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Thesis

on

Epidemic Influenza

as occurred

periodically since

1889.

Composed by

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Introduction

The attention of the Medical profession and also the public attention having been so much attracted by the sudden and surprising onset of the Epidemics of Influenza since 1889, I have thought that the subject would be a most worthy of my consideration, as well as a good opportunity for making observations in order to compile & weigh them in the form of a thesis.

Though I have read much of the literature on the subject, yet there is no doubt very much more to be known, and will be more clearly described in the future.

I do not wish it to be understood that I have made a great many observations of very weighty character, for

My observations have been principally confined to the clinical features of the disease during the Epidemics as they have occurred. I have had a great opportunity of seeing a large number of cases as I have practised in densely populated districts as well as sparsely inhabited districts.

I have refrained from using quotations from current literature as far as possible, because our knowledge as yet is scarcely able to deny or confirm some of the numerous theories that have been, or I may use the word, ventured, on different branches of the subject under consideration.

Many of the clinical observations I have made, have already appeared and have been described in the periodical literature by other medical men.

Is to at my treatise on the Epidemics that have occurred periodically since the winter of 1889 is more or less a review of the subject- i.e. disease, its most striking features & different modes of attacking patients; and the complications & sequelae that have resulted therefrom also a few observations on its pathology; its mode of spread and the treatment as found to be of the greatest service.

The various names which the epidemics, I am describing, have been designated, have led to much discussion, and there has been a variety of opinion and speculation as to the real cause and pathology of this disease, which I prefer to term Epidemic Influenza, not because I believe the epidemics arise from any meteoric influence,

but since the knowledge as to the cause of these Epidemics is uncertain. it is preferable to use the above terms. which leads to no misunderstanding as to the theory of origin or other pathological characteristics of the disease designated.

The other names that have been given to the malady. that are most fashionable are. Epidemic Catarrh. Russian Influenza. La Grippe Epidemic Catarrhal fever.

Short History

The Epidemic of 1889 was reported to have arisen in central Asia and I believe there is no doubt that such was the case. From there the disease spread. travelling in a direction. approximately west. towards Europe which continent it reached and was

reported from Russia, in the autumn of 1889. It was soon disseminated over the the whole continent. i.e. the principal towns being infected first. Most of the European capitals were unders its influence, in November of that year.—

The disease reached England in the middle of December 1889, but some of the cases I expect, were not diagnosed as Epidemic Influenza in the first instance, but were thought to be nothing more than ordinary colds, until the disease assumed an Epidemic form, when there was no room left for further doubt.

After the Epidemic had become marked in our large cities & towns, the disease could be seen

to spread along lines of communication from town to town, though some of the intermediate towns were not affected as soon as others. For instance, cases were reported from Edinburgh and towns in Ireland about the same time, its being apparently free in some others. But the disease affected those towns first where inter communication ~~to~~ between infected areas was greatest.

The Epidemic was at its highest about the end of December and first week in January following and it continued its ravages with full intensity for about three or four weeks. It began to abate in February 1890.

It was not long after its arrival in England that "La Grippe" had arrived in the

United States where it spread quickly.

In the British Isles the disease first attacked our capitals and after a few cases had become well marked, the ravages of an Epidemic were soon seen to be making headway.

These capitals or large towns, were the centres from which the disease spread — or lines of traffic most markedly.

Smaller towns, having been infected, became the spreading centres from which villages were attacked & these again affected or rather infected the country districts

When once the disease started spreading it continued to gain in quickness of dissemmating its infection & virulence until, as it were the tide of the Epidemic began to ebb.

In towns where the population was dense, the rapidity of spread was great: the occupants of Institutions & workshops were stricken one after another very quickly. The Police force & Post. office Staff suffered conspicuously.

Spring put an end to the Epidemic ~~expelled~~ and all had disappeared by the advent of Summer.

I did not observe any cases until March 1891. when another cycle, of I suppose the same Epidemic made its appearance.

But where were the organisms, or the specific cause lying dormant during the interval?

I am not prepared to speculate. This cycle was conspicuous from its Pulmonary Complication.

It was as wide-spread as the previous one & bore great resemblance in the mode of spread.

Some cases of meningeal complications came under my notice at this period.

This cycle ended in April but was followed again in autumn by another which lasted till end January in 1892. The same characteristic features as before were again noticed, but a little more erratic in its distribution.

Why this periodicity is so marked is as yet I believe unfathomed.

In this year again was the last attack but how many more we are to expect, if any, I know not.

It is remarkable that it should have disappeared for so long a time, and then, when it has reappeared, it should recur in this cyclical manner.

Aetiology

In considering the aetiology of Influenza, we may term it as an epidemic affection, which attacks a large number of persons in a rapid manner. and progressing in a more or less certain and often cyclical course; being well marked in densely populated districts, where the hygienic circumstances & surroundings are not very favorable.

But the epidemic does not seem to have any respect of persons of either high or low estate, affecting them equally together.

The epidemic does not seem to be modified or very slightly by either lowlying or mountainous districts.

The disease has a greater tendency to develop itself during

the time of the year when the temperature is not very low, for during last winter when the frost was great & the temperature very low, there were no signs of its occurrence. but immediately the thaw came the disease again appeared.

Hot climates again are most free from it.

Though it would seem that the disease is not dependent upon warmth from the fact that Russia has been affected during winter.

Some have laid stress upon the dampness of the atmosphere as being a "Sine qua non" for its development, and from the epidemics from which I have been able to make observations, the air has been well supplied with humidity. But until we have further proof, I am inclined

to treat this as a mere coincidence and that the disease does not depend on such circumstances

That ozone in the air, and other impurities in the form of alluvial deposits. Electricity -charged air. Meteoric influences. Sunspots &c, are causes of the outbreak, are impossibilities, and should not be allowed the consideration of scientists for longer time than mere mentioning.

What is most probably the cause, and the theory most likely to receive greatest support is the Microbe theory.

Reasoning from what previous investigations have taught us with reference to other diseases, which behave after the same infectious manner or epidemic character

as Influenza, we donot feel satisfied with any other theory than, that organisms, germs or some sort of living bacilli, capable of reproduction in a suitable midus, are the specific cause of the disease and of its transmittance from one person to another.

For from observations of some cases that have come under my notice, the infectious-ness of this malady must be very pronounced: for in one case a person, in apparently good health went to visit another who was suffering from an acute and typical attack of Influenza, began to feel ill during his visit and was laid up, the same day, with the same complaint.

And in schools this rapid infection passing from one person to another is very marked.

Also in households one has seen this occurrence often.

I cannot feel convinced, but that some organism or bacillus having entered the system of one person, does there generate or reproduce itself and that it becomes eliminated by the breath & excretories and that the infection is thereby transmitted, probably, in most cases, by the air, exhaled from the lungs, carrying with it, the organic matter charged with bacilli.

There have been many claimants to the discovery of the specific Bacillus. but each claimant has found a bacilli different in appearance, consequently some of these bacilli have nothing whatever to do with the reproduction of the disease, but that they are accidentally present with the proper organisms

or infective medium

Dr R. Pfeiffer. Member of the Staff of the Scientific Institute in the department for investigation of infectious diseases. Berlin. claims to have discovered bacilli in the sputum of Influenza patients & was able to demonstrate & Photo-graph them & reproduce them through different cultivators.

They are rodlets with the extremities coloured more ~~towards the end~~ than the centres (Prof. Sir Thos. Grainger Stewart's Address. British Med. Assoc. Bristol Aug. 4 1894.)

There is a favourable outlook for Dr Pfeiffer's bacilli as being the cause, because the bacilli found, are present in the sputum of Influenza patients only, as far as has been observed.

Though such brilliant results as have been obtained by Dr Pfeiffer the experiments

yet performed have not given proof conclusive, that this bacilli are the potent ones in Influenza.

But we must consider the medium in which these bacilli live during intervals of the epidemics that have occurred during the past-five years, in order that some prophylactic measures may be carried out to lessen the tendency to epidemics or prevent them entirely as has been nearly achieved in the case of small-pox.

Defective Sanitation plays a great part I have no doubt in bringing on these epidemics, but what point to be attended to is as yet unknown.

I am inclined to think that Subsoil drainage has some influence. And believe that Subsoil drainage, in

general is defective. i.e.
it might be greatly improved.
In my mind the ground
has some influence.
Predisposing causes
may be put down to general
ill health. Fatigue.
Working in damp clothes
Pre existing diseases of organic
nature

Clinical Features

Stage of Incubation is very
short in duration: as I have
mentioned previously of a case
in point.
Whether it is possible for
him to have been infected
during his visit, it is impossible
to say with absolute certainty.
I believe that 24 hours is
the usual or average time of
incubation. In others again
it has been as long as five
or six days. even longer

Invasion Stage. is generally marked in a typical case by sudden onset of a feeling of cold and chilliness creeping down the spine, though the temperature is normal or slightly raised. Sometimes there is distinct sneezing and lachrymation. This is followed almost constantly, by frontal headache or feeling of fulness of the orbits. There is pain in the loins and limbs and a general feeling as if one had been bruised all over the body.

Sometimes there is Epistaxis or Sore throat. Sickness and vomiting often are the opening symptoms of an attack.

Sometimes facial neuralgia occurs early, but generally follows later on.

This stage as a rule lasts for 48 hours or may be, three days. Sometimes there a high temperature. Tongue is usually

covered with a thick white fur and flabby. Bowels inactive.

Eruption Stage. This is very uncertain if there can be a stage of this nature. Anyhow I have often seen a rash, very much like the Scarlatinal rash, breaking out & distributed nearly allover the body & limbs, especially in children, and it appears as red dots, not raised, and in places confluent.

This rash was accompanied by the usual symptoms of Influenza and lasted about 24 hours though sometimes not so long. There was no albumen in the urine.

I have not noticed any desquamation following.

Convalescence generally follows, in uncomplicated cases, in 4 or 5 days and last about 10 days but

Sometimes even three weeks and often weakness is felt for a much longer period. In more severe cases, the separate symptoms may be very much more pronounced, though all the previously mentioned symptoms may not be present in one patient.

In the more severe typical cases, headache is almost always found to exist, and usually begins early on in the attack as a frontal headache and quickly extends over the whole head or it may be of a neuralgic nature

I have seen many cases where the headache was of the most intense character, causing the patient terrible agony, that the patient almost prays for something to relieve him. Da Costa p 773 Med. Diagnosis says that brain symptoms are rare but I have often seen delirium follow this headache and accompany it.

And, which, I believe, to great extent, can be explained by the pain experienced.

The throat is often very severely affected with Tonsillitis the tonsils becoming greatly enlarged almost to the preclusion of swallowing and I have noticed that the throat symptoms were most common in cases that have occured at the commencement of an epidemic cycle: for what reason, I donot know. Though the Tonsillitis is occasionally very severe yet it is very amenable to treatment, and disappears far more quickly than ordinary tonsillitis. The glands under the lower jaw are affected. These cases are most common in young adults. There is generally high temperature, sometimes 104°F. but usually about 102°F.

The tongue in these cases is covered with a thickish white fur

at the tip & front-part and
fettering brown towards base.
Epistaxis very often occurs
as an opening feature in the
disease, but I have never
seen any bad results from
it or any necessity to interfere
with it, and the cases have
gone on to recovery without
difficulty—
Actual Rigors may usher in
an attack. but this is not usual
and one begins to look for some
complication. as Pneumonia
A slight attack of Influenza
scarcely noticed by the
patients, may usher in
some complication by a rigor
which is thought to be the
initial stage.
Nasal Catarrh & Lachrymation
was not at all a prominent
symptom during the first
Epidemic but I noticed a
great deal more during

the last cycle 1895. and
in those in which it did occur.
there was loss of appetite and
general lassitude which
was common in almost every
case. Some patients could
not touch food in any form
for sometime. There was often
great thirst.

The Skin after the invasion
is well marked becomes very
active and perspiration
pronounced especially after
the acute stage is over.

This action of the Skin brings
the temperature down which
is sometimes very high.

The temperature rises very
rapidly as a rule

And from my experience I
find that, the cases where
a sudden rise of temperature
accompanies the onset of the
attack, the patient is likely
get well with-out any marked

difficulty. Probably the sudden onset & rise of temperature with other symptoms prevents them from running any risk of exposure to cold. I have not seen any complications of Pneumonia follow such case in young adults

I have seen some cases of very slight character, at first without an appreciable rise of temperature prove fatal from complications, & many cases of this kind are most protracted in recovery.

Cases are also recorded of Hyperpyrexia with out any pneumonic troubles (Vide B.M.J. April 6. 95. p. 752 Dr McCaw.) where the temperature went up to 107.6°F I have never seen a case to my knowledge with temperature over 105.°F

The urine is characteristic of febrile urine. high Coloured

Contains urates. and decreased in quantity

Bowels are usually inactive which are easily rectified by Saline aperients. Some times, there is marked diarhoea

The pulse cannot be considered to have any characteristic features except its irregularity. I do not mean in rhythm, but that the same characteristic pulse is not found in every case. (Da Costa Med. Diagn. p 772). Pulse is generally lowered in tension but I have often seen this (tension) good in early stages

Sometimes the rate is very much lowered also.

Types of Influenza.

The varieties are nearly as numerous as there are systems to be attacked, and accordingly the symptoms which are most

prominent are due, in a great measure, to the special system affected; and I believe that Influenza has special affinity for attacking that system which shows the greatest weakness, or, it may be that the system which shows signs of previous weakness is most likely to become complicated.

The Gastric Type

In this particular type the pain is often very marked and is felt usually in the Umbelical & Epigastric areas or regions, and in my opinion children suffer more from this particular type than any other. But be it known that children often refer pain to their "belly" when the real seat of pain is in the chest. I have often seen it so in cases of Pneumonia in children.

Diarrhoea is common in this class of disease, but I cannot say that the evacuations are characteristic at all.

In some they resemble typhoid stools.

I have also, during an Epidemic, seen cases where the stools were copious & watery in character. accompanied sometimes by great collapse & coldness of extremities & cramps the pulse thready & weak and great pain in abdomen.

The tongue in these cases was covered with white fur & rather brown towards the root. Vomiting of course is sometimes well marked & difficult to allay

I always look out for lung complications where there is obstinate vomiting and rise in temperature.

The Catarrhal Type —

This during my experience has been by far the commonest of the uncomplicated types

In this type there is great tendency to Pulmonary complications

It affects the mucous membrane of nose, & Frontal Sinuses & conjunctiva

Larynx often becomes affected in this type of case. It has been brought before my notice on several occasions

The nasal mucous membrane does not suffer nearly so much as one would think in this class of cases

In such this type of cases show great deal of nervous depression mixed with the prominent catarrh symptoms. Insomnia in one case was almost complete for 4 or 5 days, before the catarrhal symptoms showed themselves.

The Serous Type

I believe that very often the pleura has become affected in this disease, from the very onset, for I have in a few cases, seen, pleurisy well marked without any other, apparently, exciting cause. It may be a complication as it no doubt is, in some cases; but why should it arise almost simultaneously with other symptoms?

Pericarditis again has been noticed on different occasions.

I can give no experience of Peritonitis though I believe cases have been reported.

Nervous Type

By this type I mean to include all those cases that exhibit most prominently, symptoms that arise from affection of the nervous system. For instance Meningitis & Neuralgia, and

Insomnia. Great lassitude

Under the heading of Complications and Sequelae I shall describe the cases of meningitis as observed by me in one case & report from the observations by others, that were given to me.

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Complications & Sequelae

In discussing the above it will be wise to take the different systems as the headings under which the complications will be referred to: and by far the commonest is

The Respiratory System.

To this system can most of the worst i.e. most fatal cases be referred to, either in the form of Pneumonia. Pleurisy

or Bronchitis; but the respiratory tract is also affected with Laryngitis and catarrh of the trachea Bronchitis is by far the commonest complication of all that I have seen and mentioned, and as far as we can observe differs in no respects or very slightly (from chest examination) from the ordinary bronchitis due to exposure or other causes.

The cause has given rise to two different ideas as to origin as being due to some nervous inequality or influence on the bronchial tubes.

But I do not think there can be a more feasible theory, as to causation of this complication, than that it is due to the extension of the catarrh of mucous membrane down the tubes, for it almost always shows itself soon after the attack

of Influenza has pronounced itself. It certainly does not seem to be the result of exposure during the invasion in some cases. Though in slight cases of influenza, I believe that the complication has been due to exposure without the patient thinking he was running any risk. I have seen it follow influenza, by patient starting to work before convalescence was complete.

As Prof. Sir Thos Granger Stewart used to teach, that bronchitis sometimes precedes an attack of Gout, without apparent exposure, so may bronchitis follow influenza, being due to some systematic changes caused by the disease.

Bronchitis as a complication is most likely to occur in those people who have been previous sufferers from it.

or in those who have some chronic cardiac affection. and in the debilitated and aged: and pregnant women who in the latter part of the period of pregnancy suffer from influenza are particularly apt to become affected with bronchitis; though I have not seen any fatal results from such. though the cough is very tiring and troublesome and often difficult to allay.

There is not much pain in the chest, as a rule, unless the cases are very pronounced. often great oppression is felt.

The expectoration in this complication is very characteristic & often very large in amount and free (more or less) from air, unlike the ordinary bronchitic expectoration.

That feature of the expectoration is due, to a great extent, I believe, to the fact that the smaller tubes are not at the time affected, in most cases: but when the smaller bronchi become affected the sputum becomes more frothy. The Sputum has a greenish yellow appearance, and remains in the spittoon as separate masses

In some cases the expectoration is very little and I have seen one case where there was scarcely any i.e. very scanty, and this condition was continued for 6 or 7 days. what expectoration there was, was a very tenacious mucous but later on the discharge from the bronchial tubes became more copious & characteristic but the patient died after

about fourteen days illness
The cough in these cases is very troublesome and persistent and often spasmodic and not at all easy to allay, by the generally applied remedies
In children the smaller tubes are very likely to become affected and capillary bronchitis is not at all uncommon. In old people with weak heart action the complication is very serious. Delirium I have noticed, at night, very often in these cases.
The cough often persists for some time after recovery has more or less taken place. The epidemic of 1891 was marked with pulmonary complications—
Epistaxis can scarcely be considered a complication as far as I have seen.

Croupous Pneumonia is no doubt a complication of serious importance and in the cases of young adults as well as in old people affected there must be given a very guarded prognosis - As a complication in old people, I believe it is not nearly so common as Bronchitis, but in such cases certainly more fatal in its results. In children this has not been a common complication, in comparison to capillary bronchitis. Croupous Pneumonia is very apt to become a sequel to influenza if the patient exposes himself to the weather before he has thoroughly recovered. I have often found that patients suffering from Croupous Pneumonia, have not been well for about a week or so, before they have sent for me, and I have thought that in all

probability they had been suffering from influenza of a mild type, and had been going about and unconsciously exposing themselves to the vicissitudes of the weather.

The behaviour of Pneumonia is different in some cases of this kind, than in ordinary Pneumonia

The physical signs are not as one would expect in some cases: the dulness being, in some cases less marked than one would expect from the amount of prostration & rapidity of breathing, though the dulness may be explained by the fact that the central part of the lung is affected first which I believe is common in this kind of Pneumonia. And I have seen one case where delirium occured quite twelve hours before the dulness of the consolidated lung could be

detected, through the chest was examined carefully at each visit and the characteristic rusty sputum was not detected or seen till late in the disease

Though I believe the delirium was due to the complication and not to the influenza which was very mild.

This kind of Pneumonia has a great tendency to spread or extend over the whole lung in some cases.

The cough is very distressing indeed, and irritating.

There is usually great prostration.

The temperature is sometimes very high 104° F or 105° F but usually about from 103° F to 106° F.

The sensation of the temperature as felt by the hand when removed from the patients skin, may be likened to the sensation one gets or feels after blowing over breath through the loosely closed

fist. and which I think is very characteristic of this kind of pneumonia

Bowels are usually inactive. The physical signs are the same as ordinary pneumonia.

The heart action is usually much weakened during the latter part of the complication.

Catarrhal Pneumonia and pneumonia of small lobules I believe is more common than we are able to detect it. In consequence of the bronchitis masking the ~~the~~ Catarrhal pneumonia. These catarrhal pneumonic patches often lead to Phthisis I believe.

Pleurisy I believe is not so common a complication by any means. though I have seen a few cases during the epidemics. The physical signs & symptoms are as in other

cases of ordinary Pleurisy,
Effusion or Empyema may
follow but careful.
Phthisis pulmonalis as a
Sequela. I believe that a
great deal of Phthisis pulmonalis
has originated in influenza,
I believe due to the fact that
small patches of Catarrhal
pneumonia occured in the
lungs during the attack of Influenza
and that these patches did
not resume their healthy
condition. And is it not
possible that under such conditions
of weakness after influenza, these
inflammatory patches would
form a suitable midus for
the development & generation
of tubercle bacilli? I am
inclined to give an affirmative
answer.

I have had several cases
of marked Phthisis pulmonalis
and the histories pointed to this

cause. I have repeatedly heard patients say "I have never got thoroughly well or rid of the cough completely, since I had influenza"

There can be no doubt that previously phthisical cases often take a rapid course during an Epidemic wave. the process seems to augmented in some way or other. Asthma which has been quiescent for sometime has been aroused during these Epidemic cycles. I believe this to be due to the bronchial irritation which is so common.

It may as well be mentioned here that the Cough in influenza in at least 50 per cent of cases, is due to inflamed and elongated uvula (W.J. B Donelly - B.M.J. p 553 - 16-3-95)

I am not prepared to accept this theory in itself. for in more than 50 per cent. of influenza cases with cough, have distinct bronchial irritation or affection as is shown by the amount of expectoration that results therefrom. —

Circulatory System

This system has also been the field for investigation in reference to complications that have resulted from Influenza.

Marked depression of the heart's action has been observed in many cases, but I have not seen one so worthy of note, as one I shall record, except that of fainting during the attack. Prof. Sir Thomas Grainger Stewart B.M.D. Aug 4/94. p 243 mentions

a case where the pulse rate was as low as 30 per minute, with occasional abortive beats. I have no doubt but the cause was due to loss of nerve power in the motor nerves of the heart, although I am inclined to think that muscular fibres of the heart also become weakened in such cases & may have played some part in this lowered condition of the pulse rate.

It is not probable that the inhibitory influence would be increased in such cases, where nervous depression is so much marked in other respects.

It is not unfrequent to have a increased pulse rate.

Pericarditis I have seen in one case but it soon

passed away under ordinary treatment

Fainting during an attack is not uncommon and I believe is due to the great muscular weakness that shows itself in ordinary muscle of locomotion affecting the heart also coupled with the nervous prostration.

I have seen cases of Endocarditis in children which I could not explain in any other way than through influenza.

But these cases I believe are not common.

Urinary System —

The complications of this system are not common

Though during the last cycle, I had a case of Aphasia in an elderly

man, without any paralysis, followed by cystitis which he had not previously suffered from.
It was not very acute and passed away in about a week
Prof. Sir Thos Grainger Stewart B.M. Assoc Address mentions cases of passing albuminuria
I have not seen any albumen in such cases though I have repeatedly made examinations for such in the urine.

Alimentary System —

Vomiting in some cases is very marked and persistent and difficult to allay: it sometimes continues long after the attack is over especially in the morning there is then no pain: this I believe is due to gastric Catarrh which has been set up.

Diarrhoea is frequently a troublesome complication and often gives rise to a great deal of pain and sometimes passing of mucous discharge.

But mostly these complications pass speedily under appropriate treatment

There is sometimes great pastic pain.

Reproductive System —

As a rule there is nothing of very marked importance. in the way of complications, that affects this system in the male sex, beyond loss of activity.

Orchitis may occur but very rarely.

In the female sex the case is different for I have seen cases where the menstrual flow has been caused to become irregular after an

attack of influenza; and occasionally dysmenorrhea has been observed to follow. but I should not like to attribute this to be the sole cause. perhaps it may have become more noticeable at the time.

That abortions occur from this cause, I have no doubt whatever, but they usually go on the same as from other causes. The time for abortions to occur is about the 3rd or 4th month. but many time at a later period. Labour also has been induced before the period of pregnancy is up. I believe this is due to a great extent at any rate to the febrile state induced, and to the weakness caused by the disease

The child or foetus in all cases was not dead though

I believe this is usually the case. —

Nervous System —

The nervous system I believe shows more markedly than any other system the effects left after an attack of influenza: After influenza leaves the patient in a great state of nervous depression, and marked prostration and weakness. But I am inclined to think that the weakness to a great extent is brought about by the destructive action of the Influenza poison on the muscular system, as well as the nervous system after the same manner as Scarlet fever in adults.

Though certain cases suffer evidently from great

depression of spirits and of course, due to the special affinity of the poison to attack the nervous system. In such cases

Depression often lasts for some time after the attack has passed, and very often a kind of Melancholia has become developed as I have seen in one case.

In one case of Insanity a history of previous influenza was elicited which left a deal of depression of spirits & was followed some months after by mania.

In this case there was a distinct history of insanity in the family and this co-incident makes me feel, that very probably, the mania was awakened, as it were, by the influenza; and that it might have been the

cause of bringing about—
a tendency which was
laying dormant in the
nervous system.

In one case the mental
depression was so marked,
that patient would not
rise from bed for three or
four days at a time, as
he was afraid of (to use a
vulgarism) of "bringing
something else on"

A case of Paralysis of the
Insane (General) was told to
me, of a doctor, as being
due to influenza. Also
Suicides have been referred
to it

Delirium is a common
Complication of influenza
both in bronchitis & Pneumonia
And sometimes in cases of severe
headache & Meningitis

Da Costa in Med. Diagnosis
p 773 says brain symptoms are rare

Neuralgia is a very common occurrence and it is due to a great extent to the system being worn down by the virus of the disease

There may be some structural changes in the nerves themselves, but this is doubtful. The nerves that are most often affected are the cranial.

The Supra orbital & the Facial nerves being the most commonly affected.

The pain is excruciable in many cases.

There is usually a noticeable periodicity about this kind of neuralgia also: and it very often continues to affect the patient for some time after the influenza attack has passed. I suppose this is due to great tendency of neuralgia to show

itself in a debilitated subject

Neuralgic pains in the Stomach and in the abdomen generally, I believe are from the same cause

Hyperaesthesia of the head & face was sometimes noticed

Pain in the back is very common.

Of the Spastic paralysis & tabes dorsalis cases I have had. I could not elicit any change caused by influenza.

Meningitis is a complication which I have had chance of observation, in one case under treatment by me and have had about a dozen reported to me by medical friends. I will give the clinical features of the one I treated. The patient, a boy 16 years old, complained of

not feeling very well on the previous day.

The patient was taken suddenly early in the morning with a chill which was soon followed by headache & sickness. The headache very shortly became very intense. The patient was crying out with pain in the head & beneath occiput.

He was vomiting a bilious looking fluid mixed with food, and the temperature was when I saw him 100° F.

Within a few hours he became unconscious, but not comatose: occasionally crying out: head was fixed, occasional twitching of arms.

There was no rash or eruption of any kind to be seen & face more or less flushed at first.

Pulse was 96 during early

part of the day (first visit) but it soon became 110 per min. At first it was well filled with normal tension, but later it became weak sharp & badly filled

Patient towards night (6. o'clock) was quite unconscious & could not be roused in the least. He was not in a comatose state exactly.

There were no tetanic spasms

In the early part there was distinct delirium. Bowels did not act. Temperature rose to 103°. F. The pupils were contracted.

Patient died during the early hours of the following morning.

I consulted Dr Edwards Cardiff who without hesitation pronounced it meningitis complication.

One other case happened

close by which was described to me by Dr Wright. but the symptoms were more pronounced especially the spinal symptoms, there was arching of back & rigidity of head & neck. Temperature went up to 105°F.
Unconscious state was reached. Patient died in about 2½ days from onset.

The cases reported to me were all of the same nature varying in intensity.
Dr David told me of a case which occured in an old fracture of the base of Skull case, which had all the symptoms of the above but unconsciousness did not come on so early. He believed the meningitis was due to Influenza.
The base had been fractured about a year before.

I shall describe the

post mortem changes under the heading of Pathology later on.

Other Complications

Catarh of the Eustachian tube together with Rhinitis I know of in one case. Deafness was marked for sometime but with ultimate recovery.

Descase of Middle Ear happens in many cases. In some the tympanum was perforated and I have seen the ossicles swept away with the discharge.

As a rule however, the cases recover with out much difficult.

Secondary abscess over Mastoid has formed occasionally

The eyes in some cases have presented a peculiar con-junctivitis in which there was

great photophobia.

The conjunctiva was not bright red as seen in ordinary conjunctivitis, which is due to congestion: in these cases there seem very little actual congestion, but the <u>white of the eye</u> had changed to a distinct and characteristic pink appearance: it was usually in one eye only. It usually lasted for a week or may be a little more.

I have heard, but I cannot say how far it is true, that such conditions are found in horses during influenza epidemics.

Liquor Atropia. seemed to be the only application that gave relief. ——

Optic Atrophy has been said to be due to this malady

With reference to Immunity rendered by one attack is only of very short duration, though, I believe certainly that there is some immunity rendered.

In many cases that were attacked by the first Epidemic cycle were attacked by the ones following and in contradistinction to which there were many who were not suffered from the cycle that followed the first, though exposed to the same conditions.

Relapses are not uncommon especially I believe in the Catarrhal Type, even a few or 5 days after the patient seems convalescent.

Pathology ——

That there is any definite known characteristic morbid anatomy in influenza can scarcely be asserted: beyond the pathological changes that characterise other diseases when a special organ becomes affected i.e. the changes (post mortem) that occur in the lungs and other organs, in influenza, might be ~~by~~ brought about by other diseases.

Dr Pfeiffer's bacillus which seems at present to claim most support as being the cause of the disease. I am afraid or rather pleased to say, leaves but few uncomplicated cases for post mortem research

Consequently the morbid anatomy is as yet, not thoroughly known.

The post mortem examinations

reported here, of the case of Dr David's. where the meningitis complications proved fatal was as follows. the pathological changes were :—

The meninges were much congested, and the sinuses contained a dark reddish fluid. The subarachnoid spaces contained more serum than usual and some exudation at the base of the brain.

Brain substance near the surface was congested

There was also softening of the brain substance of the Temporo Sphenoidal lobe.

Ventricles contained some fluid.

The seat of the old fracture was observed *from which patient had completely recovered for some months.

He did not examine the spine.

I made a postmortem on a case which died from complications of Influenza, but there was a claim against an accidental insurance company for supposed death due to injury to head, hence the reason for P. Mortem examination. I found no brain changes or Meningeal changes.

The lung was consolidated in the lower lobe and presented the ordinary features of consolidation. The bronchi were congested & contained mucous frothy & more or less tinged with red. There were old pleuritic adhesions.

Bronchitis of a characteristic influenza type was noticed in the clinical features.

The consolidation was limited in area which alone would scarcely be thought to be sufficient to prove fatal.

There can be no doubt that there is some change in the nervous system, but what that change is, has yet to demonstrated.

There is as yet not sufficient evidence as to the pathology of the disease to confirm or deny the numerous theories set forth.

It seems to me that some organism (it may be Dr Pfeiffers) enters the system and I believe mostly through the air passages and there generates or develops; and which organism produces some toxic chemical changes in the blood, as long as there is any food or pabulum fit for its germination and that these toxic changes produce the symptoms of uncomplicated influenza

It must be very rapid

in its action in some cases because, as I have said the symptoms seemed to follow very shortly after the exposure to infection

It is rather like Diphtheria in its rapidity of infection and also its tendency to depress so severely

I believe also there is a tendency, or the poison or germs have a peculiar affinity in some cases to affect one system more than the others.

Mode of Spread

This, from what investigations previously made on Epidemics of somewhat similar nature have taught us, resolves itself into only two possible ways, and these are described under the contagious theory.

and the theory that it is air-borne like malarial fever.

If the origin could be proved to be telluric then there would be no necessity for argument.

But the manner of spread of influenza does not behave after the same manner as malarial fever. For instance. this epidemic started in Asia and travelled across Europe to America, Malarial fever is common in Asia, but I do not know that there are any records of it reaching beyond about two or three miles at the outside, from the place of origin, and if there are forest or lakes intervening between the place of origin of malarial fevers. it will not pass over and infect those areas beyond such safe guards or barriers.

Then again if such were the cause of spread, why are not towns and country affected simultaneously, that are, and I believe must be, subject to the same atmospheric influence

Again it is true the rapidity of spread is well marked and great, but the rapidity of spread is not by any means greater than people can travell, and it has been noticed, as I previously mentioned, that the spread in the first onset, has been most rapid on lines of communication or traffic.

The greater the rapidity of spread being noticed to be most marked in the directions where there is greatest communication between infected areas. The rapidity of spread is very pronounced

in thickly populated districts of towns, where marsh-miasm "is rendered innocuous by the air of large cities" (Roberts Practice of med. 10th Ed. p 228)

And the country districts & villages are often affected later than the large centres

This of itself looks very much as if the disease were contagious (I use the word contagion as bearing the same meaning as infection)

And what medical man practising since 1889. in this country has not seen members of households or institutions stricken down one by one with this direful malady?

Scarcely any! is the natural answer.

And again households who live in the country. some distance from an infected area, town or village, as the

case may be, being infected later on or not at all, perhaps.

Again one often sees, one or two cases gradually conveying infection to others and this increases in ratios by arithmetical progression until an Epidemic appears with all its ravages.

Also I do not know of any cases having been reported during this epidemic, where influenza has broken out, where there has not been communication between infected areas, as might be case for some time at any rate, in distant small islands, or among light-ship keepers or ships crews.

The case in which meningitis complication was observed by Dr Wright, was I believe infected by going down to an infected area some nine or ten miles distant: there were

no cases of influenza as far as we knew at the time. in the place where she lived (and died)

I believe that in most instances the infection is transmitted by the breath of patients, though it may be by means of infected articles as parcels ~~clothes~~ clothes &c.

I think that the evidence is greatly in favour of the Contagion Theory.

Differential Diagnosis —

This has to be made between Influenza and Scarlet-Fever Dengue - Typhus fever - Tonsilitis Acute Rheumatism and Ordinary Catarrh or Cold. Catarrh has symptoms common with Influenza, but they are limited as a rule to the nose and head, and the coryza

does not, as a rule last
so long in this affection.
There is no back pain or
feeling of having been bruised
and the fever is only slight
if any. There is not any
prostration worthy of mention.
Dengue is soon thrown out,
by the fact that in this country
it is not known to occur;
while influenza is most marked
or commonest in temperate climates.
Dengue in hot or Tropical.
Then again, there is the
characteristic pain in Dengue.
Scarlet-fever gives one more
trouble to eliminate, especially
in children, where a description
of the state of the feelings is
vague or misleading.
The rash in Scarlet-fever is
characteristic and rarely absent
while the rash in Influenza
is rarely present though
somewhat similar in appearance.

And the attack does not last so long as Scarlet Fever if uncomplicated. And Complications do not come on so early in Scarlet Fever

The Influenza rash does not last longer than 24 hours Scarlatinal rash lasts three or four days

There is very often Albumin in urine in Scarlet-fever, as a rule none in Influenza.

The tongue too, is characteristic in Scarlet-fever

Tonsilitis It may be due to influenza but the treatment would be little altered. The Constitutional symptoms are more marked in Influenza and more readily disappear under appropriate treatment—

Acute Rheumatism may be doubted occasionally but the joint symptoms and the movable character of the

pains soon explain the cause

The pains in the limbs generally and the body in Influenza is more muscular, diffused, and bruiselike than in Rheumatic fever.

The perspiration in Acute Rheumatism is more acid in its smell. Head symptoms again in Rheumatism are not so pronounced as in Influenza. Headache in Influenza is the rule. Time soon distinguishes the two. Tongue is whiter in Rheumatism as a rule.

Typhus Fever This should not be the cause of much trouble. The skin is drier and the rash is typical mottling of macules, which comes on about 4th day. When uncomplicated Influenza symptoms begin to abate

The facts of an Epidemic will clear ones diagnosis.

Prognosis —

This in the uncomplicated Influenza cases may safely be said to be good, — but where the cases are complicated with Pneumonia* or Bronchitis or Meningitis, it is guarded or perhaps, grave.

When Meningitis shows itself prominently the prognosis is bad:

In old people the prognosis is not so good as in young adults. & the same may be said of the cases with previous organic mischief of heart or lungs

It is serious also in Infants.

It is very difficult to arrive at a correct estimate of the mortality. because the disease generally proves fatal from complications which might have arisen from other causes.

The mortality may be considered very small.

Treatment ——

This to the ordinary practitioner and patient is very important indeed, and it may be laid down on the same lines as those for other fevers of a similar nature.

Preventative Treatment. This can only be carried out to a limited extent. It is nearly impossible for every body, on the first report of an Epidemic likely to arise to use all the prophylactics that have been recommended by different Medical men.

For instance, to inhale Eucalyptus oil, To use Antiseptic lotions or to take Quinine once or twice a day

This is beyond our power of

expectation from the public at large. It is difficult enough to persuade them to take advice when ill, leave alone when they are well.

There may be useful as reported by Dr Coghill (p 767. B.M.J.. 6-4-95) where the inmates of an institution took 5 grains of Quin. Sulph. daily, he reports favourably of his treatment. but that is impracticable to expect the whole community to be taking Quinine, at least it is not likely to happen.

Isolation as far as possible certainly ought to be insisted upon. especially in private houses. where there is room and I believe this would decrease its spread. Isolation in hospital during an epidemic I believe would scarcely be possible.

But very often mild cases, not under treatment perhaps, often ~~it~~ put themselves at other people's risk, and thereby convey infection.

Complete isolation is no doubt of great value, but I am afraid it cannot be carried out as desired.

The sputum from these patients should be destroyed by fire. Clothes & such like, should disinfected by heat, from patients.

Preventative medicines in the hands of the public would be useless or practically so.

Immediate Treatment —

It may be said that medical men vary a great deal in this department, and nearly every one has a favorite drug; but I think, that the indications

are, for medicines that tend to clear away from the system, the poison and other products that result from this, by giving a stimulus to the excretories, for action.

But I believe all agree that the patient should be put to bed and kept in a well ventilated room at a warm and equable temperature about 65° F.

The next step to be taken into consideration, is to relieve any distressing symptoms. first having seen that the bowels are regulated.

The medicine in the form of a febrifuge is indicated in most cases and the drugs I use are Pot. Bicarb. — Liq. Ammon. Acet Fort. — Pot. Nit. or even Sod. Salicylate if necessary, as recommended by Dr Rawlings Lancet 31. 1. 92.

In fact I believe that Soda Salicylate which brings on Diaphoresis and lowers the temperature is most active, and relieves the pain in the back and head wonderfully.

Treatment of Separate Symptoms.

Headache. This is very often relieved quickly with Anti-febrine Antipyrin. Phenacetin and Soda Salicylate.

I do not think it wise to use Antipyrin indiscriminately in all cases of Influenza

It may depress too much.

Vomiting is often soon relieved by effervescing mixtures, but not in all cases which is sometimes difficult to allay.

Pyrexia is often easily relieved by Diaphoretics but ℞ Hyperpyrexia is best treated by cold baths, as recommended by Dr Jno. McCaw, Belfast.

Cinnamon has been recommended by Dr Grant (B. M. J. p 583. 16.3.95) with fair results. I know nothing of this treatment.

Tonsilitis is best treated by Sod Salicylate internally, and an astringent gargle. Depression of the heart action should be combated by Ammonia and alcohol preferably effervescing stimulants. with some ordinary febrefuge, any depressing drugs should be avoided

Diarrhoea should be stopped by opium and chalk mixture which usually does so easily.

The condition of the patient after the acute symptoms have passed, should be watched, and all risks of a relapse should be avoided; by not going out too soon. The prostration

should be attended to by administration of nourishments of any description that are easily digested. and small quantities of alcoholic stimulants may be recommended at meal times.

Medicines in the form of ferri et Quin. Cit. is to be used if borne well and if the patient does not sleep well or there are any signs or likelyhoods of pulmonary troubles a cod liver oil is strongly to be recommended, to the warmer climates as Madeira or the Mediterranean or Cape. and which would be found to be of the greatest benefit.