Graduation thesis
on
Influenza
by

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Contents

Introduction.

The subject of Influenza is a very vast one, and one which can only be studied at certain times, on account of it occurring at intervals, more or less, prolonged.

I have chosen this as the subject of my thesis, because a pandemic disease, being so uncommon, stands very vividly before the mind of the practitioner, when we have an invasion like the one which has recently passed over our country, and what makes this invasion particularly interesting, is the fact, that it is the first pandemic which has occurred since the introduction of the thermometer for clinical purposes, and it is also exceptional from another point of view, that, from our knowledge of the action of microbes and the germ theory of disease, it was expected that, when another pandemic did come, we would be able to differentiate the germ which is supposed to cause the disease.

Another reason, to me, that Influenza would form a subject fit for a thesis, was, that I attended 2,000 cases, during the epidemic in Crewe, and had every opportunity of studying the clinical history of the disease, in all classes of the community.

In treating the subject, I have, therefore, paid particular regard to these features of the disease; viz., the nature of its epidemicity, and, the relationship of the disease, in its complications and sequelæ, to the principal vital centres.

Influenza.

A short Historical sketch of the disease.

Dr. Theophilus Thomson states that the first visitation in the British Islands, accurately described, occurred in 1510, but Hirsch mentions one as far back as 1173 (Radulfus de Diceto in Twysden script. hist. angl. p. 579) and Thomson also states that the malady is mentioned as being epidemic in Ireland in the 14th. and 15th. centuries, and also alluded to in early Gaelic manuscript. From the first pandemic in 1173 mentioned by Hirsch we hear nothing of the disease again for 150 years, viz., in 1323 when we find it in Italy, France and Germany. Epidemics occurred out of this country in 1323, 1328 & 1387, 1404, 1411, & 1414, and after that occurred the pandemic of 1510 which invaded Britain. I give a short table of the time of the various visitations in the British Islands from then till now.

Date	Interval	Date	Interval
1510	47 years	1762	5 years
1557	23 —"—	1767	8 —"—
1580	78 —"—	1775.6	6 —"—
1658	17 —"—	1782	21 —"—
1675	13 —"—	1803	28 —"—
1688	5 —"—	1831	2 —"—
1693	17 —"—	1833	4 —"—
1710	19 —"—	1837	5 —"—
1729	3 —"—	1842	5 —"—
1732	5 —"—	1847	10 —"—
1737	6 —"—	1857	9 —"—
1743	15 —"—	1866	23 —"—
1758	4 —"—	1889.90	— —

We see from this table that pandemics of Influenza occur at most irregular intervals, and that there is no regular periodicity observed in their out-break.

The present pandemic seems to have followed a generally Westward course. "It appeared in Tomsk (Siberia) on Oct. 15th.; on Oct. 31st. it appeared in the Caucasus and on the first Nov. in Viatka. About this last date it was reported from Moscow, Riga, Vilna, Tver, Pskov, Sebastopol, Kaluga and other places. In St. Petersburg the disease appeared as an epidemic in the last days of October." Frank. G. Coleman, M. B., Brit. med. Journal, p. 46, 47 Janry. 4th. 1890.

"The first cases recognised in Europe were observed in St. Petersburg about Oct. 15th.. It was reported in Berlin by professor Leyden towards end of Nov.. It then travelled to Denmark, France, Spain, England and other countries. The mortality reached its maximum in London and New York in the same week (11th. Janry.) In March we hear of it extending over the whole continent of India.

It has been stated by some that the Mode of Progression of Influenza is from East to West. The opinion of Hirsch upon this point is:— The large number of facts is rather in favour of a radial progress of Influenza, or a progress by leaps and bounds, than of a linear progress; while in a comprehensive review of the facts, the direction is found to be sometimes to one point of the compass, sometimes to another."

Hirsch p. 22

The first case of Influenza which came under my notice occurred in the East end of Crewe on the 25th of January. I could find no history of infection. The case was that of a Mrs W. and in a few hours after her youngest daughter was attacked; two days after two other members of this family, and,

and one of the family next door were attacked: then a fifth member of Mrs W's house-hold took it. Sporadic cases began to spring up in the adjacent streets, and in different parts of the town during the next few days.

A day or two after these scattered cases occurred in Crewe the disease began in the same way in the villages around, beginning in Coppenhall — a mile North of Crewe. The cases increasing in number the disease became general, until we found we were visiting 300 families in a week, reducing in numbers with the decline of the epidemic, the actual number of cases visited being not under 2,000.

Most of the cases were in adults but it confined itself to no particular age or sex and in some houses there were 3 generations ill with the disease, a day or two, as a rule, separating the attacks. I saw several cases where infants at the breast had it, though I could trace none as being communicated from mother to child.

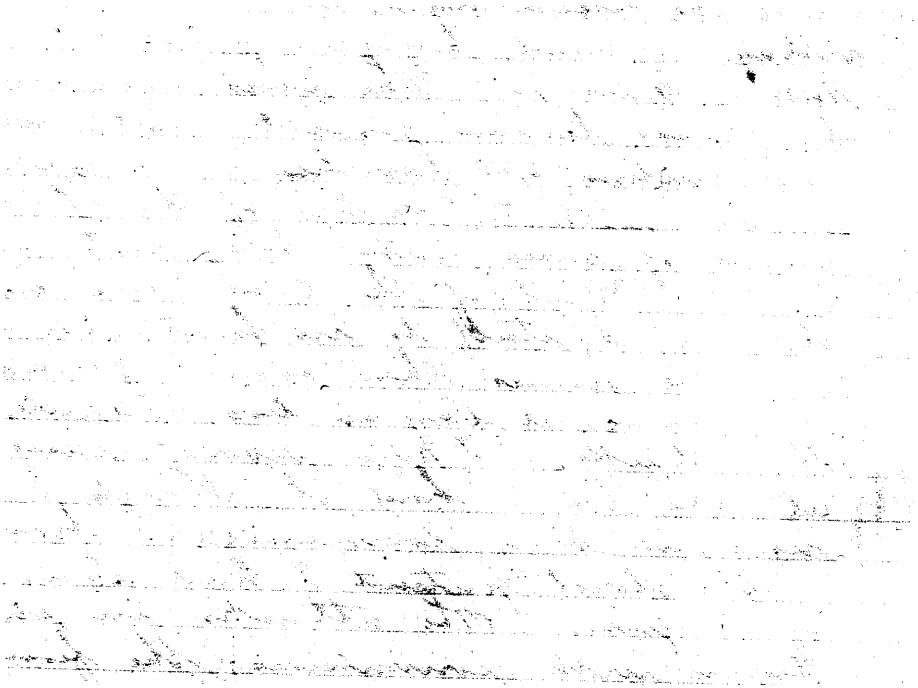
The oldest patient I had was, an old woman, of 88 years. The attacks in children often began with convulsions, the fever immediately reaching a crisis, and as suddenly declined: the child making a quicker recovery than the adult, as a rule.

The Symptoms and Signs of the disease I observed to be as follows:—

Influenza may be defined as:—

An acute fever, sudden in its onset, marked by severe headache and backache, rapidly reaching a crisis, which is accompanied and followed by profuse perspiration with a sudden and complete fall of temperature. Complete restoration to health frequently slow and tedious. Such is a typical case; it often took various forms in different persons.

The invasion was



*Cough paroxysmal, and when started most difficult to stop, sometimes

was frequently ushered in with a sense of depression and general malaise, accompanied with dizziness, swooning or fainting; the patient began to feel shivery and chilled, this alternated with hot flushes and was accompanied with frontal headache, more or less intense; backache which was often very severe; aching pains in the muscles and limbs and a sense of soreness after the pains were off, and an intense feeling of prostration and mental depression. Delirium not common, but seeing of visions and hallucinations in many cases. Intellect dull. Deafness more or less marked in some cases. In some there was nausea, in others actual vomiting, and loss of appetite was general. Taste perverted or wholly abolished. Sense of Smell deadened. Thirst not great. The tongue had a fine silvery moist fur on the surface. The Skin was of a ducky hue, and hot and dry. The Bowels were often well moved at the beginning of an attack and constipated as fever reached its height, and sometimes diarrhoea during convalescence — the stools not being characteristic of the disease. The Urine was much increased during the shivering stage, even to 54 ounces in 12 hours, but became febrile and lessened in quantity as temperature rose: no albumen. Coryza generally absent and catarrh from the nostrils very uncommon indeed. Congestion of tonsils, fauces and pharynx frequently occurred and in some cases was accompanied with hoarseness. Catarrh of the tracheal and bronchial mucous membrane very common — a tough thick sputum most difficult to expectorate, sometimes producing epistaxis and, in one case haemoptysis. Pulse quickened with height of fever, but became weak, small, very soft and slow after the temperature became normal. The patient had a very dejected, gloomy and often sulky expression, and frequently, a very irritable manner.

If patient properly treated, sweating usually came on in about 12 — 24 hours, and continued for a few days: the sweat had a warm, moist very pungent

pungent and stuffy odour, and the breath of the patient was much the same and very offensive. With the critical sweating the temperature began to subside and in two or three days became normal, and these were accompanied by the decline of the other symptoms. In some cases, however, complications were present and sequelæ followed. The shiverings and hot flushes, especially in those who had modified attacks, and would not be confined to bed, became periodic, recurring each night at bed-time. These often continued for some time after the temperature became normal, and relapsed upon any exposure. "The disease assumed the type of an intermittent towards its decline" Fothergill - Annals of Influenza p. 88. "The disease in its decline often assumed the form of an intermittent." Ph. Ach. - 1775 epidemic — " — p 104.

During convalescence different nervous affections manifested themselves, and tremors of different muscles. Great weakness prevailed after the attack.

Special symptoms:— The frontal headache seemed to be worst at the height of the fever (I don't mean the neuralgia which was a common accompaniment of convalescence) and subsided, as a rule, when profuse sweating set in, with the relaxation of arterial tension.

The lumbar pain is one of the most remarkable features of the disease. I have often found it to be one of the very first symptoms complained of. If absent at all it is in very few and those probably modified cases. It does not seem to be lumbago for it is always worst during the febrile stage and wears off, as a rule, within a couple of days after the fever subsides. It is not accidental to, but, as in small-pox, it is part of the disease itself and a diagnostic feature of it.

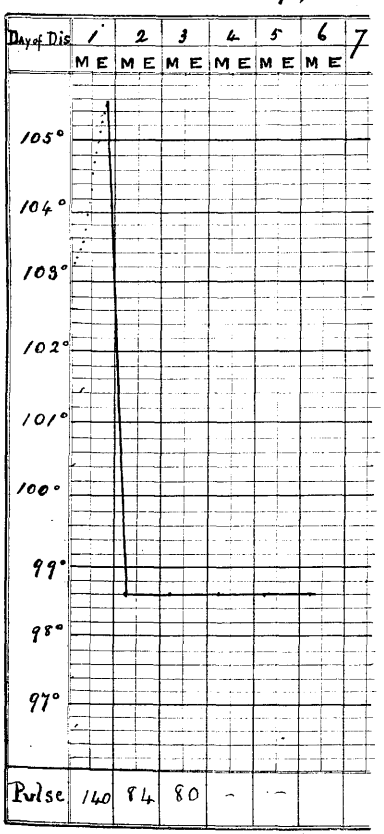
I could not determine an Incubation

Incubation period. In some cases the patient was stricken down at once; in others, apparently, not for a day or two.

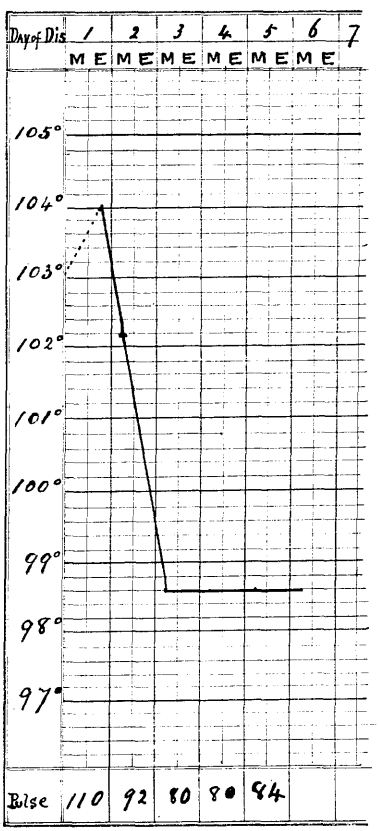
Rash:- I saw no specific rash. I saw one or two cases of Urticaria, and, the fame of herpes. The skin peeled off, nearly the whole body, of all the members of one family, and off the hands and face of members of another family.

The temperature in an uncomplicated case in a strong individual reaches its acme (generally from 102 to 105.5°F.) in a very few hours. Oscillations occur when complications set in. The disease could not be diagnosed from the temperature alone. Here are three classes of temperature common to the disease.

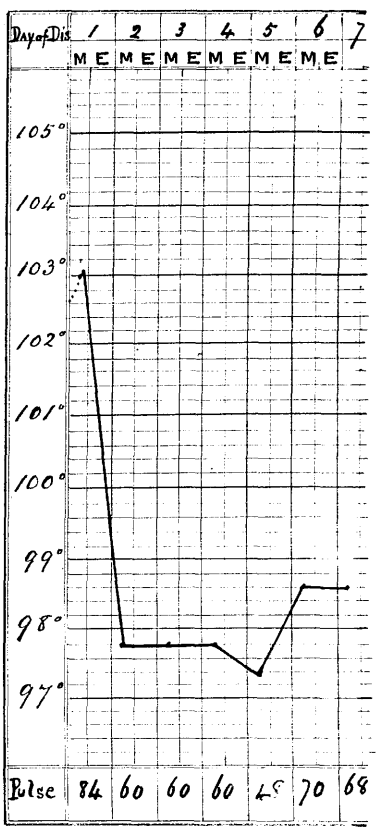
Miss M— aet. 27 yrs



Mr. W. aet. 60



Wm. P— aet 16.



Meteorological conditions.

In carefully studying all the epidemics which have occurred in this country since 1510, and "The geographical and historical pathology of Influenza" by Hirsch, there seems to me to be no doubt that this disease, so far as its origin and progress are concerned, shews a perfect indifference to, and is quite independent of the following, viz.;

(a) Climate, as it extends over the whole inhabited globe.

(b) Seasons, as out of 125 pandemics or epidemics,
50 began in Winter
35 " " Spring
16 " " Summer
24 " " Autumn
(Hirsch)

(c) Weather, as it occurs during
frost, snow, hail or rain,
tropical heat, temperate or at Zero
cloud or fog,
the stormiest gales or the stillest atmosphere,

(d) telluric conditions. "It is equally little influenced in its occurrence by = It has prevailed with as great intensity, and in as great extent, upon marshy as upon dry soils, on impervious as upon porous soils, in valleys as upon plateaus or in the hills, on the coast as in the interior." Hirsch.

Dr. Gairdner has referred to an anonymous article in St. James' Gazette of Tuesday 21st. Janry. Dr. Gairdner says "The object of the article is to show forth a probable case (confessedly not a proved case), to the effect that both in London and on the Continent the growth of epidemic Influenza has been accompanied and preceded by unusual stillness in the atmosphere,

atmosphere, and that its decline has been coincident with, and very probably due to, the replacement of stagnation by movement. "This would go far" writes the anonymous author towards explaining the vagaries of its geographical distribution; for that distribution would be commensurate with the area of stagnation, now wide and now narrow."

We will suppose the Cause of this disease to be carried by the air. There is no doubt that fog, or still air, would allow this agent to settle down, undisturbed, upon a certain district, and in greater quantity, and thus, probably, increase its intensity, but to say that stillness of the air or fog is the precursor of Influenza, or is necessary to originate the disease in a certain locality, is in my opinion quite contrary to the behaviour of many former epidemics, according to the observers of those days.

That fog has preceded and accompanied Influenza in some former epidemics, and that stillness of the atmosphere has done so in the present epidemic, so far as London and the Continent are concerned, there may also be no doubt, but there have been many epidemics when it has been preceded and accompanied by great vicissitudes of weather and in some by high winds.

I think a most conclusive proof that fog or stillness of the atmosphere, is not the necessary harbinger nor companion of Influenza, so far as a local epidemic is concerned, is shown in a Meteorological journal kept by Dr. A Carrick of Clifton, Bristol, during the visitation in 1803.

His observations extend over 3 months; 5 weeks preceding 3 weeks during the epidemic, and four weeks after its decline.

During the 3 weeks the disease was present there, the conditions of the weather were these:—

The thermometer varied from 30 to 64° F.
The barometer ranged from 29.5 to 30.2 in.

The wind was N to NE during 9 days of the epidemic
" " W " " 2 " "
" " S W " " 4 " "
" " E " " 5 " "
and on one day, only, there was no wind at all.
There was wind during the whole 5 weeks preceding, and when the epidemic had declined, there were 6 foggy days, and only 2 foggy days in the 5 weeks preceding the visitation and these nearly a month before, and none at all during the epidemic.

I give some extracts from Dr. Oth. Thomson's "Annals of Influenza" of many epidemics in Britain (nearly all of which were parts of very great pandemics) shewing the meteorological conditions preceding and accompanying these epidemics, according to the observers of those days, (and many of these observers were in the ranks of the "old masters" of medicine) which clearly prove that stillness of the atmosphere does not govern the geographical distribution of Influenza.

In 1557 it was preceded by ill. smelling fogs and followed by great inundations. The disease commenced in Oct. after a month of unusually cold winds.

In 1580 it commenced in Oct. after a cold dry wind.

In 1658 in April in the midst of a Wintery Spring.

In 1675 warm and mild weather (indeed Summer weather) lasted longer than usual, even to the end of Oct.. However it was succeeded by weather very different, viz; Sudden cold & moisture. Then it was that Coughs prevailed in greater number than any other time within my remembrance. (Sydenham.)

In 1732-3 both before and during the continuance of the disease in England, the air was warm, beyond the usual temper of the season, with great

great quantities of sulphurous vapours, producing great storms of wind from the South-west, and sometimes lightening without thunder. (Arbuthnot)

In 1743 great atmospheric vicissitudes, very severe easterly winds for months before the visitation

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1758. As for what I call the epidemic, it was first taken notice of in this City {Edinburgh} soon after the change of the weather, upon the easterly winds, that blew from the 16th. to the 20th. September; several children began then to be affected etc.:
(Robt. Whytt, M. D., F. R. S., Professor of Medicine in Edinburgh Univ.)

1762 Uncommon vicissitudes of heat and cold. Commenced in Sept. after severe and variable weather.

"Before and during the Influenza of 1775 & 1782, the wind was so variable in degree and direction, as to suggest no suspicion that it had any particular effect." Dr Haygarth's dissertation p. 195.

In 1803 The epidemic in England extended from S to North during the prevalence of North-easterly winds
Hirsch p. 35.

1831 In June after great vicissitudes of weather.

1836-37 "The accounts from all parts of the country, of ~~floods [illegible]~~ the disastrous gales, the drifting of the snow, the floods caused by the thaw, and the out-break of Influenza rapidly succeeded each other."
Dr. Streeten's report of the 1836-37 epidemic for the Comm. of the Provincial medical Association. p. 332.

We see in this as in other epidemics that the temperature of the air has no influence upon the spread of Influenza.

If we compare the mean temperatures at "the Cape", in Glasgow and in Russia, whilst the epidemic is in these places, we find the following results.

At the Cape, for month of January 1890
Mean temperature 68.5° F
} Observer:- Mr. Robt. Pett, Senr. assistant Cape of Good Hope Royal Observatory.

In Glasgow for seven weeks ending January 18th. 1890.
Mean temperature 42° F

In Russia — St. Petersburg,
for month ending Nov. 15th + 12 days = Nov. 27th English Calendar,
Average temperature was
1.6° above Zero (Réaumur) = 35.6° F

We see from the above data that Influenza is present and spreads in St. Petersburg at a mean temp. of 35.6° F, and in Glasgow it is present where the mean temp. is 6.4° higher, and at the Cape where the mean temperature is 26.5° higher than in Glasgow, and 32.9° higher than in Russia. The maximum at the Cape was actually 92° F. so even greater ranges can be observed.

Etiology.

I shall not enter into the literature of the Etiology of Influenza, as it is a question which has been discussed during every epidemic which has occurred, and the only success arrived at, seems to be, that the older writers, by thoroughly thrashing out every possible theory of the causation of the disease which was possible in their own time, have paved the way for those of the present day, who, by a process of exclusion, and analogy with other diseases of the same class, have arrived at a fairly correct idea of what the agent is likely to be, although we are still in ignorance as to the origin and nature of this suspected germ, and will remain so until the germ itself is found, differentiated and cultivated.

We have seen that Influenza does not owe its origin to the state of the weather, to the seasons, to the climate in which it occurs, or to telluric conditions.

The first question to consider is:- by what medium is the poison or infection carried. The fact of its being a Pandemic disease excludes water and food as the media of conveyance, and leaves only the air. Therefore this agent is carried by the air, and I believe that it may also be spread by human inter-course.

The next question is:- what is there in the air which gives origin to this disease in the different places. Is it a gas such as Ozone or Seleni-uretted hydrogen? According to the law of diffusion of Gases, we know that if it were a Gas it could never have the pandemic character it has; that its virulence would be weakened by dilution the further it was carried, till it was entirely dispersed. In fact, if it were a Gas it would probably be an endemic disease, existing only in those places where the conditions necessary for its production were present. If it were

were molecular or organic matter, we know that the former would be dispersed, and the latter be oxidised.

It must be something, therefore, which is capable of reproducing and propagating itself in its travels, either in the air, or in the bodies of the sick or in both.

Therefore for the following reasons:-

(a) by exclusion of those other causes already considered, and which have been proved to have no influence upon the origin of the disease.

(b) its specific character.

(c) the necessity of its reproduction in transit, and

(d) its analogy to other acute specific fevers, I consider Influenza to be

A Specific Germ disease,

which has a most pronounced individuality, running a course peculiar and special to itself, as is seen by the similarity of symptoms in the present pandemic when compared with the pandemics of former times.

M. Pasteur is reported to have said; "Doctors had better distinctly own they do not know anything about it. Il faut chercher"

Brit. med. journal Jany 18th/90. p. 150.

But the investigation of this supposed germ, so far as it has been carried out, has not brought to light what we are seeking for.

I examined many specimens, under the microscope, of sputa and discharges from the ear, but could find no bacteria of any description except in the case of Moore (page 33.) there appeared a few very doubtful tubercle bacilli, more like putrefactive bacilli from which the stain had been imperfectly discharged. I stained them by Weigert's method, improved by Koch, and described by Dr. Coats in his work upon pathology, both with methyl violet and Bismarck brown. I also sent some specimens of sputa to .....

to A. Ransome Esqr. M.D., F. R. S., which he also kindly stained and examined but his results were negative also.

Amongst the differentiated Germs which have been found in the various secretions of individuals suffering from Influenza, or its complications, and most of which have, by some, been supposed to be the primary cause of the disease, are the following:—

(a) the bacillus of Friedländer — the so-called pneumonia bacillus — which was alleged to be the microbe of Influenza, was, according to Weichselbaum, absent in every case he examined, and moreover, this microbe is present in normal sputum and in the normal fluid of the mouth.

(b) the Capsulated coccus of Jolles: this, resembling Friedländer's, has also been found in the Vienna drinking-water, and in a case of acute purulent cystitis, and even in those specimens it was said to be present in, it was accompanied with other bacteria — bacilli, pus-cocci & streptococci.

(c) A capsulated diplococcus — the diplococcus pneumonicæ — (this is the diplococcus which Weichselbaum of Vienna, and Fränkel of Berlin, quite independently of each other, showed genuine croupous or fibrinous pneumonia to be due to, and not to the bacillus of Friedländer). Weichselbaum does not consider this to be the microbe of Influenza, as he believes the microbe of Influenza to be still undiscovered, but considers the pneumococcus to be due to a secondary infection, the croupous pneumonia occurring as a complication

(d) the Streptococcus pyogenes, believed by

by Professors Ribbert and Finkler of Bonn to have the power, not only to convey the croupous pneumonia complicating Influenza, but should also be considered as the primary cause of the disease. The researches of Besser, I think, clearly prove that this is not the microbe of Influenza.

(e) the Staphylococcus pyogenes aureus, and

(f) other bacterial species.

In several instances of fatal pneumonia following Influenza, Bales isolated, the bacillus of Friedländer, various forms of streptococci, the staphylococcus aureus and various other bacterial species.

The researches of Besser are very remarkable. "We examined with the microscope and by bacteriological methods the secretion of the nasal cavity of 57 men, between the ages of 20 and 60 years; 28 of these were convalescents from various ailments, not Influenza or its complications, and the rest were perfectly healthy. In 81 examinations he found

(a) the bacillus of Friedländer, only twice
(b) the diplococcus pneumonia fourteen times
(c) the streptococcus pyogenes seven times
(d) the staphylococcus pyogenes aureus fourteen times.

all these microbes acted pathogenically on Rodents, and were present in large numbers, occasionally in pure cultures, but a whole list of other species were also isolated from the secretion in the various cases . . . . . the species found in the bronchial sputum deserve to be specially mentioned.

The Streptococcus pyogenes was found in

in 2 cases of phthisis; a microbe similar to, but not identical with, it was found in 2 cases of scarlatina; the diplococcus pneumoniæ in one case each of fracture of cervical vertebræ, of tuberculosis of the peritoneum, and of enteric fever; the staphylococcus pyogenes aureus in one case each of tuberculosis, carcinoma uteri, and gangrena senilis."

Brit. med. journal p. 560. March 8th 1890.

To conclude: he found all these microbes, the various observers have been vindicating as special to influenza, in cases which had no relation whatever with that disease. His researches have also supported those who question the etiological relation of the diplococcus pneumoniæ to fibrinous or croupous pneumonia.

Infection

The question of the infectious nature of Influenza is one which has been discussed, by the various writers upon the subject, during every epidemic of the disease in this country. We have quite opposite opinions to deal with and all from good authorities. I am convinced, in my own mind, from my own individual observation that the disease is highly infectious, both from breathing an infected atmosphere, and also from the patients breath, but to what extent infection acts in originating and spreading the disease I cannot say.

My reasons for concluding the disease to be infectious are these:-

(a) Sporadic cases preceded the general attack. I never met with an example of all the members of a house-hold being attacked at the same instant, although I've attended as many as seven cases in one family:

(b) they were always attacked in Succession - I always found this to be the case if the history of the attack was carefully enquired into.

(C) the fact that so many doctors were attacked whilst attending the sick, is another proof that the disease is infectious.

(d) my own Case. I had an attack and believe I caught it in a small close room where an Influenza patient was shut up all night; the whole room seemed saturated with a close smelling vapour, as if from the sweat and breath of the patient. I shivered whilst in the room and soon felt a headache and extremely prostrate, and although I started a round of visits at 11 o'clock in perfect health, I could hardly walk home at 1 o'clock.

Here are two of many cases, I have seen and consider to have been caught by infection.

I. Miss H. lives a mile away from her sister Mrs B. who was suffering from a very severe attack and whom she

she nursed for one day only, the 26th. of March. I was sent for, to her house, early on the 27th. and found her suffering from the usual symptoms. She was in perfect health before she nursed her sister; there were no cases of the disease in her house, nor in her district at the time; in fact it was the last case I attended in Crewe.

II. Mrs W. lives 1½ miles from Mrs D. She washed clothes for her on a certain "washing-day." The whole of Mrs D's family had been, and were, suffering from Influenza; they had also worn some of the clothes whilst suffering from the disease. She went there in perfect health in the morning, she began to feel ill whilst she was washing these clothes, and at night she was very feverish, and in the morning had a typical attack, which her daughter also caught.

As clothes are capable of absorbing and retaining contagion, it is interesting to have an example of infection being carried through the medium of Fomites.

I have extracted the opinions of the very best authorities upon the question of infection.

In the 1758 and 1775 epidemics Dr. Millar and Dr. Glass, respectively, did not consider the disease infectious.

A society for promoting medical Knowledge requested Dr. Gray to report upon the 1782 epidemic; he did so, as follows:— "Different opinions have been entertained respecting the manner this disease was produced and propagated..... But the greater number concurred in the opinion, that the Influenza was contagious, in the common acceptation of that word; that is to say, that it was conveyed and propagated by the contact, or at least by the sufficiently near approach of an infected person."

Of the same epidemic, Dr. R. Hamilton writes:—
"That the true cause sprung from another source—a particular materies morbi, a certain contagion, I think will not require many arguments to prove; the following few proofs may suffice" Then he gives some instances of infection.

But Dr. Haygarth's dissertation upon the 1782 epidemic is perhaps the most complete upon this point of any we have. In 8 out of 10 towns — the City of Chester and 9 neighbouring towns — he actually discovered the individual person who brought the disease into each place, previous to the general seizure of the inhabitants.

In the 1803 epidemic there is a great diversity of opinion among the various observers.
Dr. Nelson Scott writing from the Isle of Man in 1803 says:— "I feel quite satisfied as to the infectious nature of the influenza. I had many opportunities of observing the most incontestible proofs of it, from the persons who first imported the complaint, to the infection of the distant mountaineer."

Then we have the answer to the question— 'are you in possession of any proof of its being communicated from one person to another'— asked by the Council of the Provincial Medical Association at the close of the 1836-37 epidemic in their circular issued to the members, is reported by Dr. Streeten as follows:—
"the opinion of nearly all those who had the most extensive opportunities of investigating the disease, and the best means of arriving at a definite conclusion, being, that there is no proof of the existence of any contagious principle by which it was propagated from one individual to another."

Dr. Watson writes "The instances are very numerous, too numerous to be attributed to mere chance, in which the complaint has first broken out in those particular houses of a town at which travellers have arrived from infected places." (Principles and Practice of medicine, vol. II p. 43, 4th. Edition).

With direct reference to the present epidemic we have the following:—

"The question of the manner of transmission is answered by different observers in different ways, but all are agreed that the disease is spread by a contagious virus. The difference of opinion is this: While some observers — as Nothnagel, Leyden and Fürbringer — incline to the belief that the disease is essentially miasmatic, that is, that it spreads only by the air, others — as Henoch and Hirsch — maintain that it is essentially contagious, that is, that it spreads directly from person to person; and others again, like Bäumler, consider that the disease, if it be not a purely contagious disorder, is so at least to a considerable extent."

Brit. med. journal p. 369, Feb. 15th. 1890.

Immunity against second attacks.

It is very exceptional to have a second attack of Influenza, during the same epidemic, though relapses are very common, but there is no influence set up by the disease which confers an absolute immunity against another attack.

Mrs. E. had an attack on 3rd. Feby. and another on 14th. March.

Mrs. Farr had her first attack from 27th. Janry. to 2nd. Feb. from which she completely recovered, she then had a second attack which lasted from 10th. Feb. to 15th. Feb. then she relapsed or had a third attack from 22nd. Feb. to 26th. Feb. I don't consider that she had a third attack, the probability is that the symptoms of pneumonia and gastritis, from which she eventually died, were lying dormant in the system.

Mr. A. had an attack at the beginning of Feby. in Crewe, from which he completely recovered. He went to Lancashire, where it was prevalent, and was sent home on April 23rd. suffering from another attack for which I also attended him.

Relation of Influenza to diseases of brutes.

As some relation seems to have existed between the Influenza of man and that of brutes, during past pandemics, I thought it right to get what information I could upon this point also.

Mr. Lewis, Veterinary inspector for Cheshire informs me that no Influenza has occurred,

occurred among any animals in his district.

The Veterinary surgeon of the Great Western Railway, London, has kindly forwarded me the following:—

"An epizootic was prevalent among the horses in London during the last 3 months of the year 1889." [Influenza reached its maximum in London on 11th. Jany] "I learned from newspapers and other sources that at this same time a similar disease existed in Glasgow and Lincolnshire. I have no doubt it existed in other parts of the country also. Later I heard of it in Birmingham and in the Midlands.

The principal symptoms were, humidity of the eyes, swelling of the limbs and other dependent parts, high temperature, quick pulse and loss of appetite. There was an acrid discharge from the eyes but there were no other catarrhal symptoms, and the swollen limbs appeared to cause much pain.

When uncomplicated with organic or other diseases this complaint was rarely fatal. I have never known any cases where this, or any of the other types of Influenza were communicated to man."

Its influence upon pregnancy.

I saw very few cases of Influenza in pregnant women, but those cases I attended produced neither abortion, miscarriage nor premature labour.

Case I. Mrs B.— 5 months pregnant; temperature 103°F. Recovery retarded by very acute supra-orbital neuralgia. She carried her child to the full time.

Case II.— Mrs. B.— 7½ months; temperature 105° F for 2 days; very hot dry skin etc.; extreme pain in the back, the abdomen, and in front of the thighs to the knees. She thought that she was in labour; her pain, however, was constant not periodic, and upon treatment disappeared. This was a very acute attack but did not produce premature labour.

Case III. Mrs. A.— 6½ months; her attack was complicated with bilateral congestive pneumonia, but she made a good recovery after her confinement.

Case IV. PUERPERAL:— I had one case in a woman at the 9th. day after delivery. Her temperature soon became normal, but the nervous prostration was so great that she developed MELANCHOLIA, from which she has not yet recovered. There was no family history of insanity, nor had she shown any signs of it until after her attack of Influenza.

Complications and Sequelæ.

Cardiac.

The heart like other parts of the body is influenced by Influenza in a greater or less degree. This universal relaxation which attacks nearly every part of the system, as shown by the muscular prostration etc., is also exhibited in the action of the heart. In the young and vigorous it is not so noticeable, but in very old people, among whom I had many patients — 5/6ths. of them being women — the gravest symptom of the disease was this extraordinary and continued weakness and enfeeblement of the heart. It seemed to partake of the general depression; as if there were no resistance to be overcome, it would slacken in its work. The muscular action became enfeebled and, at times, perilously weak. The apex beat often became very indistinct and in some cases could hardly be heard, and the pulse at the wrist could not be felt in some, but was perceptible in the larger arteries, but very dicrotous. Intermissions and irregularity were very common. Palpitation from anæmia, from debility and from nervous derangement occurred at all ages, but especially in the very old. This enfeblement of the heart often gave rise to fainting and swooning and alarmed the patient very much.

When valvular, or other organic disease existed this debility caused increased danger, corresponding in degree to the gravity of the organic lesions existing.

I saw no case where it produced any organic disease.

Pericarditis. I had only one case of pericarditis as a complication of Influenza, and that occurred in a woman (Mrs. H.) aged 41 years.

years, and came on so rapidly and unexpectedly that the woman was comatose in 24 hours from the first commencement of pericarditis, and remained in that state for 18 hours before she died. It was the fourth day of the Influenza attack, from which she was recovering fairly well, being still confined to bed, to prevent complications setting in, when she was suddenly seized with a sharp pain over the heart, and on the left side, accompanied with great dyspnoea. She became very anxious and irritable.

In 24 hours there was tremendous pericardial and pleuritic effusion, the patient becoming delirious, vomiting much, then convulsions set in, Coma and death.

Anomalous and Suggestive Cases.

No. I. S. H. aged 50. Male.

For many years has been Anaemic and suffered from rheumatism and bronchitic-asthma. For some months he had been in fairly good health, when on Monday Feb. 3rd. he was seized suddenly with all the usual symptoms of Influenza, which at the time was prevalent in the neighbourhood; thinking at the time that he could tide over the attack he did not seek medical advice till Friday, when I saw him and found him sitting up though very weak, feverish and rather restless and irritable in manner. His pulse was weak and very irregular and intermitting. Temperature 102° F. and very irregular action of the heart.

The left lung was congested

congested throughout, and the Urine was scanty and seemed to consist of pure blood.

For a week he remained in much the same condition all his symptoms gradually improving; in two days the blood disappeared from the urine, and within a week it was free from albumen: the lung gradually cleared and he slowly regained his usual health.

The interesting points in his Case are
(1) the bloody condition of his urine,
(2) the congestion of his left lung,
(3) the fact that while the alarming symptoms, referred to, continued, the periodic attacks of asthma, from which he suffered, lasted,
(4) that although he appeared throughout to have entire possession of his mental faculties, the first week of his illness was and remains entire to him a blank

We have here a striking proof of the rapid and general attack on all the vital centres, which is so characteristic of Influenza in a weak or predisposed subject.

No. II.

Interesting case where an attack of Influenza entirely cured irregular intermittent action of the heart.

Mrs. C. had been under my care for about a month, suffering from palpitation, intermittent action of the heart, and great anxiety resulting from a sudden fright. The usual treatment of such cases had failed to relieve her, until she was suddenly seized with an attack of Influenza

the first effect of which was to increase to a painful extent the violent cardiac action, but this soon subsided, and with the disappearance of the attack of Influenza, the heart regained its normal tone and action and has continued so since.

Respiratory

Coryza was very uncommon.
Congestion of tonsils and pharynx accompanied by hoarseness occurred in many cases, and this hoarseness in one case reported by R. Norris Wolfenden M.D. Cantab, Brit. med. journal p. 541, was found to be due to "Adema of the larynx — a pale bladder-like projection of the right ary-epiglottic fold."
Cough, when present, was, as a rule, accompanied by thick tough sputum; it occurred in about half the cases.

Pleurisy: I had only one case and that was accompanied with pericarditis; but pleurisy is a very rare disease in Crewe: we see very few cases indeed.

Bronchitis was present in many cases and was often very acute. I had a case in an old woman of 88 years, who had never had an attack before; she expectorated pus almost from the first day, but made a good recovery.
Bronchitis sometimes became capillary and drifted into Pneumonia: at other times the pneumonia was quite independent of it;

I had

had 24 cases of Pneumonia making about 1¼ per cent. of the whole number of Influenza cases visited. Of this number:—

16 cases had pneumonia alone, of which

5 Cases had uni-lateral lobar pneumonia
6 —"— "— bi— "— "—
5 —"— "— bronchi, catarrhal or lobular—"—

Other 2 cases were so remarkable that I have described them in detail as "Suppurative" pneumonia.

One case recovered from two attacks of Influenza (see p 24,) but succumbed (either to a third or a relapse of the second) with gastritis & pneumonia.

Another had bilateral pneumonia & weak heart.

Four cases were subject to periodical attacks of asthma, and in addition to this 3 had weak hearts; these 3 died; the other recovered after an alarming illness.

Out of these 24 cases of Pneumonia we had 9 deaths or 37·5 per cent..

3 from asthma pneumonia and weak heart.
2 —"— pneumonia and prostration
3 —"— bronchi or catarrhal pneumonia
aged 5 mos., 1½ years, and 7 years.
1 —"— pneumonia & gastritis.

Its action upon Asthmatical people struck me, at the time, as being of a most remarkable and malignant character; it seemed to influence a nervo-respiratory centre, for

for in all 4 cases no sooner was the asthma started than it was immediately followed by bronchitis and pneumonia, and 3 of these cases very rapidly terminated in death.

Another circumstance worth noting is that these 3 patients were all in the prime of life, aged 36, 40 and 45 years.

I find that many old writers refer to this action of the disease upon asthma, although by most, it was as the accompaniment of old age. It was noticed in the epidemics of 1762, 1775 (by 4 writers) 1782, 1803 1837. "Annals of Influenza by Th. Thomson.

I noticed Dyspnoea in many cases where I could find no lung mischief to account for it.

Dr. Graves makes some interesting observations upon this point. "The dyspnoea appears to be chiefly attributable to some impression made on the vital activity of the lung." and again: "May not the affection of these parts in Influenza be sometimes induced by lesions of nervous power in the lungs.

Annals of Influenza p. 344. 5.

Phthisis: I had one case of latent phthisis which developed acute symptoms after Influenza, and rapidly terminated fatally.

A case of right uni-lateral suppurative pneumonia as a complication of Influenza.

John Moore, aged 19 years. A strong healthy lad, at present unemployed. Parents healthy.

He suffered for three days with the usual symptoms of Influenza, but would not confine himself to bed. On the evening of 28th. Feb. I found him sitting at the fire-side, shivering with aching pains all over him; his pain in the lumbar region still remaining but he also complained of a worse pain at the base of the right lung. His frontal headache still remained. His temperature rose to 103, Pulse 120, Respirations 40. He had had one or two rigors. I examined his lungs and found the left side normal, and this lung remained normal throughout his illness. There were moist crepitating râles over the back part of the right lung. Upon percussion I found resistance but not actual dullness. Cough with watery expectoration, not rusty. During the night he was very delirious, had several severe rigors, sweated profusely, and the pain increased in intensity and was now over his whole lung.

In the morning 1st. March, his temperature was 105, Pulse 130. Respirations 44: there was great dyspnoea with tubular breathing, dullness on percussion in some parts, and there were moist crepitating râles over all his right lung and the expectoration was already quite purulent. I examined many specimens of it under the microscope, both stained and unstained and could find no definite tubercle bacilli: in one specimen there were a few doubtful ones, but they looked more like pathefactive bacilli from which the stain had been imperfectly discharged.

On March 2nd. his temperature was 104, pulse 110, Respirations 40; expectoration still the same. By the 5th March his temperature was normal, but he continued to expectorate this pus for some time after.

This sudden onset with great dyspnoea and sudden expectoration of pus, made me think that a deep-seated abscess had formed in the lung, and which could not be detected; but from the beginning to the end of his illness no cavity could be found.

He made a good recovery.

Case No. II.

This was one of sudden expectoration of pus, but the pneumonia was in both lungs.

John Kennedy, aged 25 yrs. Occupation, a fitter. Father died at 48 from phthisis; mother still living and healthy. He has always enjoyed good health, although he is delicate-looking. He stopped work on Tuesday 18th Feb. suffering from the usual symptoms of Influenza. On Saturday night, 21st Feb— 4 days after— he had severe rigors, his temperature rose to 104, pulse 120. Respirations 42. He complained of pain at the base of both lungs. Upon examination, the percussion note was little altered, but there were very small râles here and there. In the morning there were very distinct crepitant râles to be heard over the base of each lung, especially behind. There was cough accompanied with expectoration which almost immediately became purulent. (It was like Moore's case of Suppurative pneumonia

pneumonia; there was no purity sputum. I examined the sputum at all stages of the disease, under the microscope, both stained and unstained, but my results were at all times negative.)

There was dulness on percussion and tubular breathing over the greater part of both lungs, but not affecting the apices much. This was followed by loud and crepitant moist râles over both lungs. She expectorated, at least, a pint of pus every 24 hours for a month. I could find no cavity. His kidneys remained normal.

On 20th April she got up from bed — having been there for two months —. I then examined his lungs and found both apices almost clear; loud râles, but fewer in number and not bronchial, over the back part of both lungs, and a few at the middle and base of both lungs in front.

His lungs continued to clear up and he made a good recovery.

Phthisis

A case of latent phthisis which developed acute symptoms and dated its exciting cause from Influenza.

H. J. Morley, 16 years, female.

Parents both healthy; brothers & sisters healthy.

She was an anæmic, thin, delicate-looking girl. She came to the surgery in Nov. 188—15 months before her attack of Influenza — as her mother felt anxious about her. At that time she complained of a slight cough without

without any marked expectoration. She was dyspeptic having sour eructations etc; bowels irregular, constipation being followed by painless diarrhoea. She said that she was losing flesh and that her hands were always moist. She had no night-sweats. Upon examination, I found the left apex normal. Over the right apex, in front, the respirations were slightly harsh and jerky, expiration being a little prolonged. The heart sounds were conducted more to the right than the left. There was a slight resistance to percussion in the supra-clavicular region and very slightly sub-clavicular. Percussion in supra-scapular region, normal. No râles anywhere. Upon treatment the dyspepsia disappeared; the bowels became more regular and, with cod-liver oil emulsion she began to gain flesh a little. I examined her lungs from time to time and found it clearing up slowly. It never became quite normal. She seemed to be in fairly good health, did her house-work and had a good appetite.

Upon Feb. 12th, her father became ill with influenza and developed a most acute attack, his temperature reaching 105° F and taking five days to become normal. She was constantly in and out the room during his illness and, on 17th. Feb. she complained of pain in her back, great frontal headache, giddiness and nausea, chilliness all down the spine; prostration extreme, and she was also very low-spirited.

She had an ordinary attack of influenza till the fourth day when she developed frightful rigors; her temperature rose up to 105°; pulse 140. Respirations 50. She complained of pain and constriction down both lungs in front, especially at the apices. On examination, I found crackling and

and moist râles over right apex in front and behind; dulness on percussion with tubular breathing, increased vocal resonance etc.; left apex resistant to percussion in front and behind & dry and moist râles distributed over it, especially in front. The dulness and râles soon extended over both lungs in front and behind. Cough set in and with it expectoration which from the start was muco-purulent and then purulent. Her temperature rose to 105.5°F and could not be got below 103 for days. The sweating became more and more copious and her clothes and best-clothes were soaked with it. The râles became more and more moist and were distributed universally throughout both lungs.

A cavity developed at the apex of the right lung. Cough became amphoric. Her throat became affected a week before she died. Diarrhoea set in and could hardly be stopped. Emaciation became very rapid and extreme. Consciousness remained to the last. No abdominal symptoms, excepting diarrhoea calling for treatment.

She died at 11 a.m. on 14th. March, having been in bed a little over a month.

Inflammation of the middle ear with the formation of pus is not an uncommon complication or Sequela of Influenza.

It has been observed in many previous pandemics. Dr. Gray in his account of the 1782 epidemic states" Abscesses in the ears, which, according to Huxham, were a common symptom in the epidemic of 1733, were seldom seen in that of 1782; but they did sometimes occur."

Dr. R. Hamilton in writing about the same epidemic says " One of my patients had abscesses formed in both his ears, which burst, and continued to discharge for some weeks after"

I have had some remarkable cases; The Influenza attacked the family of Mrs. D. who are of a decidedly strumous constitution, but not otherwise peculiar. It proved interesting from the frequency with which it produced inflammation and suppuration of the middle ear. First, the baby 2 years old, suffered from a very severe attack, then in 3 days, afterwards, a boy, aged 11, had an attack which seemed to spend itself entirely on the ear, producing great pain and great general disturbance, followed by profuse discharge. During the following week the father of the family was seized in exactly the same way, and subsequent to that a younger son, aged 7, had all the prengonitory symptoms of a like attack which was, however, averted. There was no previous history of ear trouble and the question suggests itself, how much had the strumous habit to do with the course of events.

Some cases very similar to

to these seem to have occurred in the practice of D. W. V. Lush, Weymouth. He writes" in one family 3 persons were attacked and all had otitis with discharge.

Brit. med. journal p. 149 Jany. 18th.

I had another very interesting case.

Mr. Saint, aged 30 years. Occupation, a decorator.

There were several cases of Influenza in his house, his wife being one of the patients, when he, himself, caught the disease.

He had the usual symptoms with intense frontal and lateral headache upon the left side, as well as a sense of weight in the ear on the same side.

On Thursday night about 12 O'clock he was seized with a most acute and sickening pain in the middle ear, which was continued down the Eustachian tube in front and into the Mastoid cells behind. I saw him on Friday afternoon and examined his ear with difficulty. The external meatus was congested at the inner part of the canal and there was a dull lustreless appearance of the membrana tympani, with a bulging outwards of the lower part where the patient complained of a painful throbbing sensation.

I dropped in a few sedative drops and ordered hot fomentations over the whole ear especially in front of the tragus, where pressure caused excruciating pain. This inflammatory condition of the tympanic cavity went on to the formation of pus, for on Saturday night 15th. March, the membrana tympani burst, with what he described as a "report," accompanied with a gurgling sound and a discharge of blood and pus. I saw

saw him again on Sunday, 16th. March and swabbed out the pus etc., and found a triangular perforation of the tympanic membrane with its base at the floor of the Cavity.

On Monday there was not much discharge, so I did not touch it.

On Tuesday I found the parts looking comparatively healthy, with a little mucus oozing out of the opening in the membrane.

I did not touch it again till Friday the 21st. when I found that there was still a slight oozing of mucus with a very slight amount of pus. The opening was beginning to close up with healthy granulations and on Sunday 23rd. it was almost completely healed.

On Tuesday 25th. discharge still continues, mostly mucus, with a little blood mixed with it.

On Wednesday he felt much better, so went out twice and caught cold. His temperature again rose and a profuse discharge continued from his ear for a long time. He remained somewhat deaf in his left ear after the discharge stopped. Otherwise he made a good recovery.

The Nervous system and its relation to Influenza.

So pronounced is the action of Influenza upon the nervous system, that by some it has been considered as a nervous fever.

In 1775 Dr. C. J. Fleury writing of that epidemic said " ..... this epidemic cold .... affected the nervous system more than any I ever remember; " Annals of Influenza, page 113

Dr. R. Hamilton writing upon the 1782 epidemic said " Whatever, then, may be the nature of this materies morbi, it is such as always produces great alterations in the functions of the nervous system. " page 177

And Dr. Graves observed " I have already stated my conviction, that the poison which produced influenza acted on the nervous system in general, and on the pulmonary nerves in particular, in such a way as to produce symptoms of bronchial irritation and dyspnoea, to which bronchial congestion and inflammation were often superadded. "

" In this view of the subject I am not singular, for I find that it has been advocated by Dr. Peyton Blakiston, in a short 'Treatise on Influenza, as it occurred at Birmingham. He states, that his researches have led him to the conclusion, 'that influenza is an affection of the nervous system, with its concomitant de-rangements in the organs of digestion, circulation, etc., commonly known under the name of nervous fever, accompanied throughout its whole course, by irritation of the pulmonary mucous membrane, which not unfrequently amounts to congestion and even to inflammation."

Annals of Influenza page 347.

There is no doubt that Influenza acts in a Special manner upon the nervous system. The muscular prostration, the mental depression and other forms of neuroses seem to be quite unaccounted for by the height of the fever or the duration of the disease. The Specific germ to which the disease is supposed to owe its origin seems to have the power of altering the quality of the blood in such a way as to give rise to the most varied forms of neuroses, which are very characteristic of the disease. The complexity of the nervous system explains why many of these groups of symptoms are different; the altered quality of the blood acting on different parts. When we remember that malaria, relapsing fever, lead, mercury, gout, syphilis over-lactation etc, and defective nutrition all cause neuralgia etc,, through impoverishing or altering the quality of the blood, we may suppose that it is probably an alteration of the blood which causes the varied neuroses in this disease also.

One of the most characteristic neurosis of Influenza is a <u>change in the mental faculties.</u> Nearly every patient suffers from <u>Mental depression</u>, more or less, at some period of the disease. When they take ill, many imagine that they are going to die, and, for a time, nothing will convince them that they will get better; then, they think that the various pains they have will never leave them, and, when they are convalescing that their constitution is permanently shattered, that they'll never have the same health as they formerly had, and that they'll never be able to manage their work again.

Some

Some become so Melancholic that they actually develop a suicidal tendency. The Suicidal impulse was so strong in 2 cases we had, that they requested to be watched: Others were so melancholic that they had to be sent away to friends at a distance before they got right again.

I attended one case of Insanity: it was the following case, of a woman who developed Melancholia.

I was sent for, to see Mrs B, on 22nd. Feby — 7 days after parturition. She was then suffering, along with others in the house, from an acute attack of Influenza. She had the usual symptoms but in addition, the pyrexia had suppressed the lochia and milk. She recovered from the acute attack in about 4 days but remained much depressed and very weak. She soon began to lose interest in her child, became very suspicious, spoke very little to anyone, often talked to herself, would sit brooding and thinking all day long, till at last she became insane and is now suffering from Melancholia. Her mother told me that she was bright and cheerful during the whole of her pregnancy, and up to the time she caught the influenza. There was no history of insanity in the family, nor had she ever shown any signs of it until this attack of influenza.

Dr. Jogmon of Northwich (about 12 miles from here) kindly wrote me about a case he attended of Mania following an attack of Influenza. It terminated fatally, the duration of illness being 10 days, and there was no history of insanity in the family.

There was another

case of acute mania in the same town, which happened in the practice of Dr. Dreschfeld. The man in his excitement trundled his mother-in-law down stairs, breaking her arm, and smashed all the ornaments in the room.

Hypochondriasis was also very common as a sequela. Some, who were very ordinary individuals before their illness, seldom troubling a doctor, imagined they had consumption, and nothing but a thorough examination would convince them otherwise, then in a few days they would come again and want their hearts examined etc.

Many were very irritable, complained of nervousness, fear and want of confidence. for many weeks after.

Neuralgia.

I have seen many cases of neuralgic affections of different nerves, and groups of nerves, which have occurred in different, and sometimes, all stages of the disease, continuing during convalescence and often prolonging it. The most common was that of the supra orbital branch of the first division of the 5th. nerve. Many patients whom I have asked to touch the most painful spot, have put their finger exactly over the supra orbital notch. This neuralgia, in some, is accompanied with lachrymation and congestion of conjunctival vessels. Some of these attacks were so obstinate and constant, as to resist all kinds of treatment for a long time. In some, I thought the sheath of the nerve must have become inflamed, they could not bear the slightest pressure. A few had neuralgia of the infra orbital nerve.

There were several cases where the skin of the scalp was so sensitive that the application of a hair-brush would immediately cause

cause great pain, to shoot along the branches of the great occipital nerve behind, and over the vertex and in front evidently implicating the cutaneous branches of the small occipital and supra orbital.

Another form of neuralgic pain was that in the occipito cervico region, which made the patient hold his head towards the affected side, and corresponded to the upper part of the trapezius.

I attended 3 cases of what, I believed to be neuralgic pains in the abdominal wall In 2 of these cases the pains were periodic; they were sharp shooting pains which made the patient scream when the attacks came on; pressure made them worse, and the temperature was not raised. There was nothing to cause colic that I could find out.

Intercostal neuralgia was very common especially of the lower ribs; this in some cases continued for six weeks after the attack.

I found marked Hysteria in two women and one man; they were easily cured. Hallucinations and seeing of visions occurred in several cases.

Delirium, apart from the high fever was rare.

Convulsions, ushered in many attacks in children; more in adults.

Herpes occured in two cases.

An absence or perversion of taste in most cases, and in many an absence of the sense of Smell.

Tremor of different muscles may exist for months after.

Mental complications, as a neurosis. I attended several. Mr. G. aged 21 years, Occupation, a banker.

This gentleman is of very studious

habits, and his occupation is one which makes him use his eyes very much. He began with the usual symptoms but so acutely and severely that he had at once to be confined to bed, and from the second day of the attack, he had dreadful pain in both eye-balls, no inflammation or ulceration of cornea, but occasionally, excessive lachrymation; photofobia extreme, and, as a consequence, spasm of the orbicularis muscles. If he attempted to read his sight failed him at once. He had to be confined to a darkened room and wear a shade over his eyes for a week.

As a rule his eyes are particularly healthy and his eye-sight normal.

Influenza in France.

The number of Suicides was increased 40 per cent. Dr. Jacques Bertillon Brit. med. journal p. 1015, May 3rd.

Epilepsy.

Wm. Prothero, aged 56 years.

Afflicted with Influenza on Feb. 9th., pains in the head, back, and aching limbs: giddiness, chilliness etc. On the evening of the fourth day, (I notice most complications seem to set in on that day) that was, Feb. 13th at about 10 P.M. he was seized with violent epileptiform convulsions, which continued for twelve hours, with almost no intermission, except whilst he was under the influence of chloroform.

After the cessation of the convulsions, the patient was quiet, seemingly unconscious; he took nothing but was able to swallow.

It would seem that the medulla oblongata

or pons Varolii were involved, as the patient developed paralysis of the left side of his body, and the right side of his face, which gradually became more complete, and this was followed by paralysis of the sphincters, then total unconsciousness came on and he died on the 17th. Feby. in the evening.

There was no elevation of temperature from the commencement of his epileptic attack till he died.

His skin was cold: his pulse rapid and feeble.

He never had an epileptic fit before nor had any of his family.

The next case is one of Influenza, followed by Rheumatic fever and brain Complications.

B. L. aged 28 years.

This is a case of particular interest to me, as the young lady who died was to have been married to a most intimate medical friend of mine, being also a fellow-graduate.

My friend caught Influenza, and developed congestion of the lungs, and he believes that the first day he had it Miss L. caught the contagium from him.

On 25th. Jany. she had the symptoms of a very mild attack of Influenza, so much so, that after taking a dose of castor oil she went to church on the 26th. Whilst there she got much worse (owing, perhaps, partly to draught) and became so giddy she could not see anything distinctly. From that exposure onwards the case became very severe, the temperature oscillating day by day, till the end of the second week, when rheumatic pains, in the shape of pleuro-dynia, lumbago etc., became rather troublesome.

On Feby. 11th. acute rheumatism supervened, the temperature rose to 104° F. and the

the pulse was 110. The perspiration became very offensive, the knees, ankles, elbows and hands began to swell. Under alkaline treatment and Salicylate of Soda there was rapid improvement, so much so, that on the 16th. and 17th. there was no elevation of temperature and the pulse was normal.

On the 18th. the temperature began to rise again, with slight pains and swellings in the limbs.

On the 19th. the temperature was 103° F. and the pulse 110. The perspiration was extremely profuse and offensive, and the pain and swelling disappeared.

On the 20th. the perspiration began to get very much less, the temperature kept rising, being now 104·5° and the pulse 120. Now Cerebral symptoms began with a pain at the base of the skull behind, as if the rheumatic poison had affected the serous membranes at the base of the brain, this pain was accompanied with deafness, disordered vision and entire loss of memory for several hours.

On the 21st. the temperature kept still rising being now over 105°; and pulse 134. The deafness was still more intense, with the development of hallucinations. There was no perspiration now, and the skin became very dry.

On the 22nd. temperature reached 106, and the pulse 140, with hallucinations increasing and seeing of visions.

at 3. p. m. there was sudden difficulty in talking, utterance became very thick and consciousness became impaired.

at 6 p. m. the temperature reached 107·5° she became quite unconscious, and from thence until death at 7.30 a. m on the 23rd. Feby utter unconsciousness of her surroundings prevailed, except for the space of a minute or, at most

most two minutes at a time; the breathing became stertorous, the rise and fall of the chest being enormous. Convulsions of both sides now set in, and the pulse rose to over 170 and her expression assumed the risus sardonicus appearance.

The heart and lungs remained unaffected throughout.

The fatal issue was predisposed to by the fact, that, for many months previously, her mind was a good deal worried, and, during her influenza attack, she would not remain in bed as she ought to have done; thirdly, she had a former attack of acute rheumatism 8 years ago, with some delirium and slight affection of the heart, which however, soon disappeared completely. And then we have to consider the loss of nerve energy from the influenza, the development of the most fatal form of rheumatic fever, with the terrible hyperpyrexia, the high fever being accompanied with complete stoppage of the perspiration and the consequent accumulation of the products of decomposition and their re-absorption into the blood. and, in all probability, meningitis and effusion.

I find there are two cases of rheumatic fever, as sequelæ of influenza, mentioned by Jas. E. Bloomfield B.A. Oxon., M.R.C.S Eng. page 889 British medical journal.

To sum up the cases which have relation to the nervous system, and have followed influenza, there is a case of

Idiopathic tetanus.

tetanus, reported by W. J. Franklin Churchouse, L. R. C. P. Ed. etc. in the Brit. med. journal p. 719.

A case of Catalepsy
in the same journal for April 12th p. 837,
by G. F. Inglott M. D., D H O.

and lastly "A Case of Aphasia."
in the same journal for May 24th p. 1190-91,
by Thos. Dabam Poole M. B. Ed.

I find that Dr. Peacock, although not unaware of the influence of Influenza on the nervous system generally, does not place the cerebro-spinal complications under a special head, yet has a 3rd variety of the disease, viz.,

Catarrhal fever with predominant disorder of the abdominal organs.

From my experience I found the abdominal organs to be disturbed very little indeed, having only one case of typhoid at that time, (during my 2.000 cases) and that I do not think could be considered as a complication of Influenza.

On the other hand, I consider, that, it acts on the nervous system in so special a manner, as to be considered a special form of the disease and placed under a separate head.

In the cases which I have just described, they did not occur " in persons who had previously laboured under diseases of the brain, or occurred as complications of one or other of the forms of affection enumerated." I presume Dr. Peacock means the three heads under which he has placed the several varieties of the disease: viz.,

1st. Simple Catarrhal fever.
2ndly. Catarrhal fever with pulmonary complications.

3rdly. Catarrhal fever with predominant disorder of the abdominal organs.

Dr. Peacock was a keen and accurate observer, therefore, I conclude that the epidemic he attended differed somewhat from the present. This is quite possible, as we also find in some former epidemics that Catarrh was unquestionably the prominent feature of the disease; in this it has hardly been noticed.

Treatment.

The treatment resolved itself into therapeutic, hygienic and dietetic. Until the etiology of the disease is determined we cannot hope to adopt any prophylactic or specific treatment with any chance of success: I tried Quinine as such, but found it did no good.

For the ordinary uncomplicated disease, if seen when the temperature was high, I prescribed Tinctura of Aconite in one minim doses, in an ordinary febrifuge mixture, every hour, for twelve hours, leaving it out at the end of that time. On account of the marked depressant influence of aconite, it might be supposed that it would be contraindicated in this disease, but the rapidity with which it brought on the crisis and soothed the patient made me continue its use with marked success.

I confined the patient to bed for about 14 days, in as large and airy a room as possible, and for diet I allowed milk & soda-water, and a little "lemon-tea" if desired.

As soon as the febrile symptoms had

disappeared they were allowed milk diet and soups, and during convalescence were toned up with Quinine, Arsenic and Iron.

Cough, bronchial catarrh, pneumonia etc required the ordinary treatment for such cases.

For the frontal headache (not neuralgic) I found 3 i doses of the granular effervescent anti-pyrin (5 grs. means 3.) almost a specific.

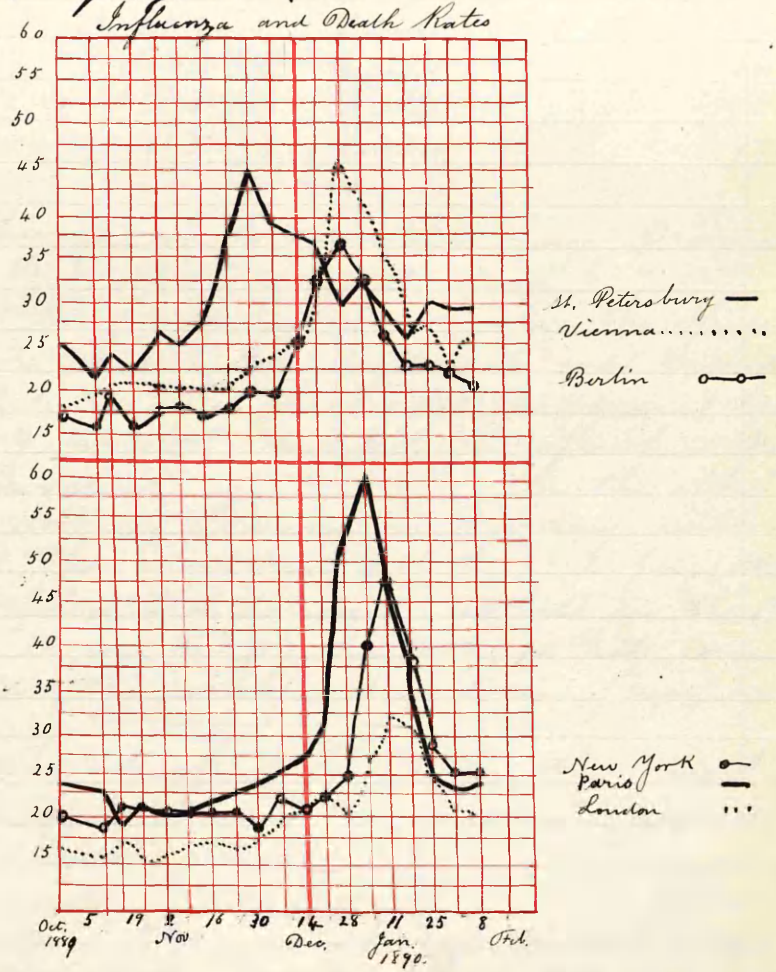
For the neuralgia, Quinine, Arsenic & Iron did best although, at times, it resisted all treatment for some time.

I may state that, being accustomed to take cold baths every morning, Summer and Winter, I thought I would try one, as an experiment, whilst I was feverish. I took both the plunge and "shower" receiving a very severe shock but not the slightest good from it.

Mortality.

I don't think that it is possible to get a detailed mortality from Influenza; because, 1stly. there has been an admitted doubt from nearly all quarters as to whether or not the disease was really present among them until it reached epidemic proportions; and, secondly, many medical men, not approving of the name, might sign catarrh, bronchitis etc., as a primary cause of a disease which was really Influenza. I believe many cases which were signed pleurisy pneumonia etc., which causes of death were common during an unaccountable increase in the mortality, had really their starting point in Influenza and were secondary to it. So that, I think that the mortality has been much greater than most people suppose. I have

have copied a most interesting mortality chart which appeared in the British medical journal for April 5th 1890 page 815.



Assuming that the pronounced rise in these curves is due to the epidemic — and of course there is a normal rise in early Winter — one or two points may here be noted.

1st. the generally Westward course of the disease is indicated in these curves. Earliest maximum in St. Petersburg, about the end of November.
" " Vienna & Berlin " " December, and
" " of Paris a week later
of London & New York, a week later still (11th. Jany.).

Paris has been the greatest sufferer 61.) = 3 times as great as latter part of Oct.
Next in order comes New York, Vienna, St. Petersburg, Berlin and London.

Maxima		Annual Death-rates.	
1. Paris	61.7	1 St. Petersburg	35.0
2. New York	46.5	2 New York	30.6
3. Vienna	45.9	3 Vienna	29.0
4. St. Petersburg	45.4	4 Paris	26.3
5. Berlin	36.5	5 Berlin	26.0
6. London	32.4	6 London	17.5

Influenza in London and large Provincial towns. Br. med. journal page 637.

"In London in Janv. when the epidemic was there at its height, the death-rate was equal to 28.1 per 1,000, while in 27 of the largest provincial towns it was only 23.7 per 1000, in but few of which Influenza was then prevalent. On the other hand, the death-rate in London in February, with the subsidence of the epidemic fell to 21.2 per 1,000 and was much below the average, while in the Provincial towns it rose to 27.7 per 1,000, a rate considerably higher than in the corresponding period of any year on record.

The highest point in the mortality rate in Belfast during the epidemic was 58 per 1,000. Br. med. journal.

In France the number of suicides was increased 40 per cent. Dr. Jacques Bertillon,

Brit. med. journal p. 1015, May 3rd.

This tremendous mortality which accompanies Influenza, all over the world, shows that it is not a disease which can be treated with impunity.

It has a remarkable power of, suddenly and severely, developing personal idiosyncrasies and diathetic tendencies: it seems to act by attacking the weakest part and starts old diseases lying dormant in the system, giving

to these diseases a most malignant character in many cases. e.g. asthma, phthisis, rheumatic fever etc.,

The dangers of its complications and sequelæ are out of all proportion to the simplicity of the uncomplicated disease properly treated.

The name, in this country, is responsible for much carelessness in treatment, and the fact that many of its symptoms have a resemblance to English Influenza. So few of the public treat it as a fever and guard against relapses as they would do in Scarlet fever, measles etc.,

These facts may account, somewhat, for the sad traces which the disease leaves behind it.

Conclusion.

From the foregoing remarks it will be seen that this disease is one of great antiquity; that it has symptoms and signs special to itself, that it does not seem to be influenced by meteorological conditions; that the cause, though supposed to be a specific germ, has not yet been discovered; that I consider the disease to be infectious, and that epizootics among horses and other animals have occurred both in connection with this and also with former epidemics. In my cases it did not produce either abortion, miscarriage or premature labour.

It often takes various forms, such as Cardiac, respiratory, aural, nervous and, according to Dr. Peacock and others, abdominal complications.

Its sequelæ are often very troublesome, especially if the disease has been suppressed, or not properly treated.

The most dangerous complications, I found, to be asthma, pneumonia, phthisis, and bronchitis in children. Its action upon the nervous system becomes so marked in some cases as to produce insanity.

Although the direct mortality from the disease is small, yet this is no criterion of its gravity. From the variety and severity of its after effects, it should be clearly recognised, by the profession, as ranking amongst our most serious diseases, and as such, to be carefully treated and clinically studied.

Finis.