

DISEASES OF THE HEART

DUNCAN

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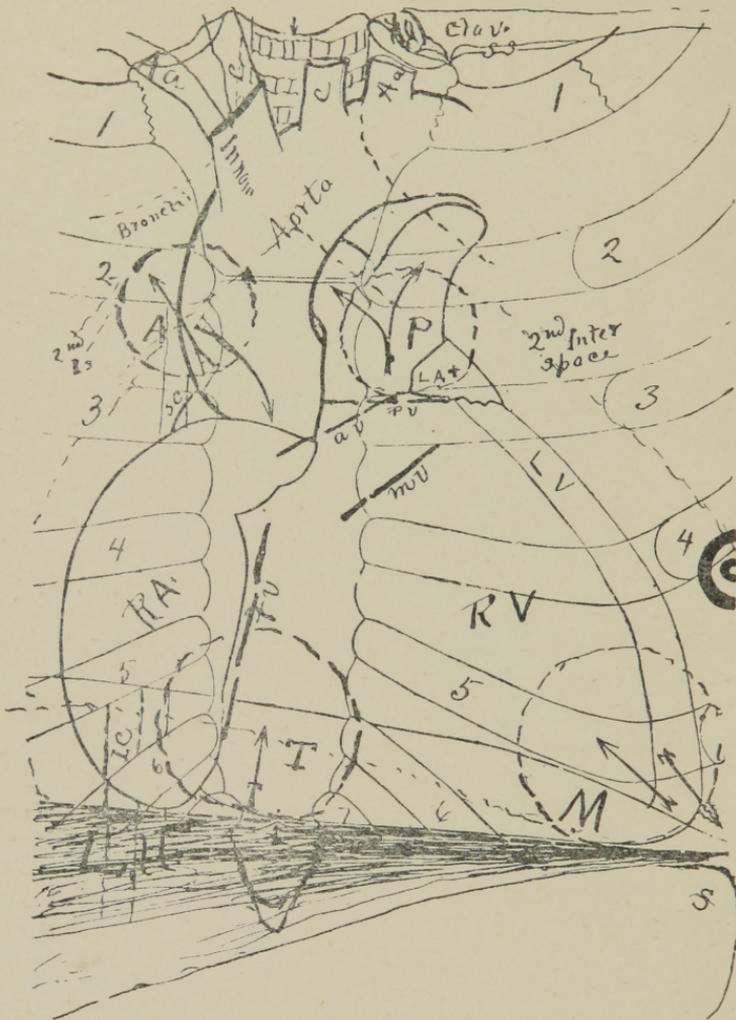


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A DIAGRAM OF THE HEART.

(After Ewart.)

1. Relative position of the heart, especially to the liver. The dotted line is the posterior border of liver behind heart. Only a small portion of the left ventricle L. V. is shown behind the right ventricle R. V.

The dashes marked t. v., m. v., a. v., and p. v., locate approximately the valve regions. The circle "M" site of loudness of mitral (*first*) sound. "T" site of tricuspid (*first*) sound. "A" location of aortic or (*second*) sound. "P" site of loudness of pulmonary (*second*) sound.

The arrows are explained in the text—see p. 15.

HAND BOOK
ON THE
DISEASES OF THE HEART
AND THEIR
HOMEOPATHIC TREATMENT.

BY

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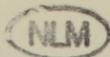
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"PÆDOHYGEA," "HOW TO BE PLUMP," ETC., ETC.

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DISEASES OF THE HEART.

A CLINICAL OUTLINE.

Diseases of the heart are most serious, often the most insidious and least understood of all the disorders that the practitioner may encounter. Hence the great necessity for clear and concise instruction upon this branch (and it is believed for an *elementary work*, plain and practical).

Those who would master diseases of this vital organ must make careful reviews of its peculiar anatomy (and dissect many hearts), comprehend its histology, understand the workings of its mechanism and the effect of various disorders of remote organs upon the heart as well as the etiological factors of occupations, habits, foods and drugs especially as revealed by toxicology and the provings found in our *materia medica*—as taught today in all thorough medical colleges.

The effects of stimulants, including whisky, beer, wine, tobacco, tea, coffee, etc., and all drugs as well as various waters and localities upon the heart should be familiar to the cardiologist. The principal diseases of the heart should be easily diagnosed by every physician. The salient points in physical diagnosis should be emphasized by constant drill. Life insurance societies find difficulty today in obtaining reliable examiners. The family physician should know about all the hearts in his field of labor. He would, if he could read the pulse aright.

Many people will not submit to a physical examination of the chest for fear serious disease of the heart will be discovered.

To capture the confidence of these people, especially ladies, demands both tact and the evidence of much general knowledge of the relations of the heart to other organs of the body. Here "a little knowledge is a dangerous thing" all around. People know that sudden death is often caused by disease of the heart and they infer that those who may have disease of this vital organ are liable to die suddenly, therefore the result of the examination should not leave them in doubt—"to live in fear and trembling all their days." [See "Diseases of heart causing sudden death," p. 54.] The physician can explain that there are many slight diseases of the heart as well as serious ones—functional as well as structural. He should explain that fear shocks the heart, stops it for a moment, during that time the blood leaves the brain and faintness is felt. We lay the person down so that the blood can get back more easily to the brain. Water dashed into the face shocks the nerves and starts the heart to more vigorous action. All should know that excitement and overwork are the chief causes of serious diseases of this organ; also that rheumatism is an accidental cause that all may be liable to. Digestive disorders may give rise to cardiac disturbances and *vice versa*. Functional disturbances when long lasting may bring about structural change. Physiology (Carpenter) tells us that "*concentrated* attention will disturb and derange any organ," so that great tact is often necessary in the diagnosis and subsequent management of cases with disease of the heart. Diverting the attention (as practiced by Christian Scientists so-called) may benefit some cases, while in others the strong will of the patient may be necessary to assist the work of a feeble heart and so prolong life.

The anatomical relations of the heart should receive the first diagnostic attention. Is the chest capacious? or is there constriction of the bony environment and organs? The heart occupies much lung space in the left chest, you know, and its function can be impeded or accelerated by the condition of the

lungs. A new motion of the heart has been discovered which is that of "lateral expansion," that takes place during expiration. When respiration is retarded as in asthma, emphysema, etc., the heart labors with difficulty. The heart lies upon the diaphragm and when the action of this septum is impeded, in any way, the function of the heart will also be disturbed. The left lobe of the liver it will be seen extends well under the heart, even to the left nipple line and when enlarged, or elevated by the organs below, must crowd the heart. [In one case of tumor involving the liver that came under the notice of the author, the heart was crowded up to the fourth interspace and well to the left. The person was young.]. The cardiac end of the stomach extends up behind and to the left of the heart and when distended with gas from tardy digestion, especially in cases of hypertrophy and dilatation the heart may be so crowded as to interfere with its function. Palpitation and arrhythmia are often due to indigestion. The pancreas beneath and the spleen to the left when enlarged especially, may, in cases of stomach indigestion, crowd upon the heart and thus interfere with its function. In many a case of a weak and failing heart indigestion is the first persistent and alarming complication. In spare people the visceral organs may be dislocated and brachycardia or tachycardia be the result, aggravated by a droop of the shoulders. In fleshy subjects the colon, instead of crossing the body just above the navel, as in the spare subject, will be distended and pushed high up. When severely distended with gas may crowd up and impede cardiac action. The chief cause of short breath in fleshy people, you know, is due to the disturbed abdominal viscera crowding upon the thoracic. Superficial respiration tends to increase the venosity of the system and weakens the heart. This condition is aggravated if there is also a stoop of the shoulders, perhaps due to hard work or injury to the back. In cases of hypertrophy of the heart especially of long standing in young, growing people,

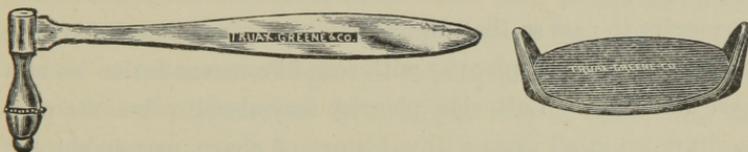
there may be an elevation of the left shoulder and a droop to the right with a slight rotation of the thorax forward and outward. This often explains the "precordial bulging." The object of this change of shape is to give the heart more room.

Malformations of the heart are not as frequently met with as are those of other organs of the body. In examining every case we locate the apex beat as the next step in diagnosis. Sometimes the viscerae are reversed, as in one instance that came before us. An x-ray picture brought out the cardiac and liver outlines, proving conclusively that the organs were reversed. Cases of infantile heart, with the right ventricle the best developed, are sometimes met in practice. There are usually other evidences of lack of development. The systemic circulation is deficient and cold hands and feet and anæmic headaches should direct the attention to the probable cause. Proper nourishing food and exercise can do much if the subject is young, to reinforce the heart and circulatory system. The foramen-ovale may be patulous giving rise to cyanosis. In infancy we will have a "blue baby." Plumping the new born baby down on its right side assists materially in closing this foetal inter-auricular opening. The right side position should be maintained for some time after birth. [This the author always advises; also on account of the large liver filling one-third of the abdominal cavity.] This position also helps to develop the left ventricle. The physician should carefully watch the development of this vital organ during the growing period.

The *attachments* and position of the heart are peculiar, and should next engage our attention. It is located as high up in the thorax as possible, so as to enable the aorta to arch properly. In fact, the base is well to the right, so that the aorta can describe a graceful curve and pass backward, downward, and to the left of the vertebral column, to which it is firmly anchored. The heart is supported by the aorta and other vessels at its

base and fascia. The next question now before us is: Is the heart dragging her anchors? Lack of integrity of the ligaments has much to do in developing anæurism (see p. 50) and serious systemic symptoms. It should be remembered that "when the blood is discharged into the aorta and pulmonary artery, these vessels are slightly *elongated*, owing to the increased blood pressure (*Senac*)." Marked depression at the throat pit suggests a possibly displaced heart.

The *cardiac outline* should now be ascertained by careful percussion. The pleximeter and hammer should be used,



although the fingers are often all-sufficient, but for deep percussion the instruments will outline the dullness better.

Have the patient hold the breath or percuss only during expiration, while sitting. A practical point here should not be overlooked. In comparative anatomy the heart is met as a double organ, with two cavities each, while in the human heart these four cavities should be tightly bound together with a firm, fibrous band. Lax fibre may account for a flabby, large heart. In the adult the left ventricle is the best developed, because it has most work to do to pump the blood around the whole body. It lies behind the right ventricle, but during contraction the heart elongates and rotates slightly to the right, if there is defective development of the right ventricle. Two points of practical value should be ascertained. 1st. Is the heart firmly bound together; and 2d, Is the muscular development normal or abnormal? In a rough way the heart should correspond to the fist clenched about the extended thumb. [This the author has verified repeatedly, even in children, at the Chicago Found-

ling's Home.] The heart increases in size during growth, and "even to advanced age" we are told.

The cardiac envelope should next be carefully investigated. "Precordial retraction" will suggest pericardial inflammation, involving the mediastinum and producing sinking in of the sternum. Inflammation here may leave a roughened surface and adhesions. These will be apparent by friction at the apex on stooping or irregular erratic cardiac action on lying down. Palpitation and auscultation will usually solve the problem. It is well to remember that the pericardium is a dense, serous membrane, but when swollen by inflammation the meshes allow corpuscles to pass so that fibrous bands may be left to retard the heart—just as after pleurisy with sero-fibrous exudation we may have adhesions. Left side pleurisy may also involve the pericardium, so in all cases with a history of sharp pain in the left side the condition of the pericardium should be ascertained by careful and repeated examinations.

The heart function deserves a close clinical study. It is a principle in physics that the motive power should be placed at the point of least resistance—nearest the centre of its work. Perhaps if the convolutions of the brain were unraveled the heart would really be at the centre of the body. The head is the chief end of man, therefore this thinking machine must receive a large share of blood—one-fourth or one-third. The stooped position of the student doubtless favors a still larger supply as evinced by the cold hands and feet. This position taxes the heart as we shall see. Walking, the erect posture and deep breathing are the best correctives; as the increased muscular tone assists cardiac action. The heart is a muscular pump of enormous power. It is the function of muscle to contract. From your histology you learned that although made up of involuntary muscular fibres there is here no fibrous sarcolemma, so that muscular stiffness, rigidity and fibrous degen-

eration does not take place in the heart muscle itself. Its fibres are stripped for work and work as no other muscles in the body can work. When the artery at the wrist or temple is hard and tortuous we may expect sclerosis (fibrous thickening and degeneration) not only of the arteries but of the valves and cordæ tendinæ. We look for this in large jointed rheumatic subjects.

A careful study of *the cavities* of this organ will help to master its diseases. It is lined throughout with dense serous membrane, thrown into rugæ by the peculiar anatomy. In the ventricles strong, muscular columns stand out, joined to fibrous bands, going to make up the bars that form the two-fold gate (mitral valve) and the triple one (tricuspid valve). You should know that at post-mortem three fingers may be passed into the right auricular opening, but only two will be admitted into the mitral opening. Inflammation here roughens this smooth surface and draws these valves out of shape, giving rise to cardiac murmurs and complications. When the ventricles contract these valves close, so as to prevent the blood going back into the auricular vestibules. The valves at the ventricular *outlets* are moon-shaped (semi-lunar), and it takes three of them to close the circular aortic and pulmonary openings. These valve segments are saucer-shaped and, as might be inferred, contain dense fibrous tissue. The outer lip has a firm border, corpus arantii, that often is the seat of disease, calcareous and fibrous. (See Valvular Diseases.) Although the heart handles so much blood it has a liberal supply of its own. The coronary arteries that run along the ventricular septum arise, you know, from the vestibule behind the aortic valves. This eddy current ensures a good cardiac supply, but like all eddies the tendency to deposit calcareous salts or fibrinous clots in the coronary arteries is very much facilitated thereby.

Its nervous connections. The heart is termed the emotional

centre, and the review of its anatomy will not be complete until we see how it is wired to the nervous system. Besides, the deep cardiac ganglia that are a part of the great sympathetic system, this is reinforced from the spinal. It also has branches from the pneumogastric, and besides there are superficial ganglia, and each ventricle is also well supplied with a separate ganglion. This vital organ must not fail from lack of nervous stimulus. Some of its functional disorders are due to this nervous arrangement, as we shall see. [Vide Palpitation.]

It has been ascertained that "The cardiac ganglia cause the rhythmic movements of the heart, while the fibres of the spinal accessory nerve, conveyed to the heart in the trunk of the vagus, restrain and inhibit its movements, even to the arrest of the heart's action." We infer that in tachycardia that the ganglia are irritated, while in arrhythmia the spinal nerves are doubtless involved. More decided involvement doubtless explains the spasm of angina pectoris.

The heart in action. The heart is likened to a pump. It is a most vigorous muscular accelerator of the circulation. It is believed that the blood is partly driven and partly drawn into the right vestibule from above and below. The valves in the veins and the valvular shape of the auricle prevent regurgitation or back flow. If there is obstruction anywhere in the portal circulation, especially in the liver, the function of the heart will be disturbed. Let us study its workings. This right ante chamber is filling with blood while the ventricles are contracting. After a brief pause the tricuspid valve opens and the blood is drawn into the ventricle, a short pause ensues, then comes the contraction and the blood rushes into the pulmonary artery, while the valve here closes as the ventricle relaxes. At the same time the blood from the lungs returns by four vessels and fills the left auricle or antechamber. With the ventricular relaxation the blood is drawn in and forced into the powerful

left ventricle which soon forces it out and into the aorta and all over the body by its tremendous contraction. The double action of the heart is really eccentric, for with every ventricular elongation the apex is lifted, and drops down and back with each relaxation. It is well to place the patient in various positions while examining its action. Examine it also at various times a day.

The systole corresponds, you know, with the first sound of the heart. The second sound is diastolic. They have been likened to the expressions "Lubb-dup—lubb-dup." The first sound is therefore prolonged while the second is short and sharp. Many theories have been presented to explain these sounds, but the most recent one is that advanced by Sir Richard Quain who believes that the first sound is produced by the blood being forced *against the aortic and pulmonary semi-lunar valves*; while their closing produces the second sound. If this is true it will help to simplify the heart sounds and assist in reaching a ready diagnosis in endocardial diseases.

Taking the pulse. The first usual step in heart diagnosis is to take the pulse. The Chinese, who are reported to diagnose most diseases by the pulse, place three fingers on the radial artery and sometimes both hands. The character of the (1) blood-flow, (2) its conduits and (3) the condition of the heart-pump are the three points of inquiry. Rapid flow goes with fever or palpitation. When the thermometer is in the mouth to take the temperature, then is a good time to take the pulse. The mind of the patient will be centred upon holding the thermometer and leaving the pulse uninfluenced. Put the arm at rest as in the lap and grasp the pulse with the fingers, while the thumb rests upon the unfeeling radius. Hold the pulse for a full minute, so that the blood will have gone at least twice around the body. The character of the artery under the finger is the first point to note. It should be *smooth, soft, compressible*. If

hard and tortuous it speaks of a diseased condition. (See Atheroma.) If the flow is "shot-like" ("a water hammer pulse") it tells of aortic disease, described elsewhere. If the flow is irregular, now rapid and full, now slow and feeble, the cause may be remote. A slow pulse (bradycardia) may be constitutional or muscular, the same is true of arrhythmia. The frequency of the intermissions should be noted by repeated examinations. They may be stomachic or muscular. If increased by walking the condition may be serious. (See case reported.) It is sometimes a result of disease. Several drugs cause an intermittent heart. The condition of the blood-stream should be read in the pulse. In anæmia or hydræmia the action is usually rapid, and the artery is not full, and therefore easily compressible. If the artery is full and tense, without fever or nervous excitement, we may expect to find hypertrophy. With the micro-stethoscope the pulse may be auscultated, but the fingers should be the *tactus eruditus*. Now the radial and temporal arteries may be read together. The pulse of both wrists should also be compared. The carotids may be interrogated. The pneumogastric nerve passes down here, you remember, so that slight pressure may shock the system, as well as frighten the patient.

In auscultation of the heart, as we have four sets of valves, we are obliged to listen at four different points. Remember that the blood carries the sound along, therefore we listen for the closing of the valves at the points indicated on the diagram. (See frontispiece.) It will be found to be the most satisfactory to take the left side of the heart first, beginning with the mitral valve. If this valve is normal the two heart sounds should be clear and distinct. We presume also that the other valves are in a normal condition. The next set examined should be the aortic. Then the pulmonary, best heard at the second interspace, may be interrogated; and, last of all, the tricuspid, over the ensiform cartilage. If there is any suspicions that the

ventricles do not contract fully or synchronously, the tricuspid valves should be auscultated after the mitral, and in rapid succession. The same plan may be followed in auscultating the aortic and pulmonary in a diastolic murmur.

All abnormal heart sounds are termed "murmurs." It is well to place the person examined in various positions, as sitting and lying, as well as standing. It should be remembered that a ventricular murmur may disappear when laying the patient down.

One disagreeable feature about heart examination is the necessity of disrobing. Fortunately the new stethoscope makes the heart sounds so distinct that many cases can be examined outside of light covering. It is always well, if the patient is at all nervous, to begin in that manner. To oblige you the chest will be gradually exposed. The flat hand may be passed under the clothing and the apex beat located by the finger tips. If found at the normal point we may usually exclude both hypertrophy and dilatation. If the lower part of the micro-stethoscope is removed, the flat surface (warmed, if the day is cold) may be placed over the various valve regions even under the clothing. If the ear is used, ask for a linen handkerchief to cover the chest. At the mitral region we listen for the normal heart beats, also over the ensiform cartilage. At the aortic region (second interspace) we hear best the sharp click of the closing valve; the same is true when we listen over the pulmonary valve region. If the sounds are not normal then we go over the regions again and again, to differentiate.

Now study and compare the chart given as frontispiece. The arrows are intended to show the character of the murmur.

Commencing at the apex (just outside and above) we may have a "thrill," limited to the apex and well to the left. That indicates mitral obstruction or stenosis, sometimes called an onward mitral murmur, and is presystolic in time. The arrow points downward. This disease is a rare one. The other arrow

here represents an insufficiency—a regurgitant mitral murmur. That is systolic.

Coming now to the right ventricular region a tricuspid regurgitant murmur is indicated by the arrow. That is systolic occurring during the severe ventricular contraction.

Now the aortic valve should be carefully examined. If there is obstruction or stenosis here (as may be found if there is also mitral regurgitation or insufficiency), then we will find the murmur transmitted outward. The outward arrow indicates an outward obstructive aortic murmur. If we have a regurgitation or backward flow then the sound will also be conveyed backward. The downward arrow indicates a regurgitant aortic murmur—aortic insufficiency. When we have both as well as defective mitral valve the diagnosis is difficult and confusing. (See Clinical Illustrations, whistling heart.)

The pulmonary valve is not often diseased except as in disturbed respiration. The murmur most frequently heard here is hæmic and in the diagram is represented by a two-headed arrow with a small p on the stem. It indicates an outward pulmonary murmur. Regurgitation is so rare that the downward arrow is omitted.

The next problem to solve is whether the murmurs are endocardial, (inflammatory or degenerative) or muscular. To determine that we proceed by exclusion.

The prominent physical signs of diseases of the heart should be recalled with every case examined. It takes constant practice to become an expert cardiologist and often repeated examinations to settle obscure points. The duties of life insurance examiner give experience along a certain line of cases, but none has a finer or more varied field than the family physician. Children are willing subjects and their record should be taken at least twice a year; four times would be better. No heart should go wrong under proper attention. In these days of athletics muscular and nervous strain should be prevented by close attention and proper management. More people would live longer if this vital organ received intelligent attention.

DISEASES OF THE HEART.

REVIEW QUESTIONS.

PHYSICAL SIGNS OF HEART DISEASES.

1. Precordial retraction is diagnostic of what?
2. What causes precordial bulging?
3. When is the apex beat found well to the left?
4. When to the left and downward?
5. When displaced to the right?
6. When is the heart impulse almost imperceptible?
7. Signification of excessive heart impulse?
8. Signification of a purring sensation?
9. Cause of grating sound?
10. Pulsation in right second intercostal space?
11. Pulsation apparent in jugular veins?
12. What does hardness, loss of elasticity and tortuousness of the arteries signify?
13. Intermittent or irregular pulse is diagnostic of what?
14. When is the pulse beat slow, firm and prolonged?
15. When is the pulse shot like?
16. The paradoxical pulse—what is the cause?
17. Intermittent action of heart signifies what?
18. Cause of irregularity of rythm?
19. Signification of palpitation?
20. Increased area of dullness is diagnostic of what?
21. Describe difference of heart sounds in the fleshy and spare?

22. Increase of first sound over ensiform cartilage denotes what?
23. Exaggeration of second sound at same spot means what?
24. Suppression of first sound what?
25. When is second sound suppressed?
26. When doubling of heart sounds?
27. Describe murmurs and varieties.
28. Define precordial murmur.
29. Varieties of endocardial murmurs as to cause?
30. A systolic murmur heard loudest at apex, what?
31. Systolic murmur over ensiform cartilage?
32. Harsh systolic murmur at second intercostal space on right side of sternum?
33. A whistling or musical murmur signifies what?
34. Diastolic murmur heard over aorta?
35. A systolic murmur over pulmonary valves?
36. A presystolic murmur at apex?
37. What order in frequency of endocardial murmurs?
38. What combinations of murmurs are met?
39. Character of hæmic murmurs, where detected?
40. Venous murmurs and where heard?
41. Describe dynamic murmurs, where and when heard?
42. Differentiate pleuritic sound from heart murmurs?

FUNCTIONAL HEART DISEASES.

1. How may heart disorders be classified?
2. Name the chief functional diseases?
3. What other name is given them?
4. Define Palpitation of the heart—functional?
5. Give the principal causes?
6. What conditions give rise to nervous palpitation?
7. Causes of dyspeptic palpitation?
8. How does rheumatism cause palpitation?
9. Differentiate functional palpitation from structural?

10. What are the alarming symptoms?
11. Give outline of treatment of palpitation?
12. Name the chief remedies and indications.
13. Give symptoms of Weak heart.
14. What are the chief causes?
15. What pathological condition may be present?
16. Give outline of treatment.
17. Name the principal remedies for weak heart.
18. Give diagnostic signs of Exophthalmic goitre?
19. Nature and pathology of this disease.
20. Describe its course and effect upon heart.
21. Give prognosis.
22. Enumerate the supposed causes.
23. Give management and remedy indications.
24. Diagnose Angina Pectoris.
25. What is its etiology?
26. Describe an attack.
27. What is its pathology?
28. What is the prognosis?
29. Describe management of an attack.
30. Give remedies that may be indicated.

STRUCTURAL DISEASES OF THE HEART.

1. Enumerate the structural diseases of the heart.
2. Describe Hypertrophy of the heart and forms.
3. Give the diagnostic symptoms.
4. Give the causes of this disease.
5. Course and sequale of this disease.
6. Give management of a case.
7. What remedies may be indicated?
8. Diagnose Dilation of heart.
9. Give the usual causes and forms.
10. Give physical signs.

11. What complications may be met?
12. Give management and remedies.
13. Describe Atrophy of the heart.
14. Give the causes.
15. Diagnostic signs.
16. Give management and indications for remedies.
17. Define a Fatty heart.
18. What are the principal symptoms?
19. Give the prognosis.
20. Describe the management of a case.
21. Give chief remedies and indications.

INFLAMMATORY DISEASES OF THE HEART.

1. What is Pericarditis?
2. Enumerate the chief causes.
3. Is the inflammation usually general or circumscribed?
4. Describe an attack giving the prominent symptoms.
5. Give the stages of this disease.
6. Give the serious symptoms.
7. Give the physical signs.
8. Give the prognosis.
9. Describe the management.
10. Give remedies, order and symptoms.
11. What is Hydropericardium?
12. Give its principal symptoms.
13. Outline the treatment and give remedies.
14. Define Carditis or Myocarditis.
15. Give diagnostic symptoms.
16. State the complications.
17. Give treatment and remedies.
18. Define Endocarditis.
19. Is it a primary or secondary disease?

20. Causes for each.
21. Give the chief symptoms.
22. Differentiate endocarditis from pericarditis.
23. Enumerate the complications that may arise.
24. Give sequale that may follow an attack.
25. Describe management of an attack.
26. Outline remedies that may be indicated.

VALVULAR DISEASES OF THE HEART.

1. Enumerate the valvular diseases.
2. Causes of valvular lesions.
3. Pathology of valvular changes.
4. Which valve chiefly affected in young people?
5. Describe Mitral Insufficiency.
6. What are the chief causes and pathology.
7. Give diagnostic signs.
8. What is Mitral Stenosis.
9. What are the principal causes?
10. Give its diagnostic signs.
11. Which valve is most often affected in the aged?
12. Describe Aortic Insufficiency.
13. Give the causes therefor and sequence.
14. Give the diagnostic symptoms.
15. Describe Aortic Stenosis or obstruction.
16. Give the causes and complications.
17. Enumerate the diagnostic signs and symptoms.
18. Sequale of advanced mitral and aortic valvular disease.
19. Describe Tricuspid Insufficiency.
20. Give the causes producing it.
21. Give the diagnostic signs.
22. Complications and sequale.
23. Describe Tricuspid Obstruction.
24. Give the causes thereof.

25. Diagnostic signs.
26. What is cause of Pulmonary Obstruction?
27. Give diagnostic signs.
28. Give signs of Pulmonary Insufficiency.
29. Give order of valvular involvement.
30. What results when compensation ceases?
31. Give management of cases of valvular lesions.
32. Give principal remedies and indications.
33. What is meant by atheroma?
34. Describe aneurism.
35. What remedies have arrested aneurism?
36. What is varicosis?
37. What is embolism?
38. Give curative remedies.
39. Give diseases of the heart that cause sudden death.

HEART REMEDIES.

1. How would you classify the heart remedies?
2. Enumerate the inflammatory medicines.
3. Enumerate the drugs for structural change.
4. Give the chief functional heart remedies.
5. Give the ones where pain guides in the selection.
6. Outline the *Aconite* heart attack.
7. Describe the *Veratrum Viride* heart.
8. Give the emphatic heart symptoms of *Bryonia*.
9. Outline a case where *Spigelia* is the remedy.
10. When would you give *Belladonna*?
11. Give conditions and symptoms calling for *Digitalis*.
12. Symptoms calling for *Kali carb.*
13. When and why would *Colchicum* be indicated?
14. What are the symptoms for *Arsenicum*?
15. Combination of symptoms *Cimicifuga* would relieve.
16. Outline a *Kalmia* case.

17. Give symptoms calling for *Squilla*.
18. What are the conditions demanding *Æsculus*?
19. Outline the *Cactus* cyclone.
20. Describe the *Apis* heart case.
21. When is *Apocynum* called for.
22. Combination of symptoms met by *Hellebore*.
23. When is *Lycopodium* indicated?
24. Describe the *Mercurius* heart case.
25. When would you call *Sulphur* into action?
26. When would *Arnica* meet the shock of battle?
27. Where has *Plumbum* done good service?
28. What symptoms call for *Naja*.
29. When would you think of *Lachesis*?
30. Where would *China* come in?
31. Describe a *Phosphorus* heart.
32. When could you depend upon *Ferrum*?
33. Give the sphere of *Nux Vomica*.
34. When may *Ipecac* be relied upon?
35. What class of cases are benefited by *Hydrastis*?
36. When and why would you call on *Ignatia*?
37. In what cases does *Crataegus* promise to be helpful?
38. Describe *Moschus* heart effects.
39. What heart symptoms are relieved by *Gelsemium*?
40. Effect of *Bromine* on the heart.
41. Symptoms cured by *Spongia*.
42. Cases cured by *Iodine*.
43. Effect of *Lycopus* on the heart.
44. Cases and symptoms calling for *Veratrum alb.*
45. Symptoms and conditions met by *Aurum*.
46. When would you think of *Rumex*?
47. Symptoms calling for *Tartar emetic.*
48. When would *Lilium* be indicated?
49. The heart of *Lithium*.
50. The *Tobacco* heart, describe it.

51. What cases call for *Calcareæ*?
52. How does *Cuprum* affect the heart?
53. What is the effect of *Phytolacca*?
54. What conditions call for *Baptisia*?
55. When would you use *Amyl Nitrate*?
56. Give the heart symptoms of *Camphor*.
57. Describe the *Agaricus* heart.
58. When might *Pulsatilla* be called for?
59. What heart symptoms does *Sepia* cause?
60. Symptoms calling for *Cocculus*.
61. The heart effects of *Badiaga*.
62. What heart effect has *Laurocerasus*?
63. What symptoms call for *Rhus*?
64. The range of *Natrum* in heart cases.
65. Outline the effect of *Baryta* on the heart.
66. When might *Dioscorea* be indicated?
67. Form of heart effect of *Tarantula*.
68. Conditions calling for *Carbo veg.*
69. Give the action of *Causticum*.
70. What symptoms call for *Graphites*?
71. Effect of *Amber* on the heart.
72. When would *Ammonia* relieve?
73. Outline the heart action of *Anacardium*.
74. What is the effect of *Argentum* on the heart?
75. Conditions calling for *Asafœtida*.
76. Action of *Benzoic acid* on the heart.
77. Heart symptoms of *Physostigma*.
78. Describe the effect of *Cannabis* on the heart.
79. Action of *Carbolic acid* on cardia.
80. What is the effect of *Glonoine*?
81. Describe the *Cicuta* heart.
82. Does *Clematis* produce heart symptoms?
83. Give the effect of *Eupatorium* on heart.
84. When does *Lachnanthes* come in?

85. Has *Lobelia* heart symptoms?
86. Action of *Nux Moschata* on the heart.
87. When might *Petroleum* come to the front?
88. Describe the *Podophyllum* heart symptoms.
89. What will *Silicia* do?
90. Does *Psorium* affect the heart.
91. Give the *Scutillaria* heart effects.
92. What conditions has *Secale* cured?
93. Describe the heart of *Stramonium*.
94. Give the heart symptoms of *Sumbul*.
95. Where in heart diseases do you call for *Zinc*?

PHYSICAL SIGNS OF HEART DISEASES.

1. *Precordial retraction* is a sinking of the chest involving the ends of the ribs, left side, and sternum. It signifies pericardial adhesion, as a result of inflammation, unless congenital or due to rickets. In the young with elastic walls the depression will be increased with each diastole.

2. *Precordial bulging* is found in *Hypertrophy*, if decided and involving the whole heart, or it may be due to Pericardial effusion, i. e. *Hydropericardium*.

3. The *Apex beat* is found *to the left* of the normal location in Cardiac enlargement, generally Dilatation and from valvular disease, or it may be due to an elevated diaphragm.

4. When the apex strikes the chest wall *below* the normal point it indicates *Hypertrophy*.

5. The heart is *displaced to the right* in cases of extensive *pleuritic effusion* in the left side.

6. The *impulse* of the heart is *almost imperceptible* in Cardiac debility or Weak heart, Atrophy, Fatty heart, or in *Hydropericardium*.

7. The *impulse* is *excessive* in Palpitation, Hypertrophy and in the first stage of inflammation.

8. A *purring* sensation is present in endocardial involvement or in anæmia.

9. A *grating sound* is detected as a result of *Pericardial* inflammation.

10. *Pulsation* at the first and second *intercostal space*, right side, close to sternum is diagnostic of *Aortic dilatation*. If at second alone in a spare person it may be a normal condition.

11. *Pulsation in jugular veins* signifies *tricuspid regurgitation*. If there is also giving way of venous valves, will have pulsation in the liver.

12. *Hardness, loss of elasticity and tortuousness* of the arteries signify that there has been inflammation of their coats.

13. *Pulse intermittent or irregular* is indicative of *weak, failing heart*, especially if worse after exertion of any kind.

14. *Pulse slow, firm and prolonged* signifies *obstruction* of the *aortic orifice*.

15. When the pulse is *like shot* it signifies *regurgitation* at the *aortic opening*.

16. The "*paradoxical*" pulse *intermits partially* or entirely *with each respiration*. Fibrous bands from a previous pericarditis binding the heart may be the cause.

17. *Intermittent action* of the *heart* indicates that the ventricles do not contract, from fatty degeneration, atrophy, dilatation, hypertrophy or obstruction if aggravated by exercise. It may also be due to nervousness.

18. *Irregularity of rhythm* is a halting during a portion of the systole and may be due to nervousness, muscular weakness or obstruction of circulation or both.

19. *Palpitation* is a tumultuous action of the heart and is caused by cardiac debility, hypertrophy or nervous excitement. It is also an early symptom of inflammation.

20. *Increase of the area of dullness* to the left and downward is diagnostic of Hypertrophy and Dilatation. If also upward, Hydropericardium.

21. In *fleshy people* the *heart sounds* are *muffled*. In *spare people* and children the sounds seem to be *exaggerated*.

22. An *increase* of *first sound* over the ensiform cartilage denotes *pulmonary obstruction*.

23. Skoda considered an *exaggeration* of the *second sound* pathognomonic of *mitral obstruction*.

24. The *first sound* may be *suppressed* in typhoid fever, or in the later stages of fatty degeneration.

25. The *second* may be *suppressed* at both aortic and pulmonary orifices in Asiatic cholera.

26. *Doubling of heart sounds*. Doubling of *first sound* is not often met with and is due to irregular muscular contraction. Doubling of the *second* sound is found in *mitral obstruction* and irregular closing of the semilunar valves.

27. All abnormal heart sounds are called *murmurs* and may be *pericardial* or *endocardial*.

28. The *pericardial murmur* is a *friction* sound and the result of inflammatory roughening of the pericardial surfaces. Sometimes heard at the base, but often best heard when the person bends forward.

29. *Endocardial murmurs* are (1) *obstructive*, (2) *regurgitant* or (3) *hæmic*.

30. A *systolic murmur* heard loudest at the *apex* is due to *mitral regurgitation*.

31. *Systolic murmur* heard loudest over the ensiform cartilage is diagnostic of *tricuspid regurgitation*.

32. A *harsh systolic murmur* heard at *second intercostal space*, right side, close to sternum tells of *aortic stenosis* or in other words constriction of the aortic opening.

33. A *whistling* or musical murmur heard best at this point is met when there is *ossification* or *cartilagenous thickening* of the aortic valves so as to produce a *circular opening*.

34. A *diastolic murmur* is heard best *over the aorta* in *insufficiency*, or *openness* of the aortic valves.

35. A *systolic murmur* of *pulmonary valves* heard best at second and third intercostal space left side of sternum indicates *valvular insufficiency*. It may be hæmic-anæmic.

36. A *presystolic* murmur at apex is *mitral* and the cause is obstruction. Its character is *rasping*.

37. The *order of frequency* of endocardial murmurs are 1. Mitral regurgitant; 2. Aortic obstructive; 3. Aortic regurgitant; 4. Mitral obstructive; 5. Tricuspid regurgitant; 6. Pulmonary obstructive; 7. Pulmonary regurgitant; 8. Tricuspid obstructive. The two latter are very rare.

38. The *combinations* of these murmurs encountered in practice are: 1. Aortic obstructive and regurgitant; 2. Mitral obstructive and regurgitant; 3. Aortic obstructive and mitral regurgitant; 4. Mitral regurgitant and tricuspid regurgitant; 5. Aortic and mitral regurgitant.

39. *Hæmic murmurs* are anæmic or hydræmic and are of a *blowing* quality and *systolic*. Heard best at aortic orifice.

40. *Venous murmurs* are also anæmic or hydræmic but are best heard over the *jugular veins*.

41. *Dynamic murmurs*. The left ventricle may *contract irregularly* giving a *mitral insufficiency* and murmur. This is nervous. An apex murmur may be met with in typhus or severe typhoid.

42. To differentiate a *pleuritic friction sound* from a heart murmur, remember that the pleuritic sound *occurs with the respiration* and is absent when the patient suspends respiration. Pleurisy that extends well to the left may confuse.

FUNCTIONAL HEART DISEASES.

1. Diseases of the heart may be classified as Functional diseases, Structural diseases, Inflammatory diseases and results.

2. The principal functional disturbances of the heart are due to (1) palpitation, (2) weak heart, (3) angina pectoris, and (4) exophthalmic goitre. The first two are really the only strictly functional disorders of the heart.

3. They are also termed Cardiac neuroses.

PALPITATION OF THE HEART.

4. Palpitation is a forcible, disturbed and rapid action of the heart.

5. The principal causes of palpitation are Nervousness, Dyspepsia, Rheumatism, and Hypertrophy. It is also a symptom of disease of this organ (e. g. inflammation) and also is met in connection with disease of remote organs.

6. Nervous Palpitation is encountered in Anæmia persons and especially in Hysterical women, also in Chlorosis and at the Climacteric. Spinal Anæmia is also a cause as well as sexual excitement and excess. The hurry and worry of life may cause attacks of palpitation.

7. Dyspeptic Palpitation is met in coffee and tea lovers, tobacco users, liquor drinkers and high livers generally, also in those who bolt their food. Certain occupations that interfere with the digestive function also produce palpitation.

8. Rheumatism develops palpitation by the fever, as well as the acidity of the blood. Lithiasis.

9. We may know that the disorder is functional and not structural when the palpitation is not increased by moderate exercise. If increased it may be inferred that it is due to hypertrophy with possible valvular lesion.

10. The alarming symptoms in a case of palpitation of the heart are dizziness, headache, trembling, choking and faintness.

11. An outline of treatment includes, (1) rest in the recumbent posture (2) diversion of mind, (3) drink of water or something warm, and (4) give the indicated similar remedy.

12. The principal remedies that may be indicated are: *Aconite*, if the attack is due to fright or wine; *Ignatia*, if hysterical case with left sided headache; *Moschus*, if from mental or sexual excitement with great anxiety; *Belladonna*, if there is a flushed face with throbbing or bursting headache; *Lachesis*, if from climacteric with hot flushes; *Phosphorus*, in cases with rush of blood to the chest, tall spare growing persons; *Arsenicum*, if from suppressed eruptions and attacks of palpitation are worse at night and aggravated by drinking cold water. For further indications and remedies see Heart Therapeutics.

WEAK HEART.

13. The chief symptoms of weak or irritable heart are faintness and vertigo on extra exertion or excitement. There may be also headache with cardiac pain or distress.

14. The chief causes of weak heart are, over exertion, over work, mental excitement and severe illness.

15. The real pathological condition may be spinal or nerve centre hyperæmia unless dependent upon local diseases elsewhere. Weak heart is an inheritance of old age.

16. The outline of management of a case of weak heart will depend something upon the history. Rest is of the first importance. A supporting diet must be carefully selected. The mind should be diverted, a country or seaside resort should be selected when possible. A visit to the mountains or a European trip should be discountenanced. A diffusive stimulant should be at hand to ward off attacks of heart failure.

17. The remedies that may be indicated are many. *Arnica*, if the result of muscular overwork, as in athletes, may be the remedy; if mental excitement or work, *Nux Vomica*, (men); if from mental worry, *Ignatia*, especially in women. If the cardiac myalgia is decidedly worse on motion, *Bryonia* would be thought of. If joy or grief starts the bowels, consider *Gelsemium*. If there is a constant weak pulse with faintness and vertigo, use *Digitalis*. If from losses, *China* may be indicated. *Crataegus* may be helpful here. For further indications and remedies see Heart Therapeutics.

AN EXOPHTHALMIC HEART.

18. Rapid action of the heart with enlarged thyroid and prominent eyes are the diagnostic signs of exophthalmic goitre.

19. This disease may be classed as a neurosis of the cardiac plexus of the sympathetic and its connections.

20. This disease is usually slow in making its appearance. It may be remittent, as during and after pregnancy, and disappear, but unless arrested it usually grows worse. It produces, or is attended with, rapid action of the heart.

21. The prognosis should be guarded. While it may disappear the usual course is to produce hypertrophy and dilatation of the heart with valvular insufficiency, aneurism of the

thyroidal vessels and inflammation and ulceration of the cornea of the eyes.

22. The supposed causes of this disease are cardiac neuroses, mechanical obstruction in the gland, delayed menstruation, mental excitement, and calcareous water.

23. The treatment and remedy indications are—Remove the cause if possible, select a proper diet, control the life, apply galvanism to the thyroid driving the blood away from the gland to the cord and select the similar remedy. *Arsenicum* has cured many cases. *Bromine* in one case produced a constrictive cough that developed the characteristic symptoms of this disease. *Spongia*, so useful in goitre, may be indicated here, also *Iodine* high. The remedy may be *Belladonna* or *Cimicifuga* if worse at the menstrual epoch. *Lycopus* has cured cases. *Lachesis* should be consulted if at the climacteric. Consult Heart Therapeutics for indications and other remedies.

ANGINA PECTORIS.

24. Angina Pectoris or Stenocardia is an irregular paroxysmal attack of cardiac pain, with a feeling of impending death.

25. It is supposed to be of nervous origin (spinal hyperæmia) with or without cardiac lesions, e. g. ossification of the coronary arteries, hypertrophy and valvular lesions.

26. The attacks are ushered in suddenly with a feeling of constriction and severe pain at the heart as if held by a hand. He imagines he cannot breathe but gets a deep breath now and then. Sometimes the pains radiate down the left arm. Extremities are cold, face pale at first but becomes finally flushed with anxious expression as of impending death. The

paroxysms are usually short and when severe simulate epilepsy. Extra mental or physical exertion or fright may precipitate an attack. Men are more frequently sufferers from this disease than women.

27. The pathology seems to be a spinal and cardiac hyperæmia, with, in some cases, cardiac lesions, as hypertrophy, ossification of the coronary arteries, valvular obstruction or insufficiency, atheromatous arteries or fatty heart.

28. The prognosis should be guarded. The attacks are dangerous, but patient often lives for years in fear and alarm.

29. The treatment of an attack is as follows:—Place the patient in a comfortable position and while attendants are loosening the clothing, chloroform may be applied, while the indicated remedy is getting control of the disease. The allopathic treatment is to inject morphine at once and give chloroform, but even this does not arrest the attack. *Nitrite of Amyl* is sometimes used. Between the attacks regulate the habits and diet of the patient.

30. The remedies indicated for the attack may be either *Cactus*, *Belladonna*, *Gelsemium*, *Veratrum*, *Glonoine*, *Arsenicum*, *Spongia*, or *Spigelia*. To prevent a return of an attack the indicated remedy should be continued. In addition to the foregoing *Aurum* and *Agaricus* have been curative. Select carefully and adhere to the remedy for several months. For indications, etc., see Heart Therapeutics.

INFLAMMATORY DISEASES OF THE HEART.

PERICARDITIS.

1. This is an *inflammation* of the serous membrane which covers and surrounds the heart, and is reflected in front over the chest wall.

2. The *chief causes* of pericarditis may be enumerated as: rheumatic, traumatic, pleuritic, pulmonic, or as diseases of the ribs, vertebræ, œsophagus, stomach or liver.

3. The inflammation may be *primary* or *secondary*. It may be circumscribed or general involving the whole pericardium, acute or chronic.—See hydropericardium.

4. The *prominent symptoms* of an attack are usually a chill or cold feeling at the heart followed by fever with stitch-like pains at the precordial region or radiating from it; tenderness on pressure, præcordial anxiety; dyspnea, preventing lying down. There may be nausea and vomiting at times. A short dry cough may be present. There is an expression of anguish on the face that is most distressing in severe cases.

5. There are *three stages* recognized: (1) inflammation; (2) effusion and adhesion and (3) absorption or pressure and death.

6. The *serious symptoms* looked for are from two causes: (1) extension of the inflammation involving the heart muscle and (2) rapid and extensive pericardial effusion and adhesions. In the first instance the heart anguish will be increased with coldness of the extremities, heart action tumultuous, insensibility, delirium, sudden death. In the second stage the heart's action is labored, dyspnea marked, œdema appears, loss of pulse, coma or faintness and death.

7. The *physical signs* are the friction sound, likened to the purring of a cat, and increased action of heart, sometimes intermittent. As the effusion increases the heart sounds become muffled and the area of dullness is increased. In cases of adhesions the action of the heart may be paradoxical.

8. The *prognosis* should be guarded, Death may occur in 30 hours. The heart may be paralyzed by the effusion. Adhesions may form. The disease may become subacute or chronic and continue for weeks and complete resolution eventually take place. The serous membrane is apt to become contracted, roughened and adherent by fibrous bands producing retraction of the ensiform cartilage and ribs. In young persons this may be very decided.

9. The *treatment* demands prompt and effective measures. The patient must be quieted and placed in the most comfortable position, and if possible have a trained nurse. The food should be light and nourishing, stimulants are to be avoided, especially in the first stage.

The carefully selected remedy should be administered to allay the inflammation and prevent effusion, adhesions, paralysis or complications in remote organs. Even if it is secondary upon some other disease, the pericarditis should receive the first attention.

10. *Remedies* that may be indicated are as follows: If traumatic, *Arnica*. For the inflammatory outset, *Aconite* or *Veratrum viride*. The anguish of *Aconite* distinguishes its inflammation from that attending the stupor of *Veratrum*. For the pain *Bryonia* or *Spigelia*. They may be indicated in this order, *Bryonia* for the first stage and *Spigelia* for the subsequent myalgia. In these cases there may be met with indications for *Belladonna* (its flushed face), *Arsenicum* (dyspnoea on lying down), *Digitalis* (its weak pulse), *Cactus* (severe myalgia) or *Kali carb* (stitching pains). General symptoms may call for

Colchicum, Æsculus, Kali iod., Cimicifuga, Kalmia, Squilla.
For special indications see Heart Therapeutics.

HYDROPERICARDIUM.

11. This is an *effusion* in the pericardium or heart sac, that may occur without active local inflammation. It may be a primary as well as a secondary disease.

12. The *Symptoms* are not prominent unless the amount of fluid is large. Dyspnœa on lying down, general dropsy, feeble heart sounds and increased area of dullness in all directions, especially in a pyramidal shape are diagnostic.

13. The *treatment* calls for great care in the nourishment of the patient. Enjoin rest and remove any exciting cause if possible. Aspirate if the effusion threatens life. The principal remedies that have proven serviceable are *Arsenicum, Apis, Apocynum, Hellebore, Lycopodium, Mercurius* or *Sulphur*. See also Pericarditis and consult general Heart Therapeutics.

Hæmopericardium is caused by blood in the pericardial sac from rupture of an aneurism, rupture of the heart, traumatism and cancerous and tuberculous pericarditis. The local signs are the same as in hydropericardium with the general one of rapid prostration and speedy death, as in one of my own cases. In traumatism control the inflammation with *Arnica* and aspirate if the conditions favor.

Pneumopericardium. Air in the pericardium is a rare condition and results from external wounds, or the perforation of a pyo-pneumothorax into the pericardial sac with the formation of pus.

Percussion yields a tympanitic sound, and on auscultation splashing and metallic sounds are detected. An anxious, pain-

ful expression with dyspnœa, cyanosis and sudden collapse are the chief and alarming symptoms.

The remedies indicated are *Arnica* for traumatism, *Arsenicum*, or *Sulphur* for formation of pus (see Pericarditis and Hydropericardium).

MYOCARDITIS.

14. Myocarditis or *carditis* is an inflammation of the heart muscle itself. It may be a primary disease as the result of heart strain or rheumatism, but is usually a complication of either pericarditis or severe endocarditis.

15. The *diagnostic signs* given are extreme cardiac anguish and pain. The heart is unusually excited with high fever.

16. The *Symptoms* may appear gradually as after severe exercise. During an attack of peri or endocardial inflammation the carditis may appear as a second storm.

17. The *indications* for treatment are to keep the patient quiet and comfortable and select the indicated remedy which may be either a myalgic or inflammatory one, e. g., *Arnica*, *Rhus*, *Aconite*, *Bryonia*. See Heart Therapeutics as well as Pericarditis and Endocarditis.

ENDOCARDITIS.

18. Endocarditis is an expressive term for *inflammation within the heart* involving the serous membrane covering the walls, columns and valves.

19. It is usually a *secondary disease*, but may be primary as from cold or traumatism. It is most severe in its results.

20. When secondary it *appears as a result* of (1) rheumatic, acid irritation of the endocardium and usually of the heart muscle, (2) vitiated state of the blood as from Pyæmia or Bright's disease.

21. The *diagnostic symptoms* may be few. In fact the invasion may be unnoticed. Usually pain, palpitation of heart, sounds stronger and audible over more space, pulse rapid and small, dyspnæa, delirium, finally icterus may appear. The appearance of a valvular murmur locates the seat of lesion.

22. To *differentiate inflammation* within the heart from that without, note the following points:

The endocardial murmur is constant in situation, rhythm and character. Position has no effect, neither does respiration nor pressure change the murmur. Generally more widely diffused.

Pericardial friction sound, change of position increases, diminishes or suppresses the *friction* sound. Pressure increases it. More local.

23. In endocarditis we expect serious valvulitis and as *a result* lesions of one or more sets of valves. Fibrillæ from adherent valves may be carried into remote organs and produce thrombosis.

24. The *sequale* of an attack of endocarditis are valvular insufficiency or stenosis and consequent hypertrophy and dilatation.

25. The *management* of an attack of endocarditis involves (1) control of the inflammation and (2) repair of the lesion. The primary disease must also receive due attention that a subsequent attack may not occur. Prompt action is demanded.

26. The *remedies* that have proven serviceable here are few. *Aconite* for the initiatory chill and fever (cold). *Arnica* if traumatic. *Bryonia* if rheumatic with stitching pains. Then may come *Spigelia*, *Cactus*, *Digitalis*, *Lachesis* or *Lycopus*. If the acid or septic cause remains other remedies may be indicated as *Arsenicum*. See valvular remedies and Heart Therapeutics.

STRUCTURAL DISEASES OF THE HEART.

1. The four principal structural or organic diseases of the heart are: (1) Hypertrophy, (2) Dilatation, (3) Atrophy, and (4) Fatty heart.

HYPERTROPHY OF THE HEART.

2. This is an enlargement of the walls of the heart. Three forms are recognized: (1) Simple hypertrophy where the *muscular walls are thickened* while the cavities remain of normal size; (2) eccentric hypertrophy where the walls are thickened and the *cavities are dilated*; (3) concentric hypertrophy in which the walls are thickened while the cavities are *diminished* in size. This form is always congenital. The left ventricle is the one most frequently enlarged.

3. The diagnostic symptoms are: Increased area of dullness downward, and sometimes also to the left; very forcible beating of the heart, constant; sounds dull and loud.

4. The causes of this structural disease of the heart are many. It may be congenital. Rheumatism, with valvular insufficiency and stenosis, is a frequent cause. Overwork while young, athletic feats, early and constant excitement, typhoid fever, overwork (where the respiration is impeded, as in carpenters, blacksmiths), emphysema, Bright's disease, and certain drugs like tobacco, may be exciting causes.

5. The usual course of hypertrophy, if not arrested, is to produce dilatation, also valvular disease, arterial degeneration, fatty degeneration of the heart and apoplexy.

6. The management of a case of hypertrophy should include a control of diet and habits, compel a quiet life, avoiding stimulants, excitement and tobacco. Enjoin plenty of sleep after

a light supper. The exciting cause should be removed if possible. Select the remedy to meet all the conditions and to cover all of the symptoms.

7. The remedies to be thought of are: *Arnica* in a traumatic athletic case; *Kalmia* if the hypertrophy is markedly left ventricular; *Plumbum* if general and eccentric; *Arsenicum*, *Lycododium*, *Naja* or *Spigelia* may be called for as well as other remedies. If the hypertrophy is a sequence of disease of some remote organ the selection of the remedy must be affected thereby. See for further information Heart Therapeutics.

DILATATION OF THE HEART.

8. In dilatation of the heart the walls become thin. A marked area of dullness is detected, especially to the left.

9. The causes of dilatation of the heart enumerated are: Debility following wasting disease, valvular lesions, impaired heart nutrition, destruction beginning in organs remote from the heart, and severe disease in those who suffer with hypertrophy. The chief cause is hypertrophy.

10. The diagnostic signs are increased area of dullness, especially to the left. The heart sounds are never loud but may be clear, especially on excitement. When dilatation reaches the stage to produce valvular insufficiency, then we may have dyspnœa, cough, dyspepsia, scanty urine, dropsy, with a feeble, irregular pulse. When the right heart is involved an impulse may be noted below the sternal cartilage.

11. Dilatation may be complicated with fatty degeneration. Hypertrophy of one ventricular wall may exist with dilatation of the other cavity giving rise to irregular contraction. Atheromatous arteries exist as a complication in many cases.

12. The remedies that may be helpful are the same as those mentioned under hypertrophy, weak heart and fatty heart.

Aconite may be called for. *Cactus* may be indicated. *Nux vomica* may be needed. *Gelsemium*, dilatation of the left ventricle. *Tartar emetic*, dilatation of the right ventricle with asthma. *Digitalis*, *Cuprum*, *Muriatic acid*, *Hydrocyanic acid*, *Hydrastis* and other remedies should be consulted. See Heart Therapeutics for indications.

ATROPHY OF THE HEART.

13. In atrophy the heart is smaller than normal. The walls are thin but the cavities may be of normal size.

14. This condition may be congenital or it may be caused by pressure from pericardial effusion, pericardial adhesions, and marasmus.

15. The diagnostic signs are few, the area of dullness is diminished, the sounds are distinct and regular but not loud. The pulse is usually regular but feeble and quick.

16. In the treatment of atrophy of the heart, proper food and exercise should be insisted on so that the weakened muscle may be developed. If there exists pericardial effusion it must be removed (see hydropericardium). The remedies are usually the nutritious ones unless the local symptoms point out differently. *Arsenicum* would be indicated where effusion and the other symptoms suggest it; *Phosphorus*, if the result of fatty degeneration; *Sulphur*, if complicated with hydrothorax; *China*, if the digestive symptoms correspond; *Ferrum* may be indicated or *Nux*. The general condition and symptoms must decide in the selection of these or some other remedy.

FATTY HEART.

17. The pathology of fatty heart includes, (1) a deposit of fat about the heart muscle, (2) where the muscle fibre is displaced by fat.

18. The principal diagnostic symptoms are few.—Feeble irregular heart beat, exhaustion and dyspnoea on exertion, pulse slow, 30-40 when at rest while the heart may be 50-60. Attacks of apoplectic syncope, at first more like syncope, then becoming apoplectic. In the earlier stages those symptoms may not be so prominent as to direct attention to the heart.

19. The prognosis is always grave, although life may be prolonged many years. In fatty infiltration it is less grave than in fatty degeneration of the muscular fibers.

20. In the management of these cases the best judgment must be exercised in the selection of nourishing diet and pure air. A quiet life, light occupation, the avoidance of all violent efforts, physical or mental, and regular exercise should be insisted on, in a mild climate. Malt liquors are to be avoided.

21. Select carefully the indicated remedy and give it time to do its work. The selection may lie between *Phytolacca*, *Nux vomica*, *Belladonna*, *Ipecac*, *China*, *Arsenicum*, *Kali*, *Phosphorus*, *Hydrastis*, *Crataegus*, or some other remedy. See Heart Therapeutics.

VALVULAR DISEASES OF THE HEART.

MITRAL, AORTIC, TRICUSPID AND PULMONARY.

1. The *valvular lesions* of the heart are: Mitral insufficiency, aortic insufficiency, tricuspid insufficiency, pulmonary insufficiency, mitral stenosis, aortic stenosis, tricuspid stenosis and pulmonary stenosis.

2. The *causes* of valvular disease may be inflammation; calcareous, cartilaginous or ulcerous degeneration. Change in the walls, as from hypertrophy and dilatation may also give rise to valvular lesions.

3. The *pathological changes* that occur are contraction, thickening, calcareous infiltration and fibrous sclerosis. Rupture sometimes occurs.

MITRAL LESIONS.

4. The *mitral valve* is the one most frequently diseased *in young people*. The activity at this time of life taxes the left heart.

5. In *mitral insufficiency* the two segments of the valve do not close properly, from rupture, inflammatory contraction of the columns, from dilatation or weakening of the left ventricle.

6. The *chief causes* of mitral valvular lesions are (1) a vitiated state of the blood, from rheumatism, pyæmia, Bright's disease, syphilis, alcoholism, etc.; (2) sudden muscular strain; (3) fevers; (4) occasionally congenital defects.

The pathological changes in the valve are contraction of the fibres or tendons and sometimes rupture of the muscular columns. Insufficiency of this valve causes dilatation of the left auricle and eventually hypertrophy of the left ventricle.

7. The *diagnostic sign* of mitral insufficiency is a *murmur*

or blowing sound heard best *at the apex*, synchronous with the first sound of the heart. The other valve sounds may be normal.

8. *Mitral stenosis* is a condition where the left auricular-ventricular opening is imperfect so that the flow of blood from the left auricle is impeded.

9. The causes are the same as those already noted being chiefly inflammatory, resulting in thickening, contraction and adhesion of the mitral segments.

10. A *rough presystolic thrill* is felt near the apex. The area of dullness is increased to the right. A prolonged, rough, churning murmur, presystolic in time, is heard *a little above* and to the *left of the apex*. The second sound is usually increased.

A sequence is tricuspid regurgitation from consequent hypertrophy and dilatation of the left auricle. The face is pale.

AORTIC LESIONS.

11. In *the aged* the *aortic semilunar* valves are most frequently affected.

12. *Aortic insufficiency* is due to a failure of the valve segments to close properly so that there is a regurgitation of blood back into the left ventricle at every dilatation of the ventricle.

13. The *special pathological causes* are rupture or inflammatory contraction of the segments or from dilatation of the orifice from hypertrophy of the left ventricle.

14. The *diagnostic signs* are: (1) A shot like or "water hammer" pulse; (2) The arteries pulsate visibly; (3) There may be præcordial bulging; (4) The apex beat is forcible and located downward and to the left; (5) Area of dullness increased; (6) At right second intercostal space maximum intensity of a diastolic murmur.

15. *Aortic stenosis* or obstruction is a thickening of the segments of the valve, by inflammatory action or calcareous infiltration or from adhesions, so that the onward flow of the vital current is impeded.

16. The *cause* in the majority of cases is rheumatism. Inflammation or degeneration produces changes in the segments. Calcareous thickening is met with in old people who live in limestone sections.

17. The heart-beat if strong is found downward and to the left. Increased area of dullness especially to the left. At the right second intercostal space a strong *systolic* murmur and is transmitted to both carotids.

The pulse, when the heart becomes weak is small and slow.

18. The *sequelæ* of mitral insufficiency and stenosis are tricuspid insufficiency and regurgitation. The result of aortic insufficiency and obstruction is mitral regurgitation.

TRICUSPID LESIONS.

19. *Tricuspid Insufficiency* or regurgitation is caused by an imperfect closure of the right auricular ventricular valve.

20. Inflammation produces shortening of the valve columns or more frequently dilatation of the right ventricle. Secondary to mitral disease or to chronic lung disease.

21. The physical signs are enlargement of the heart, a *systolic murmur* soft and blowing, heard most distinctly just above *ensiform cartilage* with pulsation of jugular veins and in some advanced cases pulsation of the liver.

22. The consequences are that the whole venous system becomes engorged, and we have enlargement of the liver and spleen with blue skin, anasarca and finally effusion into the serous cavities and death. If the regurgitation is slight such serious results may not follow.

23. *Tricuspid Stenosis* or obstruction is due to adhesion of the columns or growths thereon; that interfere with the flow of the blood through the right auricular-ventricular opening.

24. This is an exceedingly rare lesion and is usually of foetal origin. It may result from inflammation.

25. The chief symptom is a *presystolic murmur* located over the ensiform cartilage very feeble and not transmitted. Hypertrophy of the right ventricle is detected.

PULMONARY VALVE LESIONS.

26. *Pulmonary Obstruction* or *Stenosis* is a very rare lesion and a defect of the pulmonary valve interfering with the systolic current from the right ventricle. It is usually congenital.

27. A *systolic murmur* at the *second left interspace* is diagnostic. Enlarged right ventricle extending well to the right of the sternum. Pulse weak, surface, especially of the extremities, cold. Cyanosis, often extreme. Finger ends clubbed, blue; nails curved and thick. Dyspnea.

28. *Pulmonary insufficiency* causes regurgitation of the blood (being forced into the lungs) back into the right ventricle. This also is a rare lesion and is usually congenital.

It produces a *diastolic murmur* or thrill heard best at the left second interspace. The apex beat on account of right ventricular hypertrophy, becomes displaced to the left. Tricuspid systolic murmur or thrill from dilation and, insufficiency is apt to occur.

ORDER AND RESULTS.

29. The order of frequency of valve lesions are given as, (1) Mitral insufficiency, (2) Aortic stenosis, (3) Aortic insufficiency, (4) Mitral stenosis, (5) Tricuspid insufficiency, (6) Pulmonic stenosis, (7) Tricuspid stenosis, and (8) Pulmonic insufficiency.

The effect of mitral lesions is to bring about tricuspid regurgitation. Aortic lesions are followed by mitral incompetency.

The order of gravity of the various forms of valvular lesions is, (1) Tricuspid regurgitation, (2) Aortic insufficiency (often ending in sudden death), (3) Aortic stenosis, (4) Mitral stenosis, and (5) Mitral insufficiency.

The general *unfavorable conditions* are early life, advanced years, great cardiac enlargement, irregular heart action, recurrent attacks of rheumatism, bad hygienic surroundings and symptoms of venous congestion of the lungs, kidneys and digestive tract.

30. *Compensation* offsets for a time the serious effects of valvular lesions. This is brought about by an increase in the size and strength of the cardiac chambers sufficient to enable the heart to furnish the outflow of blood to properly nourish all parts of the body. When the walls become weakened compensation ceases and *pari passu* venous congestions of the organs occur. Pulmonary congestion produces dyspnea, asthma, hæmoptysis and chronic bronchial catarrh (mitral). Hepatic, stomachic and intestinal congestion produces dyspepsia. Renal congestion produces albuminuria and nephritis. Cerebral congestion produces headache, vertigo and syncopal attacks (aortic). General venous congestion produces cyanosis and dropsy, from the feet upward.

TREATMENT OF VALVULAR LESIONS.

31. The management of cases of valvular lesion depends upon the condition of the heart walls and remote organs. If compensation is well maintained the complicating disorder should secure the first attention. The effort should be by proper exercise, diet and remedies to secure the best heart action under the circumstances.

When there are symptoms of heart failure as manifest by

orthopnea and cyanosis, rest should be absolute. Light, nutritious, supporting diet should be given.

32. The remedies indicated may take a wide range during the development of serious valvular lesions. In aortic disease to prevent further distortion of the valve flaps *Arnica* may be given if worse on severe exertion; if worse while at rest, *Rhus*. If there is a lingering rheumatic inflammation *Bryonia*. In mitral involvement *Bryonia*, *Kalmia*, *Sulphur*, *Cactus*, *Digitalis*, *Arsenicum*, *Lachesis*, *Spongia*, *Naja*, *China*, *Spigelia*, *Plumbum*.

For valvular affections in general in addition to the foregoing *Aurum*, *Kali carb.*, *Bismuth*, *Cannabis*, *Crotalis*, *Laurocerasus*, *Natrum mur.*, *Tabicum*, *Sepia*, are mentioned. To control the attending hypertrophy and dilatation, *Digitalis*, *Aurum*, *Lachesis*, *Lycopus*, *Nux vom.*, *Spigelia*, or *Spongia* may be indicated. For functional anemic murmur *China*, *Nux vomica*, *Ignatia* or *Sulphur* may be needed. For hydremic murmur venous and functional the chief remedy may be *Arsenicum*, *China* or *Hydrastis*. For the asthma from pulmonary congestion *Spongia*, *Nux vom.*, *Arsenicum*, *Veratrum vir.* In each case the general as well as the local symptoms should be covered by the selected remedy. For further indications and remedies see Heart Therapeutics.

DISEASES OF THE BLOOD VESSELS, ETC.**ATHEROMA.**

33. *Atheroma* is a thickening of the arteries due to an inflammatory increase of the connective tissue, associated with more or less fatty degeneration and calcification. The arteries are thickened, tortuous and rigid from chronic endarteritis. If located in the lower extremities gangrene may supervene. Atheroma of the coronary arteries may produce serious heart symptoms, as angina, etc. Old age, gout, rheumatism, alcoholism, syphilis, lead poisoning, nephritis, calcareous water and laborious work, are the usual etiological factors.

The symptoms of atheroma are usually a sluggish high tension pulse, accentuation of the second aortic sound, palpitation, dyspnea, anginoid pains and hypertrophy of the left ventricle, urine increased and at times albuminous, headache, vertigo, disturbed sleep, failure of memory and ringing in the ears.

As *sequelæ* there may be cerebral congestion, apoplexy, fatty heart, dilatation, angina pectoris, aneurism, interstitial nephritis and gangrene of extremities. The treatment should include a careful diet, no stimulants, and a regulation of the habits. The remedies indicated may be *Bryonia*, *Secale*, *Lachesis*, *Arsenicum*, *Carbo veg.*, *Lycopodium*, *Carbolic acid*. See hypertrophy, angina pectoris and general heart therapeutics. In gangrene of the extremities operate high up and early.

ANEURISM.

34. Aneurism is a circumscribed dilatation of an artery. This may occur in any artery but is found most frequently in the aorta as a result of arterial degeneration.

The *sign* of an aneurism is a murmur or bruit loud and

booming in character, systolic in time, heard best over the aorta or base of the heart with an abnormal area of dullness and pulsation and symptoms of pressure. Dyspnea, cough, pain or distress serve to locate the aneurismal tumor.

The *conditions* of life which lead to arterial degeneration, *i. e.* rheumatism, gout, alcoholism, syphilis, cancer, drugs, laborious work, are predisposing causes. The male sex at middle life suffer most, as *sudden exertion* is the most common exciting cause.

Aneurisms are divided into true and false. When the internal coat of the artery alone gives way, allowing the blood to escape between the layers it is termed false. When all the coats yield it is a true aneurism and may be fusiform, saccular and cylindrical.

The *prognosis* is always grave. The average duration is from one to two years. Death takes place from rupture, exhaustion or heart failure.

35. In the *treatment* where it is possible to reach the artery as in abdominal aortal aneurism, compression has been resorted to with good results. Electricity is a valuable adjuvant where the vessel can be reached.

The predisposing cause should receive attention. Rest in bed for two or three months should be insisted on, a nourishing milk or meat diet should be given, avoid stimulants and excitants. Warm milk makes an excellent stimulant as well as food.

Select the remedy carefully. *Lycopodium* 12 has cured aneurism of the carotid (Hughes). If the attack is due to a sudden strain or injury, *Arnica*; if from fear or fright, *Aconite*; if from syphilis, *Mercurius*, *Kali hydro* or *Nitric acid*; if from alcoholism, *Arsenicum* or *Nux vomica*; if from fatty degeneration, *Phosphorus*; if from fibrous inflammation and degeneration, *Bryonia*; if there is great arterial excitement and delirium,

Veratrum viride; if circulation sluggish, *Digitalis*. *Secale* has cured aneurism. Consult *Carbo veg.*, *Spigelia*. See Heart Therapeutics.

EMBOLISM AND THROMBOSIS.

36. *Embolism* is an occlusion of an artery from a fibrinous clot, as the result of a valvular disease. A calcareous deposit on the valve as well as fibrin may be washed off and occlude an artery in the kidneys, spleen, brain or in an extremity.

Local inflammation is a prominent symptom and the seat of pain assists in the diagnosis. The part becomes blue, swollen and insensible.

Rest is of first importance in treatment. The remedies indicated will depend upon the location and severity of the symptoms. *Aconite* for fever and restlessness. *Lycopodium*, *Calcarea*, *Phosphorus*, *Graphites*, *Silicea*, *Sulphur* have been suggested.

Thrombosis is a blocking of the local circulation either spontaneously, after injuries or from slow and imperfect circulation forming a clot.

In thrombosis the part becomes pale and œdematous. The remedies are *Aconite* for first stage, *Hamamelis*, *Lachesis* or *Lycopodium* may be indicated. If suppuration threatens *Sulphur* or *Hepar*. Rest and a supporting diet.

VARICOSIS.

37. This is an inflammation of the veins, usually those of the lower extremities, but may be in those of any part of the body. Positions and conditions that interfere with the venous current are the causes. Varicosis causes dropsy in old people.

38. The curative remedies are few. The most prominent are *Hamamelis*, *Pulsatilla*, *Carbo veg.* or *Sulphur*. If the varices ulcerate then *Arsenicum*, *Lachesis* or *Hepar* should be consulted.

To prevent rupture and assist the venous circulation of the

extremities an elastic stocking should be worn. Posture and bathing with *Hamamelis*, rubbing at night so as to assist the circulation, are helpful.

DROPSY—CARDIAC.

Dropsy is the unnatural accumulation of serous fluid in the tissues or cavities of the body. It is usually a symptom.

The causes are (1) *venous* stasis from heart, liver and lung diseases and from local obstructions to the circulation, e. g., pregnancy, tumors, constricting clothing, occupations, etc.; (2) changes in the blood, e. g., anemia, inflammation, Bright's disease, etc.

Cardiac dropsy usually begins in the feet and ascends. Dropsy is not always fatal at first; but subsequent attacks finally result in death.

The remedies that have been of service in dropsy, dependent upon heart disease, are *Arsenicum*, *Lycopodium*, *Spigelia*, *Carbo veg.*, *Digitalis* and *Kali carb.* For general anasarca see also *Hellebore*, *Apis*, *Apocynum*, *Sulphur*. Consult Heart Therapeutics.

CYANOSIS.

Cyanosis is a blueness of the surface of the body, especially of the lips, from insufficient oxidation of the blood.

The causes of cyanosis are (1) *conditions affecting the entrance of air*, as croup, œdema of the larynx, tumors or foreign bodies in the air passages, tumors pressing on the air passages, emphysema, chronic bronchitis, pneumonia, pleurisy, paralysis of the respiratory muscles, as in bulbar palsy, and spasms of the respiratory muscles as in epilepsy, tetanus, etc., heart spasms; (2) *all forms of heart disease* ending in pulmonary congestion, where the blood does not become oxidated; (3) *patulous foramen ovale* with stenosis of the

pulmonary orifice. This is a congenital condition. Here the rapid admixture of the blood prevents the oxidation of the tissues and death ensues sooner or later.

“*Digitalis* is very useful in this disease, especially in the case of new-born infants; *Sulphur* and *Calcarea* are still better.” (Jahr.) See Heart Therapeutics.

HEART DISEASES CAUSING SUDDEN DEATH.

39. The diseases of the heart that occasion sudden death are:

- (1) Hypertrophy of the left ventricle with atheromatous arteries;
- (2) Fatty degeneration;
- (3) Angina Pectoris with organic lesions.

HEART THERAPEUTICS.

CLASSIFICATION OF REMEDIES.

1. Medicines affecting the heart may for convenience be divided, as the diseases have been, into groups: e. g., inflammatory, structural and functional. They could also be divided into acute and chronic remedies.

2. The inflammatory remedies make a very small list and strictly speaking include *Aconite*, *Bryonia* and *Veratrum vir.* To these three might be added *Arnica*, *Spigelia* and *Digitalis*. With these many sub-acute remedies might be included and grouped under the different diseases, their various stages and complications as follows:

PERICARDITIS: *Aconite*, *Bryonia*, *Veratrum viride*, *Spigelia*, *Arsenicum*, *Digitalis*, *Cactus*, *Kali Carb.*, *Belladonna*, *Colchicum*, *Kali hyd.*, *Kalmia* and *Squilla*.

HYDROPERICARDIUM: *Apis*, *Apocynum*, *Arsenicum*, *Hellebore*, *Mercurius*, *Lycopodium*, *Sulphur*.

MYOCARDITIS: *Arnica*, *Rhus*, *Aconite*, *Bryonia*.

ENDOCARDITIS: In addition to the chief acute remedies for Pericarditis and Myocarditis we have added *Aurum*, *Iodine*, *Kali Carb.*, *Naja*, *Sulphur*.

VALVULAR REMEDIES: *Bryonia*, *Arsenicum*, *Digitalis*, *Kali Carb.*, *Kalmia*, *Lachesis*, *Naja*, *Natrum mur.*, *Sepia*, *Spigelia*, *Spongia*, *Sulphur*, *Cactus*, *Rhus*, *Arnica*, *China*, *Aurum*, *Plumbum*.

3. The remedies for the diseases of the heart walls are few and may be classified as follows:

HYPERTROPHY and DILATATION: *Arnica*, *Kalmia*, *Plum-*

bum, Spigelia, Digitalis, Arsenicum, Lycopodium, Naja, Aurum, Lachesis.

ATROPHY: *Arnica, Kali, Kola, China, Arsenicum, Phosphorus, Ferrum, Nux Vomica.*

FATTY HEART: *Phosphorus, Kali, Nux vomica, China, Hydrastis, Arsenicum, Cratægus, Belladonna, Spigelia, Cuprum, Aurum.*

4. The functional remedies are most numerous as the heart is disturbed by diseases and disorders in other parts of the body.

PALPITATION may call for *Aconite, Belladonna, Ignatia, Moschus, Lachesis, Phosphorus, Arsenicum, Coffea* or *Tabacum.*

ANGINA PECTORIS: *Cactus, Spigelia, Gelsemium, Arsenicum, Veratrum Album, Belladonna, Spongia, Glonoine, Aurum, Lycopus.*

WEAK HEART. The chief remedies are *Arnica, Ignatia, Digitalis, Nux Vomica, Bryonia, Arsenicum.* Other remedies may be indicated.

GOITRE HEART: *Arsenicum, Spongia, Iodine, Bromine, Belladonna, Lachesis, Lycopus, Cimicifuga.*

5. The painful remedies may be divided into three classes, those with sharp pain, those with dull pain, and those with stitches of pain.

(1) The SHARP PAIN remedies are: *Bryonia, Spigelia, Kali carb., Cactus, Kalmia, Spongia, Arnica, Apis, Cimicifuga, Bromine, Colchicum, Graphites, Dioscorea, Phytolacca, Zincum.*

(2) The DULL PAIN remedies are: *Veratrum viride, Aconite, Colchicum, Cimicifuga, Cratægus, Gelsemium, Lilium, Veratrum Album, Glonoine, Eupatorium, Belladonna, Cuprum.*

(3) Those with STITCHES OF PAIN are: *Spigelia, Kali carb., Lycopus, Causticum, Graphites, Carbolic acid, Anacardium, Lachnanthes.*

CHARACTERISTICS OF HEART REMEDIES.

6. *Aconite*. Frightened feeling at heart. *Feverish, restless apprehension*. Effects of cold and wet. Palpitation from wine.
7. *Veratrum Viride*. *High fever, stupor*, Dull ache at heart. Rapid heart.
8. *Bryonia*. *Sharp pain* in and about heart. *Worse on motion*. Rheumatic complication. *Weak heart*.
9. *Spigelia*. *Stitchlike pain* in cardiac region. *Suffocative attacks*. Great dyspnœa at *every change of position*.
10. *Belladonna*. *Nervous palpitation with cerebral congestion*. Attacks come and go suddenly. Pressure in the cardiac region which *arrests the breathing* causing anxiety.
11. *Digitalis*. *Very feeble, irregular action* of the heart with *feeble, small intermittent pulse*. Sensation as if heart would stop, on motion.
12. *Kali carb*. *Stitchlike pains simulating Pleurisy*. Gets out of breath on ascending stairs. Puffiness over eyes. Fatty heart—dropsical.
13. *Colchicum*. *Pressure and anxiety* in precordial region—worse at night, cannot lie on the left side.
14. *Arsenicum*. *Restlessness and anxiety* with thirst for small quantities of water often. Worse at night—*must sit up in bed*.
15. *Cimicifuga*. Heart's action *ceases suddenly*—impending suffocation. Pains from heart *all over chest* and down left arm.
16. *Kalmia*. *Stitch pain* in lower part of chest. Palpitation, dyspnœa.
17. *Squilla*. Palpitation of heart. *Precordial stitches* (from pleurisy). Pulse small and slow slightly hard.

18. *Æsculus*. Heart's action *full, heavy*—feels the pulsation *all over body*. Darting pains in region of heart.

19. *Cactus*. *Sudden attacks of constriction* of the heart *as if an iron hand* prevented it beating. With fright. Numbness of left arm.

20. *Apis*. *Sudden attacks of acute pain* just below the heart extending *diagonally towards the left chest*. Puffiness above and below eyes especially in the morning.

21. *Apocynum*. Pulse weak, intermittent. *Inability to speak*—catching breath.

22. *Hellebore*. Palpitation (from effusion.) Pulse slower than beating of heart.

23. *Lycopodium*. Sensation as if *circulation stood still*, from gas,—worse after 4 p. m. Red sand in urine.

24. *Mercurius*. *Weakness* of heart. Pulse weak and *trembling*. Palpitation with fear. Worse at night. Tongue shows prints of teeth.

25. *Sulphur*. Palpitation of heart. *Worse going up hill* and at night.

26. *Arnica*. *Weak, aching* heart from *exhaustion*. Palpitation after almost *any exertion* goes off by rest. Sudden pain, as if *heart were squeezed* or as if it had got a shock.

27. *Plumbum*. Palpitation. Rush of blood to heart *from rapid walk*. Inspiration produces stitchlike pain in heart.

28. *Naja*. *Violent sudden throbbing*. Tumultuous action of heart. Hypertrophy.

29. *Lachesis*. *Suffocative palpitation* worse after sleeping. Neck clothing must be loose. Climacteric.

30. *China*. *Weak heart* from great loss of fluids or from exhaustion. No thirst, no appetite.

31. *Phosphorus*. Palpitation. *Rush of blood to chest*. Tall, spare growing persons.

32. *Ferrum*. Palpitations with *nervous restlessness*, better from moving about slowly. Congestion to head, spitting blood.

33. *Nux vomica*. Food lies like a stone causing palpitation. Frontal headache, constipation, sleep in the morning.

34. *Ipecac*. Palpitation, almost without anxiety. Quick pulse.

35. *Hydrastis*. Palpitation with faint gone feeling in pre-cordial region.

36. *Ignatia*. Palpitation of the heart at night and in the morning in bed. Headache in left frontal eminence. Sighing respiration.

37. *Cratægus*. *Dyspnœa*, gasping for breath. Pain in the heart. Pulse almost imperceptible.

38. *Moschus*. Palpitation from mental excitement, anxiety or sexual excesses. Hysterical subjects.

39. *Gelsemium*. Weak heart aggravated by fright. Chest ache with spasmodic action of heart, "must move for fear heart will stop."

40. *Bromine*. Hypertrophy in young, growing persons. Cutting pain extending upward from heart. Violent palpitations when walking and at night so cannot lie on left side.

41. *Spongia*. Pain in heart. *Dyspnœa*. Starting from sleep with fear of suffocation.

42. *Iodine*. Violent palpitation from the least exertion, better when lying perfectly quiet on the back. Constant, heavy, oppressive pain in cardiac region.

43. *Lycopus*. Violent action of heart intermittent. Cardiac distress most marked at apex on waking, after slight exertion. Mitral regurgitation.

44. *Veratrum album*. Periodical attacks of crampy pain in left chest, or to left shoulder. General prostration, cold clammy skin.

45. *Aurum*. Violent palpitation with anxiety and *tremulous fearfulness*. Cardiac asthma.

46. *Rumex*. Heart feels as if it *suddenly stopped* beating (Gels.) followed by a *heavy throbbing* through chest. Burning in region of heart.

47. *Tartar emetic*. *Palpitation* of heart in old people. Pulse *rapid, weak and trembling*.

48. *Lilium*. Dull, *pressing and heavy pains* as if heart were *grasped and released alternately* (Cactus). Trembling feeling at apex, worse on talking.

49. *Lithium carb*. *Pains* in heart before and at time of *urinating*, also before and at time of menses. *Sudden shocks* in cardiac region. Nervous palpitation.

50. *Tabacum*. *Sudden precordial anguish*, oppression of heart. Palpitation *when lying* on left side.

51. *Calcarea carb*. Nervous *palpitation* after *suppressed eruptions*—pimples on the face from onanism. Tremulous palpitation with anguish, worse at night and *after meals*.

52. *Cuprum*. Palpitation. *Boring pain* in region of heart. Stitches below heart.

53. *Phytolacca*. *Shocks of pain* in cardiac region. Angina pectoris, pain goes into *right arm*.

54. *Baptisia*. Compass and frequency of heart's pulsations seem increased and to *fill the chest*, with slow and faint pulse.

55. *Amyl nitrite*. Cardiac *oppression* and *tumultuous heart action*. Pain and constriction of heart (Cactus). Pulse irregular.

56. *Camphor*. Precordial *distress* and nervous palpitation attended by *coldness of the skin*, cold extremities, pale face.

57. *Agaricus*. *Burning, shooting pain* in region of heart extending to left shoulder blade, caused by deep inspiration, coughing, sneezing, hiccough. Anxious sensation of pressure

in heart, oppression on bending the body. Feeble filiform pulse, becoming slow and irregular.

58. *Pulsatilla*. *Violent fits* of palpitation often with anguish and *obscuratio*n of sight—better for a time from *pressure of hand*. Burning in cardiac region.

59. *Sepia*. Palpitations, with *anxiety about things* which happened *years ago*. An *occasional hard thump* of the heart. Palpitation after mental emotion.

60. *Cocculus*. *Tremulous* palpitation from quick motion and mental excitement, with *dizziness* and *faintness*. Pulse small, spasmodic, often imperceptible.

61. *Badiaga*. Palpitation from *any elating thought*, with a *fluttering* and *vibrating* upon the slightest emotion of the mind. The heart is both heard and felt to pulsate at night, from *chest up to neck*.

62. *Laurocerasus*. *Violent* palpitation of heart, with every beat. The heart's action is feeble. Beating—*fluttering sensation* in cardiac region, gasps for breath, *cold, moist skin*. Pulse scarcely perceptible.

63. *Rhus*. Hypertrophy, from violent exercise, with *sticking pain* and *soreness*. *Numbness* and *lameness* of left arm. Restlessness, must change position—always worse when keeping quiet.

64. *Natrum mur*. Heart's *pulsations shake the body*. Fluttering, weak, faint feeling, *worse on lying down*. Hypertrophy. Anxious palpitation, with morning headache. Pulse intermits with every third beat.

65. *Baryta*. Feels the heart beat. *Palpitation* when lying on the left side, with *soreness* in the region of the heart, with *great anxiety—renewed by thinking about it*.

66. *Dioscorea*. Sharp pain in region of heart, *had to stop when walking on street*. Cardiac distress. *Sharp pricking pain* in region of heart.

67. *Tarantula*. Murmurs and beating of heart with *alternate acceleration* and *suspension* of beat. Trembling and thumping of heart, *as from fright*. Heart suddenly ceases to beat and patient fears to die. Pain in the heart *as if squeezed or compressed* (Cactus, Liliun).

68. *Carbo vegetabilis*. *Impending paralysis* of heart, complete stupor, cyanosis, blood stagnates in capillaries, cold face and limbs, cold sweat, filiform, intermittent pulse.

69. *Causticum*. *Stitches* about heart. Palpitation of heart. *Oppression* at the heart, *with low spirits*.

70. *Graphites*. Sensation *like an electric shock* from the heart towards the front of neck. Constriction, pressure or stitches in cardiac region. *Strong pulsation* of blood in the whole body, but especially about heart, *increased with every motion*.

71. *Ambra*. *Anxiety* at heart, *causing oppression* of breathing, with flushes of heat. *Palpitation* of heart *when walking in open air*, with *paleness of face*. Violent palpitation with *pressure in chest* as if a lump laid there or as if chest was stuffed up.

72. *Ammonia carb.* *Audible palpitation* with attacks of *great anxiety, as if dying*. Pulse hard, tense, frequent.

73. *Anacardium*. *Stitch* in region of heart, during *inspiration, at night, stitches piercing through and through at the heart each time too quickly succeeding each other*. Rheumatic attacks.

74. *Argentum nitr.* Heart's action *irregular, intermittent*, with an *unpleasant sensation of fullness*. Exertion causes *strong beating, worse when noticing it*. Constant anxious, burning feeling in region of heart.

75. *Asafœtida*. *Pressure* in cardiac region, as if *heart were too full and expanded*. Nervous palpitations, with small pulse,

breathing not oppressed, in women after suppressed discharges or bodily exertions.

76. *Benzoic acid.* *Pains change place incessantly*; not constant around heart. *Awakes after midnight with violent palpitations* of heart and temporal arteries.

77. *Physostigma.* *Spasmodic trembling and twitching* of the muscular fibres of heart. Each heart beat distinctly felt in chest and temples. Heart's action irregular, feeble or tumultuous.

78. *Cannabis sat.* *Sensation as if cold water were dropping over the heart.* Palpitation, gradual loss of flesh and strength, from imperfect oxidation of blood. Palpitation on moving body and on stooping, with warm sensation about heart.

79. *Carbolic acid.* *Stitches* in cardiac region. Fearful beating of heart, especially at night with great dyspnoea. Bel-lows murmur, mitral.

80. *Glonoine.* *Laborious action and pressure* as if heart was being contracted. *Violent palpitation, throbbing carotids, pulsating headache, worse stooping.*

81. *Cicuta.* Palpitation, feels as if heart stopped beating, with sensations of faintness.

82. *Clematis.* Sharp stitches in region of heart, from within outward. Tearing pain in the forepart of chest above heart.

83. *Eupatorium.* Pain, soreness and heaviness behind the sternum and in cardiac region, worse by the least motion, (Bry.) or by turning the body around.

84. *Lachnanthes.* Stitches in heart with great anxiety. While lying feels beating of heart to head. Trembling of heart with great debility. Sensation as if lump of ice in cardiac region, relieved somewhat by pressing chest together.

85. *Lobelia.* Sensation as if heart would stand still. Deep

pain above heart. Sensation of *weakness* and *pressure in epigastrium*, rising to heart.

86. *Nux Moschata*. *Nun's murmur* in carotids. Violent action of heart. Palpitation and *fainting followed by sleep*. Heart beat irregular, pulse beat *intermits so long* as to excite fear of death.

87. *Petroleum*. *Cold feeling* about heart (*Lilium, Kali b.*) *Faintness, with ebullitions of heat*, pressing on heart and palpitations.

88. *Podophyllum*. Nervous palpitation from hepatic disturbance. *Palpitation*, with a *clucking sensation rising to throat* obstructing respiration. Palpitation from mental emotion or exertion with rumbling in ascending colon.

89. *Silica*. Violent palpitation *after quick or violent motion*. *Palpitation while sitting had to hold on to something*.

90. *Psorinum*. Dyspnoea with pain in cardiac region. Bel-lows murmur with first sound. *Inability to lie down*. (*Ars.*)

91. *Scutellaria*. Nervous disorders of heart, as *palpitation, tremor* and strange sensations *from emotional excitement*. Irregular action of heart. Sensation of throbbing about heart, *with flushed face*.

92. *Secale*. Palpitation, oftener at night, with contraction and frequently intermittent pulse.

93. *Stramonium*. Beating of heart, so *increased by motion* he cannot speak for hours. Trembling, twitching murmurs, instead of regular sounds, *consequent on fright*.

94. *Sumbul*. Action of heart full and sharp, *irregular, rapid eight or ten times then slow* (*Arnica, Spigelia.*) *Left arm numb, with sharp shooting pain in fingers*.

95. *Zinc*. *Severe pain* in cardiac region, some swelling and great tenderness—*feels as if a cap were over heart*. Irregular *spasmodic* action of heart, occasionally *one violent thump*.

In the literature on diseases of the heart, many remedies besides the foregoing you will find mentioned and particularly *Convallaria*, *Strophanthus* and *Kola*, and stimulants.

Convallaria majalis I have given with good effect in right sided hypertrophy with attacks of palpitation, angina cordis and severe headache on the right side. The cardiac attacks were precipitated by over exertion. There was also during these attacks increase of the spinal hyperæmia. These attacks would be followed by "feeble, irregular contraction with venous stasis" especially in the extremities. This remedy first stimulates and then is followed by depressed cardiac action, to which it is homeopathic.

Strophanthus acts in an opposite manner. We found by provings, that it first depresses the action of the heart, slows the pulse, and then it stimulates. It is therefore the similar remedy for those who have a slow heart action, but who suffer with attacks of palpitation. It benefits hard drinkers, taking away even the desire for stimulants.

Kola is a muscular stimulant. It takes away the desire for food and also postpones the muscular tire, as we found in proving it, but secondarily the myalgia is severe, even of the cardiac muscle. We can therefore use it with benefit in the myalgia met in athletes, bicycle riders, etc. It is allied to *Arnica*. These drugs deserve more thorough provings to develop their characteristics.

Alcohol is the base of all stimulants except those containing drugs, *e. g.*: Beer with its *Lupulus*; gin with *Juniper*, etc. *Alcohol is a toxic agent and not a food.* The action of *alcohol* on the heart is first that of an excitant, then follows its general anæsthetic effect and if continued muscular degeneration, *e. g.*, "hypertrophy of the left side of the heart" and "valvular insufficiency." It is this condition that *Strophanthus* (seven drops of tinct.) has benefited. It is safest to give a higher potency.

Acetic Acid also antidotes alcoholic effects (so does a salt solution). Like all acids it first accelerates the cardiac pump, even to angina and hæmoptysis; then we have "a weak, small pulse." In dropsy it is therefore similar and follows *Digitalis* well.

It would seem that among these ninety-five drugs there should be found one for any case of cardiac disorder. The fact is that in most of the cases the first few remedies are the ones from which to select. They are therefore arranged in the order of importance rather than alphabetically; but, to facilitate finding them as numbered, an index is here given:

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ON CARDIAC REMEDY SELECTION.

In heart remedy diagnosis you will not overlook the general classification of acid and alkaline (spare and fleshy) persons—a division I had the honor of first pointing out in the study of children in 1873. “We are all children of an older growth.” In the former, or acid cases, we look for an inflammatory and neuralgic tendency; while in the opposite we expect effusion and myalgia. Even the palpitation differs. In the spare, acid persons it is hurried and irregular, while in the alkaline ones it is more forcible. There may be spinal irritation in both, anæmic in the former, and hyperæmic in the latter. *In remedy selection similia guides.* In the spare anæmic cases the acids and acid generators are usually indicated; while in the fleshy alkaline spinal hyperæmic cases the alkaline drugs and those that promote alkalinity are, as a rule, called for. Those people who do not belong to either extreme, usually suffer from functional disorders and need the functional remedies. This general classification of both diseases and remedies will help you doubtless. To me it has proven the first step in diagnosis of both disease and remedy.

The classification of the remedies under the diseases, which they have controlled or cured, serves to fix them in the mind and is usually the first step in remedy selection. But we must go further and make a differential diagnosis of the drug effects, so as to select one that corresponds to the case. To do that we must get at the individual peculiarities. The characteristic symptoms, like rabbits' ears, serve to distinguish the remedy and case from all others.

Characteristics of remedies should be memorized just as the diagnostic signs are memorized. Go over them again and again until you can remember them. Disease diagnosis is child's play

compared with the remedy diagnosis. Characteristic or peculiar symptoms "blaze" the way in the therapeutic wilderness. The difficulty with the beginner is that there are so many remedies so nearly alike apparently—too many paths in the woods, so as to confuse.

In the further analytical study of remedies, just as in the study of disease, banish all thought of application or cure from your mind for a few moments and study drug effects in a comparative way just as you study diseases. Go over and over the heart symptoms until you are able to differentiate them. Write them down side by side so that you feel sure that you have found the similar one to your case. But we must go farther still.

You forget perhaps, but you made a fourth step in disease diagnosis. In the clinic we are not satisfied until we have examined the whole body to ascertain if the heart trouble is the only disease, and whether it is primary or secondary. If secondary we must cure the original trouble first or at the same time, with the heart disease.

The drug pathogenesis is also a diseased body—sometimes imperfectly developed by provings. So we go to the materia medica and look over the whole drug development. Allow me to give you a hint. In the books that might be called clinical materia medicas you will find chiefly the secondary symptoms of the drugs. Drugs have a dual action, as you will note in the pulse range in the larger works, like Allen's Cyclopædia, Hering's Guiding Symptoms, etc. The primary effects are usually toxic symptoms, while the secondary ones are reactionary and curative, *e. g.*, *Digitalis* produces first "rapid heart action and high pulse," but finally we find feeble irregular heart action and small intermitting pulse, with tendency to dropsy and heart failure. For the latter or secondary symptoms it is the *similar* and curative agent. Our regular friends

guided by contraria, give it in large and repeated doses to "bring down the pulse" and then complain of its deleterious cumulative action. The secondary effect is thereby increased and, added to that of a diseased heart, the result is often disastrous.

One step more in remedy selection, after comparing the whole drug effects with the case of disease to see that they correspond (and if satisfied as to the remedy being the similar), be sure that it meets or parallels the symptoms of today and not those of yesterday. As a diagnostician of the natural history of disease you can anticipate and predict effects. So your remedy should match tomorrow's symptoms better even than those present now. It must meet the shock of battle squarely or on the flank.

Diseases of the heart may be classified as acute and chronic, so can the remedies. Sometimes we also find mixed cases.

Acute diseases develop symptoms rapidly. The similar remedy must also be an active or acute one. The inflammatory or painful drugs are rapid in action—these head the list, and you should know them by heart and so be prepared for emergencies. Most of the heart cases you will be called to treat will be found suffering with acute diseases. *Remember that the last symptoms to appear should guide in the selection of the similar remedy.* Diseases advance by stages. We have remedies for stages and diseased states, not often for the entire course of a disease. In acute diseases the remedy is usually given at frequent intervals.

The most numerous cases of heart disorders that walk our streets are chronic ones. The remedies that may be placed in the chronic list are most numerous also. In the chronic diseases of the heart, and especially where tissue change must be effected, time is an element in the cure. The remedy can be given at longer intervals. In women the system undergoes a monthly cycle (and perhaps in men also), so we may look for improvement month by month at least, if not sooner.

An acute attack setting in upon a chronic disease may aggravate and complicate matters. Here as elsewhere, if properly treated, the acute disease may not only be cured but the chronic condition also greatly improved. Chronic heart diseases are usually secondary, and the primary disorder may need first to be cured.

Do not be afraid to try to benefit hearts with severe structural change. We have remedies that will control hypertrophy and valvular lesions. Even when lack of compensation and heart failure threatens, our remedies, with proper management, have prolonged life, to the satisfaction of the patient and friends and the benefit of the physician.

DIETETIC AND HYGIENIC TREATMENT OF HEART DISEASES.

DIETETIC SUGGESTIONS.

Proper nutrition and care of the body, as well as judicious exercise, are necessary to insure a good working heart.

If the food taken is too rich, or in too great an amount, the blood becomes plethoric and the system unduly loaded with fat, so that the cardiac function is overtaxed. If the food taken is slow of digestion, gases are generated and the heart is crowded upon so that its action may be so seriously impeded as to produce dyspnoea or even convulsions, especially in children.

Dr. Townshend reports a case of acute indigestion, with convulsions, of an epileptiform nature, in which he found a systolic murmur that continued for ten or fifteen minutes after the attack and then permanently disappeared.

The condition of the digestive organs affects directly the circulatory system. If the food is insufficient in amount anæmia may develop, and the heart be compelled to do extra work to supply the various parts of the body with the thin impoverished blood. A murmur is developed under these circumstances. How this occurs is illustrated as follows: "Take a rubber tube and allow a stream of water to flow through it into a basin. If the tube is compressed, causing a division of this current, a murmur is produced analogous to the murmur of a diseased heart." In anæmia the flow is broken. [We may learn more from this simple experiment. If the basin is held a distance from the tube, a loud and splashing murmur sound is heard, such as is found in hypertrophy of the heart; and when the tube is placed near the basin a low sound results, such as occurs in dilatation of the heart.]

If the brain is active beyond the usual extra work is thrown upon the heart, so that the brain may be properly supplied with blood. Nervous and mental activity has a decided effect upon the digestive functions. Nervous people as a rule are poor eaters. Passion in any form affects the heart so markedly that the heart is popularly supposed to be the emotional centre. Palpitation with consequent hypertrophy is produced by emotion and prolonged passion. Alcoholic drinks destroy digestion as well as stimulate the heart, so that hypertrophy and fatty degeneration result, as we have already stated. It is absolutely necessary to control the nervous system in heart cases.

If the liver does not perform its proper function the portal circulation becomes impeded and an extra tax is placed upon the heart. In all cases of heart disease it is well to give the liver proper attention. If the respiration is defective or deficient the blood is not aerated and the heart muscles become weakened by the large proportion of venous blood. Venous stasis may be prevented and the heart strengthened by insisting on systematic "deep breathing" three or four times daily.

If the kidneys do not eliminate the post organic matter from the blood the heart is irritated and its diseased condition aggravated. Venous congestion of the kidneys acts like pulmonary and hepatic engorgement in overtaxing and weakening the heart.

So in every case of disease of the heart and circulatory system a general survey of the nervous, digestive and respiratory systems, as well as the excretory organs must be made so as to be sure that the diseased heart is not the only organ affected.

In cases of spare and anemic persons troubled with palpitation, nervous or cardiac, an effort should be made to increase the blood supply. The rules given in a former work* may be followed out. The deficiency is usually in the quantity of fluids or blood plasma as well as in the amount of fat in the tissues.

*See How to be Plump, by T. C. Duncan, M. D.

Water, warm or cold, must be taken in increased quantities and usually a greater amount of food will be required, digested and assimilated. Sometimes when this sudden change in nutrition is begun, large quantities of gases are generated that may cause cardiac distress. Usually a drink of hot water, salted or sweetened, taken an hour or two after the full meal will carry the food down and on and hasten its digestion. Great skill is sometimes needed to pilot these acid cases into a more nearly normal physical condition.

In acid spare cases I have found a warm bath, two or three times a week, to be very beneficial. I direct the patient to lie down in the tub of warm water.

In anæmia the condition of the blood is effectually and promptly improved by enemata of defibrinated blood. One or two ounces of the blood diluted with warm water may be given once or twice a day. The rectum should be washed out with warm water on alternate days. Bovine well diluted may be used when the blood cannot be obtained.

In cases of plethora where the blood is thick and the whole system shows super-nutrition, or what I have termed an extra alkaline condition, the indication is to limit nutrition by controlling the appetite. The desire for food, and especially liquids, is unusual, and must be controlled by a carefully regulated diet. Liquids may be ordered before the meals, to lessen the gastric activity. A breakfast of coffee and rolls may be eaten. This is an European breakfast, and therefore may be sufficient for some. The eating of acid fruit should be encouraged. Get the patient to take the hearty meal at mid-day if possible. Fleishy people are sluggish as a rule, and moderate exercise should be insisted on. A cold sponge chest bath or rub in the morning is beneficial for these people whose systems are surcharged with blood so that the heart is overtaxed.

In many forms of heart disease no special change in diet is

necessary. During an attack of acute disease only the blandest food can be tolerated. In advanced hypertrophy and dilatation with disturbed compensation great care is necessary. It is often very difficult to regulate the diet in valvular diseases of the heart, particularly when the dilatation has gone on until there is venous stasis in the kidneys and liver. Nausea and a decided repugnance to food may occur. The amount of liquids should be restricted and concentrated albuminous food substituted, including milk, beef extract, or eggs given say every three hours. All starchy food and articles that cause flatulence should be omitted. Sometimes stimulants may be allowed to assist reaction but they are usually harmful. A cup of hot milk slightly salted will prove both a stimulant and an easily assimilated food. An egg beaten to a foam and a half pint of hot water poured on it makes a nourishing drink and food as well. When the serious symptoms of disturbed compensation have passed, then scraped meat, fish, chicken and soft boiled eggs may be allowed (Osler). Buttermilk is a good drink especially in summer. In arterio-sclerosis the patient should live a quiet life and avoid excess in eating and drinking. Special attention should be given to the excretions, skin, kidneys and bowels. Stimulants must be avoided. Alkaline mineral waters are serviceable.

ALTITUDE AND HEART DISEASE.

We are often consulted as to whether a given case can visit a high or moderate altitude. Air is a form of food, and many cases can be benefited by a rare air. You should know its effect upon the system.

“It has been proven that the number of red blood cells is increased even by a short residence in high altitudes; to this fact is due the general improvement in the physical con-

dition of patients, along with the corresponding increase of the hemoglobin which increases the oxygen capacity, thus increasing nourishment and metabolism. Schauman and Rosenquist have concluded that the effects of high altitude on the blood are due not to the dryness but to the rarefaction of the air, and that the increase in the red blood corpuscles is actual and not relative."

"The only organ directly affected at moderate altitudes (from 3,000 to 20,000 feet) would be the heart for the following reason: The usual pressure upon the heart is equal to 754 mm. of mercury; at an altitude of 10,000 feet the general pressure being 501 mm., the pressure of the heart would be only 495 mm. of mercury. The arterial pressure, and the intracardial pressure would be the same as when the pressure on the heart walls was 754 mm. Under such conditions, but one result could follow, a stretching and dilatation of the heart walls, especially of the right side; hence we have murmurs, syncope and dyspnoea. In most cases in very high altitudes there is forceful dyspneic breathing; in some there are dyspneic convulsions due to the deficient blood flow to the respiratory centre." I saw several such instances on Pike's Peak. The horizontal position and retarding the respiration by a handkerchief over the mouth soon restored the cases. In ordinary altitudes to which we send patients, the hemoglobin can take up all the oxygen the system needs, and the cardiac dilatation is the sole cause of the dyspnoea and indirectly of the pulmonary hemorrhage which occurs in high altitudes.

"The chief and immediate cause of dyspnea and cardiac failure," says Dr. Donaldson (*Pacific Med. Jour.*), "may be traced to the diminished pressure on the heart walls and their consequent dilatation."

Dr. Loomis has shown that patients whose hearts were healthy have suffered from passing cardiac failure in the rare-

fied atmosphere, and in some, permanent cardiac trouble had resulted as the direct result of the cardiac attack.

It will be seen that where dilatation is taking place a low altitude should be selected.

In plethoric alkaline subjects suffering with functional palpitation and even in the first stage of hypertrophy, a visit to a high altitude may prove beneficial. The transition in either direction should be moderate and by easy stages. If the heart can endure forced, deep and rapid respiration in a low altitude the patient can venture into a high altitude. Its bad effects are aggravated by fright. A diffuse stimulant like camphor or ammonia can be taken but retarding the respiration by covering the mouth so to render the air more dense is a method I discovered in high altitudes that proved very efficient in warding off the threatened syncope that sometimes proves fatal.

EXERCISE AND REST IN HEART DISEASE.

As to exercise, in the first stage of valvular disease where there is sufficient compensation to allow for the free flow of blood through the valves, we should advise mild exercise. Some physicians permit even mountain climbing and all kinds of outdoor exercise short of the competitive sort—*i. e.*, rowing, boxing, baseball, tennis, and the like.

Rest is often ordered when moderate exercise should be taken. Cases are on record where bicycling had permanently injured a heart weak with valvular disease. Moderate riding on a level road may not be harmful.

In cardiac hypertrophy moderate exercise may be taken, but when dilatation has taken place much rest must be insisted on.

Enforced rest in low altitudes is beneficial, but we agree with Babcock that "Prolonged rest is detrimental, undoubtedly, in cases of the heart without valvular disease, particularly if sec-

ondary to arterio-sclerosis, and in cases of fatty or other degeneration of the cardiac muscle.

“When compensation has become destroyed in valvular lesions of the heart, particularly mitral stenosis and aortic incompetence, rest is indicated theoretically and is beneficial in practice. It is in those cases where baths and resisted exercise are beneficial.

“Brachycardia, slow pulse, would theoretically contra-indicate prolonged rest.

“On the other hand, it is called for in paroxysmal tachycardia, but should not be maintained, after having shown its powerlessness to affect the heart-rate.

“Acute inflammatory or degenerative affections of the heart indicate rigid rest in the recumbent position.”

The effect of a high altitude is as you see to greatly increase the activity of the heart. It is a severe form of exercise, and in this connection your attention is called to another form and that is called “resisted exercises.” Here the patient is directed to move a leg or an arm, while the physician or skilful attendant resists more or less the movement. The effect is to greatly stimulate the muscular effort. This differs from massage or passive exercise in that the will of the patient is called into activity. The arms are thus exercised, then the legs and finally the trunk. The seance is short and mild at first but after a short time these “resisted exercises” may be prolonged. When the heart is very weak this exercise is usually given after a bath.

Speaking of weak heart you should remember the following varieties are recognized by Prof. DaCosta: (1) That dependent upon *degeneration* of the cardiac muscles, especially the fatty heart; (2) That connected with *dilation* of the heart; (3) That resulting from the action of certain poisons on the nervous mechanism of the heart; (4) That due to an intrinsic-

ally weak muscle, and finally (5) That resulting from nervous prostration.

You should also remember the fact that muscular effort is attended by deeper and retarded respiration which ensures stronger cardiac contraction, and this, as you see, must tend to strengthen that organ. There is, however, an element of danger from overdoing, hence it has been found that the best results are secured *after* certain saline baths, especially in advanced cases of cardiac failure from hypertrophy and dilatation. The good effects of the baths have been so noteworthy in Europe as to attract the attention of cardiologists all over the world.

The value of rest in cardiac dilatation is emphasized by Osler who believes that: "Disturbed compensation may be completely restored by rest of the body. Both in Montreal and in Philadelphia it was (with him) a favorite demonstration in practical therapeutics to show the influence of complete rest and quiet on the cardiac dilatation. In many cases with œdema of the ankles, moderate dilatation of the heart, and irregularity of the pulse the rest in bed (a few doses of compound tincture of Cardamom and a saline purge) suffice, within a week or ten days, to restore the compensation. One patient, in ward 11 of the Montreal General Hospital, with aortic insufficiency recovered from four successive attacks of failing compensation by these measures alone." This is the latest regular treatment. The "saline purge" was doubtless Epsom salts and the compound we understand contains Cardamom (20 gm.), Cinnamon (20 gm.), Caraway (10 gm.), Cochineal (5 gm.), Glycerine (50 C.c.), Alcohol qs. to equal 1000 C.c.

The agent in the above mixture that has any marked cardiac symptoms as far as developed seems to be the *Cochineal* (*Coccus cacti*) which produces "irregular beating and palpitation of the heart with anxiety after eating." Such a heart is evidently

dilated. Then we find recorded "pressive pain in pericardial region with palpitation. Pulse accelerated. Tumultuous action of the heart on lying down after eating."

All of these symptoms point to a weak, enlarged heart. When will our self-styled regular (?) friends learn rifle practice?

We agree with Osler that rest is the main thing but the indicated remedy can greatly assist in the restoration and this is especially true where the systemic circulation is disturbed by a leaking aortic valve.

In certain cases of weak heart, particularly when it is due to fatty overgrowth, the plans recommended by Oertel and by Schott are advantageous, "especially in those forms of heart weakness due to intemperance in eating and drinking and defective bodily exercise." (Osler.)

The Oertel plan consists of three parts:

I. "In the reduction of the amount of liquids. This is an important factor in lessening the amount of adipose tissue in these patients. It also decreases the serum of the blood and increases its density. (See How to be Plump.)

He allows about thirty-six fluid ounces daily which includes the amount taken with the solid food. Free perspiration is encouraged by bathing. An alcohol bath or even Turkish bath may be taken if the patient is able to endure it.

II. Is the diet which should consist largely of proteids. The daily dietary may be as follows: Morning—Cup of coffee or tea with a little milk, about six ounces (a teacup) altogether. Bread, three ounces (say, couple of slices). Noon—Three to four ounces of soup. Seven or eight ounces of roast beef, veal, game, or poultry. Salad or a light vegetable. A little fish. One ounce of bread or farinaceous pudding. For dessert three to six ounces of fruit. No liquids at this meal as a rule but in hot weather six ounces of light wine may be taken. Afternoon—Six ounces of coffee or tea, with as much

water. As an indulgence an ounce of bread. (If possible this meal should be omitted and especially the coffee.) Evening— One or two soft boiled eggs; an ounce of bread, perhaps a small slice of cheese, salad and fruit. Six to eight ounces of wine with four or five ounces of water (Yeo). (Tea is the best drink.)

III. In addition to the above and perhaps the most important element of all (Osler) are graduated exercises, not on the level, but up hills of various grades. Each day the distance to be walked is marked off and gradually lengthened. The heart by this means is systematically exercised and strengthened.

Under Schott at the Bad Nauheim good results are obtained by a combination of stimulating carbonic acid gas baths and a system of 'resistance gymnastics' in which the patient makes certain definite movements of each limb in succession, which are resisted by the attendant. The cases most suitable for this treatment are those of fatty heart. It reduces the obesity and the patients are more comfortable and able to work or go about without cardiac distress or great shortness of breath." The method pursued at Nauheim combined with a restricted diet, is better for severe cases, and as they improve the exercise regime of Oertel may be followed. Where there is a rheumatic tendency a more restricted and solid diet may be called for. In most of these cases acids do harm.

BATHS IN HEART DISEASES.

The form of bath that has attracted so much general interest was brought to the attention of the medical world by Dr. Schott, physician to the Bad Nauheim, who demonstrated that the baths were remarkable in reducing by actual measurements the size of the dilated and failing heart.

"It seems that the Nauheim waters are rich in salts, particu-

larly sodium chloride and calcium chloride, and some contain a large proportion of free carbonic acid. The temperature varies from 81° F. to 95° F. At the beginning of the course saline baths of the higher temperature are employed and the duration of immersion is eight minutes. The bath is used at first on alternate days, afterward one day is missed in three and later on, one in four days, but this is varied according to the condition of the patient; the period of immersion at the same time gradually increased to twenty minutes or nearly half an hour, and the saline constituents augmented by the addition of 'mutter lauge' or mother liquor; the temperature is gradually decreased during the course, until it gets to about 83° F. After twenty or twenty-five of the saline baths have been given, the patient is subjected to the 'sprudel' bath—that is, a saline bath with a large amount of free carbonic acid, and some patients further get what is called the 'sprudel strom' bath, which is the same in a continuous stream."

Sprudel or Carlbath salts (artificial), as found in the Dispensatory, consists of:

Sulphate of Potassium	2 parts.
Chloride of Sodium	18 "
Bicarbonate of Sodium	61 "
Sulphate of Sodium	88 "

The Genuine Sprudel Salts contain besides the above, Magnesium and Lithium which doubtless add to the efficiency.

As this form of bath may be ordered anywhere it is deemed interesting to explain in detail.

These baths as described by the patient as very refreshing. "On leaving them he is carefully dried by warm towels, and precautions are taken against the risk of catching cold; the feet especially have to be kept warm. He takes some light nourishment and rests for an hour or more. The course of baths at

Nauheim lasts from four to six, sometimes as many as ten weeks." The Nauheim baths may be successfully imitated in respect of temperature and chemical constitution, a fact upon which the Brothers Schott have always insisted; asserting that the Nauheim possess no exclusive virtue. If one adds to a forty-gallon bath 5 lbs. sodium chloride and 8 ozs. calcium chloride, one obtains such a bath as is generally given at the commencement of the treatment; the proportion of salt may be increased so as further to strengthen them. Dr. T. G. Stewart of Edinburgh found that Sandow's powders and tablets, when added to such a bath, produce excellent effervescence, one packet being equal to a sprudel, two to a strom sprudel. The artificial sprudel salts referred to above may be used instead. Dr. Hugh Jamieson, a graduate of Edinburgh, who has had much experience of treatment at Nauheim, believes that these artificial combinations produce precisely the sensations proper to the corresponding Nauheim baths.

Dr. Stewart had at Nauheim opportunity of examining several patients suffering from cardiac disease, immediately before and after the bath, and also felt the pulse at intervals during the period of immersion and saw the most striking diminution of the area of cardiac dullness, with slowing and strengthening of the pulse, changes just as definite as those resulting from the exercises. He made in Edinburgh a series of experiments with a view of determining the precise nature of the favorable influence so exerted.

1. He tried a series of cases with baths of ordinary Edinburgh water at a temperature of 95°, and found that neither in dilated nor normal hearts did fifteen minutes' immersion lead to any change in the size of the organ as determined by percussion.
2. He obtained nearly similar negative results when he used a saline solution at the same temperature in a series of cases.
3. He found that when he disengaged in the saline bath large

quantities of carbonic acid gas by Sandow's method, the same results were obtained as witnessed at Nauheim. It therefore appears that the combination of salines with carbonic acid best brings out the result. He argues that, "As regards the question of the physiological explanation of these facts, it cannot be reasonably maintained that inhibition of salines takes place from the baths into the body so as to influence the circulation; but one can see, while the patient is in the bath, an unmistakable reddening of the skin from dilatation of the vessels, and concurrently with this the pulse becomes more regular in rhythm and in strength and slower in rate, while subsequent examinations showed that the cardiac dullness was in process of diminution. It is probable that the effects are due to mechanical dilatation of the vessels diminishing peripheral resistance, thereby rendering the work of the overtaxed heart easier."

Would it not rather seem that the absorption of oxygen was favored, relieving the venous stasis that impaired the heart?

In the Nauheim treatment, says Dr. Stewart "it is found preferable to begin with the baths, and afterward go on with the exercises. He never saw any disagreeable effects from the baths; they are agreeable to the patient and put less strain upon him than even the gentlest resisted exercises do.

"Up to this point we have considered the exercises and the baths apart from one another, but in practice they are usually combined—sometimes the baths, sometimes the exercises being preferred; but in the great majority both are used. One secret of Dr. Schott's success consists in his large experience of heart cases and his skill in combining various methods of treatment. Neither the individual forms of the exercises nor the baths, nor even the combination of the two, are entitled to displace our former treatment by means of rest, diet and medicine."

One great value of clinical experience is that it brings all our knowledge into a group and we are able thereby to make the best selections for the case in hand.

ANOTHER NEW HEART REMEDY.

[I have the pleasure of placing before you what looks like a new remedy of value. I have known the author for many years and believe him to be an honest, earnest follower of Hahnemann.]

SPRINGFIELD, MASS., Nov. 1, 1897.

DEAR DOCTOR DUNCAN.—As you request me to tell you something of my new heart remedy I will do so, but before I “trot the race” I will “score up a little.” More than fifty years ago I was on a load of hay with no covering to a part of my foot except a stocking. The horses attached to the load started and to save myself I attempted to stick the hay fork into the hay, but instead of that stuck one tine of the fork forcibly into the top of my foot. Those present predicted that if I was not a cripple for life I should be lame all summer. A back-woods doctor promised to have me all right the next day, and he did by splitting open a common, medium sized white bean (“*Phaseolus nanus*” in Gray’s Botany); split it in halves, bound one-half the flat split side on the wound. The pain was so severe I became delirious, went to sleep and awoke well. In the forty-one years I have been in the practice of medicine I have had occasion to try it many times in punctured wounds with rusty nails, etc., with *perfect success every time*. You may be ashamed to prescribe so simple a remedy, but if you visit the patient two or three hours later you will hear words not found in the “Catechism” unless your patient is *very good*. For years I have thought I would make a proving of it, and for two years I had some of the beans on my desk so they were well dried. Some two years ago I made a trituration to the 4th x and took 40 grains a day in four doses. I shall omit the symptoms of the stomach, bowels, kidneys, genitals, etc, as I am writing about heart symptoms. After taking as above a num-

ber of days I felt a sudden curious sensation in the region of the heart. I felt of my pulse and it was very weak and irregular—the first time I ever had anything wrong with my heart. I did not take any more. Soon after I was called to a retired clergyman, 68, who had been unable to preach for quite a number of years on account of heart disease, which no one of a number of physicians could satisfactorily diagnose. When I saw him he was pulseless at both wrists and remained so in spite of my best efforts. I then gave him Phaseolus, the 6x I think, and in a few hours there was a marked improvement, and in 36 hours he had a *good* pulse and it remained so to my last visit, one-half hour before his death, from exhaustion, nearly three weeks later. Was called suddenly to New York so no post mortem. A lady in Minnesota, 40, had been under my care several months; her worst complaint was such a weak, sick feeling about the heart with weak pulse. Nux., Chelidonium Chiananthus, etc., to act upon the liver improved her health and heart somewhat, yet she complained of that weak bad feeling about the heart, causing fear and sadness. I sent her Phaseolus 9x, and later she wrote me: “In 48 hours after beginning that last medicine my heart wheeled into line all right and it has remained so now over a year.” Mrs. Doctor,—30, for two years, about five times each minute, her heart would give one hard throb, then omit one beat, but worse at night. I gave her Phaseolus 6x, and in 36 hours her heart was all right, but it gave her a severe headache. D. P. Brown reported case of a young man. Once in two weeks his pulse was 60, the rest of the time, 50 to 55. I gave him some Phaseolus 5x, which he gave, and the next morning the pulse was 72 and remained so. Was called in consultation with an old school doctor; case of confinement, first child; urine loaded with albumen, sick 48 hours, had frightful convulsions; delivered with forceps. The doctor looked after the mother, I the baby, nurse and ladies. Two hours later, before I had left the house,

the doctor came to me and said her heart had gone back on her and with Nitroglycerin, etc., I can't start it. I gave him a vial of Phas. 9x, and told him to give her a dose. Ten minutes later his face was all smiles and her heart was all right. He had to repeat it twice during the night and no more. The albumen in the urine soon disappeared and she made a rapid recovery. The doctor kept the vial and one week later he was called to a lady who was unconscious, pulseless, and breathing eight times a minute. Three doses of Phaseolus 9x restored her to her usual health. Dr. Eaton, of Palatka, Florida, sent for some of the remedy. Later he wrote me: "I was called to see a case of hopeless heart disease. One dose of Phaseolus started the heart's action and only two doses were needed then, but a return a few days later was entirely relieved by one dose." The nurse, who had never nursed one of his patients before, said it was the most wonderful thing she ever saw. The doctor wrote: ("What if she only knew.") He said, I think it will prove to be the remedy for so called heart failure. Something else. One year ago I was called to see a lady, 50, (semi-invalid many years, at one time for years was fed on bromides and whiskey alternate days) suffering from *severe* dull pain in epigastrium, vomiting, etc., which I could not relieve. Counsel thought Schussler's remedies would act at once. One was tried, then another, with no benefit; finally she was relieved, but was soon yellow with jaundice. Liver remedies had done no good during pain. Recently she had a similar attack without pain in liver. Two days and nights I worked over her, then in desperation (the Lord forgive me) I gave one-fourth grain morphine hypodermic to relieve the nervousness till some remedy would act, but it did no good. Finally I gave a small powder of Phaseolus 4x and repeated it in one hour. Soon after she said I guess you have hit it, and she guessed right. She did not vomit again and had no more pain. One thing more. A firm in St. Louis is advertising "Phaselin for

dyspepsia." Now, according to my observation, if patients take it in the doses recommended they may as well be castrated at once for it will knock their genital organs into a "cocked" down "hat."

This is the best I can do for you now.

Respectfully yours,

A. M. CUSHING, M. D.

[This may come to be a remedy of value and should be proved to develop all the concomitant symptoms.]

CLINICAL OBSERVATIONS.

Complying with a demand for demonstrative cases a number are here given. Some are unique. Most of them were used as illustrations in the course of lectures on Cardiac diseases or met with in the clinics from which they are condensed.

Clinically three problems confront us in every case we are called upon to treat:

First. What is the condition of the heart?

Second. Are the symptoms and conditions due, in any degree, to the heart?

Third. Can we restore the heart, and rest of the body, to the condition of health for that person, by any means at our command—hygienic or remedial?

In practice, in the clinics, in our office and at the bedside, we must ascertain the exact condition of this vital organ. We have discovered that it varies even within the limits of so called health in different individuals, *e. g.*, in the very fleshy and in the spare people. We should also recognize the disease tendency developed by different occupations. The life history is often necessary to throw light upon the case. Your knowledge therefore must take a wide range before you can become expert cardiologists.

A CASE OF ANGINA PECTORIS.

While a young physician thirty-two years ago I was called to a severe case of angina pectoris. I had heard of the case through a friend who had given me a clear picture of the attacks. The case was in a large boarding house where there were several young ladies—one of whom was especially interested in him. It seems that he would be taken and writhe in agony.

He said that his heart felt as if "gripped in a vice," and the only relief the allopathic physician could afford was by morphine, hypodermically, and then chloroform. The result was that he would be laid up for several days. Between the severe attacks and severe treatment he was fast being used up. One day I rashly said that if there was any truth in Homeopathy that Cactus ought to control the attacks. This was welcome news. In a few days while vaulting over a low fence to get a child's ball, an attack was precipitated and I was sent for in haste. My Cactus was a fresh, reliable preparation that I had procured on purpose and had it in my hand as I entered the house, ordering a half glass of water on my way to the room. I found an athletic man being held on the bed by four persons. His eyes were closed, face pale with a most anxious, fearful expression; head well thrown back and he was clutching at his left side (precordial region) as if to loosen the grasp of a monster. He was tossing from side to side as if in the greatest distress. I fixed Cactus 3x in water, and with the greatest difficulty succeeded in prying open his jaws sufficiently to get a teaspoonful in his mouth. By lifting the epiglottis I succeeded in getting part of it swallowed. I then let him inhale a little more chloroform. The former physician had resorted to it so often that the friends had learned how to give it. In a few moments he was evidently easier. I gave another dose which he swallowed readily. I stopped the chloroform and he relapsed into a sleep, taking his medicine however every hour for several hours. Next day he was up and came to my office to get some of that "wonderful remedy" that had stopped the attack so promptly. He had a slight attack the next week but did not have another for three months, when his supply of the remedy was exhausted. He was taking a dose daily when he left the city. I sent him some more of the remedy and a prescription. He was then in Springfield, Mass. Six months thereafter I learned through his affianced that he had no more attacks.

She and several others in that house became converts to Homeopathy which here stood the test so grandly.

Concerning the pathology of Angina Pectoris, Sir Benjamin Ward Richardson says: "After a study of 43 cases I have reached the conclusion that this affection (Angina Pectoris) is a sympathetic neurosis, bearing much the same relation to the sympathetic nervous system as epilepsy does to the brain. Heart lesions and coronary disease are often absent and when present are probably merely coincidental." *Asclepiad*. I am inclined to the view that there is usually a spinal hyperaemia present, involving the cardiac ganglia, and that must be relieved before the case can be cured.

ACONITE IN CARDIALGIA.

I must tell you of another case that I encountered early in my career:

A plump, close built lady with brown hair and eyes; when she took cold would have an attack of high fever with severe pain in the heart that would occur in paroxysms. Sometimes she would be insensible, and at other times would cry out in agony. She said it felt like a knife sticking her heart. After trying various remedies I finally found that Aconite would afford prompt relief when given early; later Bryonia was of service. She came to me because the allopathic plan of morphine and stimulants left her used up for days. For years she kept "that heart remedy" (Aconite) in the house. It would arrest the fever that followed a chill. She finally removed to Colorado and I learned that after passing the change of life she was free from these heart attacks. I was not then well up in diagnosis, and aside from a suspected slight hypertrophy could detect no other cardiac lesion. Her case had baffled several physicians. The attacks were called car-

ditis. We often cure cases that cannot as yet be accurately diagnosticated.

CASE OF INTERMITTING PULSE.

By the way of "prognosis in a case of intermission of the pulse and heart beat" I relate the following: Old Dr. Dyas my neighbor for many years was the oldest physician in Chicago at the time of his death. Having to read a paper on the Elements of Longevity at an annual gathering of the medical examiners of the Royal Arcanum I called on Dr. Dyas to get some points. He emphasized (1) a good constitution; (2) regular habits, and (3) careful eating. Although 86 years of age he went to his office every day besides making consultation visits. He informed me that an aunt lived until she was 104. He was active, supple and spry. Placing my finger on his pulse I discovered that it skipped every sixth beat, and remarked: "Doctor, if I were to examine you for life insurance I should be obliged to reject you." "So I was when 5 and 20. I had a bad attack of rheumatism in Dublin when 16 years of age," was his prompt reply. Here was a man who had lived 60 years after being rejected for insurance. The arcus senilis was well marked, he was very near sighted and his muscles were flabby. The rheumatism doubtless produced mitral insufficiency, and the intermission was doubtless due to muscular weakness. I have often regretted that I did not ask for the privilege of making a physical examination of the heart. He was killed next year by the cars.

CASE OF WOUND IN THE HEART.

Penetrating wounds of the heart are rare. Large ones cause immediate death, while small ones may heal. Auricular wounds are the most dangerous owing to thinness of the walls.

Hemorrhage is the most profuse in wounds of the right ventricle. The prognosis depends practically upon the amount of hemorrhage. Recorded cases of recovery are rare.

At the congress of the German Surgical Association, Dr. Rehn of Frankfort reported a case of a young man who was wounded by a knife in the fourth interspace. After opening up the wound resecting the fifth rib the pericardium was incised. A wound one and a half centimeters in length was then found in the right ventricle. There was much hemorrhage and dyspnea. The wound was rapidly closed with three sutures and the pericardial cavity was packed with iodoform gauze. The respiration immediately improved, and although the patient's convalescence was retarded by suppurative pleuritis he made a complete recovery.

In wounds of the heart the diagnosis is difficult to make. In doubtful cases cautious probing may be performed. The main indication for treatment is to keep the patient as quiet as the dyspnea will permit. It is recommended to make a free incision and discover the seat of the lesion as in the above case and allow the blood to escape from the pericardium and close the wound by sutures. Italian surgeons were the first to suggest sutures.

This is a case where *Calendula* would have been of great service in causing rapid healing.

RHUS IN HEART CASES.

Here is a case that has many points of interest. You see that he is large, of lymphatic, bilious temperament, and a war veteran. He had rheumatism in the army, as did most of the soldiers, until they learned to rest on the stomach instead of on the back while on the march. Walking, you know, produces spinal hyperaemia, so does the dorsal decubitus; if to this condition there is added a chill, an attack of rheumatism is apt to

result. He complains now of pain and soreness in the muscles of the left shoulder, arm and back. I find that the pulse skips every few beats. The intermission is not uniform. I want you all to feel it and note how soft and compressible it is. If it was bead like or staccatic we would infer that the aortic valve was diseased, but auscultation proves that they are sound, in fact all of the valves close properly. The inference is that the muscular walls are weak, possibly there is lack of nervous energy. This is a *Rhus* case. You should be familiar with the effects of this drug upon the back and heart. Its pathology is that of spinal hyperaemia which explains its peculiar heart symptoms.

[*Rhus* made this case so well we lost sight of him after reporting decided improvement.]

Rhus seems to be especially suitable to affections of the deeper muscles of the back. There are great pains on attempting to rise, showing, thus, the aggravation on commencing motion.

It is more suitable to the chronic forms of lumbago, (*Aconite* suits the acute form).

Rhus backache is better from pressure, likes to lie on something hard, but is worse in bed at night.

Rhus pains are relieved by bending backwards.

Organic disease of heart with sticking pains and soreness, numbness of left arm.

Chest and heart feel weak after a walk, trembling sensation of the heart.

Hypertrophy (uncomplicated) from violent exercise.

Palpitation violent when sitting still.

Pulse accelerated, weak, faint and soft, trembling or imperceptible, sometimes seems quicker than the heart beats, irregular, affected by beer, coffee or alcohol.

The effects of *Rhus* upon the heart are briefly given by proverbs.

“Some violent pulsating stitches above the pericardial region, so that he was obliged to cry aloud while sitting in the evening (after $\frac{1}{4}$ hour).

“A disagreeable sensation of weakness of the heart, trembling of the heart.” This I take to be a primary symptom and should not be italicized as it is not curative, but “palpitation so violent while sitting still that the body moved with every pulse.” That is secondary and curative.

“Pulse slow at times, irregular (after $\frac{3}{4}$ hour).

Pulse 120 at 2 p. m. (after 18 hours) and fifth day 110.

Pulse 130 (after two days).

Pulse still high (sixth day).

Feels pulse in back part of head (cerebral hyperæmia). (1) “Pulse at first full and strong but slow, (2) afterwards small, frequent and compressible.” It is proper to emphasize “pulse rapid,” because we see that it is secondary and a therapeutic guide.

Angina. Tremor about the heart. Stitching pain in the left side of the chest, which threaten to arrest the breathing, especially during violent exercise, both when standing or walking; coming and going the part being painful to the touch. Paralytic pain in the left arm which is quite numb occasionally, especially when in a state of rest; tingling in the arm when moving and rubbing it. The left arm is colder than the right. Painful tension in the muscles of the left side of the chest and the left arm, worse in rest; chilliness, little appetite.

Rhus 8th, one dose cured the case. Ann. II, p. 307. Reuckerts Therapeutics.

Carditis. Rhus may be employed in the various affections of the heart when complicated with measles, scarlatina or rheumatism. Palpitation worse during rest, stitching in the region of the heart, with painful lameness and numbness of the left arm, aching in the left arm, worse at night.

Palpitation. In nervous palpitation of the heart the poison oak acts well when the patient is better from continued motion or when the affection is occasioned by getting wet.

AN ATHLETIC HEART AND RECURRENT BRONCHITIS.

This young man has an interesting heart. He tells us that he is an athlete and that he cannot practice athletics now on account of cardiac pain and shortness of breath. He has been fast and smokes a good deal. It seems he had an attack of some lung disease, was sick a long time and was sent to California where he was soon better and returned last spring well as he supposed. He has caught cold and comes to us with a bronchitis. He takes cold easily and has had several colds—recurrent bronchitis. You see that the bronchial inflammation is now at the bifurcation of the bronchi. We will give him Bryonia which stops the bronchitis and also helps the rapid forcible heart. On auscultation and percussion a slight hypertrophy is made out. It is traumatic. When we have removed the bronchitis we will devote more attention to the state of the heart. I wish you to note that the effects of running as in this case retards the pulmonic circulation, and gives us rightsided hypertrophy. That tends also to protract the bronchitis. You notice that all of his actions are nervous. *Arnica* will come in later. [He was better but returned to athletics, tobacco and stimulants; contracted cold after cold until he was advised to go to southern New Mexico where on a sheep ranch he could lead a more quiet life in an equable climate.] This case also emphasizes the bad effect of tobacco on the heart.

TOBACCO ON THE HEART.

Stille says: "Smoking tobacco weakens the nervous system inducing *palpitation* of the heart, tremulousness of the limbs,

neuralgia, and morbid susceptibility, with diminished tone and power. These symptoms occasionally assume the aggravated form of *angina pectoris*. One of its most usual effects is to produce an *irregular and intermittent pulse*."

Some years ago the writer had to stop the use of tobacco on account of a severe palpitation and *angina pectoris*. You should know that the "*aggravation* is at night, in a warm room, and on motion," while the *amelioration* is in fresh, cold air. In cases of palpitation and cardiac enlargement, the use of tobacco should be prohibited. Do not stop here, however, you should give the person an antidote for they have a herculian task to overcome the habit. *Plantago maj* is said to cause "aversion to tobacco," but *Pulsatilla* has done the work for the writer. It is also a valuable cardiac remedy.

WHOOPING COUGH ON THE HEART.

This interesting case is brought to me for diagnosis by Dr. C. D. Messenger. He is a little spare boy of six. A fullness of the lips and nose suggests catarrh, and unusual development indicate forced respiration. He laughs and plays, and is full of nonsense, suggesting a childish brain and a rapid heart. He has a loose, spasmodic cough. On exposing the chest there is further evidence of chest storm. He is decidedly pigeon-breasted. In an answer to an inquiry if he had had whooping cough, the reply was, "Yes, he had it very severe when three years old, and seems to have a return of it every winter." Auscultation when standing reveals a blowing sound at the third left interspace. On examination with the stethoscope, while lying down, the valves are found healthy, one after another, until the pulmonary is reached—here we find insufficiency. You are aware that the dorsal decubitus assists in the closing of both auricular-ventricular valves, so examine all your cases, both while erect and lying. One winter he was taken into the high

90
altitude of Colorado, but there he experienced great difficulty in breathing. On careful examination the right ventricle was found hypertrophied—the apex striking the chest wall on a line with the left nipple. I advised a mild climate and a low altitude. He is to be taken to Mexico, the east coast, for the winter. There is no history in this case of rheumatism or leg-ache; only whooping cough and the recurrent bronchitis, so the inference is that the heart condition is chiefly mechanical—the severe cough retarding the pulmonary blood current and oxydation—prolonging the infantile heart, as it were. In connection with this case turn to the physiology and read Müller's experiments: "He found that if after the deepest possible expiration the glottis be closed, and the chest be now dilated by a great inspiratory effort, the heart is *powerfully dilated*. The elastic traction of the lungs, and the very attenuated air in these organs, act so as to *dilate the cavities of the heart* in the direction of the lungs. More blood flows into the right heart—much less blood is driven out of the left heart, so that the pulse may disappear. The heart is distended with blood and the lungs are congested, while the aortic system contains a small amount of blood." (Landois & Sterling, p. 106.) This is just what takes place in whooping cough, and doubtless explains the cause of the condition of the heart in this case and also why the cough is so persistent.

According to my old and venerated friend, Prof. S. Lilienthal, *Pulsatilla* is a prophylactic against whooping cough. It is also, we know, a valuable remedy in whooping cough, when indicated by its double-barrelled cough—"paroxysms of two coughs each." In the study of the full pathogenesis of *Pulsatilla*, we find an interesting heart picture looking towards right side trouble. We note, "strong palpitation with *suppressed* pulse." The *Pulsatilla* patient has a mild, yielding disposition, perhaps because the circulation to the brain is retarded by

the condition of the heart. This would also explain the venous stasis, portal, and disturbance of digestion characteristic of this drug. In *Pulsatilla* the heart is right large—"the beat of the pulse (heart) is felt in the pit of the stomach."

A practical point that should be remembered is that the right ventricle lies well to the front and when lying down on the right side the left ventricle overrides the right one. This explains why in hypertrophy of the left ventricle the patient prefers the right side in lying, while in hypertrophy of the right side they often prefer the reverse position.

In well developed people we expect a well developed heart and listen over the apex for its sounds. In infantile or feebly developed bodies the right heart may continue to be the better developed. In imperfectly developed bodies and from muscular and nervous weakness we may meet irregular contractions.

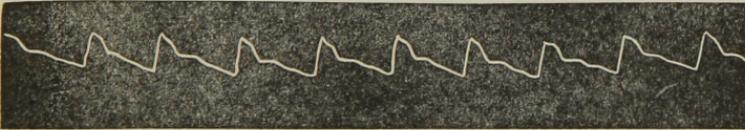
CARDIAC HYPERTROPHY AND CHRONIC BRONCHITIS.

Here is a case that comes to us for relief from her cough. You see that she is stooped, talks hurriedly, and has a loose, suffocative, bronchial, catarrhal cough. She is a sanguine, lymphatic old lady. The pulse is feeble, trembling and intermittent. She complains of dyspepsia and risings after eating. Percussion reveals a hypertrophic heart, pushing well to the left. She cannot sleep for coughing. The profuse exudation into the bronchi and the mucous rales point to lack of absorption by the reabsorbents, lymphatic glands of the lungs. Sometimes "the spit is bloody," she says. If we should conclude we have a chronic bronchitis only we shall not understand cases of this kind. The two problems before us are: (1) Why this profuse bronchial catarrh, and (2) Why the bloody sputum? Chronic bronchitis in old people may be due to nervous, lymphatic, heart, or local trouble. Suffocative cough suggests venous stasis, dependent upon the condition of the liver, stomach, kidneys or heart. The appearance of the skin does not suggest

liver or kidney complications. The appetite is good, but the gases point to slow digestion, which is either due to nervous or cardiac trouble. In this case, as in many old people, it is doubtless both. "The sputum observed in chronic bronchitis, the result of chronic heart disease, are characterized by the presence of so-called 'heart-disease' cells, *i. e.*, alveolar epithelial cells containing numerous hæmatoid granules. If, in consequence of the existence of chronic heart disease, hæmorrhagic infarcts have occurred in the lungs, the patient may at times expectorate numerous masses presenting a markedly red color, while later on—*i. e.*, after several days—these masses assume a brownish red appearance, the sputum then presenting the characteristics noted sometimes after a hæmorrhage." (Simons Clinical Diagnosis, p. 238.) The remedy you would think of for this cough is *Antimonium Tartaricum* (Tartar emetic). Its heart symptoms (given on p. 60) also correspond. [This case improved so rapidly that we soon lost sight of her.]

CASE OF CHRONIC MYOCARDITIS.

Through the courtesy of my friend Dr. Hoy, I am able to show you this sphygmographic tracing of a case of intermittent pulse due to what was diagnosed as chronic myocarditis. The



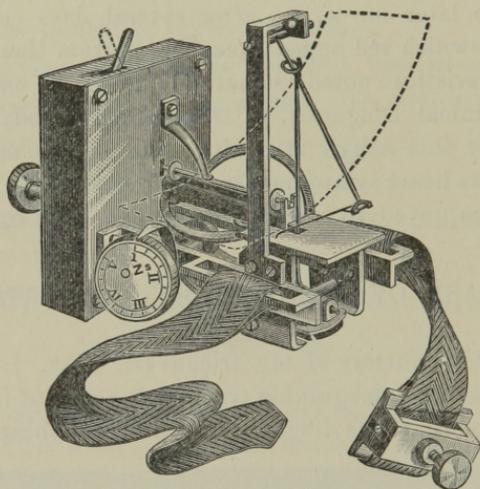
NORMAL PULSE.

lady was advanced in years and very fleshy. We would suspect fatty degeneration and a weak heart. The chief symptoms were faintness and cardiac distress. You see that even while sitting there are frequent intermissions, but after a little exer-



FATTY HEART.

tion as in walking around the room the heart skips one, two, three and sometimes as high as four beats. [That calls *Nux Moschata* and *Chloride of Sodium* to mind.] These attacks of faintness lasted three or four months, growing more and more severe until finally the end came. It is a matter of regret that a post-mortem was not held to verify the condition. She was a high liver and doubtless the weak heart was due to fatty degeneration. These tracings were made by



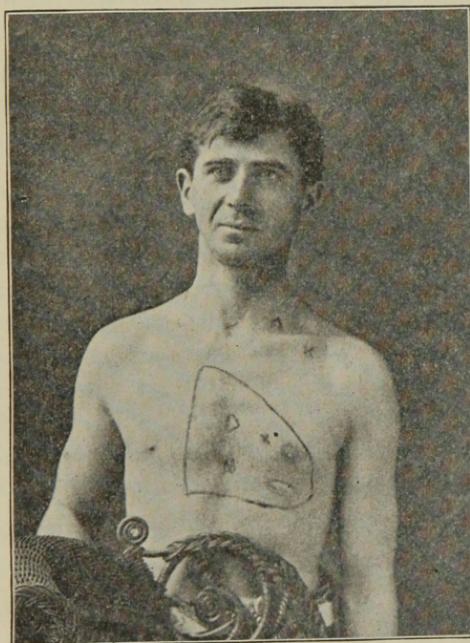
DUDGEON'S SPHYMOGRAPH.

The form of muscular degeneration most frequently encountered in the heart is fatty. The fat is deposited in the body largely outside of the circulation. In the heart it is deposited upon the auricles and along the coronary arteries—interventricular septum. Then it is found among the fibres and finally usurps the muscle cells, weakening steadily and finally cardiac muscular contraction. [See Fatty Heart.] In athletics of former days, who became fat rapidly the danger of fatty degeneration is great. The auricles suffer most as a rule.

A WHISTLING MURMUR.

The report of the following remarkable case is taken from our clinical record:

I now have the pleasure of showing this class a curious cardiac case. You will note that he is of a nearly pure sanguine temperament. These broad headed (brachycephalic) men have



large hearts. See his fist, big as a sledgehammer. You see by his body that he is fairly well nourished so that the blood flow now is ample. His nostrils and a full chest show ample capacity for æration (oxydation) of the blood. There is evidently no lung complication. His muscles are well developed and there is no evidence of nervous disorder. He does not come to us for cure. He is a "show case" and gains a livelihood by visiting the medical colleges and museums. He is certainly a curiosity. He has a "whistling heart"—the second one I have met.

Percussion must be resorted to to determine the variations from the normal size. If the apex is at the normal spot (5th interspace) then our attention can be centered upon the right side. Hypertrophy of the left ventricle carries the heart down. Hypertrophy and dilatation carries it both down and to the left. When the patient holds the breath it should be remembered that the normal area of dullness may be increased. Deep inspiration and in emphysema the area of dullness may be materially decreased. The area of dullness in this case is outlined in the cut. This was confirmed by a skiagraph or X-ray picture.

The history of the case is this: He was a Russian convict, for some indiscretion of speech no doubt. [By the way these brachycephalic people are aggressive conquerors—the bull dog fighting people.] In Siberia he worked in the mines as a blacksmith. He finally escaped and reached Japan after fording rivers where he was taken down with rheumatism so severe that he was unconscious. What the treatment was he does not know except that he had a sore over the heart where you see a scar evidently caused by a blister. After he was able to travel he struck out for “the land of the free and the home of the brave” and comes here for our benefit.

He evidently had severe endocarditis, carditis and I judge also pericarditis. The hard work as blacksmith and in the mines doubtless developed a cardiac hypertrophy—note the bulging of the left side. Evidently he now suffers with marked dilatation as indicated by the outline and as you can locate the apex beat well to the left and downward [just where the scar shows] that changes the position of the valve sounds as indicated for the heart is practically dislocated. You notice also a depression at the clavicles, he walks with a stoop. The tricuspid sound is to the left of the sternum and both semi-lunar valve sounds are hence below the normal position. The whistling sound you hear is, I think, from adhesion and constriction of one of the semi-lunar valves, the aortic. We have, also,

mitral insufficiency. There is no trouble in breathing and the integrity of the pulmonary valve is not affected. [In a specimen I can show you that had a similar whistling murmur there was ossification of the aortic valves, leaving a small, circular opening.] In this case I judge that the cusps of the semi-lunar do not approximate so that a small opening is left that causes a regurgitation and a whistling when the blood stream is broken by the insufficiency. There is both a stenosis and insufficiency as you will detect. I want you all to hear this heart for it is unique. Bryonia has been suggested by several physicians for this case and it is a remedy that has a direct bearing on lesions of fibrous tissue, but as long as compensation is maintained so that he can visit the colleges he refuses to take any medicine.

AORTIC CALCAREOUS DEGENERATION.

In the case of my old friend ——— who spent most of his life in a limestone section and who was moreover tall and spare, while recovering from a low fever, a whistling murmur was discovered. This increased so that dyspnœa was very marked and finally became accompanied with hæmoptysis. Dilatation of the left ventricle was made out with an aortic obstruction and insufficiency. He lived a long and useful life notwithstanding his cardiac difficulty. At the post-mortem kindly permitted, we found a hypertrophied heart as was anticipated and besides extensive ossification of the cusps of the aortic valves. The segments were adherent leaving a small opening through which the blood whistled on its recoil. The rest of the valves were found to be in a normal condition. The hypertrophy had not progressed so far as to produce marked dilatation and venous stasis from failing compensation. It was the increasing obstruction at the aortic outlet that was the cause of the pulmonary engorgement. It is interesting to note that butter-

milk was very beneficial as well as grateful to him. The Lactic acid contained in the buttermilk it is said helps the solution of calcareous deposits. Hering recommends buttermilk as a good drink for old people.

BEER ON THE HEART.

We have had the opportunity in this clinic of studying the deleterious effects of stimulants, particularly beer. Here is a testimony that I want to quote:

“Dr. Bollinger, director of the Anatomico-Pathological Institution in Munich, asserts that it is very rare to find a normal heart and normal kidneys in an adult resident in that beer-drinking city. The reason for the kidney disease is the tax put upon these organs by the drinking of excessive amounts of beer and the cardiac hypertrophy and degeneration are secondary lesions for the most part.” The consumption of beer is everywhere increasing and we may expect to meet many such complicated cases. The best antidote to the beer habit and effects in my experience is *Nux vomica*. Some years ago the attention of the W. C. T. U. was called to this fact and the demand for “that antidote” brought to my notice many cases showing the disastrous effects of beer upon the system, particularly the heart. The effect of *Lupulus* (Hops) is first to increase the pulse and then to slow it even from 20 to 30 beats to intermissions. The alcohol works along the same line as we have seen (p. 81). In this connection I would say that you will find *Materia Medica* authority for this use of *Nux vomica*.

THE NUX VOMICA HEART—A CASE.

This remedy is often of service in cases of cardiac disorder, due chiefly to digestive disturbance, with cerebral involvement—as we might interpret its symptoms: “Palpitation on lying

down, with frequent belching. Palpitation with orgasm of blood. Palpitation from mental emotions. Palpitations from protracted study; especially after eating spices and coffee. Heart feels tired."

"Pulse is full, hard, accelerated. Pulse, small, rapid; intermits every four or five beats (Hering)." (*Muriatic acid* and *Natrum mur.* intermits every third beat.) "In *nervous palpitation* of the heart (in men, for women *Ignatia*) this remedy gives speedy relief after the abuse of coffee, wine, tobacco, spices, etc. (stimulants). The attacks do not last long, and are attended with cerebral congestion or nausea."

"In *angina pectoris*, *Nux vomica* affords relief when there is no appetite, and great accumulation of gas in the bowels. It is especially useful after allopathic drugging."

We should remember that *Nux vomica* causes, first, rapid action of the heart (palpitation) and then, secondarily, a slow, feeble, intermittent action, with "some violent stitches in the precordial region, in the morning an hour after rising (after seven days)" (Allen). It is therefore the similar remedy for effects arising from the use or abuse of stimulants.

In *chronic hypertrophy*, especially in those who have stimulated in an early day, and particularly in brain workers when bilious or dyspeptic attacks are accompanied by dyspnoea, often so severe that they are easily exhausted from slight exertion, and the strong will must be evoked, here *Nux strychnos* or its alkaloid has been a most efficient remedy. It has braced up many a failing heart for the writer and helped to prolong life.

Case—Mr. ———; æt. 74. Nervo-sanguine temperament; lawyer; with a progressive, weak heart from hypertrophy and fatty degeneration; was subject, especially in the late summer, to bilious attacks. The portal stasis was sometimes so marked that jaundice symptoms would appear. These annual attacks grew more and more severe, with alarming arrhythmia and weak-

ness. The last one ('97) was attended with severe dizziness and vomiting. The cardiac weakness was further evident by dropsy appearing in the feet. *Nux vomica* had usually set him to rights, braced up the heart, when absolute rest of body and brain could also be secured; but in spite of this and *Arsenicum*, *Bryonia*, *Digitalis*, *Mercurius*, and other remedies carefully selected by Dr. Parsons affording only temporary relief, the writer was summoned as consultant. The chief and distressing symptoms were: Small, intermittent pulse; forced, anxious respiration, almost a sitting posture; œdema; belching of gas, and total inability to sleep; anorexia, heavily coated tongue; cardiac distress, and at times sharp pains in the heart—all symptoms with a grave portent. Neither *Cratægus*, *Strophanthus*, or *Passiflora*, nor any other remedy suggested, was of much avail. He was decidedly worse in the morning; and one morning, when it seemed as if he would die, he was given a $\frac{1}{40}$ grain of *Strychnia*, with decided benefit. Another consultant suggested that this be followed by *Digitalis* infusion, to increase the urinary flow, and an opiate to secure sleep. The latter did not accomplish much, and was objected to, for he was obliged to keep his attention upon the heart and respiration to live. The least movement of the chest to one side or the other would seem to arrest its functions. *Bryonia* afforded temporary relief. The only remedy that seemed able to reach the nerve centers was the *Strychnos*, in some form. Œdema of the lungs (increased) and brain set in, and he gradually, steadily failed. When it became apparent to all that no remedy could arouse the worn-out nervous energies of this old man, he was made as comfortable as possible. The repeated rallies brought about by the remedies proved to all that medical powers are limited. This case illustrates the progress of death when the nervous energies give out first and the feeble heart finally fails.

The three remedies that seem to brace up the failing heart, according to general experience, are: *Nux.*, *Digitalis*, and the new remedy, *Cratægus*. Which promises most will depend doubtless upon the form of the threatened heart failure. The order may be, if nervous *Nux.*; if dropsical *Digitalis*, or if muscular *Cratægus* may rally the flagging powers for a time, sometimes for a year or more.

A CRATÆGUS HEART CASE.

In this connection the following case contributed by Dr. C. F. Barker is of value. The author has met Dr. Barker in consultation, and knows him to be a careful physician.

“Something less than a year ago my attention was called to *Cratægus* as a remedy for heart disease. Unable to believe all the claims made for it, I still had faith and so tried its efficacy in a very bad case of dilated heart after *Digitalis* and occasionally other remedies had apparently lost their effect. The following case presented the symptoms given: The heart’s action was very feeble and irregular and the dyspnœa extreme. The patient’s intellect was dull, the feet and hands were cold, and general anasarca existed. Not only did percussion show a greatly extended area of dullness, but the sounds were poorly defined, and there were murmurs present showing incompetency of the valves. *Digitalis* had once rescued this patient after coma had set in and the end seemed near, but it no longer had any effect though faithfully tried.

“At this stage I prescribed *Cratægus* \ominus in five drop doses, to be taken every two hours. Improvement began almost at once, and within a few days the patient was about the house again, and with the exception of some slight relapses has remained much improved up to the present time [March, '98].

“The dropsy is all gone and the strength of the organ is increased. The remedy has been continued part of the time for several months but in smaller doses and only four times a day. The origin of the heart malady, or rather predisposing cause, was inflammatory rheumatism occurring some years ago. The patient is a woman about thirty-five years of age.”—*Med. Visitor*.

Dr. W. C. Duncan, of Oakfield, Wis., consulted the author about a case of weak, fatty heart that *Arsenicum* and *Digitalis* had formerly relieved. Now the dropsy was steadily progressing and the dyspnœa was marked. *Cratægus* was suggested, and at the last report the old man was improving. The relief will doubtless be only brief; but it is a comfort to know of

another remedy that will prolong life, if for a short time only. It is important to know that the preparation is reliable, especially in serious heart cases.

RUPTURE OF HEART.

Rupture of the heart is usually due to fatty degeneration, but then there is usually fibrous obstruction in the valves also. Cases are on record where the left ventricle has ruptured. An interesting case of rupture of the heart is reported—a patient of the author. Rupture of the heart is a rare occurrence.

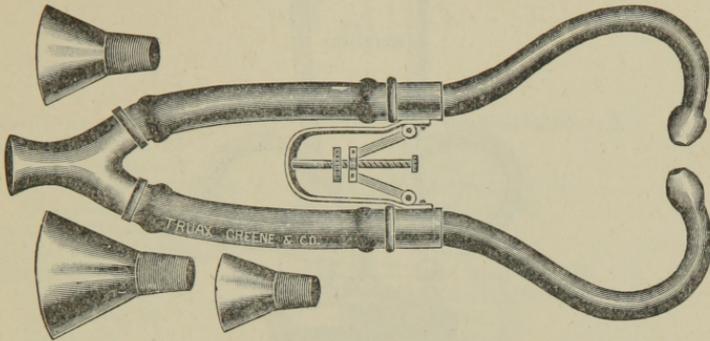
Mr. ———, an old soldier; a machinist; nervo-sanguine temperament; had severe rheumatism several times, which caused mitral and finally aortic insufficiency. A chronic bronchial cough developed, and finally he was taken with pneumonia, and died suddenly while struggling for breath.

At the post-mortem it was found that the heart was enormously enlarged and fatty. The auricular wall (left), as thin as grey paper, had ruptured, causing the sudden death. It is not often that such an interesting specimen can be preserved for the benefit of medical science and our students. It is also interesting to know that *Aconite* or *Bryonia*, and especially the latter, was able to quiet the many cardiac storms and pain that would appear on taking cold from exposure.

ABOUT STETHOSCOPES.

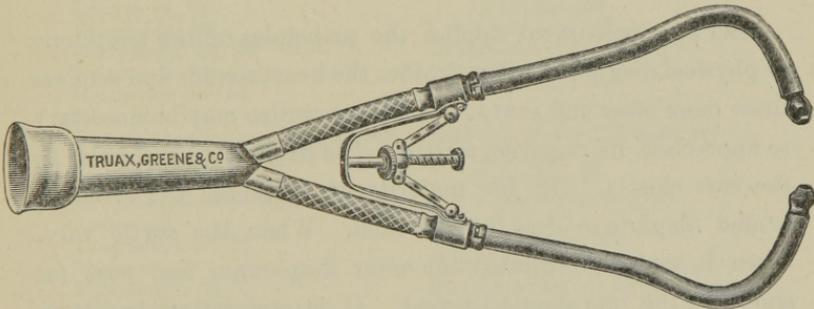
The comparative merits of different stethoscopes may be of interest. These helps to hear are numerous and each has its champion. The fact is that when one has become accustomed to a certain instrument, that one is preferred. Some cannot use any, and prefer the naked ear and the educated fingers. The funnel, the conduits and the ear pieces are the points of variation. Some are more convenient than others. In heart diag-

nosis the funnel should not be large, and the other parts should facilitate the transmission of sound.



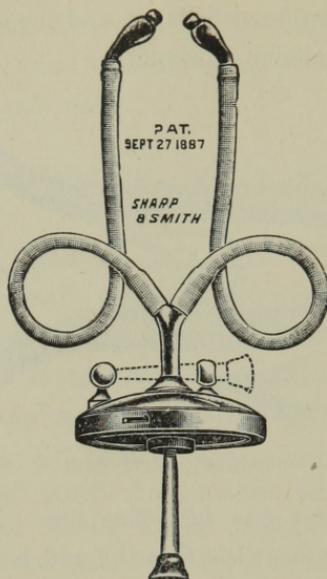
DENISON'S STETHOSCOPE

is a very convenient one for office use. The conduits are ample. This instrument is a favorite, and is a good all-'round chest stethoscope.



BURT'S STETHOSCOPE

is made all of metal, and for obscure heart cases, especially when complicated with pulmonary disease, satisfactory. Most of the stethoscopes, from the days of Lacnec, are constructed on the speaking tube principle, and whether they will be superseded by the ones with diaphragms time must tell. The latter promise much. The pitch is high and may confuse at first. When the chest is very much emaciated the soft rubber funnel may be preferred. It is well to have two instruments at least.



THE MICRO-STETHOPHONE.

This new instrument applies the principles of the telephone to physical diagnosis. It magnifies the heart sounds and renders them more clear and sharp. A little practice may be necessary to appreciate its superior merits. The rubber tips should fit the ears closely. In the majority of instances the lower or second diaphragm need not be used. When the aortic valve space is to be auscultated the outer diaphragm and post (as shown in the cut) should be used. It is especially valuable in examining cases of weak heart and fleshy people.

ERRATA.—On p. 82 “8 oz.” should read “8 lbs.” A milder bath salts may consist of Sodium Chloride 4 lbs., Calcium Chloride 6 lbs. If faintness is produced take the patient out of the bath at once.

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