Clubbed Fingers; their relation to Pulmonary Tuberculosis.

A Thesis,
submitted to the Faculty of Medicine in the University of Edinburgh, for the Degree of Doctor of Medicine,
by,

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Clubbed Fingers; Their Relation to Phthisis. (Pulmonary Tuberculosis.)

From the time of Hippocrates clubbed fingers have been noted as a symptom of disease, but the precise condition of which they are a manifestation does not seem to me to be stated at all clearly in many of our text books. Some inform us that the condition is to be found with one disease, others inform us it is to be found in another disease, totally different in character. Most authorities however mention clubbed fingers as a symptom of phthisis. The list of diseases in various books are many. They are such as: "Interlob. phthisis, chronic phthisis, purulent phthisis, empyema, chronic pleurisy, chronic bronchitis, chronic interstitial pneumonia, congenital heart disease, chronic mitral disease, cyanosis, etc." No doubt clubbed fingers may occur in all these conditions, but it is hardly correct today to say they are symptomatic of any one or two. What we are especially referring to now is clubbed fingers in relation to Pulmonary Tuberculosis we want skill at the
outlet offers a definition of the term.

As found at the present day, clubbed fingers are a chronic affection of the terminal phalanges (fingers or toes) whereby they gradually become swollen, rough or less tubular in shape. Less frequently the shape of the digits is flattened. Frequently this leads to deformities of the nails causing incurvation but this is not necessarily part of the process. As mentioned above, many authorities mention clubbed fingers as a symptom of phthisis.

1

Professor Gairdner says: "Clubbing of the fingers exists or undue curvature of the nails is to be looked for if phthisis is suspected."

2

Tanner says: "It is remarkable that in cases of tubercular phthisis the nails become incurved while the ends of the fingers get a peculiar round or clubbed appearance."

3

Watson, in his lectures, says: "A clubbed state of the ends of the fingers with convex, rather curved nails is strongly indicative of a tendency to consumption."

4

Dr. Miller Trotter still says: "Clubbed fingers are a symptom of chronic phthisis."

Broadbent, under symptoms of chronic phthisis gives a clubbed appearance of ends of fingers.
Dr. Theodor Williams says "clubbing of the fingers is a sign of the confirmed consumption."

Dr. Bristow says "a clubbed condition of the fingers and toes is of common occurrence in the chronic forms of phthisis."

Trousseau says "in the main the bipedal or clubbed fingers offer valuable presumptive evidence of the existence of pulmonary consumption.

Dr. Cofland says "the appearance of clubbed fingers is most remarkable when emaciation exists. Even alors is a most unwarranting sign of tubercular phthisis."

Other authorities make similar statements.

I venture to express the opinion that some of these statements are incorrect, that others are inadequate. Clubbed fingers are by no means limited to phthisical patients nor even to those with the so-called phthisical tendency. I shall endeavor to show that clubbed fingers are not so very common in phthisis when formed, they are very frequently associated with other disease. If we proceed on the assumption that a patient with clubbed fingers has phthisis though in some cases we might be right yet in very many cases we should be
I have several times seen clubbed fingers produced by chronic bronchitis and evidence of any phthisis was present at all. I have also seen them in cases of heart disease where the only pulmonary affection has been pulmonary obstruction.

I have examined with special reference to clubbing of the fingers in cases of advanced phthisis and I find this condition to be so very common.

Further, I have compiled a list of twenty-two cases of clubbed fingers in phthisial patients which have come under my immediate notice and I find very frequently some other disease is present besides phthisis to account for this symptom. In cases of phthisis penee, have marked clubbing of the fingers.

Firstly, I maintain the condition is not as very common in phthisis. I append a table of 160 cases of advanced phthisis omitting those cases where other disease was present, only 5 showed any signs of clubbing at all. Only two cases be said to have very distinct clubbing. It is to be recollected these were all cases of advanced phthisis and if clubbing were common in phthisis, surely the
advanced cases should show it in considerable proportion

Secondly, I would point out the disease is most common when other disease (affecting the circulation) is present in addition to phthisis. I have appended a table of analysis of 22 cases of clubbed fingers in phthisical patients. In these cases no less than 16 (72%) presented distinct evidences of other disease.

One is naturally led to ask what is really the cause of the condition. The bare statement clubbed fingers a symptom of phthisis—is at least misleading to the average student, for he is led to infer in many cases it has something to do with the tubercular process. There is no doubt that as the symptom was found where phthisis was present it was at one time concluded that the clubbing was due to, or directly part of, the tubercular process. In some cases this opinion has been persisted in to the present day.

Dr. Hartree and Taylor in speaking of the fingers, stated in phthisis attribute the condition “to a tubercular process at the root of the nail.”

James in his textbook of medicine quotes Mr. Lavelly with approval.
"That clubbing is due to the imperfection of the arterioles state of the blood into the various stagnation in consequence of which stagnation, tubercular matter is deposited from the blood."

C. Theodor Williams, also says, "that clubbing more or less denotes blood infection from the leucip products."

Now, if this condition were due to tubercular deposit, the clubbing found in chronic bronchitis cardiac disease or other non-tubercular ailments must be different in origin. There is no evidence to show any type of the kind. True, tubercle bacilli have been demonstrated in the blood Williams mentions some granules found in the Blood in phthisical patients. But no authority so far as I can find, has ever demonstrated any type of the nature of a tubercular process taking place in the finger producing the clubbed appearance in the only cases in which had an opportunity of examining post mortem. There was no evidence of such a process simply an excess in development of the fibro-cellular tissue in the pulp. Some of the older writers attempted to show that clubbing was largely
Reduced by occupations involving the use of the fingers e.g. polishers, burnishers, pianists. In the list of cases, it will be seen clubbing is to be found in patients of various occupations in those of no occupation. I have met with the condition in labourers, common weavers, tailors, carpenters, &c. &c. &c., whose occupations do not involve special use of the fingers. Besides this would in no way account for the clubbing of the toes.

I have made no reference to clubbing of the toes, because they are usually distorted or deformed by badly fitting boots and deductions in such a case would be unreliable. I may mention however, my experience is that they occur quite as commonly as the fingers. I have seen cases of clubbed fingers where the toes were apparently not affected, but in all cases where the clubbing of the fingers was marked, the toes were, to some extent at least, affected. Crisp of London (11) thinks that clubbing might be explained by cold causing constriction of the vessels, so leading to enlargement. The objection here at once
The raised is no proof it is seen that cold can cause clubbing. Undoubtedly after the application of cold constriction of the part may arise, but it is surely more rare of a temporary character. But clubbing may arise in cases when the action of cold externally applied is about, so that this explanation is rather satisfactory for occasional application.

Clubbing of the fingers is present in many chronic chest affections including phthisis pulmonis for an explanation of the condition it is advisable to suppose if there is a cause common cause which may produce the deformity. It has been observed that such a cause which will account for the clubbing under all conditions in venous congestion; insufficient saturation or deficient oxygenation of the blood. It has been noted that all diseases in which clubbed fingers occur lead to more or less venous congestion or insufficient oxygenation. The cases thus noted have been afflicted with Phthisis Pulmonis, Chronic Bronchitis, Spinal Cerebrospinal, Chronic Alcoholic, Chronic Nephritis, Empyema, Emphysema.

All these eventually lead to some suspicion of pulmonary obstruction. In Chronic Bronchitis, the inflammation of the tuba will itself lead to insufficient
eration of the blood. In addition, the disease
lets back on the pulmonary circulation &
produces enlargement of veins system, a
erection of the reflex side of the heart
condition which are favorable for the
development of clubbing. - In the list of
22 cases, Chronic Bronchitis is a direct
or contributing cause in not less than 10 cases.
Spinal Curves - producing Pott's curvature
was a contributing cause in three cases.
Mastoiditis was in all three cases.
situated in the dorsal region which
(although the common situation) is the local
favorable part of the spine for producing
some interference with the action of the
lungs. In all these cases caused from the position
taken up by the patient, there was interference
in the free play of the lungs. If this is
deficient respiration, venous congestion either
symptoms of pulmonary obstruction are liable to
result.

In Eclampsia, compression
of the affected lung would not long tell
back on the right side of the heart.
I have also observed the condition in
various forms of heart disease but in
all cases some degree of cyanosis or venous
obstruction was more or less present.
The obstruction to the circulation is not necessarily central, or situated within the chest, but may be produced by aneurism or by a circular burn of the arm. — Aneurism of the Right Subclavian produced clumping of the fingers on the Right only. The presence of the aneurism in this case causes venous obstruction.

We may therefore conclude clumping results from the imperfectly arterialized condition of the blood, from the veins stagnation which results, viz., in no way due to the intercostal process force.

The precise way in which poliomyelitis produces clumping of the fingers may perhaps be discovered if we examine carefully the cases in which it is found. As mentioned before, poliomyelitis itself does not produce so many cases of clumping as is usually stated.

In the 92 cases there recorded, sixteen had other disease present which could account for the condition. — This leaves, remains six cases to be accounted for. From a study of these other cases there been led to the conclusion that there are 2 classes of poliomyelitis in which one may meet with clumped fingers.
1844. When a large area of lung is affected with tubercular disease - very frequently an acute case.

2. In most chronic cases when the right side of the heart is dilated. Now both these conditions produce cyanosis venum, emphysema, these as we have pointed out we believe to be a sufficient cause to produce clubbing. In all the phthisical patients with clubbing (no other disease) that examined me if these two conditions was present. In some cases, perhaps both. Given then for a case of phthisis with clubbed fingers. I find it will be found.

either a large area of lung is affected or if there is some dilatation of the right side of the heart, or if some other disease (affecting the circulation) is present.

In addition, I would add that I believe anaemia is almost invariably present in phthisical patients which show clubbing. It was certainly present - often in a very marked degree in all the 22 cases that I appended. Dr. Cannon draws free much conclusion in these cases between anaemia.
clubbing for anaemia is so frequently present in advanced phthisical cases. I can find no instance of anaemia alone producing clubbing though theoretically it would seem possible. In many cases it is to be noted that anaemia may be masked (as pointed out by Layton) by hectic fever by cyanosis itself. One must be careful not to these conditions if the anaemia may be overlooked.

I have not found the age of patients (phthisical) to have any special connection with clubbing. It may occur at any age. I have seen it in a child under six months. I have seen it in a man of sixty years of age. The condition is much commoner in the cases I have collected at the age of 30-40 yrs, but this of course is obviously due to the fact that phthisis itself is most commonly among men before the age of 30 yrs than after.

Clubbed fingers I have found to be by far more common in men than in women — as the case is, therefore justified in saying that phthisis is most common, but it is believed that phthisis is at any rate more chronic. This has been pointed.
out by Williams. I have found in my bookhouse cases that as a rule in female phthisical patients the disease advances with much greater rapidity than in men. Hence, there is less time for the development of pulmonary obstruction, hence staphylion of clubbing.

It is remarkable the majority of patients seem not to have noticed the clubbing even when well marked. In at least three well marked cases the patients stated they were unaware of anything abnormal. — when it has been noticed by patients they usually state it is caused by their work. This I have noted in seven cases.

The question might be asked, how soon may clubbing of the fingers develop? — A reply is not easy to give as the condition especially at first so often escapes notice. I have seen no case where distinct clubbing was induced in four weeks. The patient was a child, fourteen weeks old. Strongly built up, looking robust 10 weeks from birth when it was attacked with severe whooping cough. After four weeks clubbing of the fingers was distinctly present. I then a physical examination revealed with
little difficulty make out distinct enlargement of the root of leaf veins, enlargement was very marked during the first years of cough. This is no doubt a rapid case, as the majority of cases of other people where I have obtained any information (at least only approximate) from six months to twenty years was a more common period for their production. -

Susskind states that when rapidly developed the process causes pain, I have not been able to find any case in which this symptom was ever present. As the process of clubbing is usually slow it must be a very rare symptom, tingling of the fingers that noted in one case but I am not inclined to attribute it to the clubbing. - Pain & tingling apart altogether from clubbing occur in the extremities in phthisis pulmonary neuritis has also been observed in the same condition. It seems to me therefore more rational to consider these symptoms as separate from the formation of clubbed fingers. It has been stated the fingers are always invades in a definite order, first the third & index fingers, then the other fingers, the little fingers being the last.
The clubbing of the fingers is a condition that is often associated with various medical conditions. It is characterized by the enlargement of the distal phalanges of the fingers, which may appear bluish or club-shaped. The exact cause of clubbing is not fully understood, but it is believed to be related to increased blood flow to the fingers, possibly due to a decrease in the oxygen level in the blood. Clubbing may be present in a variety of conditions, including chronic lung diseases, heart conditions, and certain types of infections.

In some cases, clubbing may be a result of increased blood flow to the fingers, which can be caused by a variety of factors, including infections, tumors, or other medical conditions. In other cases, clubbing may be a result of a deficiency in the oxygen level in the blood, which can be caused by a variety of factors, including smoking, anemia, or other medical conditions.

Clubbing is often accompanied by other signs and symptoms, such as cyanosis (a bluish coloration of the skin and mucous membranes), clubbing of the toes, and swelling of the fingers. Clubbing may also be associated with a variety of other medical conditions, including chronic lung diseases, heart conditions, and certain types of infections.

In some cases, clubbing may be a result of a deficiency in the oxygen level in the blood, which can be caused by a variety of factors, including smoking, anemia, or other medical conditions. In other cases, clubbing may be a result of increased blood flow to the fingers, which can be caused by a variety of factors, including infections, tumors, or other medical conditions.
curvature of the nails from side to side.

Dorsing of the subcutaneous fat does of course occur in the general emaciation, but I cannot
agree as to the incurvation. I have seen several
cases (of which Case 2 with photograph is an example)
where there is some flatten up, certainly no
lateral incurvation.

A. Tatum Bury says "in clubbed fingers in
phthisis the thickening is mainly from before
backwards via subperiosteum from side to side." I
this is by no means an absolute rule.
Cases 2 and 3 are patients with advanced
phthisis where the thickening mainly
from side to side. (See photos.)

In Case 2 I believe the clubbing has
been largely due to subperiosteum; the
enlargement is more from before backwards
than from side to side. I then feel
no absolute rule can be laid down as
to the precise form the clubbing may
Take. I prefer to attribute the different shapes
the digits may assume more to individual
peculiarities than to different varieties
of disease.
It is unnecessary to think today more than a word on the treatment of such a condition. It is, of course, only a symptom the appropriate treatment would naturally be removal of the cause. It is noteworthy that a patient in the last stages of phthisis will fix his attention on the condition of the fingers, forgetting for the time being all his other pains and discomforts. Unfortunately as a rule little can be done because the condition which has caused the interference with the pulmonary circulation is so frequently of an incurable or fatal nature.

If due to an acute illness, the deformity may disappear as the patient thoroughly recovers health. This has been seen in a young child.

Mr. J. Smith of London in a case of amurris with marked clubbing of fingers kept the arm raised for several days with the result that the clubbing was very much lessened.

I have also found that by keeping the terminal digits bandaged for several days such improvement takes place. This improvement is, however, more apparent than real for in many cases there is some obliquity of the terminal digits. Having the fingers raised or supported under the foot...
cause an improvement. After death, it will usually be found that the clubbing does not appear nearly so marked showing I think, some of the enlargement is due to oedema.

Lenticular Incursion of the Nails

A condition which has been found frequently to be present in pulmonary phthisis is longitudinal incursion of the nails. It is not by any means pathognomonic of phthisis for it is to be found in chronic bronchitis, wasting diseases even in persons apparently healthy. From my experience it is certainly more common in phthisis than clubbed fingers. In 100 cases of advanced phthisis I have found it present in no less than 32. It is difficult to say what is the exact cause. It is often present along with clubbing in nearly every case where incursion is present there is often been emaciation and profuse sweating. As the condition is also present in some apparently healthy persons it may be considered as a sign of a delicate constitution or of a constitution afflicted by chronic disease.
In conclusion, I would briefly summarize the views expressed in the preceding pages. I have endeavored to show, the subject of clubbed fingers, especially in regard to phthisis, has not been satisfactorily dealt with, as an examination of various sources shows great discrepancies.

That with Phthisis per se, the condition is uncommon; that it is much commoner, if other disease affecting the circulation is present.

That the condition is not due to tubercular deposit, nor to cold, nor to excessive use of the fingers in certain trades.

That it is due to defective circulation either deficient oxygenation or venous stagnation.

That are has no special connection with clubbing.

That it is commoner in men than in women.

That the phthisic cases which develop clubbing are where there is some pulmonary obstruction either

1. From large area of lung affected
2. From dilatation of right side of heart

In addition anemia is almost invariably present.

That the deformity is sometimes slow,
sometimes rapid as not accompanied by pain
that all thefingers on the hand are not
necessarily affected.
That no specific form of clubbing is due to
any particular form of disease.
And that longitudinal incurvation of the nails
is much more common than clubbing
in tuberculosis.
Bibliography.

13. " " " " (State of Blood) P. 1176.
16. " " " " " " P. 414.
21. Touchon: Bury's Clinical Medicine (Griffin) P. 44.
23. See Table of Female Cases of Alliice appended.
A List of 22 Cases of Clubbed Fingers found in Phthisical Patients.

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<th>Age</th>
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<tr>
<td>Charles C.</td>
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<td>Chronic Bronchitis</td>
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<td>T. O'Farrell</td>
<td>40</td>
<td>Chronic Bronchitis</td>
<td>Phthisis</td>
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(continued)
The following 16 cases are not as marked all.

11 Henry Powell. 39. [Ch. Bronchitis. Phthisis.]

12 Joseph McEwan. 33. [Ch. Bronchitis. Phthisis.]
   Disease: Phthisis. Occupation: Calvers.

13 T. Boyle. 36. [Ch. Bronchitis. Phthisis.]

14 T. McGuire. 50. [Ch. Bronchitis. Phthisis.]
   Disease: Phthisis. Occupation: Tanner.

15 Tom Ralph. 45. [Ch. Bronchitis. Phthisis.]

16 Martin Tyrnaw. 33. [Ch. Bronchitis. Phthisis.]

17 Thomas Curley. 44. [Empyema. Ch. Bronchitis. Phthisis.]
   Disease: None.

18 E. Brown. 28. [Chronic Nephritis. Phthisis.]


22 A. Carlyle. 34. Phthisis. Stableman.
An Analysis of 22 Cases of Clubbed Fingers found in Phthisical Patients.

Case 1.

Wm. M. aged 39. Occupation: for six years a soldier in India, most of the time, last four years he has been working in a Rubber factory.

He suffers from marked Pott's Curvature in the head and cervical region, which has been present about four years. He has also Phthisis of both lungs.

He has had a bad cough for many months, he suffers considerably from night sweating, and loss of flesh markedly during the last 4 months.

No hemoptysis. Patient in anaemia.

Clubbing of the fingers is marked. Patient has never specially noticed the condition, though it was often noticed by his work.

Note: 1. Condition attributed to occupation.

ii Clubbing with Pott's + Spinal Caries

From the history it would appear the pulmonary phthisis is in late development, the clubbing is no doubt due to the spinal condition.
Case 2.

Thomas Brown. Age 41. Chairmaker.

Enquiry fair health up to 18 months ago, when he commenced to have a cough, which has gradually got worse. Has lost flesh considerably lately.

Note: (Shay) hemoptysis. Left lung considerably.

Right lung in markedly affected. Patient is anemic.

Clubbed fingers.

Note: This is a case of phthisis with clubbed fingers and no evidence of other disease. The anemic condition I believe has been induced by the large area of lung affected. Chronic atelectasis. The expansion has induced clubbing.

Probable cause the anemic condition of the blood may be a supplementary cause.
Case 3.

Chas. Lomineson, age 41. Carter.

Diagnosis: Pulmonary Tuberculosis.

His illness commenced with an attack of pneumonia about 4-5 years ago. He has never really got over it. He has seldom left his bed, and has been in bed several times. Formerly had night sweats to a great extent. Some six months ago had swelling of his chest. The anemia considerably associated.

Both lungs are affected. There is marked thickening of the left pleura. Further, the patient has also been under observation as a case of suspected abdominal aeurisus. He has clubbed fingers.

Note: In this case also, there is possibly no other disease but pulmonary tuberculosis, but it has been present for an indefinite period in an acute stage.

Hence, both lungs are affected — hence cyanosis of the venous return — hence clubbed fingers.
Case 4.

James Caffrey, Age 44, Packer.

Diabetes. - Phthisis. - Alcoholic Neuritis.

History of a cough for over two years with (several attacks of) haemoptysis; weight loss; loss of flesh occurring during last 18 months.

Also a history of alcoholism, for he was in hospital 18 months ago with alcoholic neuritis and had swelling of his feet also. Albuminuria is present. Marked venous engorgement seen in face.

Phthisis affects both lungs.

Note. Certain: case the cerebral symptoms of alcoholic neuritis have not entirely passed away it is difficult to obtain any accurate information.

Phthisis here is complicated with alcoholic neuritis, better symptoms of chronic alcoholism. There is no evidence of distinct cardiac disease, but alcohol itself is a sufficient factor to account for the anaemic condition, producing various symptoms etc.
Case 5.

Joseph Matthews, age 8.

Disease: Pott's curvature. (Pulmonary Phthisis)

This photograph does not show the condition well.

Spinal Caries has been present for about 2 years. The lumps are only slightly affected, one doubt. The clubbing has been induced by the Pott's curvature, present in the upper dorsal region. The clubbing has been evident for at least 8 months.

The relative position of heart, great vessels and lungs must necessarily be modified by the position of the body, induced by marked Pott's curvature.

It is quite possible that a certain amount of pulmonary obstruction could thus be induced & hence clubbing of fingers.
Case 6


Disease: Empyema, Phthisis.

Up till Dec. '93 he enjoyed fair health. He then had a severe cold, then never really quite thinned it off. He gradually got worse till in Oct. '94 he sought admission to Cumberwell Infirmary. He was found with empyema on left side two admissions which was at once treated.

He has Phthisis of both lungs, with varicosity in both. Opening in chest wall still discharging (Feb. '95) the usual phthisical types of hemorrhages never event. Mass of flesh has been present, Clubbed fingers — never shown by patient till his attention was directed to them.

Note: Phthisis complicated with empyema producing clubbing. I believe empyema to produce more cases of clubbing than phthisis in proportion, though acti

tion amont of erasing surface.
Case 7.

Bernard Shields, Esq., Bricklayer.

Disease: { Spinal Caries. 
{ Phthisis. 

This patient was admitted to Crownewall Infirmary in May 1891, and has been nearly four years in hospital. He came in with spinal caries affecting the upper dorsal region which has steadily progressed ever since. Paraplegia, incontinence, and other pressing symptoms are present. (Ref: 7b)

Patient has also phthisis affecting both lungs, which has probably developed since admission. He has not observed the clubbing until his attention was drawn to his fingers.

This is a case of spinal caries + phthisis, in which clubbed fingers have been noticed.

Similar to Case 5. Q. V.

Facts: He has had a cough as long as he can remember—usually worse in winter, especially the last two years. He has seldom been laid up in bed till his admission to Hampstead Infirmary in Dec. 1892.

Immediately prior to admission he noticed he had begun to lose flesh and had one attack of hemoptysis. In addition, he had pimplular rales of chronic bronchitis he has evidently phthisis of both apices.

Tuberc. has been clubbed at rattle, he has observed the clubbing for at least 18 months.

Note

Case of Phthisis and Chronic Bronchitis with Clubbing.

See Note at end of Case 10.

Disease: Chronic Bronchitis
Phthisis

This patient has suffered from chronic bronchitis for very many years, there is also some emphysema present.

Phthisis has evidently developed subsequently, he has had symptoms of this complaint for at least 2 yrs. Both lungs affected.

Clubbed Fingers.

Note: Clubbed fingers in Chronic Bronchitis Phthisis.

See note at end of Case 10.
Case 10. Joseph O'mally, age 60, laborer.

Erect, a history of chronic bronchitis for over 10 years.
He says he has had no other ailments, has never left his work for more than a day or two in account of illness. Admitted to Grampall Infirmary Jan 4th 1895.

Has been loosing flesh for the past 2 years.
About 2 yrs ago he coughed up a good deal of blood that cleared on several occasions since. He is very emaciated otherwise.
In addition to the above of chronic bronchitis he has left limb very markedly affected with Phthisis. Right limb seems to be very little affected.
Unfortunately patient died before photograph could be obtained of his fingers.

Note - CASE OF CHRONIC BRONCHITIS
with
Phthisis supervened.
+ Clubbed Fingers.

Cases 8, 9, 10 are similar in that Phthisis has supervened on Chronic Bronchitis. In these cases the clubbing was marked, otherwise they are similar to Cases 12-16. Q. V.
In the following list of cases, the clubbing is less marked as in some of the preceding ones.

Case 11.

Henry Powell, age 39, Saddle.

Diagnosis: {Chronic Bronchitis + Empyema.}

Phthisis.

History of chronic bronchitis from early youth.

From his history we never suspect he has had phthisis some years. There are cystic in both lungs. Face somewhat hirsute.

Note: In this case there is a distinct tendency to clubbing of the fingers, that the phthisis is complicated with chronic bronchitis + empyema.

In this case probably two causes produce the expansion:

1. Venous congestion from the chronic bronchitis.
2. Scopula of lung affected by phthisis + also abscessed. Hernial emphysema.

This case is interesting as always distinct clubbing of thumbs + little fingers, the other digits being practically unaffected. The photo, however, does not show the well...
the next five cases of clubbed fingers are grouped together because they are all very similar as regards history of illness. 
In each case we have a history of Chronic Bronchitis for many years followed eventually by Phthisis. 
Chronic Bronchitis of itself is of course sufficient to produce clubbing, for in all longstanding cases the effects are to be seen or felt beyond the lung. General venous engorgement, dilatation of Rb side of heart, obstruction to circulation through pulmonary veins, all these together with the deficient oxygenation brought about by the anemic condition of the bronchi surely take and contribute themselves a sufficient cause for clubbed fingers.

In addition to Chronic Bronchitis for several months' duration Phthisis, affecting mainly upper lobe of Rb lung. 
Fingers are clubbed, attributed by patient to his work. Phthisial symptoms have been present at least 8 months.

In addition to Chronic Bronchitis for many years he has had Phthisis for about 2 years. 
Heber only slight clubbing of fingers.
   Also chronic bronchitis for many winters.
   Both lungs are affected with phthisis,
   & he has had phthisical symptoms for about
   12 months. — Clubbing here is only slight.

Case 15. James Ralph, age 45. Warehouse porter.
   Has a history of chronic bronchitis for several
   winters. Left his work a year ago because
   of great weakness unable to work without bringing
   on great shortness of breath. — He has also been
   rapidly losing flesh for 18 months. — He had no definite
   haemoptysis but sputum has been several times
   streaked with bright red blood. Both aeries are
   affected with phthisis. He has slight clubbing
   of the fingers, which he has never specially noticed.

   Has a history of chronic bronchitis for 6 years
   ago.
   Eighteen months ago he had an attack of pneumonia.
   Sputum has never been really red. He had
   2 attacks of haemoptysis in Nov. 94. —
   He has phthisis, especially affecting R. lung.
   Slight clubbing of the fingers, very rustic in appearance.

Patient:
Case 17.

Thomas Curley, age 14.

States he has had a cough all his life, that he has been confined to bed several times because of his cough. Two years ago he states he had pleurisy followed by emaciation. He has also phthisis affecting mainly left lung.

He has slight clubbing of fingers.

This is similar to Case 6, only chronic bronchitis is present in addition.

Case of Chronic Bronchitis.

- Emaciation
- Phthisis

Case 18.

E. Brown, age 28.

States; a few years ago he had an attack of acute bronchitis, disease, & his evidently suffering from chronic nephritis (tubal). He however states he recovers completely after his acute attack.

He has some albuminuria. No phthisis or symptoms until 10 months ago. From that time he has lost flesh rapidly. Haemoptysis (coughing) 2 or 3 times. Surface area weak. Both limbs are affected. Patient anemic.

Fingers are slightly clubbed.

Case of Chronic Nephritis & Phthisis with clubbing.
There were four cases I have grouped together. They are phthisical patients with clubbing and other obvious disease.

Case 41. David McCulloch, age 31, Blacksmith.

Until 2 yrs ago he was fairly healthy. He was laid up for one or two weeks at that time, but states he never was well until one year ago, when he had a severe attack of phthisis. Soon after this he developed a cough which gradually got worse. Night sweats also at this time very troublesome. His last flack considerably for two months. When seen in Jan. '95, he had phthisis mainly affecting the right lung. Symptoms of some dilatation of right side of heart. Increased cardiac dullness towards right side. Pulse slow and weak.

Patient v. anaemic.

Case 20. J. Burns, 36, Commercial Traveller.

Has had phthisis for over two years.

Previously was in good health. The whole of the right lung is very much affected. Lungs both left also affected - probably only stage of tuberculous disease. He is v. anaemic.


Has never been very strong, but has no从前 illness. He has had symptoms of phthisis nearly 12 months.

Left lung in an advanced stage (excavation) of affection. He is very emaciated and anaemic.
Case 22. A. Darbyshire. age 34. Stoolman.
He has been ill for 3 years with Phthisis.
Left lung is mainly affected, presenting (loose)
state of consolidation. Patient is very anaemic.
Pulmonary zone albuminuria. Clubbing
of the fingers is less only slight.

These four cases are phthisical patients.
with no other respiratory disease. The
clubbing in none of the cases is very
marked. I believe in all these cases we
find the explanation of the clubbing
in the deficient aeration of the blood
or venous congestion produced either:

1) by the large area of lung affected; or,
2) (in chronic cases) by the right side of the
   heart becoming dilated; or,
3) by both causes.
There follows,

A Table of 100 Cases of Phthisis,

examined with special reference to the clubbing of fingers, longitudinal incurvation of nails.

They have all been inmates of the Manchester Workhouse Infirmary.

Crompton, Dr. Manchester.

I have examined each patient myself, there was always made a note if there was anything peculiar about the fingers or nails. With regard to duration of illness it is often only approximate; the symptoms of Workhouse patients are often very defective or very mincetive.

Here noted how frequently Haemoptysis, Night Sweating, Loss of flesh (frequently known as 'Thyriades phthisicæ bipedæ') is present.
<table>
<thead>
<tr>
<th>Name</th>
<th>Sex</th>
<th>Age</th>
<th>Occupation</th>
<th>Disease</th>
<th>Mutation</th>
<th>End Stage</th>
<th>Years</th>
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<td>Both hands. Ph. about 2 yrs.</td>
<td>10/12 yrs.</td>
<td>Clubbed fingers. Incur</td>
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<td>Parts affected</td>
<td>Remarks on patients, etc.</td>
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(24)
The following list of 25 female phthisical patients is appended simply to support the statement made on page 13 that phthisis from my own experience was more chronic in its progress in women.
| Number | Name          | Age | Disease | Part affected | Remarks | Date admitted | Remarks on treatment | Remarks on date of death | Remarks | Dates
|--------|---------------|-----|---------|--------------|---------|---------------|----------------------|--------------------------|---------|-------
| 1      | E. J. Bell    | 26  |         |              |         |               |                      |                          |         |       |
| 2      | Hen Dolan     | 44  | Phthisis|              |         |               |                      |                          |         |       |
| 3      | Alfred Hughes | 29  |         |              |         |               |                      |                          |         |       |
| 4      | Jno. Dally    | 21  |         |              |         |               |                      |                          |         |       |
| 5      | Jno. Tomes    | 50  |         |              |         |               |                      |                          |         |       |
| 6      | Jno. Robinson | 27  |         |              |         |               |                      |                          |         |       |
| 7      | Ann Hywell    | 43  |         |              |         |               |                      |                          |         |       |
| 8      | Martha Wilson | 45  |         |              |         |               |                      |                          |         |       |
| 9      | Sarah Mallory | 38  |         |              |         |               |                      |                          |         |       |
| 10     | Joseph Welsh  | 27  | Phthisis|              |         |               |                      |                          |         |       |
| 11     | Jno. Hyney    | 34  | Phthisis|              |         |               |                      |                          |         |       |
| 12     | Jno. Blake    | 40  |         |              |         |               |                      |                          |         |       |
| 13     | Eliza Smith   | 57  |         |              |         |               |                      |                          |         |       |
| 14     | Emma Brown    | 44  |         |              |         |               |                      |                          |         |       |
| 15     | Ann Currie    | 35  |         |              |         |               |                      |                          |         |       |
| 16     | Louisa Dixon  | 344 |         |              |         |               |                      |                          |         |       |
| 17     | Eliza Challen | 59  |         |              |         |               |                      |                          |         |       |
| 18     | Rachel Allen  | 31  | Phthisis|              |         |               |                      |                          |         |       |
| 19     | Cath. Shakes  | 48  |         |              |         |               |                      |                          |         |       |
| 20     | Jno. Smith    | 29  |         |              |         |               |                      |                          |         |       |
| 21     | Elizabeth Oke | 49  |         |              |         |               |                      |                          |         |       |
| 22     | Sarah Paine   | 44  |         |              |         |               |                      |                          |         |       |
| 23     | Ann Evans     | 57  | Phthisis|              |         |               |                      |                          |         |       |
| 24     | Jno. Lepper   | 28  |         |              |         |               |                      |                          |         |       |
| 25     | Mary Place    | 58  |         |              |         |               |                      |                          |         |       |
| 26     | Elph. % Kellard | 31 |         |              |         |               |                      |                          |         |       |
I have to thank Dr. Ernest S. Reynolds, Visiting Physician to Crumpsall Infirmary for permission to examine report on the patient under his supervision.

I hereby certify this thesis to have been composed entirely by myself.
(Signed) W. Clayton Grosvenor.

April, 1895.