1857

Diagnosis

On diseases of the Heart

by

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Diseases of the Heart

Perhaps Caleb
This is a disgracefully written.

Heavily full of bad spelling.

Disease is to omit written disease.

Delerium means twice.

Vomiting.

Severe.

Mimicked.

Venerial.

Immediately.

Deficient.

Residence of.

Disorder.

Perhaps.

Calébre.
On diseases of the Heart.

Cardiac affections which cause a large proportion of the mortality in Britain, are generally directly or remotely a consequence of inflammatory action affecting the Pericardium, or the internal lining membrane of the Heart; the former constituting Pericarditis; the latter Endocarditis, with its various results. These cases occurring in young persons are generally to be referred to inflammatory action, chiefly in connection with Rheumatism, but many cardiac affections seen in advanced life may result from changes affecting the arterial system common to that age, such as thickening and rigidity, with deposition of cartilaginous or bony matter which occurring in the valves causes thickening and other morbid results, unfitting them for their functions.

We are now greatly assisted in our diagnosis of heart diseases by the "physical signs", which since the days of Linnec have been an object of attention among medical men, of late,
different kind of bruit are heard on auscultation depending on obstruction to the free passage of blood through the heart, which in conjunction with other symptoms enables us to form a pretty correct diagnosis as to the nature and seat of the affection. By percussion also we can in most cases detect other abnormal conditions, such as effusion into the Pericardium, Hypertrophy &c.

We shall first consider inflammation of the Pericardium, Pericarditis.

Pathological characters. The effects of inflammation are observed to be here as in other parts of the body, redness and various effusions according to the nature and intensity of the inflammatory action; the redness is in most cases widely diffused over the membrane or occurs in patches giving it a mottled appearance.

The effusion of lymph may cover all the membrane from a thin layer to two or three lines in thickness or occurs like the redness in limited portions of it only. Its appearance is different from that of lymph effused all other serous membrane
in consequence of the motions of the heart in the pericardium, for as the two layers are closely applied to each other, the friction causes a reticulated or honeycomb appearance of the lymph. It is at this time and before adhesion between the surfaces of the pericardium has taken place that the "fruit de proterre ment" or rubbing sound caused by the friction of the two layers on one another, is heard. When the lymph is not soon absorbed adhesion takes place, and the disease is arrested, but only for a time, as hyperpyrexia commonly results from the heart's motion being embarrased. It is unfortunately seldom in our power to arrest pericarditis (especially when connected with rheumatism) before adhesion takes place; both early and active antiinflammatory must be employed to cut short the disease, and favour absorption of the effused lymph, so as to escape not merely the immediate danger, but also the remote and scarcely less fatal results. White patches of organized lymph on the
free surface of the pericardium observed in the hearts of persons, who at one period of
their lives had had pericarditis and recovered their health by early and pious treatment
adhesion can in some cases be prevented and only those traces of it left.

The effusion when thrown out in the liquid form contains lymph, blood, or pus, differing
from the serous characters observed in "hydrops pericardii" of a pale yellowish color
amounting generally to about 8 ounces.

When absorption is resumed, the serous portion is taken back into the system, and
coagulable lymph remains.

The effusion may gradually change into pus, especially when the vital powers are weak, and adhesion consequently be prevented. The presence of adhesion does
not always prevent a recurrence of inflammatory action, leading to purulent deposits in the organized lymph, or even tubercular deposition if the patient is of
strumous diathesis.

As regards the chronic form, from the known tendency of adhesions which attends
on chronic effusions, there is difficulty in procuring that result (i.e. absorption) and the fluid may collect to a great extent in the cavity of the pericardium, impeding the heart's action.

Symptoms. It is not an easy matter to distinguish this affection and Endocarditis, as the symptoms are very similar; and the two affections are often combined.

The most characteristic symptoms are the following; pain in the cardiac region; indeterminate action of the heart, often greatly increased by even slight exertion, occurring especially when the patient is about to fall asleep, and causing anxiety and alarm, with dyspnea and rather hurried respiration. Delirium often occurs during inflammation of the pericardium, sometimes however so urgent as to simulate Phrenitis, and mislead the unguarded practitioner. It probably arises from interference with the due supply of blood to the brain, as no well marked appearances of cerebral inflammation have been observed after death in cases where the delirium was violent. It was formerly
ascribed to metastasis of inflammatory action to the brain. In Dr. Waterton's lectures there are several interesting cases of this fluid related. (In some cases also there is incessant vomiting. But these are not characteristic symptoms.) Occasionally serum is seen in the ventricles of the brain, but insufficient to account for the symptoms, the products of inflammatory action such as lymph and pus, have not been observed. When the effusion is fluid there is great inability to lie on the left side, the patient usually lies on his back, and is unwilling to change his position. When oedema occurs however, the symptoms are not so disturbing, and the pulse is not fluctuating, and irregular and weak as it is when there is fluid effusion, but full and its strength generally unimpaired; the blood is not drawn from a vein exhibits in a high degree the buffed and engorged appearance, which is always best observed in rheumatic cases, from the greater proportion of fibrin in the blood. There is accompanying inflammatory fever.
Physical Signs. The bruit de frôtement already alluded to is generally heard on the third or fourth day, gradually increasing in intensity, and accompanying both sounds of the heart. It is caused as already mentioned, by the friction of the opposed surfaces of lymph, described by Dr. Watson as the 15 and 16 sound, a term which aptly expresses its character.

When complicated in the Intercardiitis the bellows murmur may be heard masked by the friction sound. It is of uncertain duration however as it may only last a few hours during the whole course of the disease, as the lymphs may be absorbed, adhesions may take place or fluid effusion may separate the opposed surfaces from one another.

As already mentioned the heart's action is unimpaired when adhesion occurs, so that the disappearance of the "bruit de frôtement" or the strength of the heart's action leads to the supposition that adhesion has taken place, but if the pulse is weak and irregulare, we suspect fluid effusion to be the cause of the disappearance of the to and 16 sound.
Fullness of the left side under the sternum is observed when there is effusion into the pericardium, which is known further by dulness on percussion in that region, very considerably if the effusion has taken place to a great extent, it may even be found to the right of the sternum and occupy a large part of the left side of the chest. The sitting posture is most favourable for its detection, as, when the patient lies on his back, the fluid gravitates to the posterior part of the pericardium.

Prognosis. Adhesions generally cause progressive cardiac decline by limitation of the heart's action. Opinions of medical men are divided, as to what extent adhesion produces subsequent decline; some considering that a fatal result must issue in a few years at furthest by hypertrophy &c others ascribe the hypertrophy to Endocarditis which is so often complicated with the Pericarditis and consequent effusion of lymph on the valves, (which was perhaps overlooked) the results all being ascribed to the latter.
There is no doubt however that adhesions uncomplicated are equal to the production of hypertrophy etc. It is not however considered so fatal as it formerly was. From Lewis statistics, penearditis proves fatal in about a fourth of those attacked, as shown by post mortem examination of those patients who had died of other diseases and in whom traces of former pericardial inflammation were evident. When acute it lasts generally from 7 to 14 days, during which time the patient recovers or succumbs. The fatal event is caused by increasing pressure of fluid on the heart, causing feeble fluttering action and gradual cessation of its movements, masked by tendency to syncope, irreglar pulse, great hypopnea amounting almost to orthopnea and death.

Sometimes death occurs suddenly from syncope, but this mode of fatal termination is not so frequent as might be supposed. When the effusion has become chronic the patient may alternately improve and yet worse for two or three months, when he either slowly recovers, or succumbs from the attendant
irritation. When acute rheumatic fever is present in the lungs, we should prepare ourselves for metastasis to the heart (which is unfortunately of such frequent occurrence) and early oppose the first symptoms, often repeating our examination of the heart, as the physical signs sometimes precede the symptomatic indication. In the course of continued fever pericarditis is frequently observed as a complication. Pleurisy and pneumonia are also known to occur simultaneously with pericarditis, and pleurisy of the left side may obscure the nature of the affection, but the friction sound of pleurisy may be distinguished in most cases from the bruit de poulsment by its ceasing on the patient holding his breath. Young persons are more liable to pericarditis from rheumatism, those more advanced in life, and in women also the disease is more fatal.

Treatment. When acute, active antiphlogistics must be had recourse to as early as possible. Moderate general bloodletting, or a full stream, may be practiced, so as to effect a sedative result.
on the heart's action; and lessen the quantity of blood, so as to diminish the labour of the organ. This must be done early, the sooner especially on this account, that it would not be advisable at a later period when effusion has taken place, as from the pressure outside, the introduction of the proper amount of blood is apt to cause fatal oppression of the heart's action. It often repeated bleedings may be had recourse to, in preference to general depletion, as being more effectual in arresting the immediate danger, and probably diminishing the ulterior effects of this inflammation, but the great advantage of this method is, that it is far less liable to cause irretrievable depression of the heart's action.

The tartar emetic should follow, given in small doses, so as to cause slight nausea without producing any great depression on the heart's action. Mercury has been much extolled in this affection, and certainly cases every now and then do occur where its efficacy is undoubtedly,
yet, it is probable that the good effects of
this remedy have been greatly overrated. It
probably acts variously in different individuals
according to the constitution. It is best
given in conjunction with opium, in the
dose of 3 grains of calomel with ½ or ½ a
grain of opium every four hours until the
constitutional effects are manifest, and
the symptoms moderate, continued more
gently for a short time, and gradually
abandoned; lest re-accension of inflammatory
action occur. If the constitutional action
of mercury is tardy in coming on, it may
be accelerated by injection of Hg. hydrazo-
in the apex or groin. The antityphlogistic
regimen should be strictly maintained
and gentle laxatives may be given.

Medical men are not agreed regarding
the quantity of blood to be taken in this
affection; some affirming that large
collection is most efficacious in checking
the disease, others, that it increases the
embarrassment of the heart's action, and
not only checks the immediate action of
the heart, but renders it defective, giving
rise to irregular pulse and great Feebleness of the heart's action. If the case has not been seen till a late period of the disease, general bloodletting would be hazardous, and local abstraction alone advisable, indeed if thought necessary by, Colonel and opinion. When the acute stage is over and effusion present, a blister applied over the cardiac region is likely to prove useful, and sedatives may be given such as Digitalis or Hydrocyanic acid to moderate the excited state of the heart, and the anxiety and nervous restlessness which often continue. When the case has become truly chronic, blisters in succession with local bleedings are the chief indications of treatment, or tartar emetic or croton oil embrocation may be used, taking care to avoid excessive irritation, which obviously might prove injurious. Tincture or wine of ephellicum must evidently prove useful in some cases, especially those connected with rheumatism, which as we know frequently occur. The powder of the seeds is the most eligible
form of colchicinum, believed by many and probably with good reason to be more certain in its action than either the brucine or uric. Mild mercurialism may be tried with the object of favouring absorption of the effusion. The patient must be put under the tonic regime (cautiously introduced) he must carefully avoid excessive bodily or mental exertion, and especially exposure to cold; he must be allowed a moderate nourishing diet, especially of animal foods, avoiding however stimulating drinks; rest, active action be again induced. Indication of Potassium may be administered with probable benefit. As a last resource we sometimes have recourse to paracentesis of the pericardium, but it is only in idiopathic cases where we think of such a procedure. Such idiopathic cases being of rare occurrence the operation is seldom performed. No practitioners would think of performing the operation when there was organic disease of the heart or lungs present.
Endocarditis.

Pathological characters. Three appearances are usually seen in this affection, according to its stage or duration. 1. Redness connected with its first attack, with thickening and softening of the membrane, accompanied with exudation of lymph. As regards the redness it may vary from a mere trace to extension over the whole endocardium, chiefly seen however at the orifices and valves. Some have doubted the inflammatory origin of it in some cases, but if we have symptoms of cardiac affection before death, and more especially if there exist any appearances of effusion of inflammatory products such as lymph, we can have no doubt. From the constant motion of the blood, lymph effused may be washed away, but it has a tendency to adhere to particular parts of the internal surface, especially the valves, which renders the inflammatory origin conclusive. 2. The appearance of the lymph may
organized, and adhering to the parts alluded to especially, may vary in aspect and situation. In rheumatic cases pericarditis is generally complicated with endocarditis more or less, but as the latter disease has not such a tendency to diffusion, it is consequently observed more limited, such as the appearances of opaque white deposits under the endocardium in the interior of the ventricles, (especially the left which is the common seat of the affection), but the parts most affected are the valves, mitral or aortic, more particularly by the fibrinous attachments from which they arise. They become thickened, shortened, and less translucent from lymph effused between the membrane and fibrinous substance, or it may be deposited outside the membrane, consequently giving a tendency to adhesion of the valve to the sides of the cavities of the heart, and impairment of its important functions. There are also peculiar want-like excrecenses observed on the valves, the
formation of which has not yet clearly been made out; they are not unlike venereal marks; some are firmly attached to the valve, others but loosely, and easily detached. They tend much to obstruct the passage of the blood.

A peculiar arrangement of them has been observed by Dr. Watson (Lectures vol. ii. p. 267) a pectiniform arrangement extending from the corpus aerundii, to the outer part of the base of the valve, but not along the outer margin. Forming as it were two crescentic lines, one on each side of the valve, a short distance internal to its free edge. This depends apparently on the anatomical arrangement of the valve, since the fibrous tissue does not extend to the free margin at the sides, although it reaches the corpus aerundii in the centre of its free margin, consequently the two layers of endocardium in those situations alone form the edge of the valve, and as they are applied front to front, when the valve closes, any vegetations upon it would
there be swept off, so that they collect in the
concrescent line alluded to.
3. Then, at a later period we find the
lymph become much harder making a transition
into cartilaginous and even osseous matter, which
often surrounds and contracts one or more of
the valves, or it may extend into the substance
of the heart itself, from the bases of the valves,
whence the term isos Relation of the heart.
The inflammatory nature of these deposits have
been denied by some, apparently by reason of
their occurrence in old persons; in whom such
a state results from the common tendency
to osseous deposits at that period of life,
but there can be no doubt that inflammation
is a fertile source; especially rheumatic,
its commencement may be dated from an
attack of endocarditis in many cases, and
its progress traced by symptoms and physical
signs. In these cases it generally
occurs in persons under 50 years of age;
but examples are not wanting where it has
been found even in children.
In the auriculo-ventricular valve, it causes
the valve to appear like a horny partition-w
between the cavities perforated in the centre, and
the semilunar valves may become consolidated
do as to give the aortic and pulmonary orifices
a triangular or slit-like appearance, the valves
forming as if were a perforated septum across
them. Such a state of matters leads to
an unusual effort of the muscular fibres
of the ventricles to overcome the obstruction,
and consequently hypertrophy is the result.
The life of the patient is often greatly prolonged
by this provision for forcing on the circulation.
Also from the constant distention of the
avity of the ventricle, dilatation results, a
state of matters termed "eccentric hypertrophy."
Physical signs. As the symptoms of endocarditis
are very similar to those of pericarditis, we
should be able to make a correct
dagnosis without the physical signs; these
are the least complete which is a diagnostic
mark of great value. When best heard
about the third side, the obstruction may
be presumed to exist at the semi-lunar
valves of the aorta; those of the right side
(i.e. belonging to pulmonary artery) being seldom affected.
Obstruction of the auriculo-ventricular valves
is best detected about the fifth rib, and towards the apex of the heart. The bellows murmur could not alone indicate organic disease of the heart as it frequently occurs in nervous affections of that organ, caused by motion given to the blood, by the irregular contraction of the muscular fibres. If the bellows murmur occurs with the first sound of the heart, as high as the 3rd rib, obstruction to the passage of blood from the ventricle, by contraction of the aortic valves is the probable cause. If it accompanies the second sound some alteration of the valve must have taken place which allows of regurgitation into the ventricle, if it accompanies both sounds it generally indicates structure of the aortic orifice, with insufficiency of the semi-lunar valves. In cases of the aortic valves, the pulse is full and regular; but when the aortic valve is affected allowing regurgitation into the auricle, the pulse is irregular, not even corresponding in number with those felt at the chest, and the bruit de soufflet will be heard with the second sound of the heart, heard best from the apex of the heart over the ventricle. The aortic results.
of such obstructions are many. When the
vessels of the heart are contracted by the abnormal
deposits alluded to on the valves, or the latter render-
ed adherent to the sides of the cavities and to
each other, and thus made incompetent, re-
gurgitation resulting, it is plain that many evil
consequences will arise from such a state of the
circulation, indicated by peculiar symptoms.
For example, chronic bronchitis from the perma-
nently congested state of the lungs and embar-
rassed circulation is well known to be a frequent
cause of hypertrophy of the right ventricle and
the consequences resulting from such a state.
The valves there at last becoming incompetent,
there is consequent constriction of the great
veins opening into the right auricle, from
obstruction to the flow of the venous blood.
This must cause passive congestion in all parts
of the body and tendency to serous effusion.
The hepatic veins cannot empty themselves
with their accustomed freedom into the inferior vena,
and there results congestion and enlargement
of the liver. The portal veins will therefore
become affected and congestion will take place
in the spleen and intestines from whence the blood
of the portal vein is derived. This will cause
effusion into the peritoneum, termed ascites, and
the blood from the inferior extremeties being also
impeded, anasarca of the limbs will result.
The same cause acting on the superior cardiac will
cause congestion and effusion in the upper extrem-
ities and brain, whence results the coma-like
symptoms observed so often towards the close of
organic disease of the heart. The obstruction
may be so great as even to rupture some of
the capillaries in the brain, and thus cause
death by apoplexy.
Disease and
obstruction on the left side of the heart act
first by causing a congested state of the
capillaries of the lungs, which predisposes those
organs to inflammatory affections, bronchitis
and pneumonia, which cause urgent dyspnea
and often death by asphyxia, a common mode
of fatal termination in diseases of the heart.
In the capillaries of the lungs may give way, and
the blood be effused into the pulmonary cells,
a morbid condition termed apoplexy of the lungs.
Bright's disease of the kidney also frequently
intervenes in disease of the heart.

Treatment. As in Pericarditis, active antiphlogistic.
must be had recourse to whenever we are certain of our diagnosis. General bloodletting concerning which there has been much discussion, some French physicians advising it to be carried to a great extent, which has been found to fail however in this country. Dr. Watson remarks that the movements of the blood, being much retarded or brought to a stand by bleeding to syncope, must evidently favour the formation of deposits on the valves &c. by rendering the adhesion of the lymph more probable. The chance of subsequent removal of the inflammatory to the extremities, is also known in rheumatic affection of the heart to be diminished by much general bloodletting. Repeated local abstractions of blood is certainly much safer, and more to be trusted to. We may here also as in rheumaticus give mercury so as to affect the mouth as early as possible, with the object of promoting the absorption of lymph which may already be thrown out, and control its further deposition. In some cases by early and active treatment, we certainly succeed in effectually removing the disease.
and restoring the heart to its normal condition, but too often in the majority of cases, some of the changes already alluded to have resulted, which will ultimately cause death, the symptoms of such changes supervening sooner or later. These cases can only be considered objects of palliative treatment; by opium, digitalis &c. we alleviate the prostrations, being cautious not to push the latter remedy too far, lest it depress the heart's action too much, as to bring on syncope, which in all organic affections of the heart, is extremely dangerous, and often immediately fatal.

The patient must be put under the tonic regimen, avoiding stimulants lest inflammatory action be excited in the various organs predisposed to it by the congestions. If Bronchitis or Phlebitis supervene we must have recourse to general bloodletting and antiphlogistics which however must only be carried so far as to relieve the urgent symptoms. If客戶, auricular &c. supervene we may give digitalis, such as digitalis, Sfp. Athers, &c. bi-
turate of Potash &c. and the patient may be allowed a small quantity of tea to his
ordinary diet. It is worth of observation that Bright's disease of the kidneys, resulting from diseases of the heart, is more under the influence of diuretics, than when coming on slowly and uncomplicated with any other affection.

Different action of the heart, or Syncope, inordinate action, or Palpitation, and Painful action, or Angina pectoris, (although often symptomatic of organic disease,) frequently occur idiopathically and are usually spoken of as functional diseases of the heart.

Defective action of the heart is not of such frequent occurrence as the inordinate action. It occurs chiefly in weak persons, more frequently in females than males. Often observed when there is too much mobility of the nervous system, seen especially in hysterical females, and in persons labouring under long continued mental depression or anxiety.

As regards the treatment, little is to be done, without the proper regimen, and this must be enforced when the stomach will admit of it. Small doses of wine may also be allowed.
Inordinate action of the Heart.

This is the most common form of functional disorder of the heart; and is thought by many to be more prevalent now a days than it formerly was. This functional disorder is in general easily recognized from that depending upon organic disease. There is sometimes pain felt in the region of the heart, independently of pressure and often extending to the shoulder and down the arm; the impulse of the heart is increased, in some cases to such an extent as to be distinctly visible at a distance. If we lay our ear on the chest we find the sounds also increased in intensity. Sometimes the pulse is intermittent, but this is seldom observed, irregularity of the heart's action often very great, such as is seldom or never seen in organic disease. There is often lassiness of spirits approaching to melancholy. Sometimes the bruit de soufflet may be heard but this is in general slight and of short duration, and often disappearing even during the time we are auscultating the chest.

When we know that such conditions of the heart's action occur independently of organic disease, we apply
to them the term of Irritable Heart. The unusual irritability of the heart is often remarkably observed in some persons, when taking little exercise, when enjoying less sleep than usual, and when under the influence of mental anxiety. Dr. Christian had known it to take place from excessive smoking. It is also common in convalescents from acute diseases. Also in certain chronic diseases, particularly nephritis. It is quite certain that this irritable condition of the heart's action may go on for years, without organic disease supervening itself; but it is also certain that such organic disease is very liable to supervene, and therefore we must be cautious in giving an opinion as to the ultimate result of such a case.

We know such functional derangement of the heart's action occurring diagnostically, chiefly by the following marks. There is no fever. The patient may have complained for a long time, perhaps for years and yet we are unable to detect any enlargement of the heart. If there is any murmur sound at all it is only slight and soon disappears. The interval between the paroxysms is often great.
There are nervous symptoms. In organic disease the apex of the heart is felt beating lower than usual, usually below the sixth rib, in functional disease it may even be felt higher than usual, or nearer the sternum. In organic disease there is dullness on percussion over the cardiac region. The effects of exercise very characteristically, instead of the patient being rendered worse, he often expressed himself benefited, and the cardiac affection is often gradually diminished by muscular exertion.

Treatment. When this inordinate action of the heart occurs in full-blooded persons as it frequently does advantage may often be derived by local bloodletting either by cupping or leeches applied over the cardiac region, and by the use of such medicines as will cause a sedative effect on the circulation, such as Hydrocyamine acid and mixture of aconite, which are preferable to digitalis because the latter is liable to accumulate in the system and depress the heart's action suddenly. But in the majority of cases permanent relief is best obtained by attending to the tone regimen; so as to strengthen both vascular and nervous systems, and thereby render the patient less liable
to sudden impressions. Also by the use of such tonic medicines, as Stiel, preparations of iron, tincture and the bitter nigricia; and change of air and scene.

Painful action of the Heart or Angina Pectoris. Angina pectoris was first described by Dr. Stiel in his commentaries, who also gave it its name. Although Angina pectoris is not necessarily connected with organic disease of the heart, yet it seldom occurs well marked without some organic change having taken place. In some cases the heart has been found excessively loaded with fat; in others there has been a softness of the heart; in others disease of the valves or of the aorta, and in a great many cases ossification of the coronary arteries has been observed. Symptoms. These seem to be of the nature of cramps or spasm of the heart with inability to propel its contents properly. The patient is seized with a pain in the region of the heart, generally during some muscular exertion as when walking quickly, or up hill. It is a pain of a peculiarly alarming
character to the patient, who feels that he must stop and support himself, and as if another step would prove fatal, and cases have occurred where the patients have drooped down dead. The pain goes through to the back, and often shoots down the arm to the elbow or the left side. The pulse sometimes stops during the paroxysm, whence it has had the name of Syncope Auricularis. This peculiar affection occurs far more frequently in men than women. Thus in 88 cases collected by Dr. Forbes, eight only or one in eleven occurred in females. The ages in 84 of these cases are recorded and of these, 43 were above 50 years, and 12 or the one-twelfth of the whole under 50 years, so that we may fairly infer that this is a disease peculiar to advanced life. It is not yet clearly known what is the cause of this dreadful malady, probably the pain is of a neurologic character, depending on an impression made on the sensitive nerves of the heart but this is uncertain.

Dr. Jones in a number of bodies he examined after death found that the coronary arteries
of the heart were ossified, converted into bones, and constructed in their calices. He hence concluded that the paroxysms resulted from the circumstance, that when some increase of the muscular contraction happens to be called for, the increased supply of blood rendered necessary by the additional exertion is not capable of being furnished by the diseased nutrient arteries of the organ, that the heart comes to a stand because its muscular tissue is not duly injected with arterial blood. But later investigations showed that ossification of the coronary arteries is by no means found in all cases of angina pectoris, and that the coronary arteries may be ossified, and yet no angina pectoris be the result.

**Treatment.** The patient must be cautioned to avoid the exciting causes of the paroxysm. Walking up hills &c. He must be regular in his habits, live abstemiously, and preserve a healthy state of the digestive organs. He ought to take moderate exercise in the open air, avoiding as much as possible exposure to cold. Gentle purgatives ought to be taken from time to time.