A Treatise
on
Bronchitis
by
Bruce Barclay.
Bronchitis, or inflammation of the mucous membrane of the bronchial tubes, is the most common of all diseases of the lungs, and may either be acute or chronic. An attack of acute bronchitis usually begins by inflammation of the mucous membrane of the nose and fauces, which gradually creeps down into the trachea and bronchi. But the inflammation may appear at first in the mucous membranes of the bronchi themselves; the result generally of a sudden change from a warm to a very cold atmosphere, or it may be the result of the inhalation of acid fumes, and it has been remarked that when the disease arises from this last cause, it is generally very slight, and of short duration.

When the disease is fairly established, the symptoms are: weakness, or even pain over the chest, which is increased on coughing; the respirations...
are increased in frequency, and accompanied by a wheezing noise; there are usually febrile symptoms present, more or less intense, which become aggravated towards evening. The cough is at first dry, and hard, occurs generally in paroxysms, and is worst after sleep. When the disease has advanced a day or two, there is expectoration, at first scanty, frothy, or perhaps quite clear, but gradually becoming more abundant, and puriform.

In the greater number of cases, the inflammation and symptoms of fever subside in a few days; the expectoration becomes thicker, and more scanty, and is observed in the morning and evening only. And the disease either disappears altogether or becomes chronic. Very often, as the inflammation of the lungs subsides, a similar affection takes place in the mucous
membrane of the intestines, producing diarrhoea; and, the fact of their being, at this period of the disease, much mucus in the urine, and heat and pain in passing it, would indicate also inflammation of the mucous membrane of the bladder, and urethra.

Instead, however, of the disease ending favorably in a few days, the smallest arteries may become affected, the pulse may become weaker, more frequent and irregular, the dyspnoea and cough more distressing, and the air passages clogged with mucus, which the patient is unable, partly from his own weakness, and partly from the adhesive character of the secretion itself, to expectorate; the face becomes livid, delirium succeeds and the patient dies asphyxiated.

All these symptoms may follow
Each other very rapidly, and death take place in a very few days, from the commencement of the attack. There is one form of acute bronchitis very fatal to children, occurring after Measles, Scarletina, and other eruptive diseases.

It commences as a common cold, without much derangement to the general health. The respirations may perhaps be more frequent, and there may be slight wheezing, but these symptoms are so slight, that unless by a careful observer, they are apt to be overlooked. Gradually the pulse becomes quicker, and there is great dyspnoea, occurring in paroxysms, which pass off, leaving the child completely exhausted. These paroxysms increase in frequency, and severity, and the child dies suffocated.

Very like to this, is the bronchitis which often accompanies continued fever in adults.
There are two varieties of bronchitis: contagious, influenzaa and whooping cough. The former, which is most fatal to old persons, has been often epidemic in Europe. It is always attended by a most debilitating fever, sometimes almost of a typhoid type. In whooping cough the greatest danger to be apprehended is from convulsions, or even apoplexy, the violence of the fits of coughing preventing the return of the venous blood from the head.

In acute bronchitis, the expirations are usually longer than the inspirations; there is no alteration in the form of the chest, and it expands equally on inspiration. On percussion, no unusual dulness is found, indeed there is sometimes more clearness of resonance than is usual in a healthy lung.
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In some cases however, as in children after measles, or scarlet fever, there is slight dulness on percussion, from the accumulation of mucus in the smallest air tubes. This dulness will not be found over the whole extent of the lung, but only in some parts of it, generally at the base, and posterior part.

On Auscultation, during the first stage of the disease, certain dry rales may be heard. Called by Lannee "sibilant" or "tumorous," and by others "crowing," "snoring," "whistling.

In the second stage, accompanying the respiration, there is a bubbling sound, and by this we can judge pretty nearly of the extent and situation of the disease. If the bubbles appear to be large and to burst irregularly, the disease is confined to the larger bronchi; but if the sounds are fine, the disease is situated in
the smaller tubes also.

In infantile bronchitis, occurring after measles, or scarlet fever, the capillary bronchi may be affected without the larger ones being so. Consequently we may find perfectly healthy sounds over the course of the larger bronchi, and the fine bubbling rale at the bases of both lungs.

If this sound is limited to one base, or both apices "the bronchitis" is either emphysematous, or of "tuberculous origin".* In such cases there will be more or less dulness on percussion.

As the disease advances, the secretion of mucus becomes more abundant, and more solid, and partially blocking up some of the bronchial tubes, produces an irregular clicking sound. Sometimes hardened mucus so entirely blocks up the bronchial

* Walthe
tubes, that no respiration whatever can be heard in some parts of the lung. Lannee gives the case of a man, subject to bronchitis, who, during a slight attack, experienced a feeling of obstruction about the root of the right lung, with frequent fits of dyspnœa; and who, during a violent fit of coughing, expectorated a large clot of solid mucous, weighing half an ounce, after which the dyspnœa entirely ceased.

The Diagnosis of bronchitis is comparatively simple. It can always be distinguished from pleuritis, by the clear sound on percussion, and from pneumonia by the same sign, by the absence of the crepitant râle, and of the moist sputa. Indeed bronchitis may be distinguished from any other disease of the lung, by one symptom, viz: the dyspnœa and
wheezing always occurring in paroxysms; free expectoration taking place during the intermissions.

The prognosis of bronchitis, where active treatment is employed early, is generally favorable. And in such cases the disease runs its course in from four days to four weeks. But in cases where treatment has been long delayed, where the inflammation has spread extensively through the lungs, there is a great amount of fever. The prognosis is very unfavorable, especially in old persons, whose strength is soon exhausted, and in whom death takes place from collapse.

On opening the chest, in fatal cases of bronchitis, the bronchi are found so filled with mucus, that the air is not permitted to escape. And, consequently, the
lungs do not collapse.

This mucus is generally frothy,
and often mixed with blood;
but as this blood is not perceived
in the expectorated mucus, before
death, it must exude from the
vessels afterwards.

In very acute cases which
have proved fatal in a very
short time, purulent matter, or
even pus, is sometimes found.
The mucus membrane of the
lung is red and inflamed, and
this redness may either be
spread over the whole surface,
or occur only in patches of
many different shades of color.

When bronchitis begins in the
mucous membrane of the pharynx,
it may sometimes be at once
stopped, by using some strong
astringent gargle, or what is
caller putting the inflamed
surface over with a camelhair
brush, dipped in a solution of
the nitrate of silver.

Dennee says, that a common
catarrh has a certain course
to run, and that no means
will be effectual in checking it,
until it has run that course.

Surely, a common cold, which
otherwise might have lasted for
months or even months, by the
use of antiphlogistic, and other
remedies, may be checked in a
few days.

Dr. Williams recommends, that
at the first feeling of cold, the
patient should take a purgative
with two or three grains of
loose ash or Sarracenia's powder,
that a hot bed should be
used, the patient getting into a
warm and well covered bed
immediately after, and pro-
moting any disposition to
perspiration by a warm draught
of their gruel, barley water, or
any other mild diluent and perspiration come on
If the purgative acts well the
cold is sometimes already
cured, and it is only necessary
to remain at home and to abstain
from animal food, and wine,
next day to prevent a return.
Although in some cases these
means may be sufficient, yet
in others they will not. In such
cases the patient must keep
his bed, and abstain from all
kinds of animal food, wine,
and spirits. Small doses of
ipeacuanha and squill, are
very useful in promoting expec-
toration. Ten minims of the tincture
of squill, with ten or fifteen of the
ipeacuan wine, with a little
hypericums, will generally be
sufficient for this purpose.
Sometimes however these means
are not sufficient to relieve the
breathing, and a blister must
be had recourse to which generally
has the desired effect. 
Lannee recommends the use of spirits in the treatment of the 
slighter cases of bronchitis. 
His method is, to give the patient 
at bedtime, an ounce or an ounce 
and a half of brandy, in double 
the quantity of infusion of violets, 
made very hot, and sweetened 
with syrup of marshmallows. 
This dose is usually followed by 
a copious perspiration towards 
morning, but frequently the dis-
case is cured without any per-
spiration. If this should not be 
the case, the same plan is fol-
lowed for several days success-
ively.

This mode of treatment may 
perhaps succeed in some cases, 
but in those in which it does 
not, it must greatly increase 
the inflammatory symptoms. 
These are a great many home-
dies in common use, for coughs
and colds, the rest of which are those which contain ipecacuanha. All the remedies already spoken of, however, are only applicable to the slighter cases of acute bronchitis; whereas the attack is more severe, we require of course proportionally severer remedies. Bloodletting is recommended by some in the earlier stages; but unless it is practised at the very outset of the disease, it will do much harm, by weakening the patient, suppressing expectoration, increasing the dyspnea, and promoting perhaps, effusion into the substance of the lung. General Bloodletting, then, is a remedy which ought to be practised with extreme caution. It should never be tried, when the patient is old and feeble, and even in young and strong patients, when it is practised, the blood should not be taken in large
quantities at once, but a little at a time, often repeated, according as the strength will bear it.

Local bleeding may be practised either by leeches, or by cupping; the latter the more preferable, as being quieter in its effects.

Of all the counterirritants in use for the relief of bronchitis, the best perhaps is tarter emetic.

A hot mustard poultice ought to be first applied over the chest, for a short time, and the tarter emetic, in the form of an ointment, composed of one part of the tarterate to two of spermaceti ointment, is immediately rubbed in.

In a short time, particular inflammation will be excited.
And a minute portion of the tartrate being absorbed into the system, slight nausea will be produced, which is of course
Beneficial.

Cantharides, as a blister is objectionable, for two reasons: its use is apt to be followed by strangury; and it so irritates the whole system, as generally to aggravate all the symptoms, for the time.

In young or weakly children, blistering of any sort must be used cautiously; the blistered surface, in such patients, being very prone to ulcerate, or even to slough. For such children, mustard poultices, frequently applied, are very useful in the first stages. In the milder cases of adults, also, they may be used instead of blistering, with great advantage.

There are a great many medicines, suited to different cases, and to the different stages, of acute bronchitis.
It is well in the earlier stages, to begin by giving an emetic, followed by a brisk purge. Purgatives should never be carried far however, as they tend greatly to reduce the strength.

Nauseating expectorants, especially preparations of antimony, ipecacuan, squill, & digitalis, are of great use in moderating the heart's action, and relieving the congestion of the lungs. The antimony should be given in as large doses as the stomach will bear, without producing vomiting. And even if this should be produced, it is rather advantageous than otherwise.

Calmel and opium, given in small and frequently repeated doses, are in this as in most other inflammatory diseases of great use.

Assafetida is greatly recommended by Dr. Badham, when...
there are paroxysms of dyspnea, produced by spasm and contraction of the muscular fibres of the bronchi.

When a patient, from weakness is unable to cough up the mucus which has accumulated in his lungs, the best stimulant expectorant is the Carbonate of Ammonia, which seems to have almost a specific effect on the bronchial mucous membrane.

When the stage of collapse comes on, the case is almost hopeless, but the Carbonate of Ammonia may be tried, with Chloro Bitter, and the Solacia inflata.

During the whole course of the disease the patient should be kept in temperature as near 66° of Fahrenheit as possible.

Bronchitis was a disease well
known to Celsius, and his mode of treatment was almost precisely similar to that which is practiced at the present day. (Lib. IV. Cap. IV)

It is sometimes difficult to say whether an attack of bronchitis is acute, or chronic. An older says that "so long as the sputa are glairy, viscous, and not opaque, the inflammation is acute. In a favorable case, the sputa, toward the termination of the attack, become more consistent, opaque, and are expe-
torated in distinct masses. But, when, instead of this taking place, the expectorated mucous becomes more glairy, viscous, it and increases in quantity, then the disease is of the chronic "kind."

Laennec considers the differ-
ence to be, that "in chronic "bronchitis, the cough and ex-
"Restoration continues after the fever has subsided, or, this continuing in so slight a degree, as to be only perceptible towards evening, and morning, during an increase of the complaint."

Chronic bronchitis, when slight, shows itself by merely a cough, worst in spring and winter, and greatly influenced by certain changes in the state of the weather.

In its more severe forms, it is very similar to an attack of the acute variety. It is very common among old people, in course of its forms, and is very fatal to them.

In such patients there is great frustration of strength, huskiness, and labourous breathing, coldness of the extremities, inability to lie down, from a sense of suffocation; great want
of sleep, and, when a short period of sleep is obtained, there is a great increase of suffering in making, caused by the accumulation of mucus in the bronchial tubes.

There is a peculiar form of the disease described by Walsh, and called by him Bronchothorax in which he says that “during the fits of coughing, a copious thin watery fluid, or, it may be aropy, glutinous, transparent substance, like the white of an egg, mixed with water, is expectorated, as much sometimes as a quarter of a pint, in half an hour.

Chronic bronchitis very often follows an attack of the acute variety, but it may result from other causes.

It may follow measles, whooping cough, scarlet fever, etc., and is often found in connection
with disease of the stomach.

A peculiar form of it is found among persons who inhale air charged with different kinds of dust, as stone cutters, knife grinders, needle grinders, and others.

The disease, in such cases, begins generally with slight attacks of dyspnoea, which gradually becomes accompanied by a cough, and expectoration of mucous, or perhaps, of pus, or blood.

If the patient continues his unhealthy occupation, he soon gets worse, and worse, and dies, with all the symptoms of Phthisis Pulmonalis, the disease of artisans by Dr. Darwin.

The characters of the expectoration are various, in different cases of Chronic bronchitis. Sometimes it consists of a thick greenish coloured
Mucus, in which casts of the smaller tubes are distinctly seen; sometimes it is purulent or contains real pus, or even blood. In the latter case the disease has generally a fatal termination.

The physical signs of chronic bronchitis, are similar to those of the acute disease, the only other disease with which it may be confounded being phthisis pulmonalis, to which its most severe forms bear a great resemblance.

The resonance on percussion is generally as great as in health; mucous rales are heard irregularly over the chest, and when there is partial obstruction to the air tubes either from accumulated mucus, or from thickening of the mucus membrane.
Vibrant and sonorous rales will be heard.

The long continuance of inflammation, in this, as in all other parts of the body, has the effect of weakly altering the structure of the tissues; the mucous membrane may become thickened; the muscular structure may become hypertrophied, and many other changes may take place.

The most remarkable, however of all these changes, is the dilatation of the bronchial tubes.

This is a very frequent occurrence after chronic bronchitis, as it is after pneumonia, both acute, and chronic, and produces very remarkable physical signs.

When the bronchial tubes are evenly dilated, the respiratory
Murmurs will be simply harsh, but if the obstructions are uneven and accumulated, the respiratory murmurs will be cavernous.

In some cases the vocal resonance is entirely absent, in others it is unnaturally loud and strong.

There are many opinions as to cause of these obstructions of the bronchi. Lannee considers them to be caused by the mucus accumulating and causing a mechanical distension of the tubes.

Andral considers the pre-disposing cause to be alteration in the texture of the tubes, and the physical cause to be the acts of respiration and coughing, exerting a degree of pressure on the softened membrane, greater
than its elasticity can resist. When this state of the air tubes exists, there is great and constant dyspnoea, much increased on the slightest exertion.

When chronic bronchitis exists in connection with disease of the stomach, and liver, the prognosis is generally very unfavorable; but in the slighter forms of the disease, when unaccompanied by other diseases, although lasting perhaps for years, life does not appear to be shortened in consequence.

In those simple cases, where the termination is fatal (generally in old persons) the cause of death is the great alteration which takes place in the mucous membrane.
of the lungs, preventing the proper oxidation of the blood, the result of which is congestion of the lungs, and heart, and, if the patient live long enough, thickening and induration of the right ventricle.

In Chronic bronchitis, as in all other Chronic diseases, it must be remembered that as the disease is of longer duration, the patient will be longer under treatment, and therefore, our treatment will be more or less severe, according to the time it is likely to last.

Bloodletting is to be had recourse to only in cases where there is great congestion of the lungs.

Blisters, on the other hand, which may be objectionable...
in attacks of the acute disease, are of great use here. They generally however require to be two or three times repeated before any permanent benefit is derived from them. They cannot be applied in every case, as they produce in some, very debilitating effects. When this is the case, tartarized antimony must be used instead, as in the acute disease.

Lancere recommends in old people, the insertion of a deton in the arm, or thigh, and expectorant medicines to be given.

He also, in this disease, as in the acute, recommends the use of Spirituous preparations, particularly punch, but their use he says, must be much longer continued in this, than in the acute disease.
He also strongly recommends the use of the balsam of Copaiba.

I have often seen this used without the slightest benefit being derived, and Dr. Armstrong says, that in most cases, it increases the disease. It is very apt to bring on diarrhoea.

Calcicium was at one time greatly used in the treatment of bronchitis, and is much praised by Dr. Hastings, but it has now fallen greatly into disuse.

Expectorants are by some considered to be of no use. On the principle, that there is too much mucus secreted already, and why try to produce the secretion of more. But it must be remembered that expectorant medicines
not only increase the bronchial secretion, but also soften it, so that it may be expectorated with greater facility. The best medicines for this purpose are, ipecacuanha alkaloid, digitale, &c.

The ipecacuanha may be given in the dose of from twenty minims to half a dram of the wine, or one or two grains of the powder two or three times a day, according to its effects. And it may be given in combination with any of the other expectorants.

Great benefit is derived sometimes, from the use of emetics. And many cases are related, where bronchitis was completely cured by this treatment.

When there are profuse night sweatings, however
Exciters must not be used.

In cases where the fits of dyspnoea and coughing are very distressing, and the heart's action frequently much accelerated, the lobelia inflata, and digitalis, prove of great advantage. The tincture of digitalis may be given in doses of from ten minims to half a drachm, according to its effects, three times a day. And the lobelia in the form of tincture, in the same doses. Ammonia, in doses of from five to ten grains of the carbonate, given repeatedly, is also in such cases, a very useful remedy.

The treatment of bronchitis, by applications, in the form of sponges, to the mucous
Membrane itself, is very little practised, but I think it might be productive in some cases of great benefit.

When it is practised, the best method is, to have the vapour diffused in the patient's room, in this way the remedy is constantly applied.

The inhalation of tar vapour was much recommended by Sir A. Chrichton in cases of Phthisis Pulmonalis and it has been proved by experience to be of great use also in certain cases of Chronic bronchitis.

From its stimulating nature, it is not suited to cases of the acute disease.

Narcotics are very useful in allaying that irritation of
the system which causes the frequent attacks of dyspnea and coughing.

Opium, being the most powerful of these, would naturally be thought the best suited for the purpose; but there is one great disadvantage attending the use of it, namely, that it has a great tendency to check the bronchial secretion, and therefore, if given at all it must be given in combination with other medicine.

In most cases, some of the preparations of morphia are preferable to either solid opium, or its tincture. Dr Paris greatly recommends the extract of coriandrum, and advises it to be given till it produces nausea, and wildness. It is best
Combined with squill, or  
Ipecacuanha.

Rattling the chest with  
cold water and vinegar, is  
by some recommended, to  
strengthen the system, against  
repeated attacks of this disease.

Besides using these means  
for the treatment of bronchitis,  
we must always be sure that  
the state of the general  
functions is good.

If accompanying the bron-  
chitis, there be evident signs  
of derangement of the liver  
or stomach, we must treat  
them accordingly, and till  
they are removed, any treat-  
ment for the bronchial disease  
will be quite useless.

With regard to the diet to be  
engaged in bronchitis, it will  
of course require to be different.
in different patients, but it should always be as simple as possible.

Where there is disorder of the digestive function, milky and tar inaceous diet will be most suitable.

In other cases, animal food will be required, especially such as is easily digested, e.g., game, fowls, etc.

The influence of climate in diseases of the Chest is too obvious and too well known, to require any illustration. And in the case of bronchitis, as in that of phthisis, a change of climate is a curative resource, requiring the particular attention of the medical adviser.

A climate suitable for bronchitic patients, ought to be characterized by purity, equality, warmth, and dryness.
Such a climate of course is not to be found in Britain. It is believed that there is only one accessible region, in which these atmospheric conditions are found united; and this is in Egypt.

A bronchitic patient, who has himself derived great benefit from a winter in Egypt, says, that it is not in all Egypt or in any part of Egypt at all seasons, that the atmospheric conditions referred to are fulfilled.

No part of the Delta, he says, is suited for bronchitic patients at any time of the year, and from the beginning of May till the middle of October the heat in every part of Egypt is too great for a native of the North of Europe. But during the months of November, December, January,
February, March, and April. The invalid may enjoy in middle or upper Egypt, a temperature, warm, but not oppressive, and equable beyond that of any other known region, while the absence of rain, and the vast deserts on each side of the valley of the Nile, ensure a perfect dryness. The purity of the atmosphere. At Thebes, during the months of December and January, the mean temperature of noon is about 70° with a mean difference of nearly 6° between day and night. During the months of March and April, a similar climate is to be found in the latitude of Cairo, with still less difference between the temperature of the day, and that of the night. This equable warmth cannot
but have a beneficial effect in allaying the irritation, and restoring the healthy functions of the mucous membrane.

It is in the desert, however, that the invalid may expect to reap the full benefit of the Egyptian climate.

The same patient describes it as being at once, salmy and bracing, imparting the most delightful relief to the organs of breathing, and infusing vigour, and energy, into the whole system.

He says, that next to Egypt, the best climate is that of Málaga; the warmest and most equable in Europe.

There, during the month of May 1853, the thermometer ranged, at 2 o'clock P.M., from 69° to 73°; while the range of the lowest night temperature
was from 67° to 71°. Shewing an extraordinary equality.

During summer however, Malaga also becomes too hot, while at the same time, the transition from it to Britain would be too great. Therefore he says, it is advisable to spend the month of June in the best intermediate climate that can be found, such as that of Cintra.

In recommending a change of climate for a bronchitic patient, he says, the following is most likely to prove beneficial. "Leave Britain as a first step to reach Cairo, in the latter part of October, leave it for Upper Egypt, about the middle of November, remain there at Luxor for head quarters, till the middle of February, then return to Cairo, and spend a month or six weeks in the.
adjoining desert, leave Egypt in the latter part of April, and pass the month of May in Malaga, and the month of June in Lintra.