Thesis on Measles

Alfred Hartley, M.B. Em.
Measles

An epidemic of measles occurring in this town (Post-Script) toward the end of last year, it occurred to me to make some observations, chiefly with regard to the temperature in that disease. The difficulties that the practitioner meets with in obtaining satisfactory data here, are considerable, and the causes of this are chiefly two. Firstly: he is frequently not sent for till the rash is out, and sometimes only to attend the sequelae, for many people have the idea that it is not necessary to send for medical aid in a case of measles, as so many recover without. This has prevented me in the majority of cases from making observations concerning the periods of incubation & invasion, and it is only in those cases where the symptoms of invasion were sufficiently severe that I have had an opportunity of clinically studying the disease. Secondly: in many cases the mothers are vitiated minds, not only from ignorance of what is the right thing to be done, or the right way to do it, but also from want of care in carrying out the orders of the medical man, such as purging, diet, etc. Errors in this respect are a frequent cause of a deviation of the line of temperature from the course it would have taken in a properly treated case. I propose now to submit to you a few charts of cases.
of measles, with remarks upon such points as I have thought necessary, to be followed by a digest of the subject taken from standard authors, and periodicals, with evidence from my cases in support of accepted ideas on the reverse.

The chief books consulted are:
- Trouseau's 'Clinical Medicine' Vol. III (2nd Edn.)
- British work on medicine (2nd Edn.)
- Ellis on 'Diseases of Children' (3rd Edn.)

Cases:

(1) (2) (3)

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Case I had diarrhea. II and III had not.

(4) (5) (6)

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None of these three cases had diarrhea, and the bronchial cough was very slight.
Neither of these cases had diarrhoea. The temperature of case 7 is remarkable for there was no serious complication, the bronchitis being only slight.

Case 9 had diarrhoea - bronchitis slight in both.

This case (11) is a local one. The child had diarrhoea for a fortnight before the rash, with swelling of the face, especially the eyelids. I could find no oedema in the knees. Parvulox off taken the day before the rash, which, when it appeared, did not take the ordinary form. Instead,
of appearing on the forehead, it only appeared on the face about the chin. Over the rest of the body it appeared as slate-coloured patches, mostly about the size of a pea, of irregular shape, elevated & disappearing on pressure, with variable intervals of skin between them. These patches were scattered fairly abundantly over the abdomen and back, particularly marked on the buttocks. and were confluent on the tuck of the thigh giving rise to a diffuse redness. Scattered here and there amongst these patches were the seen the ordinary papillons of measles. The rash appeared on the 20th; on the 23rd it had almost disappeared.

(12) (13) (14) (15)

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**Case 12.** Here there was considerable tenderness before the rash came out, it took place on Dec. 6th. was followed by subsidence of the temperature, contrary to the usual rule. The eruption was very abundant and there was no diarrhea, but the...
Courses came on before their time, and the discharge was excessive.

Case 13, had no diarrhea.

Case 14, here there was delirium the night before the rash, it took place on Oct. 29th, preceded by diarrhea, the patient being moved five times in the morning, twenty-four hours. Case 15, the rash came out on Nov. 9th, when the temperature was first taken, but appeared two days afterwards. Here there was severe bronchitis, and, as in Case 13, decline of temperature took place on the first day of the rash. There was no diarrhea.

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Published by Harvey A. Reynolds, M.D., B.S. 1835.

Case 16, had considerable bronchitis, with diarrhea on Nov. 4th, having commenced on the day before that. The rash came out on the fifth day, Nov. 16th. You see here the subsidence of the fever, spoken of by Pennequin, before the sudden increase when the rash comes out. The temperature declined in a typical way on the tenth day of the fever, or second day of the rash.

Case 17 had no diarrhea, but bronchitis.
Case 19. This was an exceptionally severe case among the 336 cases, but there was no diarrhea at any time. On the contrary, there was constipation during the early stage. The rash appeared on Oct. 11th, first on the right temple near the roots of the hair — none appeared at any time on the forehead — then on the back. The rise of temperature on the 16th was, probably, due to the rashes. It took place contrary to orders. Again on the 18th, the child was found eating meat.
Case 20. The ear appeared on Oct. 13th.
The temperature, instead of subsiding on the 14th or second day of the ear, continued to rise owing to the severity of the bronchitis present, till the 16th when the number of respirations was 69.
There was no diarrhoea.
Case 21. was one shifflet of cases. There was slight diarrhoea.

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Case 22. Here there was diarrhoea with marked bronchitis. The ear appeared on the 18th, followed by a characteristic fall of temperature on the second day, and had almost disappeared on the 21st or fourth day.

Case 23. When this child was first seen, on Nov. 14th, there was a separi croup over all over the body, and it appeared to be suffering from croupous cataract.
The respirations, it can be seen, were exceedingly quick, the chest being loaded with mucus, which the child was unable to get rid of. The mucus contained powder, a carbonate of
Annunca was twice given a dose of, to produce the desired effect. On Nov. 16th, the rash had almost disappeared, and the subjective symptoms were worse. The same emetic was again given with a like result. On the following day, sulphate of jure, and mustard, also failed to produce emesis. The child gradually sank, and died on the 20th.

Note: The failure of emesis in this case I cannot but attribute to the fact that the mother, before sending for the medical man, had been giving the child a mixture containing St. Camph. De obtained from the chemist. This was probably an important agent in causing death.

So far, this is the only case of death that I have had that came from the above cause—failure of emesis from previous taking of medicines.

Considerable diarrhoea was also present in this case.

Case 24: Aged 13 yrs. — The rash here was peculiar. It was not out on the 20th, but made its appearance on the following day. First on the chest, then on the back and limbs; it took the form of dark purplish patches, of crescentic shape, disappearing on pressure — very few spots of any sort were to be seen on the face, and none appeared late.

Diarrhoea here was severe, and there was no diarrhoea, but, as noted in Case 12, the contents
Case 25: When called to this case on Nov. 23rd, I found much of a most abundant rash about the face being present. It was said to have appeared on Nov. 21st, two days previously, and on Nov. 24th, it had disappeared. The boy had a rather severe attack of bronchopneumonia. He gradually got worse, his temperature reaching, to 104.7 on Nov. 27th. He seemed the worst due to carelessness in nursing, or to the nurse carrying out of directions in this respect, must be attributed. The rapid decline of temperature from that date. On Dec. 5th the fever was still considerable, yet as the pulse was becoming feeble and the tongue getting clearer and more moist, the patient was put on to food nourishing diet, such as pork, eggs, green meat, with remarkable good effect. He rapidly improved from that day.
Case 26. This child, aged two years, began with bronchitis on Oct. 16th. On Oct. 19th, the cough should have disappeared, laryngitis set in.

Oct. 20-21. The child gradually sweated, in spite of pectoral and hot fomentations to the throat, cold in the chest continued.

Oct. 22nd. The rash made its appearance, with remarkable relief of cough, breathing.

Oct. 24th. The rash was in great abundance over the whole body. The child continued to improve from the date of the first appearance of the rash, and made a good recovery.

To proceed to consider the subject of measles generally.

This disease consists in an acute and severe change, with a specific inflammation of the skin and mucous membranes, with more or less cataract of the bronchial tubes.

- Incubation -

This is the latent period during which there are no symptoms, is of variable duration. If the disease arise from inhalation with nasal mucous membrane, symptoms may show themselves on the seventh or eighth day. But, as is usually the case, if be acquired by inhalation of the virus, the period extends from ten to fourteen days. Being most frequent between twelve & fourteen.

I have been able to make notes
of the duration of this stage in only three cases, where the members of a family apparently caught the disease from one another, and in these I was obliged to rely upon the interval between the appearance of the rash in the different individuals. (a) Cases 4 & 5 were 10 days later than 6 (b) Case 16 was 12
(c) Case 12 was 13
(d) Case 13 was 24

Knowing that ten days is one of the shortest lengths of the incubation period, the instance (a) appears to indicate not only that the stage of incubation is the most infectious period, but that here, with all probability, the disease was taken on the first day of that stage.

Two other facts seem worthy of mention (a) Case 8 was 2 days later than his brother 4 (e) Case 13 was 20

Probably the brothers caught the disease at the same time, but the period of incubation has varied.

— The Invasion —

This, the period of commencement of the symptoms, begins with slight rigors — in young children convulsions — alternate chilliness and heat, rise of temperature, quickening of pulse; the nasal mucous membrane becomes injected, and a secretion of thin, clear, tenacious, serous, takes place, with sneezing,
and sometimes epistaxis. This catarrh spreads to different mucous membranes, giving rise to headache, pain of the frontal sinuses; coryza; lacrimation; intolerance of light, and redness of eyes from congestion of the conjunctiva; hoarseness of voice with cough by affecting the bronchial tubes; dullness of the soft palate, tonsils and fauces in the mouth.

"From the very first day," says Houssay (p. 213) "they (the mucous membranes) show the presence of the eruption; and, before there is any斑点 upon the skin, you see the disease inscribed on the pharynx, tonsils, and back of the palate."

Occasional symptoms — There may be no prodromata, or there may be convulsions or delirium at the outset. Delirium occurred in Case 14 the night before the appearance of the eruption. There may be high fever, and sore throat — sometimes severe headache and absence of appetite.

The fever in this stage is variable and oft to be deceptive. There is not the early high elevation of smallpox, which continues up to the period of eruption. Here the fever may continue till the eruption appears, or, after a day or two, it may move on less outside, and the patient appears almost well,
only to burst out again with greater force on the day of the eruption.
Case 16 is an example of this. You may observe by looking at the
chart, that the temperature, which
was at 102°. F. on the 8th, came down
to 101°. on the 9th. The day before the
 rash, and rose suddenly again
to 102° when the rash appeared.

As this stage commences, with slight fevers,
from three to six in twenty-four hours,
followed by hot jet and sweating, it
stimulates intermittent and remittent
fever; and, since the leucocytes,
cough, cough, and chills may be
absent, we ought in such a case
to have some difficulty in diagnosis
during the first three or four days,
unless we were assisted by the fact
of other members of the family having
measles, or of the presence of an epi-
demic of that disease.
The duration of this stage is character-
tic and of great importance. It is longer
here than in any other contagious fever.
This is the reverse of Scarlet Fever where
the rash appears in about twenty-four hours,
and may be in a few minutes. Now in
Small Pox the rash makes its
appearance by the end of the third
day, beginning of the fourth day. In
measles, on the other hand, it is full
four days before the rash shows itself
in the skin, and it is nearly always out
By the fifth day. In many, however, even in uncomplicated cases, not come out till the sixth, seventh, or eighth day, (Sorrows p. 124), though Chalmers beyond five days should make one suspect complications. Case 16, is an instance of this, while on the fifth day, when the rash should have appeared, false crops suppurated. The rash did not show itself till the ninth day, coincident with which a rapid improvement of the cutaneous symptoms took place.

In rare and exceptional cases, the presence of various complications at the beginning of an attack of Small Pox or Scarletina causes the eruption to be retarded; in measles, it is four or five days before the appearance of the rash in a simple case, where there are no complications.

— The Stage of Eruption —
In the fourth or fifth day, then, of the disease, in a simple case, after a short subsidence of the fever and symptoms, there is a sudden increase in severity of the backache, fever, cough, and the characters, his appearance of measles makes its appearance — together with, frequently, diarrhoea. "The phenomenon," says Sorrows p. 124, "the simultaneous advent of crops and diarrhoea belongs essentially to measles." Observations made in some other cases, (6, 22, 28)
Scene below that. Here is not the subsidence of fever or symptoms followed by increase in appearance of the rash, mentioned above, when there is already much constitutional disturbance, as from acute bronchitis; but, on the contrary, that they begin to abate when the rash is appearing.

I must here recall to you, what I stated previously, when speaking of the stage of invasion, that the eruption is to be seen on the soft palate and jaws from the beginning of the attack. It is first to be seen on the skin about the temples and forehead near the roots of the hairs, spreading thence to the cheeks and neck, then to the chest and arms, back and lower limbs. It is generally more frequent on the back than the abdomen, and least to about the genitals. Hands, and feet are both affected.

Though the authorities speak of this as if it was the invariable order of appearance and situation of the rash, it would seem that it is not always so; for in Case 11, the only part of the face that showed the rash was the chin and its under surface, and there it was scarcely compared with that on the forehead surface of the body. In Case 17, the rash appeared scantily on one side
of the temple only, and was near the
seen on the back. In case some
one, it made its first appearance on the
chest, and only appeared on the face
to the course of the disease, and
not to a very small extent.
Character of the Eruption: It takes the form
of small, soft, red or dusky-pink elevations,
consisting of congested papules, both
the epidermis and true skin are raised
up; they are more or less palpable to
touch than red, and disappear on
pressure. They have not the eruptions,
wrinkled aspect sometimes, seen
in Scarletina, and they tend to crowd
or, together into a crescentic form, some-
time, including skin which is free
from the eruption. They frequently
run together to form patches, and,
if they are very confluent, the red-
er is becomes uniform, and there
may then be some difficulty in
making a diagnosis.
This must not be confounded with a
papular eruption that is apt to
make its appearance in warmer weather,
when the patient is heavily clothed
and perspiring much. These ulcers
are limited, have an inflamed base,
and usually contain a puriform
fluid. They are larger here than
those occurring in Scarletina. If
present in abundance the affection
will be greater.
Another eruption sometimes appears,
in the form of small echymotic patches of violaceous colour, which do not appear on pressure. These is the "purpuragic" form of measles, or "black measles." These spots remain for eight or ten days after the disappearance of the morbillous eruption, leaving greenish-yellow staines.

The question arises: What is the relation of the rash to the severity of the case? Percivall says, p. 216, speaking of the purpuragic form, "The form of measles is more severe than the other, as much as the eruption is more violent, because it is a general rule in eruptive fevers — in small pox, scarlet fever, and measles — that the gravity of the attack is in proportion to the intensity of the eruption." Dr. Ellis, p. 79, says that "the quantity of the eruption bears no constant proportion to the gravity of the attack" and the petechial form.

These opinions seem to be conflicting. Notably Percivall includes complications. Considering, then, when the rash is severee, there are generally complications present which make the case more severe; while Dr. Ellis implies that the rash alone is no guide to the gravity of the attack. Among my cases, there were only
two in which the rash could be called
fetalile, and there had serious
complications (23 \& 25), the first
dying from suffocative catarh, the
second recovering from a sharp
attack of broncho-pneumonia.
Of the other, the rash seemed to have
a direct relation to the amount of
complication, and to to the
severity of the case.

The eruption usually, during four
days, then rapidly disappears in
the order of its advance, and in
five days has completely disap-
ppeared. But there usually remains
some pigmented degeneration, and
firstly, a liability of the spots to
become congested under excitement,
which cause traces to be left, when
the actual rash has long since
this appeared. (Post-script 153)
Should the eruption disappear after
this time, it is in all probability
due to the development of some
complication such as suffocative
catarh.

Concurrent with this, on the eighth
or ninth day of the disease, chagae
peculation sets in, and is first to be
seen on the forehead, following the
rash in the order of its disappearance.
This is said to be in the form of pri-
mary scales. Rousseau, however,
denied that this is of common
occurrence, and I cannot do better than quote this words (p. 214)
"Classical authority speak of a purpuraceous desquamation con- 
taining of an epidermic dust resembling small scales of bran; but 
if you minutely examine what is taking place, you will find 
that there is not one in ten 
patients who exhibit a trace of 
this sort of desquamation. How-
ever, when the skin is covered 
with desquamation — and desqua-
mination is not uncommon in Measles — the 
epidermic scales adhere to the 
kinin, because the epithelium is exceedingly thin. The desqua-
mination is best seen on the face, 
because the face, where there 
is less perspiration than on other 
parts of the body, is not covered. 
But even there, the desqua-
mination is often quite imper- 
visible."

The skin in Measles is generally 
hot and dry.

The temperature bears a direct 
relation to the rash. As the rash 
increases, the symptoms become 
exaggerated; the temperature rises; 
and these culminate on the second 
day of the rash, or fifth day of fever. 
It may be a day earlier or later, 
but when the rash is at its height, 
so is the temperature. I have not
Found this to be always the case. In twenty-four cases of which I was able to observe it, in none the temperature began to subside on the first day of the eruption, viz., in Case 3, 9, 10, 12, 13, 14, 15, 18, 24— in four of these cases the temperature was at a considerable elevation from bronchiectasis (13, 14, 15, 24), but the others were simple. After this, in a simple case, the rash quickly fades, and fever subsides very rapidly—the very opposite of scarlatina, where the temperature comes down slowly. This rapid appeasement is quite characteristic of measles—to such an extent that, if the temperature keeps up after the rash has begun to fade, you may conclude that some complication is setting in. This is the well seen in the first ten cases and the 21st, which were simple ones, and also in Case 15; but it is most remarkable in Case 9, where, on the second day of the rash, the temperature was 105.6°F and on the third it was 98.7.

With regard to the association between the temperature keeping up after the rash has begun to fade, and the occurrence of complications, Cases 23 and 25 are good examples. The former grothed had suffocating cataract, the latter hemopneumonia.
Dr. Dufour states that the highest temperature recorded in ordinary measles is 103.8°. Cases 7 and 16 do not tally with this. There were similar cases, the first of them reaching 105°, the second 104.5°.

- Complications -

The stage of invasion is that in which complications most commonly occur. Dufour and Barthe point out that measles manifests itself by a double inflammation, that of the skin, and that of the mucous membranes (Ellis, p. 79). That which is upon the skin should predominate, otherwise pulmonary, laryngeal, and intestinal inflammations result.

The most common complication, one should probably call it, is 

**Enrümurant** — is 

**Hyponeural Catarrh**, which is present to a greater or less extent in all cases. These are generally heard at the beginning of the attack, silent or sibilant, which often become subacute on the day of the eruption. These should not cause any alarm, though they may be very fine, provided that the fever is not high and there is not much oppression of breathing. Then the cough fades, and mucous rales are generally gone to be heard, then sibilant rales, the sounds finally becoming normal.
The expectoration here, which one can only see in adults and the elder children, for the young children do not expectorate, is characteristic. It is at first thin and clear, afterwards becoming thick and greenish yellow, and mucilaginous, as in phthisis, floating in mucus.

Should the above chest sounds be accompanied, in the early stage of perspiration, by high fever and great oppression of breathing, it will have to deal with Suppurative Cataract — a dangerous complication, especially in this stage. This Cataract is of specific nature, and differs thus from Capillary Secreci, of the ordinary kind, being also far more dangerous. Though the only differential diagnosis between the two is the presence or not of Pyrexia, Leukocytosis, otitis, or epistaxis.

The expectoration here is not mucilaginous as in normal秘书es, but, being at first thin, in two or three days it becomes thick pus and is expectorated in large quantities as from an abscess. Suppurative Cataract usually proves fatal in a few days (pronounced p. 224).

Acute Laryngitis: this sometimes occurs in the stage of perspiration, and
Here is a good example in Case 26, where it considerably delayed the appearance of the eruption.

**Diarrhoea** - This, a very common accompaniment of measles, if in moderation, is beneficial. It generally comes on with the eruption, and may pass on to become a troublesome disease. Sometimes, the colic attack the large intestine, and you get tenesmus with bloody, bloody stools.

"The term "diarrhoea"" says Harnack, 227, applied to this is very inappropiate. Diarrhoea is an epidemic disease. Specific, contagious, independent and special in its character. If it is a colic, it is a colic of an altogether special nature, and quite different from the colic of measles - as different as the scabulums is from the scabulums lesions, though both eruptions are cutaneous - a different as essences, or from Console of, from the first to of both greatly resemble each other."

Looking at any cases, I find that only seven out of the twenty-six had diarrhoea, viz. Case 19, 11, 14, 15, 21, 22, 23, 25, 26; while it should be noted that in Cases 12 and 24, though there was no diarrhoea, the bowels came on before their time, with an excessive amount of discharge.

In Case 19, there was constipation
During the early stage, and no disease afterwards, though a rather strange case.

Convulsions. They are not uncommon in young children at the commencement of an attack; but, if it be remembered that convulsions in very young children take the place of what would be severe in adults, for a spirit of essentially the same nature as a convulsion, one can readily understand why they should occur. For the same reason, they are not alarming then at this period, but they are more serious during the stage of eruption; and should they occur during the last stage, they involve the worst possible future. Hyman, p. 221. Mention, however, the case of a child dying in a tonic convulsion just at the commence of the eruption. None of my cases had convulsions at least but so as to be observed by those in attendance on the child.

Delirium may occur at any stage. In case 14, it took place the night before the appearance of the eruption.

Obits: In older children and adults this is easily made out, but in young children who cannot talk, it is not so easy. You are obliged to rely upon exclusion in forming a diagnosis.
If in the early stage the child is evidently suffering pain, which probably
causes delirium, and the fever increases, yet you can find no other
cause for these symptoms, you may conclude that you have a Case of
Pneumonia to deal with. Your diagnosis will probably be confirmed in
from thirty-six to forty-eight hours by a discharge taking place from the
ear. This, if not attended to, frequently
gets on the a horridous sequelae,
and a dangerous one; for as long
as Pneumonia exists there is the risk
of the inflammation spreading to the
Middle Ear. When one considers
that the anatomical relation of the
Middle Ear are, the dangers of this complication cannot be exaggerated.
The Middle Ear is bounded on the outside
by the Membrane tympani: in front of
the internal Carotid artery ascends
from which it is separated only by a
thin lamina of bone; also on this
aspect lies the Carotid sinus. Behind,
it communicates with the mastoid
cells; above, only a thin layer of bone
separates it from the dura mater;
below, it is in loose relation to the jugular
vein, separated only by a thin sheet
of bone from the jugular vein; and only a
very thin lamina of bone separates it
from the seventh nerve. Ultimately are
the fenestra rotundum & fenestra ovalis
separating the cavity from the labyrinth.
One can readily understand from this how inflammation of the middle ear may be followed by inflammation of the jugular vein which may give rise to fever, delirium, or pyrexia; or the inflammation may spread to the mastoid cells causing Caries of the bone there; or to the dura mater causing Cerebral Injuries; or to the seventh nerve resulting in facial palsy; or the nasal passages may become disorganised. The eighth nerve accompanying the jugular vein is also liable to suffer.

I have had a good example of this lately in a boy, aged 6 yrs., who had had occasional otitis for years, dating from an attack of measles. Suppuration of the middle ear set in, with fever and symptoms of septicalemia, including affection of the septal lungs, with somewhat failed health.

In other cases, of those that result of measles, and many years standing, are at present under treatment, one of them being almost recovered.

Epistaxis is said to be a common phenomenon in measles. Though none of my cases had it, I mentioned before that in two, unexpected and excessive menstruation took place. It is not a serious symptom, but it is sometimes to jibe with the child's life permanently injure his future health.
Any of the above complications may occur during the period of incubation, and some of them, such as cataract, and bronchial catarrh, which may have been slight during this stage, often become markedly aggravated upon the appearance of the eruption; and may result in becoming bronchopneumonia.

For instance, the capillary catarrh, so often seen in the early stage, may, when the eruption appears, develop into supplicative catarrh, pneumonia, or bronchopneumonia.

Pneumonia, in its different forms, is the most formidable complication of measles that we have to deal with. It may occur as pure pneumonia in adults; but it usually, and almost always in children, takes the form of broncho-pneumonia. The reason of this is that the pneumonic is merely an extension of the bronchial catarrh to the true pulmonary tissue, giving rise to inflammation there. You may state that this complication is nearly always fatal in children under five years of age - that in an epidemic which he observed, 22 out of 24 cases had broncho-pneumonia, and these 22 died.

"Of 169 cases recorded by Pulliet and Barlow, bronchitis occurred in 24, pneumonia in 58, lobar, broncho-pneumonia in 58, and leucopenia in 59" (Ellis, p. 79). Of only twenty-six cases, only one (25) had broncho-pneumonia,
one had laryngitis (26), and all had hoarseness more or less severe.

The seventy and fiftieth of this complication are to be explained by the
fact of its being a disease, specific, autopoietic, and of the bovine nature. The
same may be said of cataract, wherever it occurs in this disease, whether
in the bronchial tubes, bowel, or eyes.

Case 26 suffered from this complication, and it is interesting to see how the
temperature, instead of growing down when the rash faded, rose steadily
higher, which is an indirect sign of pulmonary mischief, if setting in.

Cataracta. Like other cataracts in this disease, is more severe and
lasting than simple phthisical cataracta.

"One of my co-patients of cataracta phthisica had
seen his cataract in measles," Tomes, p. 239.

And the eye has on rare occasions been
destroyed by this affection.

Case 11 had prevalent phthisical to both
eyes, which set in during the invasion.

Stomatitis, a common sequela of measles,
I have already treated; when following
of cataracta.

Other complications liable to occur are:
Gaumpe of the mouth and pharynx, the
Croup: influenza, Bright's disease;
Algin and Paralysis pulmonalis.
I have no examples of these to
offer.
Measles is caused by a contagious poison, and is one of the most rapidly contagious of diseases. It is purely contagious, being conveyed by blood, tears, and fomites.

When an epidemic of measles occurs, the disease spreads more extensively than either scarlatina or smallpox. This may be greatly due to the fact that the most infectious period of measles is the stage feverish—not during desquamation as in scarlatina and smallpox—when the disease is not fully recognisable, and consequently no precautions have been taken to prevent the spread of infection. All ages are liable, excepting infants under the mark, to be a disease mainly of childhood. This, however, is not so much that adults are naturally indispensible to take it, but because most of them have had the disease in childhood. Generally, the attack is protective but it may occur two or three times in one individual; sometimes recurring to soon as to constitute a relapse. A case is mentioned by Dr. Wetmore's in the second year of the first attack, and the second attack coming two years and a half after.
Prognosis

In uncomplicated cases, favorable. Cerebral, meningitis, and pneumonic are the most frequent causes of death. Encephalitis are dangerous during the second stage, and, says Dowman, the worst possible prognosis if they occur in the last stage. "Unfavorable signs are great fever, great dyspnea, sudden fainting of the heart, together with an accretion of ulcer; brown dry tongue, with special specks of some two or three symptoms positive with a typhoid form of fever." (D-Ellis p. 50). He had one case of death from measles in his practice in a woman sixty-five years of age.

Treatment

Place the child in a well ventilated room. Fire from draughts - a matter of great importance. Considering the liability to chest affections. Give milkleet, and allow tepid drinks. Immediately remove all discharges and soiled linen. Let the excreta be mixed into the infecting solutions. The worst useful thing in this disease is undoubtedly the enema. & 90% of the infections, and a cathartic, merely whitening the chest and encouraging the cough; if checks the diarrhoea, and if acting on the large bowel, is
Particularly serviceable when the child is feverish and bloody. Upon the liability of the child bronchial catarrh to develop, it seems to me that it should be in almost all cases. Should the chest not appear at the right time, or should it suddenly recede, put the child into a hot bath containing mustard, taking it out when the skin becomes red, and wrap it in a warm flannel. In bronchial pneumonia, the benefit of ammoniac is good, being both stimulant and expectorant. Beech is good here. And stimulants may be required. Strong counter-irritants are to be avoided here for the vitality of the skin is low. Moxibustion of potassa is useful, there being 4.2 hours at a time, and it is a good hypnotic for children. Perforation should be avoided, as it brings the tendency to diarrhea. For the large bowel, Jumex ammon. e. h. 9 or tincture bring out of the water to be applied to the abdomen, and a belt of gauze. For fever, a lotion containing 3% sulphur, or 1% carbolic acid 87 to 1. The ounce of water has been of much service. When typhoid symptoms are present, and the parent shows signs of exhaustion, stimulants must be resorted to; large doses of chlorate of potash are said to be useful here; also the yolk of egg heated in boiled wine.