A. Measles Epidemic
Notes on 1400 Cases
by
John Harold Peck M.B. Ch.B.
Whilst acting as Visiting Surgeon to the St Lawrence Dispensary in Ramsgate during the winter 1908-1909, I had the fortune, or misfortune, to become personally acquainted with an epidemic of measles.

The first two cases that occurred in the town were pupils of a large Church School. They were my cases, so I immediately reported the matter to the health authorities, and recommended that the school should be closed for two weeks.

My warning was neglected and as a result, measles became general throughout this school, and also spread rapidly to other schools in other parts of the town.

I don't know how many cases of measles there were in the town, but I personally attended upwards of 400 cases.

Whilst quoting a few special
cases to illustrate some points that I wish to bring out in this paper I intend to speak, for the most part, of the subject in a general way. The books I have consulted for reference and guidance, are works on infectious diseases and notes on the same by the following authorities.

E. W. Goodall
J. W. Washbourne
J. Wyllie
C. B. Ker
W. N. Hames
Measles is by no means a disease of modern times. It was known to the Arab physicians and Herodotus says that it was in all probability widely diffused over Asiatic and European soil during the middle ages. At the present time it is known all over the civilized and semi-civilized world. Colonization has had a good deal to say in the spread of it especially amongst the natives of Australia, New Zealand, and the Polynesian Archipelago. In these parts it is practically a modern disease amongst the natives. Having no hereditary immunity, measles often plays havoc with the village population. I quote here two well-known examples. In Fiji in 1874 about 1/7 of the entire population...
(population)

perished, and in 1749 on the banks of the Amazon, whole tribes are said to have been cut off.

Hunger and age in these cases offer little protection, children and adults alike being affected. Another example of this was seen in the epidemic which visited the Fareo Islands in 1846.

Season and Periodicity

This epidemic visited Ramagata in the winter months and seemed to die off about February or March, the worst months being November, December, and January. Most writers quote this time as being the usual time for an epidemic, some mention the cold spring months as also a likely time. Why the cold winter months and not the warm summer ones, no one seems to know. So it that the organism is not
(more)

actue in the cold weather? or that the powers of resistance of the individual, along the lines of infection, are weaker?
The disease seems to occur in waves, and our last epidemic here was about 3 years before this one. Of course we had a few odd cases in the intervening years, but nothing to speak of.

This winter for instance, I have only seen one case of measles and it was not typical.

Whitelegge speaks of "major waves" and "minor waves" about 20 years elapsing between the major waves, and 2 1/2 4 years between the minor waves.

He also suggests variation in the quality of the measles itself. This is quite conceivable, because an organism, and undoubtedly measles is due to one, has its ups and downs, like an individual
(individual)
or a nation. Variation in climate
and soil & individual attacked must
have a definite effect on the virus
of any organisms.

Age

Age is an extremely important factor,
although the disease may occur
at any period, yet it is common
in the first ten years of life.
This is due to the very infectious
nature of the disease, the crowding
together of children at school &
the prevalence of the disease at certain
seasons of the year.
22% of my cases were under
5 years of age & of the rest only
3% were over ten. Poore's
reports that of 12,362 patients
admitted to the Glasgow Fever
Hospital, 6,870 were under 5 years
of age. Of the ages up to 5,
I found that the greatest sufferers
were between 1 & 2 years. Below
(Below,

one year, two babies although exposed to infection, sometimes escaped altogether. Two mothers I found had put their babies, one 9 months and the other 6 months into bed with the older children who were ill with measles, so that the children might contract the disease and "get it over." These children strange as it may escape. Dr. Keen in his work on Measles says that "infants during the first six months appear to enjoy a certain degree of immunity."

Cause and Dissemination

There is not the slightest doubt that measles is due to a specific microorganism. The nature of the attack and the rapid spread of the disease through a community are enough to indicate this. What the real nature of the germ is we are at present unable to
say definitely. Prellke, Canov, and Barbier, have isolated a
short bacillus, whilst on the other
hand Lesage claims that a micro-
coccus, which he found in the
blood and nasal mucus of a
patient suffering from measles,
when introduced into a rabbit
induced a condition resembling
measles. Franz Mayer in 1852
injected two children by introducing
into their nasal cavities mucus from
the nose of a patient suffering from
measles. Two experiments made by
Ludwig Heberlein (Journ de l'Acad. de
Sciences 1905) show that the blood contains
an infective agent. He obtained
under the strictest antiseptic precautions
blood from 2 patients in the
eruptive stage of measles, with
it he inoculated some rabbits—
both and incubated the broth
at the body temperature for
24 hours. There was no growth.
Growth, and no growth could be obtained with a variety of media. He injected 4 cc of the blood and peritoneal broth after incubation subcutaneously into 2 men, who developed measles after 11 to 13 days respectively. I found that measles was mostly transmitted from person to person although I admit the possibility of transmission by a third person or by means of fomites. I personally saw no examples of this. Three district nurses were visiting and attending my measles cases during the epidemic and at the same time they were visiting other cases of a different nature, and I cannot recall one instance of infection being spread by them. Every case of measles that came under my notice I was able to trace definitely. There was either a history of playing with
children during the prodromal stage, or sitting near them in school, when they were sneezing and coughing. Bedclothes also I don't consider very dangerous, perhaps as suggested by Ker because of the shortlived nature of the virus. The foregoing all goes to prove that the disease is generally transmitted directly from person to person. The most infectious time is the early coryza stage, before the true rash appears, and a coughing and sneezing child may infect a dozen or more of his schoolmates before the complaint is recognized. Mucus and water seen both perfectly innocent as far as we know in the spread of measles.
Incubation.

I found that in the great majority of cases, after exposure to infection 9 to 14 days elapsed before the appearance of the symptoms. In one case it seemed as if only 2 days was the incubation period. But there was probably some mistake in the child had been injected earlier. Other authorities give the wide range of 7-21 days, but the consensus of opinion seems 10-14 days. Another point in estimating the incubation period is, that we have to remember that the period of incubation may last 5 or 6 days. So many observers estimate the incubation period from the time of exposure to the appearance of the rash, which is quite wrong. In the majority of cases (her) the time of incubation is "nine or ten days" which, well authenticated cases 9, 17 or 18 days are reported, but these are no rare
(Rare),
that they can be neglected.
During the period of incubation
there are no symptoms, the child
plays about and looks and
feels perfectly well.

Irritation
This is the most important
period because the patient is
now highly infectious because
the physician - unless there be an
epidemic of measles to guide him -
is often in doubt as to the real
nature of the disease.
This period also varies very
widely in different cases. In
the majority, there are of course
the typical signs, fever, coughing
sneezing, coryza, lacrymation
and pharyngitis. There is a
watery discharge from the nose
which may become mucous and
later. The patient appears to have
a very bad cold and all one can.
(can)

do is to treat him on those lines and nurse him carefully. In a few days he seems to get better, the temperature falls, and the patient is thought to be danger convalescent. Sometimes in this period prodromal rashes are present. They are generally morbilliform in type, but occasionally resemble scarlet fever. Sometimes urticarial rashes are seen. These rashes die away before the real rash appears.

The Cataract is very like a severe cold. The eyes, nasal passages, larynx, and bronchial tubes are affected and the running at the eyes is very characteristic. Nearly all the cases show signs of photophobia, but in some the eyes are not much affected, having simply a "blurry look"
(book)

and photophobia is absent.
Sneezing is always an early symptom and is invariably present during this stage. Teachers should always be on the look-out for sneezing children during epidemics, and have them sent home immediately. Throat symptoms are also a worry in this stage and occasionally patients suffering from laryngeal catarrh are sent off to hospital as suffering from diphtheria. The bowels also are occasionally affected by this catarrh of the membranes and looseness or even diarrhoea may be present.

Fever varies tremendously; it may keep fairly high all through the stage of invasion, or it may rise steadily until the appearance of the rash or it may fall almost to normal. To rise again
again,
just before the appearance of the rash. I found in the most of my cases that the temperature fell to normal or a little above normal and then rose again before the appearance of the rash. These vacillations of temperature are not really very important, perhaps occasionally they tend to confuse the doctor and lead him to think that the patient has not had measles, or has had a very slight attack which has passed over.

Koplik's spots
are a very important early sign of measles. These spots were first described by Finland, but their diagnostic significance was insisted on by Koplik of New York. According to him they are "small irregular spots of a bright red colour."
(Colour)

In the centre of each spot there is noted in strong daylight a minute bluish white speck. Ker describes them as minute bluish white specks usually surrounded with a bright red halo. They are probably due to the same cause as the rash on the skin, but appearing much earlier in the buccal mucous membrane. I found the detection of these spots of the utmost value in the early diagnosis of measles. Sometimes they are very difficult to find and often appear to be absent, unless good light is used. They are seen best in bright daylight. In size they are about the size of a pin's head and are scattered irregularly over the lining membrane of the cheeks, even extending under the lips. If scarce the best place to look for them is about the level of the
first or second molar tooth.

On the palate too I noted their presence, but her says that "the spots do not invade the palate the rash which occurs there seems rather to be an early appearance of the same eruption which occurs on the skin". Of their great value in early diagnosis, there is no difference of opinion, because they are even found before the rise of temperature so the only other symptom is that of a severe cold.

Advance and Eruption.

This is the stage when the doctor is often called in. The mother tells you that the child has been feeling "off colour" for a few days, she tells you of the sneezing or coughing, perhaps of his headache or vomiting. She has been trying all the home
remedies for a severe cold, but
now with the spots coming out,
she is frightened and although
hoping it is measles she fears
something worse. The "blotched
and cloudy look" of the child gives
the doctor the cue immediately.
The rash generally commences about
the 4th day of the disease and
the symptoms of the patient vary
according to the intensity of the
eruption. There is still some catarrh
but not as well marked. The
patient feels very bad and especially
miserable during the height of the
eruption.
The eruption may commence
anywhere, but it is unusual for it
to commence below the roots of the
hair, or behind the ears. It
spreads over the face and down
over the body taking from 1-3
days to its full development.
On the 2nd or 3rd day it commences.
to fade in the same order as it came on. It fades first on the face, then trunk and arms, and then the legs.

The eruption commences as small red spots, which disappear on pressure, scattered irregularly. These spots become larger and may be felt even when the skin is stretched over them. These papules then "coalesce and give rise to cavernous, serpentine or irregularly shaped blisters". The colour is dusky red.

The back and buttocks as a general rule are worst affected, while the papules may become confluent and the whole appearance may be one of uniform redness. Sometimes the colour becomes purplish, giving rise the idea of haemorrhagic needles, and this is not to cause alarm because this appearance is not uncommon in moderately severe cases. Here the colour does not disappear on
pressure. In most cases the rash is universal and no area of skin escapes. The scalp, face, palms and soles are all affected.

During this stage the temperature is generally very high 103-105, pulse in young children 120-160 or even higher. Respiration also much increased, due to the bronchial catarrh. Headache and sometimes delirium are also present. The urine during this stage is concentrated and may show traces of albumen. Occasionally too, instead of the bronchial symptoms improving, there is now a more pronounced attack of bronchial catarrh, sometimes involving also the larynx, as shown by the alteration in sometimes loss of voice and harshness of the cough.

Depressence.
Generally uneventful, in about 48 hours the temperature comes
down to Normal usually by slow crisis. The rash fades and the temperature falls and the patient looks and feels much better.

Convalescence.

Generally rapid, the patient is sometimes very annoyed because he has to keep his bed. Occasionally weakly children take some time to regain their usual state of health, and have to be carefully nursed and looked up for some weeks. During this stage there might be some remaining pertussing yet, but this gradually disappears. During convalescence a slight bronzy discoloration occurs usually.

Varieties of Measles.

Writers describe in addition to the ordinary forms of measles, two mild types (1st, Morbilli sene Morbillis and Morbilli sene Catanso. I must
must admit that I have never seen either of these mild varieties, although sometimes the eruption is so trivial that it is not complained of or noticed. All of my cases showed the classical signs and whilst most of them were of the ordinary mild type, some gave me a very anxious time. I never saw a case of the so-called haemorrhagic measles. Her says that probably these cases of black measles, as described by the older writers were in reality cases of haemorrhagic smallpox. Even the not uncommon variety in which haemorrhage occurs into the papule and gives a purplish appearance to the rash did not come my way. The deaths that I had were all due to some complication arising during the course of the disease and I can recall no instance of a death due to the intensity of an attack. There were three
children. One instance I might refer to
happened early in the epidemic. There
were three children in the family
all under 5. The two elder
children died, as the mother told
me just after the rash came out.
They were attended by a homopathic
doctor. Nine or ten days later
the third and youngest child was
taken ill, and they sent to the
Dispensary for a doctor. The child
had just the ordinary uncomplicated
form of measles — rather mild in
character — and under the ordinary
treatment made a rapid recovery.
I have often wondered what had
happened in the case of the other
two children. Perhaps they had
a severe and virulent form of
measles carrying them off rapidly
or perhaps here the doctrine of
"similia similibus curantur" did
not keep them much. The second
milder attack that the youngest
Measles. Girl aged 5 yrs.

Day of Disease

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<th>Time</th>
<th>Bowels</th>
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Temperature (Fahrenheit)

- Normal temperature of body
- Mild case with 3 days
  - dry cough, Koplik's spots
  - could not be found on 6th day
  - child felt quite well for three days.

Convergence

Entered at Stationers Hall.
Printed and Published by Woddenspoon & Co. G. Gate Street, Lincoln's Inn.
Gould's Clinical Chart.
child suffered from was probably due to the attenuation of the oxygen.

Complications.

These were my great worry. I had to work under the most unfavourable conditions. Often I found four or five children huddled together in one bed, the mother perhaps having to go out to work during the day, leaving perhaps a grown up daughter to do the best she could for the children.

The nurses had their hands full and could only look in once or at the most twice a day if the children were not doing as well as was hoped. Had I been able to notify and have all the children sent away to be properly nursed and cared for at a proper fever hospital, I am sure I would not have had to record 11 deaths due to measles. The fever
Measles. Girl aged 3 yrs.

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<tr>
<td>Sheeting and Coughing, Koplik's spots</td>
<td>Rash</td>
<td>Rash</td>
<td>Mild rash</td>
<td>Mucous</td>
<td>Convolvence</td>
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Case showing no prodromal symptoms, rash appearing within 24 hours of each. Koplik's spots well marked.
Patient delirious. Throat most moist, clearing on 5th day. Made an

Entered at Stationers Hall.
Fever, Hospital in this district, does not accept measles, only taking in Scarlet Fever, Diphtheria & Encephalitis. I have been worried again this winter with an epidemic of Whooping Cough & have again they can give me no assistance.

Broncho-pneumonia.

I have seen cases I have to record out of a total of 400, & of these 8 died. Some writers make a great fuss about the distinction between Capillary Bronchitis and Broncho-pneumonia. There is of course a distinction, but it is extremely difficult to tell where one begins and the other leaves off. This condition may appear at any stage of the disease—in the prodromal stage, the stage of eruption or even late in convalescence. Sometimes it occurs early in the disease and the little patient when seen seems in great distress.
Distinctly, with her breathing. The breathing is very noisy, wheezy and rapid; at first coarse rales are heard all over the chest. Pulse is rapid & colour bad.

Generally however the Broncho-pneumonia comes on during the eruptive period. Respiration very rapid, sometimes reaching 70 or 80 per minute.

It is very difficult to pick out the areas of dulness, on account of the wheezy and noisy rales. We wait for the rash to fade, hoping against hope that the pulmonary symptoms will also fade. The rash fades, but the temperature still keeps up. Respiration just the same and pulse rate often alarmingly high, in young children sometimes reaching as high as 170 or 180 per minute. The patient now looks Broncho-pneumonic; the flushed cheeks, the protrusion, the alae nasi quivering with each inspiration.
(Inspiration)

the extraordinary muscles of respiration being brought into use, the anxious
fretted look in the eye, all go to form a picture, which I shall never forget.
Examination of the chest is always difficult, one does not like to disturb
the little sufferer too much, and even if one has every opportunity of a
careful examination, it is extremely hard to make out definite areas
of dullness. One often has to diagnose Broncho-pneumonia by the pulse, respiration
and facies, if they are really very good guides.

In favourable cases the duration is about a week or ten days. I have
had cases drag on for 3 or 4 weeks or even longer. Fatal cases
are due to exhaustion by non-oxygenation of the blood, also due to toxæmia.
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Temperature (Fahrenheit):

- 107°
- 106°
- 105°
- 104°
- 103°
- 102°
- 101°
- 100°
- 99°

Normal Temperature of Body:

- 98°
- 97°

Day of Disease: 4

Pulse:

- 160
- 160
- 160
- 160
- 160
- 160
- 160
- 160
- 160
- 160

Resp.:

- 64
- 46
- 46
- 46
- 46
- 46
- 46
- 46
- 46
- 46

Notes:

- Fatal case of Bronchi-Pneumonia following Measles. Oxygen was administered during the last 3 days. Unfortunately, prolonged the patient's life.

Fatal case of Broncho Pneumonia
follows Measles

E.P. 5 years.

rather a delicate child, the mother
said that she had been treated a
year previously by a local doctor
for "crying and drinking diabetes.
When I saw her first she had a
slight prostrated rash with slight
rise of temperature. Temperature
fell to normal on the 2nd day. On
the 4th the mother said the child
had a convolution & when I called,
I found a rash just showing at
the roots of the hair, and also
slightly on the face. Respiration
were very quick & laboured, being
64 and the pulse 160. Rash
came on fairly well next day
but the child looked very ill indeed.
The temperature had meanwhile fallen
to 99 but the respirations were
64 and the pulse 162. The
cough was paroxysmal and very
exhausting. She had a flushed
flushed

anxious look and the alae nasi were working vigorously.

On examination rhonchi at promiscus feet, and on percussion the note was somewhat but could find no definite areas of dullness. The breath sounds were weakened and fine moist rales were heard over greater part of the chest. Two days later I made out several small areas of consolidation on the right side. On the 9th day she had several convulsions, & toward the last she was only kept alive by small hypodermics of strychnine & oxygen inhalation.

(appendix see chart)

This case shows the poor chance a delicate child has when needle to follow by broncho pneumonia.
Laryngitis.

2 cases, 1 of which died.

This complication may appear very early, in the invasion period or late in the convalescent stage. As a rule, there is always more or less laryngitis in every case, hoarseness being a very common symptom. In one case, the patient, a little girl, had a very croupy, clubby cough with some dyspnoea. I was called up at night to see the child, who was said to be choking. On arrival, she had a very bad colour, I was breathing very chastely. I put my finger down the child's throat and made it sick, and it brought up a great quantity of phlegm & mucus. A clean rent was then rigged up & by morning the child was ever so much better.

The other case was a baby 11 months old. I was passing the house when the mother called me to say...
(say),
her baby was choking. The
child a well nourished boy but
had the measles only, but that "they
had gone on" again the mother said.
The child was collapsed and almost
pulaskers & giving a sighing gasp
every few seconds. I tried
artificial respiration, "siphon" strychnine
but to no avail. Had I seen
it a few minutes earlier, perhaps a
tracheotomy would have been of use
but it was too far gone when I saw
it. Of the other measures, I took no
more or less to show the mother. I
was trying my best for the child.

Bronchitis

Not one case out of 400 escaped
Bronchitis. Of course many had it
very slightly, whilst others kept it
with them for weeks after the measles.
It is therefore to be regarded more as
less as a symptom than a complication.
Lobar Pneumonia

No cases to report.

Tubercular conditions of the Lungs are supposed to be common sequelae to measles. This seems rational enough especially if the patient's resistance is weakened by an attack of Broncho-Pneumonia. Two cases of mine who suffer from Broncho-Pneumonia following measles are now distinctly tuberculous. I can find no other reason for it than measles, as the other members of the families are healthy without a suspicion of Tuberculosis.

Eye conditions

I had one rather severe case of Blepharitis, & one case of corneal ulcer. These were partly due to the improper cleansing of the eye and partly to the poor state of nourishment of the children. Many mothers were very careless about the toilet of the eyes. — although...
although they were given boracic solution, many of them preferred the old fashionable remedy of milk, and others thought the lips would "come right" themselves.

Ear Inflammation

Thirteen cases of otitis media, all followed by perforation of the drum, no case of subsequent mastoid disease.

Adenitis

No record of any case, of course I lost eight of my patients generally a few weeks after the attack of measles.

Convulsions:

Three cases, one of which was during a broncho-pneumonia, the other two during a severe attack of measles.
Rare complications

Her mentions that sometimes nervous sequelae are seen as paralysis, muscular atrophy, chorea, tetany, disseminated myelitis, hemiplegia. None of these has come my way.

Mumps in Measles

Occasionally albuminuria is met with during the fever stage. Ethical dropy reaction is present in measles when the rash is out. Her says that the most characteristic time is when the rash is beginning to fade.

Morbid Anatomy

Unna says that the rash is due in the first stage to local hyperaemia, round an infecting agent in the capillaries of the skin, this is followed by spastic paralysis of the blood vessels and oedema, as that dilates vessels are not seen in a measles pustule.
(Consecutive)

autopsies at the Eastern Hospital,
various lesions were found in the
following number:

Lobular pneumonia  32
Bronchitis        5
Lobar pneumonia   2
Coryzae           12
Pleuisy           4
Pulmonary tuberculosis 1
General tuberculosis 2
Otitis media externa 2
Cerebral abscess  1
Cervical abscess  2
Inflammation of skin of neck 1
Pulmonary hemorrhage of? 1
Doubtful organ  1
Ulcerative stomatitis 1
Tuberculous ulcers of the mouth 1
Diagnosis

In the stage before the rash appears is one of considerable difficulty. A temperature, a severe cold, sneezing and running at the eyes, always makes one think of measles, especially in children, and if there is also present some stomatitis.

If in addition, Koplik spots are present, that settles the question definitely. If the spots be not present or be delayed and there is a doubt as to the diagnosis, it is always best to isolate the patient for a day or two and await developments. Occasionally the doctor is deceived by the temperature falling to normal, the child feeling well. Then suddenly out comes the rash and unless the doctor has safeguards himself, this development is difficult to explain. As a rule I was
not called upon to diagnose cases in this prodromal stage, the majority of my cases being already in the eruptive stage when I first saw them. Looseess of the bowels and Coryza are two other points which might suggest measles. Really after all the only absolutely certain sign is the presence of Koplik's spots, and these unless you look carefully for them are apt to be missed. You must have good bright daylight to be sure of them. In the prodromal stage, the presence of laryngitis is also another source of worry to the practitioner. The thought of Diphtheria must cross his mind. But during a measles epidemic, laryngitis should always be regarded as a possible measles. It is wise to search carefully for Koplik's spots, stomatitis, and mottling of the palate. If however none of these be present then it is always wise to treat the
Case as one of possible Diphtheria

Eruptive stage.

To distinguish from Rubella is not as easy as some authors think. The chief point to remember are:

1. In measles there is generally a well marked prodromal chill, which is not present in Rubella.
2. Enlargement of the lymphatic glands which is more evident in Rubella.
3. Presence of Koplik spots in true measles.
4. Debye reaction which if present would justify one in diagnosing true measles.

Scarlet fever

The chief difficulty is in the prodromal stage, but once the rash has come out and other symptoms have appeared, there should really not be much difficulty. In scarlet the rash
(rash)

usually appears on the 2nd day
and avoids the face, and there
are no catarhal symptoms. Then
the rash in scarlat is punctate and
has a more brilliant colour. Then
in measles the absence of sore
throat & the presence of koplik’s
spots, coryza and catarhal symptoms
would prevent a mistake. In
scarlet also there is the circum-
coronal pallor, sore throat, vomiting,
strawberry tongue & headache.

Small pox:

In the invasion period a
morbilliform prodromal rash is
occasionally present. But the
absence of catarhal symptoms, the
presence of severe pain in the back
vomiting & prostration, would give
an idea as to the real nature of
the rash. Another point to
remember too is that the temperature
in small pox falls with the
appearance of the eruption, whilst in measles the temperature mostly rises.

Infantile Rheum

sometimes cause a wrong diagnosis, but the temperature in these cases is generally normal and there is no catarrh.

Prognosis,

As a general rule is good but a wise practitioner should never treat this disease too lightly. In considering the prognosis one has to take into consideration the conditions of life. In a desperate practice like this one, although the people are not as ill fed and ill housed, as say the people in the poorest part of Edinburgh, yet they are badly enough off and proper food, nursing, and other attentions are often sadly lacking again the ignorance of the lower
classes is another thing the doctor has to fight against. They seem to think that measles is one of the "has to be's" of childhood, and often deliberately spread the disease amongst the other children to get it over. The result is that children say between 6 months & 2 years are infected and as everybody knows, the mortality in measles is heaviest in the 2nd year of life. Again if there be preventing disease (eg) tuberculosis the child's chances of recovery are lessened.

Mother are much concerned if the rash "goes in" and rightly so too, because a fading rash generally means a failing circulation and demands immediate attention.

Complications of various sorts also affect the prognosis unfavourably especially Broncho-pneumonia. Again if death complicate measles, the prognosis is bad
Treatment

Bed even in the earliest stages, there is much danger in allowing children to run about not only to themselves but to others. If possible give the child a large ventilated room. If there be any photophobia, the eyes should be shaded from the light.

Diet.

Milk only during the eruptive stage, the child itself desires no more. Allow water freely. I found that I had to tell the mothers this in every case because they seemed to think water was harmful. When the temperature falls, allow more solid foods, but be very careful because of the danger of enteritis.

Eye.

Wash with Boracic coloan, night and morning, a little vaseline on the lids at night time will
(well)

prevent them being stuck together in the morning. All crusts must be removed from the bases of the excreta at every washing. This is not difficult a steady stream of warm Bowes is all that is necessary.

Cough.

In every case I ordered the following which I found extremely useful. orig

2s

Oxymel Bellad. m x

tri. Speear,

Tinct. Bellad. ad m iv

Syrup. Tobin. m xx

Aquae. as Zy f.r.d.

Camphorated oil rubbed into the chest night & morning is excellent. I recommend for this purpose a mixture of Camphor, Eucalyptus & olive oil. The protection of the chest by means of a cotton wool jacket is especially useful and I ordered.
ordered,
this in every case, whether the
bronchitis was bad or not.

Temperature

I never interfered with. Occa-

sionally I felt inclined to order a tepid
sponge, which would certainly have
made the patient much easier, but there
is such a prejudice against water in
these parts, that had the child died I
would have been blamed, because the
mother cherishes some old-fashioned
notion that water sends measles in.

Eruptions.

If this did not develop to my
satisfaction, I found that a hot
linseed poultice to the chest
also at the back and front was
very effective. Hot bottles were
also very useful, hot baths I
would prefer to use, but again the
water prejudice here
Laryngitis.

Even if there were the slightest suspicion of this trouble I always ordered steam tents and never to buy expensive apparatus. In 1/4 an hour the people would rig up a tent with a few broom handles tied to the cot & steam would be led through brown paper from the kettle.

Broncho pneumoniæ.

had to be treated on ordinary lines, but here again I am very fond of the steam kettle and indeed poultices. Brandy in small quantities frequently, strychnine & atropine in are occasionally indicated, oxygen inhalations I reserved for extreme cases because of the expense, but I think they keep a great deal. The food must be more nourishing here because the disease runs a longer course & meat juice, fellows of different kinds & some of the
Proprietary foods (e.g., Benger) I found useful. I had no opportunity of treating Brachs, Pneumonia by the open air method as recommended by Kos. but I fully recognize its value. Medicines don't seem much use in the ordinary course of the disease but a simple cough mixture containing Trease & a little Ammon Carb is often useful.

**Congenitivitis**

Frequent washing with Boracca lotion & the ointment of the yellow oxide of mercury once a day. I found good. I used the same treatment in Cornal ulcer, only applying the ointment twice a day.

**Wound**

Syringing frequently with Boracca sol.

**Enteritis**

Milk diet only, & a dose of Castor oil with 3 drops of laudanum in it I found very serviceable.
Irocephaly.

Too little notice is taken of measles, it being considered by the majority of the public, but a disease of trifling importance. If it were realised that the mortality varies from 2% to as high as 4%. In some epidemics, perhaps some means would be devised to stamp out or at least control the disease. Rarely is the mortality less than 4%. Out of 12,362 cases in the Glasgow Fever Hospital, there was a death rate of 9.1%.

Notification, tried in 2 or 3 places, does not seem to have been so valuable as it was hoped, simply because the most infectious time is the prodromal period. I thus the disease is spread broadcast day before the case is notified. I cannot keep saying here again that had the Church School in Ramsgate been closed immediately after I discovered the two cases of measles, we might
might} have slowed off the epidemic for another year at least, and thus given the children between 1-2 a better chance. Of course I agree that this system means a great loss of school time, but I think that at least it would be effective in stamping out the disease.

Dr. Herstaell recommends a system of school notification, which makes it absolutely necessary for every school doctor to have an accurate knowledge of the history of the children.

Ebersall, at Gray, keeps a list of all the children and the diseases they have had and only excludes those during an epidemic who have not had measles. So that he is able to furnish the authorities with a certificate that a given individual has already suffered from measles, and such a pupil continues to attend school. Ebersall thinks the best procedure is to exclude all children who have not had measles from the school.
On the 14th day after the occurrence of the first case (Eq), a boy in a school at Droy was sent home coughing on Apr 22. The case turned out to be one of measles and his class was closed from May 1 to May 6.

During this period no less than 16 developed measles all in their own homes, but apart from this there were no more cases. I think this system is excellent and might well be adopted universally as it would save much school time.

Thomas has suggested the following rules for The London County Council:

1. A child attending other than an infant school, who has already had measles, need not be excluded.
2. A child attending other than an infant school who has not had measles must be excluded till the Monday following the expiration of 11 days from the occurrence of the first case. A child attending an infant school who has not had measles must be excluded till the Monday following the expiration of 11 days from the occurrence of the first case.
(Am.

infant school, whether or not it
has had measles, is excluded for the
same period.)