Barracks, Infantry	173	150	*192	*194	50	9	10	6	—	—		
Norwich Prison	100	100	12	12	12	6	7	2	—	—		
Heigham Hall Asylum ...	77	77	25	25	—	15	—	17	—	—		
Hellesdon Asylum	246	264	38	43	10	2	36	3	4	—	Broncho-Pneumonia	
Thorpe Asylum	700	700	75	75	74	30	60	5	2	—	Pneumonia	
	2708	2660	597	593	272	79	165	47	6	1		

* Including the women and children.

INFLUENZA IN EAST ANGLIA IN 1892.

(*Read before the Norwich Medico-Chirurgical Society, in May, and revised November*, 1892.)

Influenza prevailed again very extensively in East Anglia during the first three months of this year. Indeed, so general, almost universal, was it in this district during February and March, that the term, pandemic, was constantly applied to it; and the strain upon the time and energies of the medical profession was consequently very great. During the latter part of March it gradually diminished, both in extent and intensity, and by the end of this month had nearly disappeared. It ceased, as it had begun, very suddenly. Since March only a few scattered cases of the disease have occurred. But quite recently some cases of illness have occurred which, although a little doubtful as to their nature, have raised a strong suspicion as to their being due to the Influenza poison.

The disease has shown many marked variations this year, as compared with its incidence in 1890 and 1891. Thus, its commencement, as a general epidemic, was more sudden; its development and general diffusion were very rapid; and after seven or eight weeks of virulent prevalence,

its subsidence was almost as markedly rapid as its beginning. How fatal it and its secondary influences were, is well typified by the local tables of mortality for two or three of the early weeks of the year, during which the rate in Norwich rose to forty and forty-four *per* thousand *per annum*, being at least double the average number of deaths of ordinary healthy seasons; a very large portion of this mortality being due, either directly or indirectly, to this disease.*

Tradition tells us that in its later epidemics the disease was usually most severe in the first year, and that—though reappearing more or less for two or three subsequent springs—yet that it was always with rapidly diminishing severity. But in this, the third year of the present outbreak, its severity and general diffusion have equalled, if not exceeded, that of either of the two former ones; and, indeed, so much so, that during February and March last, it almost approached the character of a true pestilence.

The chief other respects in which the disease has differed this year from the two last, is in the greater severity and persistence of the pulmonary coincident involvements,

* The Editor of the Norwich *Daily Press*, writing on May 7th, thus comments on this excessive local mortality: "The quarterly returns supplied by the Registrar-General show the havoc which Influenza made among us in Norwich during the first three months of the year. Why, we had very nearly as many deaths as we had births. Indeed, the death-rate reached a weekly average of 28½ per thousand. Of the large cities and towns of England, only two were worse than we, namely, Wolverhampton and Liverpool. The excessive mortality, however, was among the aged. The epidemic was peculiarly fatal among people who were over sixty years of age. During the three months as many as 322 persons who had survived their sixtieth year died. Happily the ravages of the epidemic have ceased, and we now stand at a normal death-rate."

whether bronchitic, pneumonic, or broncho-pneumonic. There have been, unquestionably, abundance of examples of affections of the gastro-enteric, and also of the cerebral and general nervous systems. But there is no doubt that on the whole, the severe, the paralysing, the mortal influences, have been exerted to a very extreme degree upon the cardiac and respiratory branches of the pneumo-gastric nerve; and it is to these influences that the very large mortality, directly or indirectly caused by this disease, has been mainly due.

As in the past two years, the amount of *catarrh* attending the disease has varied greatly, but has usually been slight (except in those subject to recurring bronchitis); and there has generally been but little involvement of the mucous membrane of the eyes or nose; but there has been a greater tendency to a passing soreness of the throat. Acute pleurisy, with simple or purulent effusion has been decidedly less common than in the first year; but on the other hand, there has been an undiminished tendency to the occurrence of pneumonia and broncho-pneumonia.

The morbid auscultatory sounds have, in some cases, been very varied and peculiar; and the course run by these complicating inflammatory affections has often been distinctly different from that of these affections in their simpler forms: and, speaking from watchful observation of my own case, I can say that the course and symptoms of the lung affection differ most markedly from those of ordinary pneumonia. Thus the solidification of the lung tissue is never very dense, and the percussion note never very dull; whilst the clearing up of the engorged and condensed lung tissue has often been unexpectedly rapid.

There is now no doubt that the varied and peculiar auscultatory sounds heard in these cases—sibilant, rhonchal, and crepitant—are due to the direct impact upon the mucous surfaces of the specific germs of the disease, and that on each of these spots some of the Influenza seed has alighted, and has there grown and fructified—causing by this growth the irritation which produces the mucous secretion and consequent sounds. And this applies both to the bronchial and pulmonary complications. And in reference to this, Dr. Klein confirms the observations of Pfeiffer and Kitisato, that "the characteristic Influenza bacilli are constantly present in the bronchial sputum of Influenza cases,"* and says that they rapidly diminish in numbers as the patient gets better. He also states that the bacilli are similarly found in the congested and pneumonic lungs of Influenza; in one case examined, some capillary vessels of the part being "completely blocked by a mass of microbes."

Although the point does not appear to have been yet fully investigated, it may be presumed that the same local effects are produced upon the gastric and intestinal mucous surfaces, when these parts are more especially affected. And this appears the more probable since Klein has shown that, in cases of acute Influenza, *the fluids of the mouth* may contain abundance of Influenza bacilli, some of which would necessarily be swallowed. It would appear, from his further researches, that such distant affections as, *e.g.*, pleuritic effusions, may be due rather to a secondary

* Pfeiffer and Beck state that they have not been able to find bacilli in the blood, and according to them "it appears to be proved that the morbid process of influenza is accomplished within the bronchial territory."—*Local Government Report*, 1889-92.

development of a streptococcus, than to that of the Influenza bacillus itself.

The acute initial symptoms seem to have been practically identical with those of 1890 and 1891, and to have consisted of often sudden feelings of *malaise*, with chills (often slight), quickly followed by pain or discomfort in the head, feelings of great prostration, and pains in the back and lower limbs. The temperature has usually risen to 100 or 103; but in uncomplicated cases, has subsided, either in one or in some three or four days, to normal or sub-normal (the so-called three days fever), with quick subsidence of other acute symptoms. There has frequently followed a *period* of sub-normal temperature, with a condition of lingering debility and delayed convalescence.* Later still some one or other of the well-known wearisome sequelæ have frequently shown themselves.

It would seem that East Anglia has always been largely affected by epidemics of this disease.† Its incidence in the last three years is but too well known. A minor epidemic in this district, in 1878, has been described by myself (see page 27), whilst many other localities escaped. The severity of the epidemics of 1837 and 1847 are well remembered by me.

* In a few cases either the temperature or the pulse, or both, have remained raised for several days after the subsidence of other symptoms, and without other continuing signs of illness.

† Possibly from its being situated on the easternmost part of England. On this point Dr. Beverley has stated that in the beginning of this epidemic, in the autumn of 1889, "the earliest recorded cases of the recent Russian Influenza occurred in one of the best known houses on the cliffs at Cromer, during the prevalence of the east winds." Nevertheless, the view of the aerial conveyance of the infecting germs is not that which is now generally accepted.

Dr. Beverley, in his presidential address (1890) to the East Anglian branch of the British Medical Association, has also called attention to a passage in Dr. Caius's treatise "Ephemera Britannica," which appears to describe a severe epidemic visitation of Influenza in this city in the earlier half of the sixteenth century. In this he speaks of "violent pain in the head, extreme thirst, internal heat, drowsiness, and sweating," and says that "it affected suddenly persons in high health, mostly of middle age, and especially of better rank and condition." Caius attributed the cause of it "amongst other things, to contaminations of the air, which being wafted by the winds, were perceived to carry the contagion with them." Of the last century, Dr. Symes Thompson* writing of the epidemic of 1762, has the following paragraph, "At Norwich, 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, or by the more severe visitation, called Influenza, in 1743."

As is well known, the general epidemic of 1837 was described in a most masterly way by Sir Thomas Watson, and by this outbreak Norwich appears to have been severely affected. As these notes are intended to be in great measure a local record of Influenza, the following brief extracts from letters in the recently published life of the late Professor Sedgwick,† formerly Prebendary of our

* "Annals of Influenza," ed. 1890, page 64.

† "Life and Letters of the Rev. Adam Sedgwick," by Messrs. Clark and Hughes, 1890.

Norwich Cathedral, may be both interesting and instructive; stating as they do, in the Professor's quaint but descriptive way, many facts in connection with this outbreak which would well apply to a description of the present (or recently passed) epidemic. Professor Sedgwick himself seeming to have been ill or ailing with Influenza for several weeks.

On the 23rd of January, 1837, he writes:—

"My servants are ill of the Influenza, and for the last ten days I have myself been out of sorts, though never quite laid up." Two days later he wrote, "My house is a hospital," and he excuses himself for not having completed a paper he was writing by saying, "Throw the blame on me as much as you like, or blame the Influenza. My stomach is sadly out of order, and for the last two days I have been tormented with a palpitation of the heart, which though not acutely painful is very distressing." He goes on to say, "I read prayers myself in the Cathedral this morning. All the Minor Canons, and most of the Singers, are laid up in bed." Again, a day or two later, he says, "Had I not been in a miserable condition from the effects of this malady which is raging in the heart of Norwich, I should be ashamed of myself for failing you in the hour of need. But the Influenza destroys all feeling for others."

On the 2nd of February, he again writes, "For the last three days I have been almost confined to my bed. This morning I am beginning to wake up, and have taken a short walk in the sunshine. But I have still a pain in my brow, and a swimming in my head, and am still slightly feverish." Two days later, *i.e.*, twelve days from his first real illness, he says, "I am now very much better."

Soon after this he returned to Cambridge, and shortly after he speaks of having "paralysis of one-half of the optic nerve of the left eye," which, though it soon passed away, left the eye weak.

On the 24th March, Professor Sedgwick writes:—

"The weather is as cold as Christmas, and the great court of

Trinity College is literally mid-leg deep with snow." "I have had a sore relapse of the Influenza, and for ten days have been confined to my sitting-room and bed-room, in both of which, by Haviland's order, there is and has been for the last ten days a great roasting fire." He goes on to describe his "head as ready to split, and his lungs wheezing like the cracked bellows in the organ of St. John's Chapel." A little later he seems to have recovered from this relapse, but the usual debility appears to have remained, for he says, "On Friday I took a short ride; and though I returned from it much fatigued, I was certainly refreshed by the exercise."

He thus, I think, in a very few sentences, describes many of the leading features of the disease, as we have recently so fully witnessed them. For instance, he mentions the general and simultaneous affection of his household and of the Cathedral officials. He describes some of the special and specific symptoms, as we have lately seen them. He also describes his relapse from slight exposure; and even a slight nervous sequela,—one of the class with which we are now so familiar in connection with this disease.

Upon the inmates of the Great St. Helen's (old people's) Hospital in this year 1837, the epidemic seems to have fallen with great severity. Their numbers were about two hundred, and of these no less than eighteen died in the first three months of the year, instead of the usual average number of four or five. Mr. Lohr, the then Master of the hospital, makes the following note in his list book, in reference to the disease at this time, "During this period the Influenza prevailed sadly in the house. Not one-tenth of the inmates escaped it. Those (5) who have a × against their names most certainly died from it, and several others who had old coughs or asthmas, had their deaths accelerated by it."

It may be here added, that in the three first months of

1847, the deaths at this hospital from Influenza were not much increased, but in 1848 the total number doubled the usual average, being ten instead of five.

Its incidence in 1890 and 1891 upon the residents (whose ages vary from 65 upwards) has been already given.* In the Spring of this present year (1892) a larger number of these inmates were affected than in those years, and thirteen deaths, several of them more or less directly due to it, occurred in the establishment—instead of the usual average of five in these first three months of the year.

Many members of the medical profession in this district have this year like myself suffered more or less severely from Influenza. As I was able carefully to note the various phases of my illness, I have recorded (see Case 24) my personal observation of the symptoms as they occurred.

* See table, page 65.

INFLUENZA IN 1893.

(*Revised, and reprinted from* THE LANCET, *of November 30th*, 1893.)

THIS is the fourth year of the prevalence of Influenza in this country, and, as I have in the three previous years placed on record my observations of the disease in this East Anglian district, I venture again to relate my further experience; for, although the general history and features of Influenza have been very fully and learnedly dwelt upon by numerous writers and again quite recently in Dr. Parsons' report to the Local Government Board, I do not think that this subject is by any means exhausted. In looking back over these past four years it may be said that the disease has always shown its own distinct type and its specific individuality, and the primary seizure has varied but little, except as regards its severity; yet when a careful note is made of its complications and secondary manifestations it will be seen that they have varied so much in character and intensity in the different years that it may be said there have been different ailments to appreciate and to treat. Thus, speaking broadly, in the first year the primary fever was more severe; acute inflammations

more constantly complicated the seizure; pleurisy with effusion was more frequent; neuritis and severe local neurosis were more common; whilst the bronchial affection rarely passed beyond the condition of dry sibilant rhonchus. In the second year (as in each succeeding year) pneumonia was common, but with less pleurisy, whilst a greater tendency to bronchitis with secretion showed itself. In the third year primary local neuritis had almost disappeared, but there was an increasing tendency to acute disturbance of the action of the cerebral and spinal centres, frequently followed by secondary or peripheral nerve affections; active gastro-enteric symptoms appeared also to be increasingly frequent, and still more so in this present year, 1893. In this last year the special feature of the disease has been the still more frequent implication of the nervous system, both primarily and secondarily, without other complications, as is shown by the frequent occurrence of delirium, of mental excitement or of actual mania, or by the supervention of cerebral or spinal meningeal inflammation. And, indeed, so much less severe has the initial fever, as a rule, now become, and so frequent the implication chiefly of the nervous centres and their nerves, that the interest and importance of the disease (except for its pneumonic complications) have now largely centred in its nervous manifestations. In all these years abiding debility has been a frequent and special feature; but it has certainly been less general in the last two years than at first, although, on the other hand, more definite nervous affections have been even more common. The question has been raised whether these later manifestations of disease can properly be considered as being really sequelæ

in the same sense that phthisis following Influenza would be a sequela. Doubtless the Influenza poison chiefly affects the nervous system and has been always present from the first; yet its primary effects have often differed greatly from those manifested at later periods, and, moreover, such later phenomena do not follow in a very large proportion of cases. Although, therefore, the word "sequela" may be theoretically inexact, yet, as after diphtheria, it does seem to express well the conditions frequently met with, especially where, as is often the case, a considerable interval of quiescence, or almost of health, has occurred. The word has the sanction, too, of many former eminent writers and observers. It is remarkable that these secondary nervous affections have now, as previously, borne no necessary relation to the severity of the primary attack. Dr. Copland* uses the word "sequelæ," and he says that "the severity or danger of these had frequently no relation to the violence of the epidemic seizure, for the consequent affections were often most serious in persons who had experienced a comparatively mild attack of Influenza, and as frequently slight in those who were severely attacked"; and the same statement might now be repeated.

It is a noticeable fact that in all these years the disease has subsided at the end of either the first or the second quarter, and has not reappeared in an epidemic form until the return of the cold weather in the ensuing December or January. Indeed, in 1891 the great stress of seizures was not felt until February, March, and April, but it also ceased to be actively epidemic in the month of June. In

* "Dictionary of Medicine," 1858.

the present year scattered cases have continued to occur until the present time, but there is no general prevalence, and there can be no doubt that thermometric or atmospheric conditions—favourable or unfavourable to the life and multiplication of the bacilli—have existed at these periods respectively.

Although this district, in common with England generally, has been almost entirely spared, the coincidence of the reappearance of Asiatic cholera in Europe during the last two years should not be overlooked in connection with this outbreak of Influenza, corresponding as it does with what has been observed after other invasions of this disease. It commenced about July of last year, and swept across Europe from the East and from Russia westwards and southwards, causing great mortality. The disease had by November, 1892, largely subsided, and has not reappeared during this year, on this side of Europe in a virulent form. All the new evidence relating to Cholera points to its being contagious; and to its being due to a specific germ, the "Comma Bacillus" of Koch; to its being propagated only by persons and their secretions, and along the line of human traffic, whether by road or by water. Many cases of the disease have been imported into this country by passengers arriving from infected ports and places, but owing to rigid isolation of the affected individuals, and thorough disinfection, the disease nowhere spread among us.*

* Further study of this disease has tended to show not only that it is commonly propagated by water, but that certain molluscous inhabitants of the water drunk may contribute to its propagation (as with typhoid fever) by constituting a medium for conveying infected sewage.

During the last week of January and the greater part of February of this year a very extended special epidemic occurred, which was characterised by a considerable and marked *soreness of the throat*, with faucial redness and relaxation. There were also with this usually some catarrh of the eyes and nose and some bronchial secretion. Debility and lassitude, both at the time and afterwards, were also marked symptoms. In the latter part of February true Influenza began to show itself in an epidemic form. The attacks of this disease were markedly contrasted with the catarrho-cynanchal seizures which had been so prevalent previously, and it is remarkable that these latter forms of illness disappeared almost suddenly at the time that true Influenza re-assumed its epidemic condition.

As in former years, the great majority of the cases of Influenza were quite uncomplicated; but on the other hand a considerable proportion were accompanied or followed by active complications or by sequelæ. Pneumonia, as in all the years, has been the most common complication, as well as the most fatal. There is no doubt that it has often been induced by want of due care or by undue exposure during an attack of simple influenza.* Though somewhat less frequent this year than previously, yet in three or four districts of Norfolk it has prevailed largely and quite endemically. One country medical practitioner

* My own attack of influenzal pneumonia last year was distinctly induced by such exposure, when I was otherwise comparatively slightly ailing; and the lamented deaths of two healthy and most respected medical practitioners of this district in the Spring of this year from pneumonia, were clearly traceable to their courageous ignoring of their own needs in their steady devotion to their duties and the proper care of those patients who were under their charge.

reported that he must have had in his district at least 100 cases of pneumonia during this Spring; another stated that he had had more than sixty cases; and another said that a large proportion of the children in the Union House to which he was attached as medical attendant had suffered from pulmonary inflammation.

Pleurisy and pericarditis have this year been comparatively rare. Phlebitis, usually of the femoral vein, has occurred occasionally. Albuminuria of varying duration would appear to have been increasingly frequent and to have readily recurred during convalescence through imprudence or exposure. Fluxes, such as diarrhœa and vomiting, have often been severe. Catarrh of the bladder has been very occasionally met with. Delirium, mental confusion and attacks of acute mania have been by no means rare; whilst acute or subacute cerebral and spinal meningitis have been not uncommon. Nona, or undue sleepiness has been less common.

The temperature of affected persons has shown some curious variations. As a rule it has after the first three or four days become normal or subnormal; but a few cases have occurred in which, without evident cause, an increased range of the thermometer has continued for three or four weeks or even more; and in one case it was noticed that the morning temperature was for a time from one and a half to two degrees higher than that of the evening. In some others, where it was persistently high, there was a morning remission of two or three degrees, giving rise to the suspicion of an attack of typhoid fever being impending.

Of later or secondary affections a varying amount of loss of taste or smell has been very frequently noted; and

in connexion with this I may mention a marked and prolonged desquamation of the mucous membrane of the soft palate which was observed in one case, in which there was also distinct peeling of the skin of the feet. The vesicular eruption on the fauces described by Dr. Shelly* as being extremely common in Influenza, has not been quite so constantly observed by myself, though undoubtedly often present, and in some cases even diagnostic. One of the most frequent and remarkable neuroses observed with or without general neurasthenia, or weakness of the limbs, has been a peculiar chronic affection of portions of the spinal column, in the form of persistent tenderness of some of the vertebræ, most commonly of the cervical and dorsal regions. Presumably the poison of the disease had especially affected these particular localities, and the resulting asthenic congestion of the cord or its membranes was very slow to disappear, although the patients, as a rule, eventually recovered. A few cases, however, have been met with where the patients did not so recover, but the disease went on to produce greater limb weakness, or even abiding partial paraplegia. This unfavourable result appeared to have occurred where an attack of Influenza in a second year accentuated or increased a spinal weakness already existing from a former seizure. In these cases the lower cervical spines and the fourth or fifth dorsal vertebræ were the most common seats of this abiding tenderness, and it was observed, not infrequently, that two or more regions of the spinal column would be thus affected, with distinct intervals of normal spine between them. In these cases.

† *Brit. Med. Jour.*, vol. i. 1893, p. 791.

too, there has usually been a certain amount of fixed pain in some portion of the sternal region, corresponding with the peripheral termination of the nerves arising from these particular parts. The spinal pain was usually accompanied by marked tenderness on pressure, and by some hyperæsthesia of the adjacent skin, and the whole condition has sometimes borne a striking resemblance to that seen in cases of spinal hysteria; but the age and sex of many of the patients, as well as other circumstances, quite negatived the idea of its being due to such a neurosis.

As a proof of changing type, it is worthy of notice how much less alcoholic stimulants have been required, or even borne, in the last two years than previously. At first it often appeared that champagne or brandy could be taken, and with advantage, in almost any quantity; but recently it has been a common complaint of patients that all forms of such stimulant have produced flushings or headaches or general discomfort.

Public institutions have, as a rule, been but little affected this year, so far as patients or general inmates are concerned, but the officers and servants have, in some cases, suffered to a certain extent. In a few districts, however, the public schools have suffered more extensively.

Upon the whole, the disease may now be considered to have lost much of its initial intensity, and it is probably dying out. This may be due to changing seasons, or possibly to a partial protective influence upon the population exerted by previous attacks, or by previous exposure and acclimatisation; but this protection has been clearly shown to have been only partial both as regards individuals and communities.

INFLUENZA IN 1894 & 1895.

These two years may well be taken together, seeing that the characters of the season during the early months of each of them, and the time of the commencement of the disease, as well as its special manifestations, have been well-nigh identical.

In both years the weeks from the end of December until the middle or end of February were exceptionally cold and dry. During the whole of these weeks the frost continued, with only slight and brief intermissions, and the cold was often very intense. On several nights in January of 1895, the thermometer registered a temperature two, four, or even six degrees below zero (Fahr.); and on many other nights, in both years, from twenty to thirty degrees of frost were registered.

During the whole of this time more or less snow laid upon the ground, though the amount varied considerably in different localities. Thus, in and for many miles around Norwich, it lay at times several inches in depth. But near to the sea coast, and in the more southern parts of the district, the quantity was much less.

In the whole of these seven or eight weeks the air

was dry, and the general health of the community was good; the mortality being considerably below the average of this period of the year. After this there came a general thaw, which commenced a week or two later in 1895 than in 1894.

During the latter part of January and the first half of February in each year, only scattered cases of illness, which could be regarded as Influenza occurred, although feverish sore throat, or mild cases of febricula (with or without a dry cough, and without this cynanchal condition) were rather common, as well as the ordinary winter colds and bronchial catarrhs usual at this part of the year. But immediately upon the general melting of the snow or ice, not only did the number of those suffering from "feverish colds" increase, but the true Influenza began to make its appearance. In 1895 especially, it soon became very extensively prevalent in this district; whilst in London, during the month of March, a widely diffused epidemic of the disease raged. And it was remarkable what a large number of political and other prominent personages suffered from it. The mortality due to "pneumonia," and generally to diseases of the respiratory organs was also again very largely increased. The experience of these two years, therefore, has confirmed that of former epidemics, that whilst the Influenza bacillus does not thrive in a warm or summer atmosphere, yet that a certain amount of moisture,* as well as cold, is necessary, in order that it should flourish and be rapidly propagated.

* I have elsewhere shown that sitting in front of a good fire, and thus *scorching the breath*, is a potent means of checking or mitigating an incipient attack of Influenza.

The general features presented by the disease in these two latter years were of the typical character. The headache and spinal and muscular pains were often marked; and there was often more bronchial secretion than in the earlier years. Still, upon the whole, it was distinctly of a milder type. It caused far fewer deaths, and the secondary, as well as tertiary effects, were less constant and less severe.

Two clinical points have been specially noted of late :—

1. The constipation which has so constantly accompanied the first invasion of the disease, and

2. The remarkable cyclical regularity of the thermometric register observed when the temperature was taken at frequent intervals during the twenty-four hours.

With regard to the first, the muscular, or peristaltic action of the bowel has very constantly been weakened or semi-paralysed from the first day of illness; and considerable difficulty has often been encountered in securing due alvine relief. In severe or prolonged cases too, this bowel inaction has often ceased quite as suddenly as it has commenced. In milder cases it has usually terminated at about the tenth day; but in others at about the end of the third week. Often the sudden recovery of the acting power of the bowel has been most noticeable.

The symptom has been best combatted by enemata of warm water alone, or of this with glycerine; by pills containing some extract of cascara; or by castor oil.

With regard to the temperature, and especially where the fever state has been prolonged by inflammatory complications, it has been found that the thermometer will

constantly describe a very uniform daily cycle. The highest range of temperature has been generally in the early hours of the night, and has lasted until about midnight; after this hour the thermometer has gradually and steadily fallen—sometimes to almost normal—until about eight a.m. (occasionally remaining at the lower range until noon), when it has again commenced steadily to rise, reaching its highest point during the evening. It has so remained until about twelve a.m., when it has again begun to fall as before, thus constituting a very definite and regular cycle of twenty-four hours' duration.

NOTE FOR 1896.

The winter has been exceptionally mild. On only a few days has there been any frost or snow, and the season has been marked by a considerably diminished rate of mortality. At the time of going to press with this new edition (February 10th), no distinct cases of Influenza have appeared; whilst the mortality from pneumonia has been markedly below the average. A large amount of catarrhal affections and of "bad colds" has, however, recently appeared, but in the absence of microscopical examination of the stained bacilli from sputum, the exact relation of these (if any), to the influenzal disease, is necessarily uncertain.

With regard to our General Knowledge of Influenza, up to this time, derived from previous, as well as recent records of the disease, from our own personal experiences

during the visitations of the last five or six years, and from published scientific investigations, the following PROPOSITIONS would appear fairly to sum up this knowledge :—

1. The disease is a specific fever, with extremely definite symptoms, allied in nature to the exanthemata, and having a special secondary influence upon the nerve centres and nerves of a paretic character.

2. It is due to a living and multipliable germ or (spore-bearing) bacillus* (as recently demonstrated by Pfeiffer, Kitisato, Klein, and others).

3. It is communicable directly (and most usually) from person to person, and possibly also through intermediate substances. It also appears possible that this Influenza germ may have growth and diffusion into the air from other sources than the human breath or body.

4. It has a very short period of incubation, usually from one to three days, and when uncomplicated, runs its acute course in from two to four days. Its infectivity, after convalescence, does not usually exceed seven or eight days.

5. Numerous complications are liable to accompany it, and these may add very largely to its importance and duration. They may affect almost any of the organs or tissues, and are inflammatory,† congestive, irritative, or depressant.

* This bacillus has been thought by Althaus to have a special affinity for the medulla oblongata, but this is scarcely proven.

† Many of the secondary inflammations of Influenza appear rather to be connected with the presence of streptococci or staphylococci, than with that of the true influenzal bacillus.

6. The disease, even when primarily uncomplicated, is apt to be followed—long after the primary attack has passed away—by various sequelæ (often, apparently, the result of central or peripheral neuritis), and especially by asthenia, with neuroses or partial paresis of various parts.

7. These secondary affections are probably due to the poisonous influence of the ptomaine or other toxine or poison secreted by the bacilli; but possibly also, to some extent, to the presence in the blood of the dead organisms (for the bacilli appear to die rapidly when they enter the circulation).

8. The bacillus influenzæ lives and thrives best in the colder temperatures; and there is strong reason to believe that it flourishes most of all on or in the presence of melting snow or ice, that is, where moisture exists in the atmosphere along with the cold.

9. The bronchial rales doubtless indicate that each spot where these are heard, is a fresh centre of a colony of the seeds of this bacillary disease; and doubtless, also, the "inflammation" of the lungs is also due to the development, in these organs, of masses of these germs.

10. Influenza, uncomplicated, and in healthy persons under the age of fifty, rarely kills. When it does so, it is usually through its paralysing influence upon some comparatively feeble organ, and especially upon those supplied by the pneumo-gastric nerve. After the age of sixty, it becomes more dangerous, even with only slight complications; and still more so after the age of sixty-five, when its bronchial, and pulmonary, and cardiac complications frequently destroy life; whilst at seventy, or upwards, the shock of the attack alone will often kill, through the

brain and nerve or heart feebleness, and the prostration thus induced.

11. One attack of Influenza would seem to exercise some (but not a complete) protective influence against a second seizure.

12. There is evidence in favour of the view that several classes of animals are liable to suffer from Influenza in much the same way as human beings—such as horses, dogs, cats, pigs, and others.

As to TREATMENT. The disease being a specific fever, and due to a specific microbe, we have, as in other such cases, no means of killing this germ, and so of cutting short the disorder. The first essentials in managing a case, are always rest, warmth, and quietude; and whatever medicinal treatment we may adopt, it is always to be remembered that depressant remedies are inadmissible.

Of the various classes of drugs, the diaphoretics so often prescribed in the early fever stage, and for the promotion of perspiration, or for the relief of the "bronchitis," such as ipecacuanha, liq. ammon. acetatis, etc., are, and must be at the least, useless; for the skin is apt to be too active in this disease, and, except on the homœopathic principle, they can, at the best, only do no harm.

In the milder cases, an effervescent draught with prussic acid; or even a little simple sal volatile is sufficient, as well as usually grateful to the patient. When the fever and sense of illness are greater, then antipyrin, antifebrin, salicine or salicylate of soda, salol, or occasionally quinine, are distinctly useful. A little later, a mixture of ammonia with

one of the ethers, and compound tincture of bark, has frequently been found very helpful. Whilst at a still later stage, when debility, nerve prostration, and irritation have begun, nothing has seemed to be so useful as sal volatile, with bromide of potassium, and a little strychnine, or—in anæmic cases—iron and quinine.

In cases accompanied with much general debility, iron salts—even from the first—are often specially useful, either in the form of sulphate of iron with quinine, as recommended by Sir Thomas Watson, or as the tincture of iron with, or without, quinine or strychnine.

Various special or specific drugs have, from time to time, been recommended for this disease, and especially the bicarbonate of potash; but none of them have stood the test of extended experience. Ammonia, especially in the form of the spiritus ammoniæ aromaticus, appears to approach nearest to this character, and is often both grateful and apparently useful, at the onset of the disease.

The advantage of administering anodynes in many of the cases, both in those in which general restlessness or sleeplessness are present, and also where actual pain exists, is very marked. And the drugs selected must vary from the compound ipecacuanha powder alone, or this with Indian Hemp, up to chloroform, liquor opii sedativus, sulphuric ether or morphia injections.

Of course, suppurative or other products of inflammation must be treated by such surgical or other measures as may be found needful.

The utility of alcoholic drinks varies greatly. In some cases, and especially in severe seizures, or where asthenia,

or faintness, or *much sweating* are present, both wine (effervescing or otherwise) and brandy may be required freely. But in other cases these appear not to be required, or even to do harm; and this has been more particularly noticeable during the later years of this epidemic.

Much comfort is at times derived from the inhalation of steam or of medicated vapours. Unfortunately these latter cannot be used in a sufficiently concentrated state to destroy the microbes, as their tenacity of life appears to be much greater than that of the human tissues; but nevertheless, they will often unquestionably relieve the irritable and irritating cough, and check bronchial secretion when copious. One of the most useful of these inhalations appears to be a combination of carbolic acid with tincture of conium, in hot water, and freely and often inhaled.

In no case must influenzal "inflammations" be treated by depressants, or by the abstraction of blood either locally or generally, on any theoretical view of their "inflammatory" nature.

ILLUSTRATIVE CASES.

Case 1.—Influenza, simple, typical, and uncomplicated.

A lady, aged 45, treated by Dr. Compton in June, 1891. She one day felt suddenly ill, and complained of pains in the head and back. The temperature was soon found to have risen to 103° Fahr.; and next day there was slight cough; and on examining the chest fine sibilant rales were heard in various parts of the lungs. The high temperature continued for two days, and then dropped to normal; and the patient was convalescing, although she complained of weakness and languor, and had an irritating cough, with slight mucous expectoration, for two or three weeks afterwards.*

Case 2.—Influenza—*sine catarrho.*—*P. H.* A single female servant, aged 40; seen January 11th. At first chilly, then hot and feverish (temperature 101°), with much pain of the mid-chest, and also of the forehead, back,

* Within the next few days following the seizure of this lady several more of the lady patients in Heigham Hall were similarly attacked; and it was remarkable and interesting to observe the almost absolute identity of the illness in the several patients, both as to mode of seizure, and prominent symptoms, as well as duration of high temperature.

and limbs, with a feeling of aching in all her bones. When seen, twelve hours after seizure, was flushed in the face, with a small weak pulse, 100. The skin relaxed and freely perspiring, generally reddened, but without any distinct eruption. No coryza, cynanche, or bronchial catarrh, and neither sickness or diarrhœa.

Influenza is prevalent all around, but she is not conscious of any special exposure. Weather dry and frosty. Wind west and north-west. No other case in the house. The patient was severely ill for some days, but the disease ran a simple uncomplicated course. It was marked throughout by a great sense of weakness, by flushed face and perspiring skin. The general pains did not disappear, nor the temperature become normal until the fifth day. There was no marked bronchial affection throughout. The usual post-influenzal weakness continued for two or three weeks. She was treated, first with salicylic acid and Dover's powder; and later with antyprin and quinine.

Case 3.—SIMPLE INFLUENZA after exposure. Five days' fever. Recovery.

M. E.,* aged 69. February, 1893. On the 17th and 18th took an open air drive, and during the latter of these the weather suddenly turned windy and wet. She was at the time well, and did not at the time appear to suffer. But in the afternoon of this latter day, she suddenly began

* NOTE.—A servant of this lady was ill in the Spring of 1892 with acute but uncomplicated influenza, but at that time neither her fellow-servant, who slept in the same bedroom, nor her mistress suffered (see Case). This year the same servant suffered from the epidemic catarrh and sore throat, the other servant again escaping; whilst subsequently her mistress (as above) had true influenza, *sine catarrho*.

to feel weary and her back ached. Next morning she vomited, and complained of a little soreness of the throat, and of slight "head cold" which quickly passed off. Temperature in evening 100°.

On Feb. 21st.—Still feverish and feeble. Skin flushed, but without distinct eruption; perspiring. Tongue white. Thirsty.

Feb. 23rd.—For last two days has been confined to bed, with a morning temperature of 99·5° to 100°, and an evening temperature of 102°.

After this she began to improve, and was convalescent in about a fortnight from the time of her seizure.

Case 4.—INFLUENZA after prolonged exposure to infection; some catarrh and *sore throat.* Patient elderly.

Mrs. C., æt. 64, of dyspeptic and gouty diathesis. Jan. 5, 1892. Had just returned from staying with her son, twenty miles from Norwich, and is suffering from general influenzal symptoms, with a certain amount of head cold and a little soreness of throat. Almost the whole of the household at her son's were ill with influenza, but she did not sicken with it until after seven days' exposure to the infected atmosphere of the house.

She was treated by warmth, rest, and a mixture of ammonia, chloric ether, and compound tincture of cinchona. This medicine gave her great comfort, and she gradually improved, being convalescent in about three weeks from date of seizure.

Cases 5—14.—SIMPLE INFLUENZA, with only slight special symptoms or complications.

The following series of ten cases were carefully watched by Mr. Nance in the Norfolk and Norwich Hospital (1890). They are remarkable for the very small amount of bronchial irritation recorded.

The chief special symptoms noted, are profuse sweatings, in three ; eruptions in two ; shivering in two; coryza and suffusion of eyes in three ; vomiting in one ; pulmonary catarrh in one ; tonsillitis in two.

Case 5.—Female, adult, No. 8 ward. Attacked January 20th, 1890. Temperature on first and second days 103·6° Fahr. ; on the fourth 99·8°, and after this normal. Excessive sweating on the fourth day. No chest signs.

Case 6.—Male, aged 19, No. 4 ward. Attacked January 26th. Temperature 102° on first day, normal afterwards. This patient had a very peculiar rash on and across the abdomen. It consisted of raised, flat, nodules, neither red nor painful, in crops like herpes, but nowhere vesicular.

Case 7.—Female, aged 21. January 27th. No. 7 ward. An initial shaking fit, followed by the usual headache, slight coryza. Temperature 102·3°, normal on fourth night. Profuse sweatings on third day. (A special note says that the disease did not spread to either of the adjoining beds.)

Case 8.—No. 8 ward. Female, aged 28. Coryza, suffusion of eyes, flushings. No rise of temperature. Well on third day.

Case 9.—Female, aged 16. Ward No. 7. February 1st. Sudden shaking fit, frontal headache, general muscular soreness, and sense of bruising, slight tonsillitis, sweating. Temperature 100° on first day, 102° on second, normal on third.

Case 10.—February 1st. Female, aged 14. No. 3 ward. Felt sick and vomited, throat a little sore, eyes suffused, some erythematous rash on forehead, and a slight punctiform rash on the chest and abdomen, very pallid except where rash exists.

Case 11.—Female, aged 13. No. 3 ward. February 2nd. Much feeling of illness, eyes suffused, pain of eyes. Temperature did not exceed 101°, slight pulmonary catarrh.

Case 12.—Female, aged 8. February 3rd. Coryza, suffusion of eyes, frontal headache. Soon recovered. Temperature only slightly raised.

Case 13. Female, aged 12. February 3rd. Headache, suffusion of eyes. Temperature 102°. Quickly convalescent.

Case 14.—Female, adult. In gardener's cottage, and away from hospital wards. January 24th, 1890. Listless, languid, eyes suffused, pains of head, and all down neck and back. No chest symptoms. Speedily convalescent.

Case 15.—Influenza. Double pneumonia. Cardiac dyspnœa. Profuse sweating. Rapid convalescence.

Miss —, aged 20 years. Seen January 20th, 1890, with Mr. Woodman. Was taken slightly ill on January 8th, after supposed slight exposure; but, as she believes, from inhaling the breath of a person convalescent from Influenza, which was then prevailing in the district. Although she had at first a slight shivering, she continued to move about until January 13th, when she again exposed herself to cold. She then fainted in church, and in the evening had a distinct chilliness or rigor. In the course of the next two days she developed distinct pneumonia, first of the right base, then also of the left, with some rusty expectoration; and the temperature rose to 104°, and the pulse to 130.

At the time of my visit, the pneumonic signs of bronchial breathing, and a small amount of crepitation in the lower third of each lung, still continued; and there was present also an extreme amount of diffused sweating, as well as of cardiac dyspnœa and faintness. The heart sounds were extremely feeble; the pulse was small and quick; and the patient was restless and choosing the supine position as the easiest for her breathing. She was treated with champagne or brandy as desired, besides ether and cinchona. Next day she began to improve, the lungs rapidly cleared, and she convalesced so quickly both as to lungs and heart, as to surprise those in medical charge of the case.

Case 16.—INFLUENZA in an elderly and diseased patient. Congestive pneumonia, with a rapidly fatal issue.

General M., aged 67. Seen on January 14th with Dr.

Walker. Was then suffering from general influenzal symptoms of four days' duration, complicated with acute congestive pneumonia of the base of right lung. This gentleman was previous to this seizure in a very poor state of health; of highly gouty temperament; subject to attacks of angina pectoris; and decidedly elderly for his years.

At the time of my visit, he was flushed, dyspnœal, perspiring, with a quick, weak pulse, and a temperature of 101°. The urine contained a marked quantity of albumen. He was well supported, took doses of salicine and cinchona, and some stimulants; but the asthenia continued to increase, and he died two days afterwards.

Case 17.—Influenza. Relapse. Pulmonary congestion. Cardiac angina. Albuminuria. Recovery.

Mr. E., æt. 52. Seen April 11th, 1892, with Mr. Marriott. Had been ill since March 10th with Influenza, complicated with some congestion of the lungs, and was slowly convalescing, when—a week ago—he had moved for change into another room, and lain upon the sofa with the window open. The day was sunny and bright, but a cold east wind was blowing. Directly afterwards, he had had a relapse; the congestion of the lungs had returned; the urine had become loaded with albumen; and he had had several alarming attacks of panting dyspnœa, induced by very slight exertion. For these last he had been treated, with temporary relief, by doses of sulphuric ether, with hot poultices, and inhalations of nitrate of amyl.

When seen he was flushed and orthopnœal, the pulse 120, the respirations 30 to 40, but the temperature

not raised. The heart's action quickened, its impulse weak a sharp "clip" heard with the first sound over the tricuspid valve. There was dullness over the bases of both lungs; but fair inflation of these parts, with extensive fine and mixed rales; but no consolidation signs.

The urine, on examination, was found to be turbid with pale urates, and albuminous to one-third. The microscope showed in the sediment a few scattered blood discs, many large mucoid particles, and an enormous quantity of kidney casts, large, either hyaline with renal epithelium attached, or granular.

The treatment agreed upon was, the continuance of ammonia, ether, or brandy, as required; the substitution (for the original spasms) of nitro-glycerine for the amyl-nitrite; or, in the last resort, the sub-cutaneous injection of pilocarpine. The diet to be purely of milk and thin liquids.

On *April 1st.* Mr. Marriott writes, "Mr. E. is doing well. The urine contains less albumen day by day, is now of sp. gravity 1·020, and abundant in quantity. The breathing is still quick, shallow, and easily affected by the smallest exertion, or by mental excitement. The pulse quick and feeble. The lungs vary in condition continually; but there is generally varying coarse crepitation at the left base, with some dullness and indications of a small pleural effusion at the right base. Can rarely sleep more than two hours at a time. The complexion is better, but this varies much, and yesterday his face was almost purplish. The milk diet has been continued."

On *May 24th*, he called to see me, and said he felt nearly well. The cough and dyspnœa had disappeared.

The bases of the lungs were nearly normal. And the urine contained only about one-twelfth albumen, without renal casts. He had been taking with benefit the sulphates of iron and magnesia.

He soon got quite well.

Case 18.—Epidemic Influenza. Predominance of broncho-pulmonary symptoms. Patient aged. Recovery.

Mrs. H., aged 67. Farmer's wife. Seen with Mr. Taylor. Has now been ill about a week. Influenza is prevalent in her parish as elsewhere, and her husband and daughter are both severely ill also, the latter has had basic congestive pneumonia.

Miss H. was seized about ten days ago; two days after this the husband; and on the following day, this patient. The symptoms in all have been largely bronchial or pulmonary, without much initial cerebro-spinal pain; and there has been in all three patients cough, expectoration and a temperature of from 100°—102°.

To-day, Mrs. H. has a temperature of 101° Fahr.; she coughs and expectorates viscid mucus, often in suffocative paroxysms when lying down, and in consequence is obliged to maintain the orthopnœal position. Pulse weak, 100. Heart's beat feeble. The chest yields no dullness on percussion, but large rhonchal and moist rales are heard almost universally in both lungs. The urine yields a bare opalescence of albumen. There is and has been little affection of the mucous membrane of the eyes, nose, or throat.

She was treated with ammonia, bark, and senega, and gradually recovered, as did the other two patients.

Case 19.—Influenza. Senile "bronchitis." Normal temperature. Death.

Mr. K., æt. 72. Seen February 27th, 1891, with Mr. Woodhouse. Previously always very healthy and very temperate. Had been suffering for two weeks from Influenza, with cough, wheezing, and mucous rales in the chest. He had been gradually getting feebler, and was now greatly oppressed in his breathing, with an almost venous colour in his face. The expectoration was scanty, thick, and purulent in appearance. The pulse was 80, and the temperature normal. The chest on examination showed sibilant, and diffused large mucous rales. Heart fairly normal.

Ordered compound sulphuric ether, nux vomica, and cinchona.

He died on the following day.

Case 20.—Influenza. Pneumonia. Fatal asthmatic complication. Death.

Miss H., æt. 15. Seen June 17th, 1891, with Dr. Odhams. A brother in the same house was just convalescing from Influenzal pleuro-pneumonia.

Seized five days before visit after exposure two days previously, with congestive pneumonia of both bases, chiefly the left. She was subject to recurring attacks of asthma, and the lungs had become generally wheezy, sibilant, and choked, in addition to the diffused crepitus and other pneumonic signs at the bases. Her heart soon showed signs of embarrassment, and she died a few hours after my visit, presumably from cardiac thrombosis.

This patient had formerly suffered from eczema, as well as asthma, but she was free from both these ailments at the time of seizure.

Case 21.—Influenza. Profuse and prolonged bronchorhœa. Recovery.

Mr. D., æt. 60. First seen January 24th, 1891. Of nervine temperament, but quite well previously. Was seized suddenly with general symptoms of Influenza, chilliness, and cough. Two days later was found to have high temperature, sibilant and rhonchal rales in the chest, and to be expectorating most profusely,—the quantity of sputum being not less than six to eight ounces a day. The mucus was at first quite viscid and tenacious. There was no bloody discoloration. The lungs showed no signs of pneumonic congestion or inflammation.

This patient continued to expectorate about the same quantity of mucus for eight to ten days, but it gradually became more opaque. At the end of this time it began also gradually to diminish in amount, and then after another week or two quite ceased altogether and the patient recovered.

Soon after his seizure the sister, who resided in the same house, also fell ill with Influenza, but her attack was a mild one, and soon passed away, without special symptoms.

Case 22.—Influenza. Pleurisy. Empyema. Recovery.

Miss W., æt. 38. Seen June 13th, 1891, with Mr. Cecil Muriel. At this time her mother, aged 72, was ill

in the same house with Influenzal pneumonia; and her sister was also convalescing from varied but severe Influenzal symptoms. This lady had been ill eight days with Influenza and chest complication. She had suffered severe pain in the right side, and had now the usual signs of pleurisy with some effusion at the right base. Temperature 100·6°. Pulse 108. Had been treated with salicylates. On June 26th, the right side of the chest being full of fluid, it was tapped and twenty-five ounces of thickish pus were removed. On July 2nd, some more purulent fluid was withdrawn, and a drainage tube inserted. She gradually recovered; as did also her mother and sister.

Case 23.—Influenza (?). Erythematous rash. Pulmonary pneumonic congestion. Tertiary suppuration in pleura. Recovery.

Master A., æt. 4, seen May 26th, 1891, with Mr. Day. This child had been ill about three weeks. At first (after exposure) he was flushed and feverish, and a rash appeared upon the skin, erythematous, or doubtfully scarlatinoid. Then congestion of the base of the right lung showed itself, which gradually passed away. He now became feverish; unnaturally quiet and composed; skin moist and perspiring; tongue clean and moist. The skin, especially over the hips and on the chest, had still present upon it an erythematous-looking rash. The urine had a floating phosphatic pellicle, and effervesced with acetic acid. It was free from albumen.

After a few days, and rather suddenly, effusion into the pleura was found to have occurred. This was in due

time aspirated, and twenty ounces of purulent fluid were withdrawn. The chest re-filled, and on the fluid being again removed, a sinus continued open. The opening was now freely enlarged, and the child gradually recovered, and regained perfect health.

NOTE.—Influenza was fully prevalent; the rash made its specific character almost certain.

Case 24.—SIMPLE INFLUENZA, converted into complicated by exposure to the cold. Double pneumonia, numerous sequelæ.

P. E., æt. 66. January 16th, 1892. Saturday. Previously to this day I had attended various cases of Influenza, which was at the time almost universally prevalent, and was myself quite well up to six o'clock in the evening. At about this hour, without any apparent reason, I began to feel a peculiar creepy sensation in my skin generally, and to feel ill. I kept myself very warm and went early to bed. On the following day, Sunday, January 17th, I had the same peculiar feelings in a more marked degree. In the night of this day (the preceding 26 or 28 hours constituted, apparently, the true incubation period) my temperature rose to 101·5° Fahr. (for which I took small doses of antipyrin and compound ipecacuanha powder), but subsided to normal in the morning; I felt then to be much better, and remained so during the day.

NOTE.—I have given these notes of my case at some length, because not only did I make a careful daily record of my symptoms and progress, but also because they serve to illustrate many of the more special phases of this disease, and the intercurrent affections of various parts and tissues. I was most kindly and carefully treated throughout my illness by my friends and colleagues, Sir F. Bateman and Mr. Robinson.

In the evening (a cold north-east wind blowing, with a driving snow) I was urgently pressed to see in consultation two severe cases of this disease, and I unwisely consented to go out for the purpose. Immediately on my return I felt that I had taken harm from the exposure, and more severe symptoms ensued almost immediately. I passed a restless night, the temperature rising to 102°, and the pulse to 90; and throughout the night there was profuse sweating, with marked flushing of the face, and irregular and palpitating action of the heart, but no fixed pains in either the head or back. I again took antipyrin and Dover's powder with marked relief. The high temperature, however, remained, and by the afternoon had risen to 103·5°, whilst the flushings continued, and there was much feverish excitement. At this time there was scarcely any cough and no expectoration, but it was now discovered that the base of the right lung was solidified with pneumonia, with scarcely any bronchial rales.

Next day, January 20th, the temperature was 104°, and some portion of the left pulmonary base was also affected; but there was still but little cough or expectoration, no pain or dyspnœa, and the respiration was not hurried except on movement or exertion.

January 21st. On this day (fifth of acute illness) the temperature ranged from 102° in the morning to 99·5° in the evening. On the following day, it varied from 101° to normal, and then up again to 100.5°. The same variations occurred on the next (seventh) day, after which the temperature fell to normal and subnormal; whilst afterwards it continued to be subnormal, in spite of the fact of the bases of the two lungs being more or less solid,

though slowly resolving. It may be noted here, that whilst the temperature at this period scarcely ever ranged above 97° either by day or night, the pulse was rarely above 60 in the minute, and the respirations were usually only from 14 to 16 per minute. This state of pulse and respiration remained for many days.*

It was now recorded that the urine was free from albumen, and that both the knee and plantar reflexes were very weak; that there was more cough, especially on movement, with the occasional expectoration of peculiar lumps of clear or gelatinous mucus; and that the perspirations continued to be very free, and sometimes profuse, not unfrequently smelling very markedly of the beef-tea which had been taken as nutriment.

On January 26th (tenth day), the nurse observed that the roof of my mouth was covered with a white membranous film, adhesive and only removable with difficulty. This condition lasted for several days.

A day or two later, the nurse noticed that the soles of my feet were peeling and shedding cuticle freely.

On January 30th, the lungs slowly recovering, the skin over the right base became tender and distinctly œdematous (and this condition of the integument lasted for several days).

At this time I recorded that for the several preceding days, there had been a marked and decided division of each twenty-four hours into two equal parts,—one of gradual improvement in my symptoms and feelings from 12 a.m. to noon, and the other of greater and increasing

* The low range of temperature continued for many weeks.

sensations of illness from mid-day until twelve at night, constituting as it were in each half of the day, an advancing and receding wave.

Throughout the above illness, the paretic and weakening influences of the disease were very marked. The gastric and intestinal functions were especially and disproportionately lowered, and much difficulty was experienced with the alvine excretions.* The intellect and intelligence, however, were not markedly affected, although on two or three days I had illusions,—visions of unreal persons being present, or of scenes being enacted, in my room. The paretic mental effect of alcohol, in the form of champagne, when first commenced, was very curious (I am habitually almost an abstainer). It at once brought on a maudlin, almost crying state, quite foreign to my previous condition, and this although the quantity taken was not more than an ounce or two.

The secondary debility was considerably prolonged. Muscular weakness and relaxation long remained, and it was not until a change from home in June that this really disappeared.† During this convalescence also, the loss of handfuls of hair; the loosening and threatened loss of some teeth; the subnormal temperature; the presence of a deep groove or marking on my finger nails; and an abiding loss of energy,—all pointed to the special and depressing influences of the disease, and to the variety if

* I have noticed that sudden constipation is often a marked feature of an influenza attack, and that its usual duration is from ten to fourteen days.

† This disappearance of the muscular debility was really quite sudden and surprising. I have observed the same effects from change of air and scene in other convalescing influenzal patients.

not universality of the tissues and functions affected by it.

Case 25.—Influenza. Pains of abdomen and left side; increase of periodic headaches; general nervous symptoms.

Mr. A., aged 28, married. Seen January 25th, 1890. Several others in the house ill with Influenza. When seized three weeks ago, he was chilly, then feverish; and had pains of the head, back of the neck, loins, and across the upper part of the abdomen. Had also much pain on the left side of the chest, "over his heart." He had at first a short dry cough, and a slight "cold." Says most of these severe symptoms are now better or gone, but he still feels weak, giddy, and liable to headache. He also feels nervous, and is depressed in spirits. His bowels are habitually irritable, but they are now much more so than usual. He says he occasionally suffers (habitually) from migraine.

Examined, the heart and lungs are found to be normal; and the urine is free from both albumen and sugar. Temperature normal.

He was treated at first with doses of antipyrin, and of bromide of potassium; with a tonic mixture of cinchona and hydrochloric acid. But as he mended only slowly, and continued to complain much of headaches, and of other lingering discomforts, I prescribed for him pills of Indian hemp and Dover's powder; with the local use of an anodyne liniment (opium, belladonna, and chloroform) occasionally. He gradually quite recovered.

Case 26.—Influenza. Acute intercostal and diaphragmatic nerve pain; (?) neuritis: gradual recovery from the acute symptoms.

Mrs. Y., æt. 36. Seen December 28th, 1889, with Mr. Hughes. This case occurred in the very early period of the epidemic, before other and similar examples of acute nerve pain had been encountered, and it was at that time difficult to understand. The lady had long been subject to recurring attacks of asthma, but this illness bore no resemblance to these seizures. When seen by me this lady had been ill five days. At first she had had shivering, followed by raised temperature, and then very severe pain of the left side, which had urgently required anodynes for its relief. There had been scarcely any (if any) cough or expectoration. She was still complaining of very severe pain referred to the lower edge of the ribs on the left side, along the insertion of the diaphragm, and along some of the intercostal spaces towards the back. This whole region was very tender to pressure or manipulation; and a deep inspiration caused a serious increase of the pain.

Examined. The pulse was 96, and the temperature 100·5°. She was flushed. The abdomen was full and tense. The heart's action was very soft and weak. The lungs showed on inspiration some sibilant rales in their upper portions. No other rales and no friction sounds were to be heard. There was no dullness on percussion. The left base was rather hyper-resonant. The urine was high-coloured and turbid but otherwise free from abnormality.

The patient was ordered repeated doses of a mixture containing chloral hydrate, bromide of potassium, and

morphia,—with a suggestion of the subcutaneous injection of morphia, if necessary, with plenty of warm fomentations.

I afterwards learned that she soon obtained relief from the acuteness of the pains, but that she remained very weakly and delicate.

Case 27.—Influenza. Late simple debility Threatened phthisis.

A. S., æt. 22, male. Seen July 7th, 1890, with Mr. Vincent. Had Influenza in February. Got better from this; but for the last few weeks had been feeling weak and ill, with shortness of breath and some palpitation of the heart. His cough had now quite disappeared, but he had recently seen some streaks of blood in the scanty expectoration. He occasionally suffered from pains across the lower part of the chest. The heart was normal; the lungs were free from rales; but there was somewhat blowing and relaxed respiration at the left apex. No percussion dullness. Other organs healthy. He was recommended citrate of iron and quinine, with nux vomica; a glass of port wine daily; and to try a change from home.

Case 28.—Influenza. General sibilant rales. Severe local pain. Sweating and prostration. Ultimate phthisis.

Miss —, aged 20. Seen January 22nd, 1890, with Dr. Coomber. Ill twelve days with Influenza, with which several other members of the household are suffering. During these days she has felt very ill and prostrate; the heart's action has been very feeble; and there has been much faint perspiration. Temperature yesterday was 104°, but this morning it has suddenly fallen to normal. The

sharp pain of the side below the left breast, which was so severe yesterday as to require doses of opium, is also better to-day. There is in this spot a very little fine crepitation audible (without friction); but in nearly all other parts of both the lungs there are only varying sounds of sibilus, sibilant rhonchus, and bronchial wheezing. The cough is frequent but almost dry. She is occasionally sick, without apparent gastric disturbance; and at times is much flushed.

This lady soon improved, but after a time she became, I was informed, phthisical, and died. A sister was at the time ill in the house with chronic phthisis.

Case 29. INFLUENZA: Subsequent renal congestion and hœmaturia. Recovery.

Mr. L., aged 54. Seen July, 1892, with Mr. Claremont. Was severely ill for three weeks, in January last, with influenza. A few weeks later, after exposure, began to suffer from pain of the upper loins, and around the waist; and from irritation of the bladder. Has been ill ever since, and is wasted, pale, and with slight bronzing of the skin of the cheeks, neck, and hands. Always temperate. Never had syphilis. Had slight rheumatic fever twenty years ago.

Has lately been several times sick, and two days ago had free epistaxis. There has occasionally been slight swelling of the ankles.

The pulse is now rather tense. The heart's apex beat is rather strong. The urine is passed very frequently. It is albuminous, bloody, and shows under the microscope blood discs, leucocytes, a few short granular kidney casts, and some long-tailed epithelial cells.

He was kept carefully warm, and put upon liquid and milk diet. Iodide of potassium with citrate of iron were prescribed, and compound camphor liniment was rubbed upon the loins.

He gradually got quite well.

Case 30.—Influenza. Debility. Mental delusions. Recovery.

M. S., aged 35. May 7th, 1892. Suffering from general weakness, and from delusions. These occurred at the beginning of last year, but soon passed away. Does not know if he then had Influenza. In January of this year had a distinct attack of it, and towards the end of March again began to feel jealous of his wife (without any justification), also to fancy an *employé* of his was robbing him. Is nervously weak. Has a little frontal pain or feeling of weight; and occasionally the chest feels tight. Family is not liable to mental disorders. Is usually a strong man, not overworked, accustomed to sexual indulgence from two to four times a week. Has four children. Urine contains an excess of phosphates, but is free from albumen and sugar. Is very temperate, and not gouty. Advised great sexual and other abstinence, and a change from home. To take ammonia, bromide of potassium, and nux vomica.

M. S. soon improved, and gradually regained his strength; but the delusions did not quite disappear until several months had elapsed.

Case 31.—Influenza. Acute fever. Mania. Typhoid symptoms. Recovery of health. Prolonged maniacal condition.

Miss S., aged 18. Seen *February 20th*, 1893, with Dr. Fenn. In the previous week or two several members of the household had suffered from slight attacks of Influenza, and she herself had been feeling poorly. Four days before this date, she had been taken ill with smart fever, and since then there had been daily a high temperature, ranging up to 104° and 105° Fahr.; she had also had some slight pains in the back; had been flushed, and was often perspiring. Yesterday she began to cough, and this morning she has been sick once. Was slightly delirious in the night. When seen at 6 p.m., she was lying supine, flushed in the face, with a hot and perspiring skin. Bronchial rales were heard in the chest, chiefly on the right side. Temperature 104°, pulse 100. Manner reserved and rather peculiar. Ordered antipyrin in repeated doses, with ice to suck, and Dover's powder, if sleepless. Seen again on *March 3rd.* Reported to have been maniacal for the last two days, incoherent, often somewhat violent, and refusing her food. The temperature has varied from 103 to 100, except for a short time this morning, when it was 99°; and there has usually been an increase of two degrees in the evening temperature above that of the morning. This evening is very ill, very feeble and exhausted, with a dry forepart of the tongue, and a quick, weak pulse of 120. Since yesterday there has been rather active diarrhœa, somewhat restrained by chalk mixture, with catechu and tincture of opium; but she was so much exhausted by it this afternoon, that she was thought to be actually dying. Cough less, and much less catarrh of the lung present. Is very sleepless, in spite of several doses of bromide of potassium. Mentally, she is this evening very dull, but

speaks and answers intelligently when roused. Ordered ℥.xij of nepenthe at once.

March 8th. Dr. F. writes: "Our patient is slowly improving. The diarrhœa has been troublesome. Temperature for the last two mornings, 97·4°, and in the evenings about normal. Pulse, 112 to 118. There is great mental depression, and the patient dislikes taking nourishment; but the tongue is clean and moist. Opium has not seemed to agree at all."

After this date the patient gradually improved, and soon quite recovered her general health; but a maniacal condition remained for some weeks, in spite of a visit to Bournemouth, and other changes. It should be noted that her family was of nervous temperament, but not otherwise "mental."

Case 32.—Continuous exposure to Influenza. Subsequent cervico-dorsal-pachy-meningitis. Gradual improvement.

W. H. D., æt. 68. May 9th, 1892. When now seen had been ill a month; at first complaining of rheumatic-like pains referred to the thighs, with stiffness in moving; and for the last few days, of similar pains in the shoulders also. Latterly there had also been somewhat acute tenderness on percussion over the third dorsal vertebra and a little above this. On these symptoms he had treated himself with salicylates, quinine, and the iodide and bicarbonate of potash.

Present state. Is out of tone. Has had domestic anxiety and looks pale. Is of strumous habit. Although he called his pains rheumatic, he has continued to do his

work as a surgeon, driving about in an open carriage, in spite of very cold winds, until to-day, when he has gone to bed. Is not aware of having had a distinct attack of Influenza, but he has visited numerous patients ill with it, and has been continuously exposed to infected atmosphere. On examination, the upper dorsal spine is found to be tender; the upper arms, especially in the deltoid regions, stiff, and painful on motion. There is also pain in the hips and knees, and difficulty in raising himself in bed. The right buttock feels numb and "doughy." None of the joints are swelled. There are no rheumatic perspirations. Urine pale and clear, and free from albumen and sugar. Temperature, 99°.

July 6th. The illness has been a long and weary one. It has consisted throughout of tenderness referred, as at first, to the upper dorsal spines, and later to the cervical spines also. The amount and greatest localization of this varying much from time to time. There has also been continuing pain of the muscles of the shoulders and upper arms, of the hips, and occasionally of the knees. These parts have been painful on motion, often acutely so, as well as stiff, after sleeping, with a general weakening of the muscular power of the limbs, and some wasting, especially marked in the deltoid regions. There was for long a marked cutaneous hyperæsthesia over the cervical and humeral regions. At first there was diminution of the reflex actions, and of the muscular irritability, but this gradually gave place to an exaggerated condition of these, after which they gradually became normal. No spasms or rigidity of muscles have ever been present.

The temperature has usually been subnormal, 97° or

97·5°, occasionally rising for a short time to 99° or 99·5° in the evening or earlier part of the night. Pulse never quickened. Appetite and general health fairly good, in spite of the many weeks in bed. Loss of weight only four pounds.

After this date the symptoms began slowly to improve; still, the principally affected muscles have never properly recovered, even up to the present time (March, 1893). There is still some wasting of the deltoids, and still both pain and stiffness and impaired motion of the shoulders and hips. The arms cannot be properly lifted or extended, and he experiences difficulty in raising himself from a sitting position, even after short restings in his chair; also in ascending stairs. A little tenderness of the dorsal spines remains, but that of the cervical vertebræ has quite disappeared. One long-standing, sensory abnormality is still present, namely, a feeling as of a needle pricking him in the upper and front part of the left leg. The stiffness of the back is quite gone, as is the severe soreness on moving the limbs after sleep, which was, for a long time, a most distressing symptom.

The treatment adopted was very various, but nothing appeared to exercise a very decided effect. In consultation with Dr. Barton, belladonna, leeches, small blisters, and the hot-spoon externally; and iodide of potassium, bichloride of mercury, and various tonics, internally, were tried. But nothing had any immediate or definite influence. Later, friction and partial massage were used with some advantage.

Case 33.—INFLUENZA two days after exposure. Three days fever. Prolonged subsequent asthenia.

Rev. A. B., æt. 30. *January* 13*th.* On the 11th travelled twenty miles by train, and was thus exposed to the extreme cold of the weather. Next day felt chilly and strengthless, and has to-day gone to bed complaining of pains of the back of the neck, and shoulders, and behind the eyes. The limbs also ache rather severely. Has slight cough. The face is flushed; the skin moist; the temperature is 100·8°; and the pulse 90.

The next day, *January* 14*th*, the throat feeling raw, the temperature 101°; the urine turbid and high-coloured, but non-albuminous; a considerable amount of coughing, but the lungs were free from rales.

January 15*th.* Temperature 99°; pulse 84, soft and full; skin quite moist; pains of all parts subsiding.

January 16*th.* Pains all gone; temperature 97·8°; pulse 78; throat easier. Coughs a little, but there are no chest rales.

February 8*th.* The primary influenzal symptoms have gradually disappeared, but he is still far from well; weak, and complains much of the influence of the very cold weather. Has still a slight irritable cough.

He now went to Bournemouth in search of a milder climate; but here also the cold was severe, and he soon returned home, not benefited by the change. He did not recover his health and strength for many weeks after this date.

The treatment adopted in this case was, at first antipyrin, then a mixture of spirits of ammonia and of chloroform, with compound tincture of cinchona; with pills of compound powder of ipecacuanha for the irritable cough.

Case 34.—Influenza. Prolonged neurotic symptoms. Slow but gradual improvement.

Miss F., aged 37. Seen October 11th, 1892, with Mr. Robinson. Quite well until January last, when she had an attack of Influenza, but ailing ever since with varied nervous symptoms. For these she travelled for a few weeks on the continent, but they did not improve, and since her return home they have much increased. Family liable to mental disorders.

She complains now of great nervous prostration, and has frequent muscular tremblings, especially of the muscles of the arms, which are very easily excited. Has pain and tenderness over the three lower dorsal and first lumbar spines, and also tenderness along the course of the right first lumbar nerve. Has also pain of the upper part of the chest, and of the shoulder. The heart is very irritable, but otherwise normal. Has noises in the ears. Three months ago had pain and discharge from left ear. Has swelling and great hyperæsthesia of the left great toe (never gout, a brother rheumatic). Menses regular, not hysterical, mind normal, and no head symptoms. Secretions healthy. Temperature normal. Knee reflexes acute. Tapping here, and pulling with her hands, produces semi-clonic contractions of the muscles of the thigh and arm; but individual groups of muscles do not contract on percussion.

She was treated with perfect rest in bed; also with small doses of sulphonal at night, and anodyne applications to the back and great toe; also internally, with ammonia, bromide of potassium, and tincture of hop. The complete rest appeared to benefit her, and the hyperæsthesia and muscular tremors gradually got less. But she was many

weeks before improvement was very marked, and several months before she quite recovered.

Case 35.—Influenza. General nervous derangement. Glycosuria. Recovery.

Mr. R., aged 59. Seen October, 1892. Had a slight attack of Influenza in January, and has never been well since, but has suffered from pains and discomforts about the head, back, and limbs; from palpitation and sleeplessness; and has felt generally weak and nervous, and (often) depressed. Since June has suffered from noises in the ears, but without discharge or deafness. These symptoms are still present, and he has also pains and weakness in the knees, legs, and ankles; with occasional tremors of the muscles of the legs and arms. He is feeble and depressed. Digestive functions natural. Urine: sp. gr. 1020°; phosphates in excess; no albumen, but it contains a trace of sugar. The knee reflexes are fairly normal, but that of the left side rather greater than that of the right.

He was slightly dieted for sugar, and given a mixture of ammonia, bromide of potassium, and citrate of iron and quinine.

A month later the urine still contained a little sugar, but his general health and nervous symptoms were distinctly improved. In December the sugar had quite disappeared, and he said that he felt quite well.

Case 36.—Influenza. Continuing pains and prostration. Early nervous sequelæ. Recovery.

Mr. E., æt. 65. Seen May 14th, 1891, with Dr. Ellis. Has been ill between two and three weeks. Suffered at first from chills, followed by a rise of temperature to 104°, and pains of the head, eyes, shoulders, and thighs. Had a little cough, now better. The temperature has now fallen to 97°, but he still feels weak and prostrate and nervous. He also often still feels pains in the back of the head, and the shoulders, as well as in the thighs and calves of the legs. Often also has disagreeable feelings of "pins and needles" in the upper arms; and a woolly or wooden feeling in the fingers. There is no loss of motor power anywhere. The heart, examined, is normal; and the urine free from albumen. Habits, very abstemious.

He was recommended to take a pint bottle of champagne daily, with a tonic mixture of dilute phosphoric acid, quina, and nux vomica; and to use an anodyne liniment to the aching parts, if the pains continued.

He soon recovered.

Case 37.—Influenza. Prolonged nervous debility. Headache. Hyperæsthesia. Recovery.

Mr. A., æt. 40, married. Seen May 13th, 1890, with Dr. Darrell. This patient was a nervous and weakly man, always dreading that he was becoming phthisical; until recently an abstainer. He had recently been to Lowestoft for change, without much benefit.

He had been ill fifteen weeks, in fact since his first seizure with Influenza, and had practically never recovered from it. He complained of general debility, with depression of spirits, and a sense of great nervous weakness. He had recurring pains of the front part of his head, and also

of the anterior part of the thighs. And he complained of frequent sensations of "pins and needles" in the upper arms or in the thighs.

The lungs examined, were found to be quite free from disease. A chloasmal eruption existed on the front of the chest.

No internal organs appeared to be diseased.

He was ordered a mixture of ammoniated valerian, with bromide of potassium, and citrate of iron and strychnia; with an anodyne liniment for external use; and he gradually improved in health.

Case 38.—INFLUENZA. Late and obscure neurasthenic symptoms. Albuminuria. Slow recovery.

A. N., æt. 21. Seen June 9th, 1890, with Mr. Wayman. In common with all the rest of his family, he had Influenza in January and February. He got gradually better, but never quite well, and remained in this condition until about three weeks ago, since which time he had been feeling extremely weak; with great loss of appetite, pains in the right loin, and below the left nipple. The quantity of urine was slightly increased (although the bladder was not irritable), and it was found to contain a trace of albumen, both with heat and nitric acid, and with picric acid. No sugar and no blood. A little uric acid deposited after repose.

The pulse was quiet; the temperature 97·5°. There were no signs of any sensory or motor paralysis. The knee reflexes were weak. There was now no cough or expectoration. The chest signs were normal, except for a slight feebleness of respiration, and slight increase of vocal

fremitus at the right apex. The heart was beating weak and excitedly, showing cardiac muscular asthenia, but there were no other signs of organic disease.

He was a nervous man; an abstainer; and he dreaded lest his present symptoms of weakness should be due to masturbation; but he had discontinued this habit for many years, and never practised it much.

He was recommended much quietude and rest, either in bed or on the sofa; with a mixture containing compound tincture of valerian, bromide of potassium, and tincture of nux vomica, with or without a pill of phosphate of iron and phosphate of zinc.

He slowly improved.

Case 39.—Extreme tertiary nervous derangement after Influenza.

A. B., male, aged 47. May 22nd, 1890. A patient of Dr. Wrigley. In January last had a severe attack of Influenza, ushered in by chills and shivering, and soon followed by pains referred to the chest, back of the neck, shoulders, and loins, and also to various muscles. He kept his bed for some days, and then got up; but he has never recovered, and has continued weakly, nervous, and incapable of exertion. In the last two or three weeks, a remarkable train of nervous symptoms has appeared, in addition to the trunk pains which have never left him. Thus he has had a sensation of heaviness in his forearms and hands, with special pain over the point of both olecranons. The calves of the legs have frequently ached, and the feet occasionally. At times he has had sensations of "pins and needles" in various parts. On deep inspiration,

his front teeth have at times felt icy cold; and once or twice the tip of his nose has felt similarly cold. He has constantly felt sleepy. He has observed that all his pains and discomforts are increased by cold, and are relieved by lying in bed and by warmth.

On careful examination, the skin over the lower part of the chest is tender and sensitive, especially on the right side. The hands are strong and grasp well. He also walks well. The reflexes of the knee are very weak. Common sensation to touch is normal. The heart and lungs are normal. The temperature is 98° Fahr.

The urine examined, is of specific gravity 1017, free from albumen, sugar, and excess of phosphates. The microscope shows nothing abnormal in the sediment. It was tested for urea, and found to contain ten grains per ounce.

This patient gradually recovered.

Case 40.—INFLUENZA. Secondary pains. Loss of memory. General nerve debility.

Miss W., æt. 34. Patient of Mr. Alexander. Seen November 19th, 1891. Was taken ill with Influenza in July last, the initial symptoms being vomiting and diarrhœa, with a little cough. After eight weeks had improved, but had never got well, remaining weakly, and with a weak digestion, suffering pain after food in the mid-chest, and thence through to the region of the second and third dorsal spines. Had been from home for change, but without much benefit.

In the last few weeks had suffered more, and had become more weak and more nervous. Had frequent

pains over the whole occiput; and also of the upper dorsal spine, always made worse by taking food. She stated that she had lately lost memory considerably, forgetting words and the names of things and places, and being also unable to add up figures; also that she felt weak on her legs, and inclined to stagger in walking. She had also been much depressed, and often inclined to cry. There had also been for the last week, sensations of numbness and coldness in the left arm and leg, and her power of grasping on this side had become slightly diminished.

The special senses of sight, hearing, taste, and smell had not been affected.

She had for many years had an enlargement of the thyroid gland, but the goitrous swelling had somewhat increased in size of late.

The urine had been very variable in quantity, but otherwise normal.

She was ordered to take a mixture of ammonia, bromide, and citrate of iron and quinine, with a little nux vomica; to paint the bronchocele with iodine; and to use an anodyne liniment for her varying pains.

Case 41.—Influenza. Double pneumonia. Great and prolonged nerve disturbance.

Mrs. S., æt. 60. Seen November 21st, 1891, with Mr. Cufaude. Was first taken ill on August 29th, with a rigor, bronchial rales, pneumonia of the base of the left lung, and various Influenza symptoms. (Influenza was then prevailing in her village.) She gradually improved from this, but on September 11th, the base of the right lung became affected with pneumonia. From this also she

gradually recovered, but has never got well, remaining weak, languid, and nervous.

Some three or four weeks ago she again became more ill, and was often compelled to rest in bed. She suffered from pain or "heats" of the head and down along the spine, and in the upper chest. She had varied pains in the abdomen, with occasional painful burning sensations at the epigastrium, induced or much increased by eating solid food. The act of defæcation often also caused much abdominal pain. Quite lately she had complained of a sense of weakness in the left arm, with occasional anæsthetic feelings in the part. (Thirty years ago she had a slight hemiplegic attack affecting the left arm and side.)

Two days ago sat up (she thought) too long, her feet became very cold, and ever since she had felt more ill and feeble, with a great sensation of "internal heat;" and she had been obliged to keep her bed. The temperature had latterly been quite normal, or below this.

At my visit she was flushed, anxious looking, with a pulse of 84, and a temperature of 100°. She complained urgently of a hot feeling in the head, and of the scalp at the vertex; also of sensations of internal heat; and of hot pains along the spine, the top of the sternum, and over the lower ribs; with hyperæsthesic tenderness over the whole abdomen. The spinal column was tender on percussion; the abdomen, although tender, was soft and supple. The legs, she said, ached at times, and at night would sometimes jerk so as to prevent her sleeping. She had still some cough at times in long fits, and would then bring up some portions of glairy mucus, apparently with relief.

She was restless at night, and often had considerable perspiration in the morning.

The reflexes, examined, both of the knees and plantar, were found to be diminished. There was no clonus.

Urine was free from albumen, very variable as to quantity. Bowel function fairly regular.

Although she had been nervous, depressed—occasionally crying, and very anxious about herself, there had been no delirium or mental wandering. She was not much wasted, in spite of her inability to take solid food.

The treatment agreed upon was spirit of ammonia, with bromide of potassium, and citrate of iron and quinine; and anodyne liniment, to be used freely, and sulphonal or Dover's powder at night, if required. For later trial Mr. Cufaude suggested arsenic.

Jarrold and Sons, Printers, Norwich, Yarmouth, and London.