

"resorptive" origin of tubercular phthisis; otherwise, at least, than in quite exceptional instances.

AFFECTIONS OF THE ORGANS OF CIRCULATION.

PERICARDITIS.

Definition.—Inflammation of the covering membrane of the heart.

Varieties.—Simple or idiopathic, and rheumatic pericarditis. The latter is very much the more common. Degrees of violence in the attack also cause variations, from the mildest and almost latent cases, through those of open and active severity, to those attended by rapid effusion and prostration.

Symptoms.—Fever; pain (occasionally absent) at and radiating from the heart; tenderness on pressure in the cardiac region; accelerated, irregular, or oppressed, rapid and feeble pulse; anxiety or delirium; nausea and vomiting in some cases; short hacking cough; towards the end, coldness and pallor or lividity, œdema of the face and extremities, loss of pulse.

Stages.—1st, Acute inflammation; 2d, Adhesion; 3d, Effusion.

Physical Signs.—Before adhesion or effusion, usually, exaggeration of the heart's impulse. Then, pericardial *friction-sounds* (to and fro); the vibration accompanying which is sometimes felt by the hand. After effusion, dulness on percussion, with muffling of the heart's sounds to the ear on auscultation. The friction-sounds disappear during this period, sometimes to return as the effusion is absorbed.

Morbid Anatomy.—In the first stage, there is a rose-redness of the pericardium, diffused, punctated, or in patches. Then, deposits of coagulable lymph, white and opaque, sometimes causing local or general adhesion of the two layers of serous membrane. In most fatal cases, effused serum is found in the sac, in quantity varying from ounces to pints. Great quantities of it weigh down the diaphragm below it. *Purulent* exudation is sometimes met with. In scorbutic cases, it may be hemorrhagic. The muscular tissue of the heart is found to be less coherent than usual.

Diagnosis.—From *endocarditis* and from *pleurisy* it is sometimes not easy to distinguish pericarditis. The symptoms of the latter and those of endocarditis are the same; and the *friction-sounds* may occur in both. The heart's impulse is more apt to be sustained in strength in endocarditis; and in the latter, no dulness on percussion occurs, nor are the heart-sounds muffled at any stage; while valvular murmurs follow endo- and not peri-carditis.

Friction-sounds which are outside of the heart (pericardial) have a *nearer* character to the ear than endocardial sounds; they are more narrowly *limited*, not passing along the vessels; they do not keep exact time with the cardiac sounds, and may vary from day to day; and sometimes the vibration may be felt externally.

Pleurisy causes friction-sounds and afterwards dulness on percussion. But the former sounds are more diffused, are generally *single*, not "to and fro" or double; and the dulness extends further

over and around the side. Latent pericarditis may possibly, from some symptoms, be taken for inflammation of the brain, or of the stomach. Physical exploration should prevent such errors.

Prognosis.—There is great danger to life in pericarditis; and its course is sometimes terminated by death in a few days. In other cases resolution may take place promptly; but more often the heart is clogged for a considerable time (weeks or months) with effusion, or a more protracted interference occurs from adhesion of the pericardial surfaces. The latter is sometimes shown by a dimpling, or sinking in, with each beat of the heart, of the intercostal spaces above and below it.

Causation.—The process or *materies morbi* of rheumatic fever is far the most common cause of pericardial inflammation, as it is of endocarditis also. Gout is accused of the same thing; but with much less frequency, or indeed, clearness of proof. Bright's disease of the kidney is occasionally associated with it.

Treatment.—In active cases, and good subjects, *one early and moderate bleeding from the arm* will be proper. Afterwards, in some, and instead with feebler patients, when fever is high and pain intense, leeches over the cardiac region may be used. A brisk saline cathartic, as Epsom or Rochelle salts, or citrate of magnesium, should commence the medication. Calomel, trusted still by some and condemned by others, may be confined to open sthenic cases, in previously good constitutions. In such, I would give half a grain of calomel, with half a grain to a grain of opium, thrice daily for three or four days. *Veratrum viride*, in small doses, is preferred by some practitioners of experience.

Where the rheumatic diathesis is marked, *alkalies* [F. 37] will be indicated. Carbonate or bicarbonate of potassium, or bicarbonate of sodium may be given, in scruple or half-scruple doses, with as much of Rochelle salts, three or four times a day. A blister over the heart, as the fever lowers, will often have a very good effect. If effusion occur, blistering may be repeated.

Should no opiate be given through the day, Dover's powder or morphia may be prescribed at night.

For the stage of effusion, or "chronic pericarditis," the usual treatment consists of diuretics [F. 38, 39, 40], as squills, juniper, sp. æth. nit., etc., varied and continued until absorption occurs. Tonics will often much promote the same end. Trousseau, Roger,

Fig. 63.



Pericarditis, with effused lymph.

and Allbutt¹ have in a few instances, in one at least with a successful result, *tapped* the pericardium, when greatly distended by effusion. Dr. Allbutt operated with a small trocar, placed on the upper margin of the fifth rib, half an inch to the left of the sternum, inclined upwards and inwards, and thrust steadily forwards through the intercostal space till the movement of the heart was felt. This was followed by the advancement of the canula far enough to make it exhibit the heart's impulse; and the fluid was withdrawn, with great relief.

Dieulafoy's aspirator may, perhaps, be used for a similar operation with greater safety.

A *rapidly depressing* case of pericarditis, with cold, blue skin and feeble, irregular, pulse, will require, instead of the above, a supporting or stimulating treatment from the first; with dry cups and blisters instead of local or general bleeding; and quinine, ammonia, and brandy instead of sudorifics or laxatives.

Myocarditis is inflammation of the muscular substance of the heart. It can hardly be said to have other than a nominal existence. Some writers consider the "white spot," found upon the surface of the heart occasionally, in soldiers and others, to be the result of a low form of muscular inflammation.

Gangrene of the heart is said to have been clearly proved in one or two instances.²

ENDOCARDITIS.

Definition.—Inflammation of the lining membrane of the heart.

Symptoms and Physical Signs; Diagnosis; Treatment.—These have been sufficiently stated in the account just given of pericarditis, and need not be repeated. Like that disease, it is most often of rheumatic origin; but may occur in Bright's disease or in pyæmia. Dr. Peacock and others assert the opinion that endocarditis occurs most frequently in cases of rheumatism with severe articular symptoms; while pericarditis is somewhat more common in those in which the joints are more slightly affected. This remains doubtful.

Valvular derangement and its signs give great interest to endocarditis and its resulting changes. Mostly it is the left side of the heart that is chiefly affected. The simplest and most common sign of this is a blowing sound heard on auscultation. But a bellows-murmur is heard also in cases of anæmia, and a blowing sound occurs not rarely in fevers; or it may belong to an organic heart-affection of long standing. This last fact should be ascertained by the history of the patient, as well as by the aid of symptoms; but an *old* murmur is generally rougher and more fixed in its seat. It is *possible*, though very *rare*, for endocardial inflammation to be located so far from the valves as to cause no blowing sound.

Clots sometimes form in the heart, in endocarditis (as well as in some other diseases attended by prostration), obstructing the circulation even to a fatal extent. Although most clots are post-

¹ Brit. Med. Journal, Oct. 10, 1868.

² Cincinnati Med. Repertory, May, 1868.

mortem in origin, there is no doubt that sometimes firm fibrinous masses do occlude the valves for some time before death. The symptoms and signs produced are, blueness and coldness of the skin, indistinctness of the heart-sounds, feebleness and irregularity of the pulse, nausea and vomiting, anxiety of expression, and fainting.

Much more often, vegetations or fibrinous deposits of exudation on the valves of the heart are carried in fragments therefrom by the blood into the arteries. Being arrested, as in a vessel of the brain, or a limb, etc., the condition of obstruction designated as *embolism* results; which will receive attention in another part of this book. *Old* valvular vegetations, as well as the recent ones of endocarditis, may give rise to emboli; which may, also, arise from coagulation in a vein, or *thrombosis*.

Endocarditis produces valvular derangement in the *mitral* valve most frequently in the young; in the old (from this cause as well as from degeneration), disease is rather more common in the aortic valve. The forms of disorder indicated by murmurs, occur in the following order of frequency: 1st. Aortic obstructive; 2d. Mitral regurgitant; 3d. Aortic regurgitant; 4th. Aortic obstructive and mitral regurgitant together.

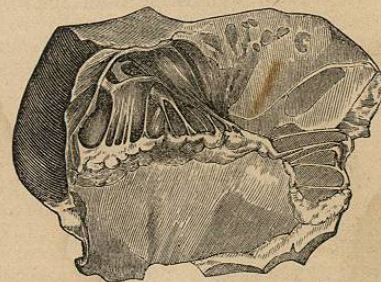
Enlargement of the heart, either with muscular thickening (*hypertrophy*) or with attenuation (*dilatation*) is a common consequence of

endocarditis with valvular lesion. Already (see *Semeiology*) the statement of Dr. Stokes has been adopted, that in every case the important question is, less the state of the particular valves, than the amount of interference with the functional action of the heart. In young persons, remarkable recoveries sometimes take place (as I have seen) from very considerable lesion of the valves. In other instances, *adaptation* of the heart itself, and of the general system, by degrees, is effected, so that quite good health, and even capacity for exercise, may be attained, while the physical signs of the local organic change remain. Sudden death is less common in heart disease than is popularly supposed. Some persons having it have lived twenty or thirty years.

VALVULAR DISEASE.

The valves of the heart may be impaired either by inflammation, or by degeneration (*e. g.*, calcareous deposit or "ossification"). The latter, degenerative valvular changes, occur gradually; and mostly late in life. Either form of valve-disease, or at least of valvular alteration, is generally permanent; the *degenerative* form most invariably so.

Fig. 64.



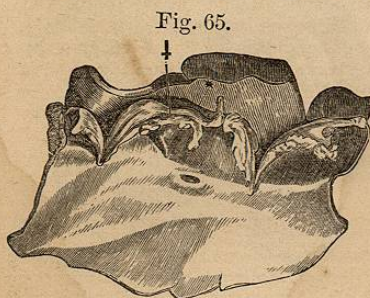
Fibroid thickening of mitral valve.

Changes may occur by simple thickening, or by deposits of fibroid, fatty, or calcareous material; or by atrophy, contraction, adhesion, or ulceration of the valves; or gouty deposits of urates and carbonates of soda and lime. The valve (mitral or aortic primarily, tricuspid or pulmonary secondarily) may be thus rendered incapable either of perfect closure, or of full opening; in most instances, at least, a permanently half-open state results.

A considerable variety of pathological conditions may exist in organic disease of the heart; while the number of cases in which an exact and unequivocal diagnosis can be made, is comparatively small. We must not confine attention at all to the physical signs alone, but compare with these the pulse, and force of the heart, with other general symptoms, and the entire history of the case. It is possible, though very uncommon, for valvular disease (especially mitral obstruction) to exist without any murmur.

Certainty can hardly ever be obtained, unless it be in the diagnosis of one of the following three conditions:—

1. Uncomplicated disease of the mitral valve. Signs of this are,—a permanent murmur with the first sound loudest towards the



Atheroma of aortic valve.

apex and left side, and not heard over the aorta; the second sound natural. The heart's action natural; the impulse not excited, the pulse natural. A *presystolic* murmur, just before the first sound, has been, by Gairdner, Salter,¹ and others, referred to constriction of the mitral valve. It is often accompanied by thrill, and associated with hæmoptysis. Dr. Gowers, especially, has pointed out² that this murmur is often much louder

when the patient is lying down than when sitting up. I found it entirely inaudible in one case, except when the patient (a child) was recumbent.

2. Disease of the aortic valves with permanent openness. With this, there is no murmur with the first sound; the second sound is replaced by a double murmur, loudest at the base of the heart, and heard along the aorta. In an advanced stage of this condition, the arteries give to the finger, or even to the eye, an impression of *bounding* pulsation; with a *jerking*, or abruptly ending pulse at the wrist. Quincke and Otto Becker have observed, with the ophthalmoscope, *pulsation of the retinal vessels* in cases of aortic valvular insufficiency.³

3. Disease of the aortic valves without permanent openness. Here, the action of the heart is slow and feeble, generally regular, or only occasionally intermitting. A murmur is heard with the

¹ Lancet, Oct. 23 and Oct. 30, 1859.

² London Practitioner, 1873.

³ London Ophthalm. Hospital Reports, Feb. 1873.

first sound, the second sound being healthy; but a murmur may be heard with the second sound, in the aorta and carotids.

It must be remembered that in *anæmia*, without heart-disease, a bellows-murmur is often heard, extending into the arteries. Chiefly by the concurrent signs and symptoms is this to be distinguished from organic disease of the heart. Anæmic and functional murmurs are more variable, and are not much increased by moderate exercise. Even organic murmurs, however, are, in some rare instances, variable.

When the aortic valvular orifice is greatly *contracted*, the pulse at the wrist may become very feeble, almost absent; while the heart's impulse is strong.

Dr. T. B. Peacock¹ considers it to be the result of his experience, that *incompetency* of the valves is a more serious defect than obstruction; incompetency of the aortic being more dangerous than that of the mitral valve. Obstructive disease of the mitral, however, he regards as more unfavorable than that of the aorta in prognosis.

Advanced mitral or aortic disease is accompanied usually by derangement, sympathetic or obstructive, of the lungs, liver, and other organs; with hæmoptysis, anasarca, cyanosis, irregularity of the pulse, syncope, etc. *Pulsation of the jugular veins* usually indicates secondary disorder upon the right side of the heart, with regurgitation into the venæ cavæ. *Pseudo-apoplectic syncope* may occur in permanent patency of the mitral valve; or in fatty degeneration of the heart, with or without valvular disease.

For an account of the *Sphygmograph*, and its use in diagnosis, see *Semeiology*.

DILATATION OF THE HEART.

Uncomplicated dilatation of the whole heart, or of either pair of corresponding cavities, or of any one cavity, is very uncommon. **Complicated** dilatation is frequent. It may depend—1, on a debilitated state of the cardiac muscle; 2, on valvular disease; 3, on obstruction beginning in organs remote from the heart.

The commonest form of dilatation is part of a triple affection, in which the *heart, lungs, and liver* are together involved. All this may come, in the first place, from a cachexia, such as gout, or scurvy, or from simple anæmia. Exacerbations in the disorder may occur; as, of pulmonary congestion, enlargement of the liver, cardiac asthma, bronchitis, or dropsy. The prognosis cannot be very favorable in such a case; and only palliative or recuperative treatment avails, along with hygienic management, to economize the powers of nature.

Enlargement of the heart is indicated, upon physical exploration, when, with extended impulse of the heart, we have dullness on percussion beyond the usual limits. If true **hypertrophy** or muscular thickening be present, the impulse is very forcible as well as extended. The heart-sounds are apt to be *clear*, though not loud, in **attenuated** dilatation; rather loud, but dull toned, in

¹ St. Thomas's Hospital Reports, vol. ii.

enlargement with thickening of the walls. But these differences are hardly to be relied upon. Bulging of the pericardial region is sometimes quite distinct in children.

Hypertrophy of the muscular tissue of the heart is most often induced by valvular obstruction or regurgitation, compelling unusual and continued effort to sustain the circulation. It is also a not uncommon attendant of Bright's disease of the kidneys.¹

Sometimes, however, it is more truly idiopathic; following causes of over-action of a heart otherwise sound. Thus violent exercise, self-abuse, coffee, alcohol, tobacco, etc., are, with good reason in predisposed cases, accused of producing it.

Dr. Quain has described a condition of cardiac enlargement which he considers to be a hypertrophy (hyperplasia) of the connective tissue of the heart.²

In the treatment of simple hypertrophy, avoidance of exciting causes, and particularly of violent exercise, alcohol, and venery, is the main principle. Robust or plethoric patients will bear and will be benefited by moderate venesection, at long intervals; or by occasional leeching or cupping over the heart. *Acetate of lead* [F. 41], as an astringent cardiac sedative, is recommended by some, and is worthy of trial (one grain thrice daily), with care to avoid saturnine poisoning.

Digitalis was formerly relied upon as a reducer of cardiac action. Lately the question has been opened widely, whether it does at all tend directly to lower the heart's action; or whether it is not, instead, a tonic to the heart (probably through ganglionic influence), lessening its rapidity of action only when that depends on debility.³ The time has hardly come to pronounce upon this question. Brunton, Gull, and Fothergill consider its use unsafe when there is fatty degeneration of the heart. I think, however, that evidence has been given to encourage us to use digitalis [F. 42, 43] unhesitatingly, although moderately, where abnormal rapidity of the heart's action exists in conditions of debility; and to expect more from *veratrum viride* [F. 44] as a sedative and palliative, in violent acceleration of the pulse, as in muscular hypertrophy, and some forms of palpitation. Benefit may attend, in like cases, upon the use of *wild cherry bark*. An exclusive *milk* diet is recommended by Drs. Karell and Pechalier, in cardiac enlargement and other chronic affections. In dilatation of the heart, neither reason nor experience affords ground for the approval of such a regimen.

FATTY DEGENERATION OF THE HEART.

Definition.—Substitution of fatty substance for the muscular tissue of the heart, to such an extent as to interfere with its normal action.

Symptoms and Course.—Though no doubt almost always gradual in its progress, this affection in many instances fails to make itself known by symptoms until a late period; sometimes even till the

¹ In 100 cases, Dr. Bright found hypertrophy of the heart in 52; and in 34 of these there was no evidence of valvular affection.

² *British Med. Journal*, March 23, 1872.

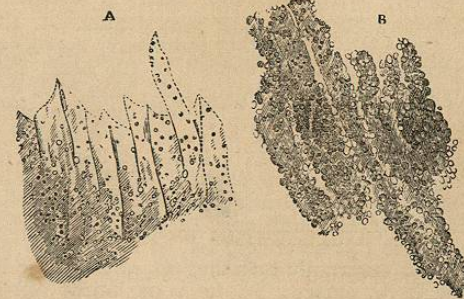
³ See a paper by Dr. H. C. Wood, Jr., *Philada. Med. Times*, May 3, 1873.

moment of death. Usually, feebleness and irregularity of the pulse and heart's impulse are observed; with exhaustion and dyspnoea upon exertion. The pulse is slow when at rest; sometimes only thirty or forty in the minute, although the heart beats fifty or sixty in the same time. Attacks of apoplectic syncope or syncopal apoplexy may occur; at first most like syncope, after repetition becoming more apoplectic. These are distinguished from true apoplexy by the feebleness of the pulse, coldness of the skin, sighing respiration,¹ and the slightness or absence of paralytic symptoms, notwithstanding several repetitions of the attack. They are made worse by depletion or reduction of the system; and may be relieved or warded off by timely stimulation; the recumbent posture is most favorable in them. The first attack of this kind may, however, prove fatal.

Physical Signs.—Fatty degeneration is often complicated by the presence of other structural changes of the heart. By itself, it is with difficulty diagnosticated by physical exploration. The heart's impulse is feeble and slow, often irregular, and the sounds weak. A bellows-murmur is frequently heard with one or both sounds.

Morbid Anatomy.—True fatty degeneration must be distinguished from fatty accumulation about the heart; which may impede its action, but is much less dangerous. In true interstitial degeneration, the heart is, in part or throughout, flabby and pale, or yellowish, though it may be more bulky than usual. Minutely examined, the muscular fibrils are found to have lost their transverse striæ, and to have resolved themselves, more or less, into streaks or oil-dots or opaque granules.

Fig. 66.



Fatty degeneration.

Death, sometimes, is shown to have resulted from rupture of the heart. In other instances that organ has, under some exertion or excitement, become exhausted and failed to act sufficiently to keep up the circulation.

¹ "Ascending and descending breathing" of Cheyne and Stokes.

Prognosis.—Recovery is not to be expected in cases of fatty degeneration; although life may be prolonged to old age. Much will depend upon circumstances of living, and care to avoid disturbing agencies.

Causation.—In early life this affection is uncommon; its most frequent cause is, then, pericardial or endocardial inflammation.

Most cases occur after fifty years of age. It then comes as one of the local manifestations of waning vital energy; but it may be promoted by any or all exhausting or depressing causes. No special or peculiar line of causation can be pointed out.

Treatment.—This can be only *conservative*, not curative. Tonics, particularly iron, with generous diet, sea or mountain air, change of scene, avoidance of anxiety and exertion, may do much to retard the degenerative process. Violent effort or emotional excitement may be suddenly fatal. Tranquil occupation only should be selected, and all rapid exercise, and even straining at stool, ought to be avoided.

Fig. 67.



Rupture of heart.

MODES OF SUDDEN DEATH IN HEART DISEASE.

We may briefly enumerate these as, 1. Arrest of the heart's action from debility of the muscular walls; 2. Spasm of the ventricles; 3. Extreme obstruction, or regurgitation; 4. Rupture; 5. Heart-clot. Indirectly, cerebral or pulmonary apoplexy.

Of heart-clot, *i. e.*, fibrinous deposit in the heart before death (undoubtedly a rare occurrence), the signs have been well pointed out by Dr. B. W. Richardson.¹ They are, dyspnoea, not otherwise accounted for, pallor, fluttering pulse, and prostration, with deficiency of one or both sounds of the heart, on the right or left side, according to the position of the deposit. Very seldom indeed does heart-clot form long before death; reduction of vital energy seeming to be its essential condition. In autopsic examination, an *ante-mortem* clot is characterized, 1st, by its filling a cavity; 2d, its being grooved externally by a current of blood, or bored by a current through its centre; 3d, its being firmly adherent by a mechanical or organic tie to the walls of the heart or vessel; 4th, its structure being laminated, or containing in its centre broken up fibrin; 5th, its being deeply indented by the surrounding structures.

¹ Med. Times and Gazette, Nov. 21, 1868.

ANGINA PECTORIS.

Definition.—An irregularly paroxysmal disorder, characterized by sudden attacks of severe pain, extending from the heart along the left arm, with a sense of stricture in the chest, prostration, and alarm. The attacks are especially apt to come on while walking.

Pathology and Causation.—This appears to be a *symptomatic* affection; a neurosis, connected in most, if not in all cases, with organic disease of the heart; especially ossification of the coronary arteries. Gout predisposes to or excites it, but probably not in the absence of heart-lesion. It occurs generally in old people; most often in men. Weakness of the muscular fibre of the heart is, very probably, important in predisposing to it; and it may be, Sir T. Watson conjectures, especially dependent upon fatty degeneration of the heart.

Prognosis and Duration.—The attack may last from a few minutes to an hour, or even a day. Commonly it is short, going off with perspiration or copious urination. A first attack may be fatal. Returns occur at variable intervals—days, weeks, or months; each one generally sooner or more violent, till one of them ends life. Persons subject to angina pectoris may, however, live for many years.

Treatment.—Stimulants and anodynes [F. 47, 48, 49] are indicated during the attack. Best will be Hoffmann's anodyne, laudanum, Warner's cordial, and whisky, in moderate doses, repeated in a short time if necessary; with mustard plasters over the chest and between the shoulders, and the warm footbath. Where gout is present, colchicum [F. 45, 46] and alkalies are important. Arsenic is said (Philipp) to have done good in the interval; and inhalation of nitrite of amyl (Thompson, Madden), during the paroxysm.

THYRO-CARDIAC DISORDER.

Synonym.—*Exophthalmic Goitre; Parry's Disease* (1825); *Graves' Disease; Basedow's Disease.*

Definition.—Enlargement of the thyroid gland in the neck, with overaction of the heart and cervical vessels, and prominence of the eyeballs.

Nature.—This uncommon affection is considered by Dr. Stokes to consist in a more or less permanent functional excitement of the heart; which may produce finally dilatation and hypertrophy, with dilatation also of the jugular veins, and an aneurismal condition of the thyroid gland. Although considerable disturbance and prostration of the system must attend such a state of things, yet it has been repeatedly recovered from. The *cause* of the affection has not been made out. Virchow asserts the heart to be found, after death, greatly dilated; sometimes the aorta and other large vessels are atheromatous.¹ Cruise and McDonnell, as well as Recklinghausen, have observed marked changes in the *cervical sympathetic ganglia.*²

¹ *Atheroma*, a gruel-like or pulp-like change.

² Irish Hospital Gazette, Sept. 1, 1873.

Treatment.—To tranquillize the heart is the main indication. *Veratrum viride*, in doses not at all nauseating (two or three drops of the tincture every three or four hours), may be persevered in, while watching its effects. Other treatment must depend upon the general condition of each patient. Of course violent exercise and mental excitement must be avoided. Dusch, Meyer, Eulenburg, and others have reported favorable results as following the application of *continuous electrical currents* to the sympathetic nerve, or to its vicinity in the neck.¹ Dr. Guptill, of Maine, obtained good results in one case from the *iodo-bromide of calcium*.²

PALPITATION.

All excessive or consciously disturbed action of the heart is commonly thus designated. Overaction, in particular, may have either of the following origins:—

1. **Nervous**, or hysterical; 2. **Dyspeptic**; 3. **Rheumatic** or **gouty**; 4. **Hypertrophic**.

Nervous palpitation occurs in anæmic persons, especially hysterical females, or in those otherwise debilitated. Alcoholic intemperance, strong coffee, tobacco, excessive venery or self-abuse, may produce it.

Dyspepsia is very often attended by palpitation, sympathetic with the gastric disturbance. Usually, in such a case, it is worst after meals.

Gouty and *rheumatic* palpitations are common. Their nature will be made known by the presence of other signs of the controlling diathesis.

All of the above forms of merely functional disturbance of the heart, and especially the purely nervous, may be known from *hypertrophic* overaction, and from the conscious impulse of dilatation of the heart, by the fact that they are not increased by moderate exercise; are often, indeed, much diminished thereby. When the heart is enlarged, especially with valvular change, active movement causes distress and dyspnoea, with great acceleration of the cardiac movement. In palpitation of all kinds, during the attack, it is generally not possible to lie with ease upon the left side; and orthopnoea may occasionally occur, without organic disease.

The **treatment** of palpitation must vary according to its cause. If nervous in origin, invigoration of the system and enrichment of the blood are probably needed; by iron and other tonics, and regimen. *Dyspepsia* will require appropriate treatment; as a part of which, exercise in the open air will not be counter-indicated at all by sympathetic palpitation.

Functional overaction of the heart, without organic disease, is in itself not dangerous. It is alarming, however, to the patient, as well as a source of discomfort; and may, if long sustained, bring on true enlargement of the heart. All causes, therefore, of such disturbance ought to be sedulously avoided.

¹ London Practitioner, March, 1874.

² Am. Journ. of Med. Sciences, Jan. 1874. Dr. R. T. Smith speaks well of *belladonna* in this disorder.

CARDIAC EXHAUSTION.

In U. S. general hospitals during the late war, under my own observation¹ as well as that of other practitioners, quite a number of cases of soldiers presented, who were rendered unfit for duty by heart-symptoms, and yet without signs of valvular or other organic disease. Careful investigation of these satisfied me that the condition was one of **muscular exhaustion** of the heart; owing to hard marching with deficiency both of rest and food; especially during McClellan's peninsular campaign. Symptoms of this were—constantly rather rapid though not strong pulse, with less than normal vigor of the impulse of the heart; the acceleration increased greatly, with dyspnoea, upon even slight exertion. The sounds of the heart were not altered except in the diminution of duration and force of the first sound, making it more like the second. After many months of rest these men improved, so as to be likely to recover. No special treatment seemed to be required. British army surgeons have ascertained beyond doubt² that functional heart affections are decidedly more frequent among soldiers than in civil life. The explanation proposed for this is, the unsuitable construction of the accoutrements of the soldier, unduly compressing the chest and obstructing the movements of the heart. Dr. Myers asserts that "irritability of the heart" is shown very early by the sphygmograph; a marked diastole being always presented.

ANEURISM OF THE THORACIC AORTA.

A **bulging** in the front of the chest, in which pulsation is felt, not continuous or identical with that of the heart, and over which resonance upon percussion is dull—is probably an aneurismal tumor. If a thrill also is perceptible in it, with or without a murmur on auscultation, we may be still more confident in the diagnosis; and when the signs of pressure upon the air-tubes, œsophagus, sympathetic or recurrent laryngeal nerve, or thoracic duct occur, it is nearly certain.

Murmur may, however, be absent; so may thrill; the bulging may be slight, and the percussion-resonance little altered. The sign of most consequence is, the existence of *two* points of pulsation in the chest, the cardiac and the aneurismal; the latter coinciding almost with the diastole of the heart.

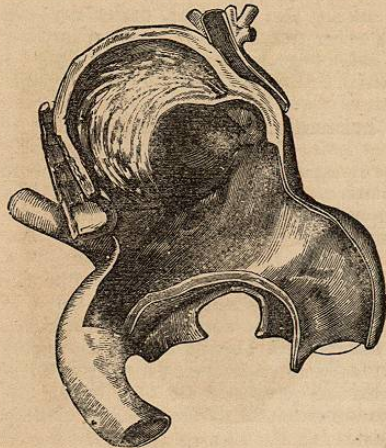
The signs of pressure are, chiefly, pain, cough, dyspnoea, loss of voice, difficulty of swallowing; and (as I have seen in one instance) emaciation from obstruction of the thoracic duct.

Cancerous or other tumors may produce all these latter signs; but such tumors do not pulsate. In *empyema* the beat of the heart sometimes impels the fluid so as to throb somewhat widely; but this is a *single* cardiac impulse. Occasionally a consolidated lung, in phthisis, may vibrate forcibly with the pulmonary artery; but

¹ Trans. of College of Physicians of Philadelphia, in Am. Journ. of Med. Sciences, July, 1864.

² Myers, Alexandra prize essay on Diseases of the Heart among Soldiers. London, 1870.

Fig. 68.



Aneurism of the Aorta.

whom the process of degeneration of the vessels has commenced; but now and then it is met with before middle life. It is, relatively, frequent among soldiers.

The following points may be added in regard to its clinical history (see *Stokes on the Heart and Aorta*):—

1. The effects of the aneurismal pressure may vary from time to time; much more than they do in cancer.
2. The aneurismal impulse may be even stronger than that of the heart; but a feeble impulse in some instances attends a large aneurism.
3. Destruction of one or more vertebræ from absorption under pressure (as shown by autopsy) is not uncommon.
4. Phthisis is often associated with aneurism of the aorta.

(See remarks upon the *Sphygmograph*, in Part I., Section II., of this book.)

ABDOMINAL AORTIC ANEURISM.

Of this, the signs and symptoms are—deep-seated severe pain (occasionally intermitting) in the back and abdomen, increased by certain movements; unaccompanied by fever, but resisting all treatment; later, muscular spasms of the lower limbs, displacement of the liver, and the manifestation of a pulsating abdominal tumor, felt upon palpation, over which there is dulness of resonance upon percussion. The higher up the aneurism, the more severe are the pains and other symptoms of disturbance.

Aneurism of the aorta may, without careful examination, be confounded with aortic pulsation without tumor (common in dyspepsia, etc.), or with neuralgia, rheumatism of the bowels, colic, worms, disease of the liver, caries of the spine, psoas abscess,

other signs then make clear the disease. There are, however, cases of thoracic aneurism entirely latent, until death; no distinct sign making the affection known, even to a careful observer.

The course of aortic aneurism is usually very gradual—often lasting for a number of years. Death occurs—1, from sudden rupture and copious hemorrhage; 2, from slighter rupture and slow leakage; 3, from slow exhaustion by pressure, interfering with respiration, deglutition, etc.

The causation of thoracic aneurism is obscure. It occurs nearly always in rather elderly people, in

or cancer. Only the discovery of a distinctly pulsating tumor (not a tumor moved by subjacent pulsation) can establish the presence of aneurismal disease. An additional sign of value is a localized "bruit" or aortic murmur heard along the course of the spine.¹

The treatment of either thoracic or abdominal aortic aneurism is, generally, null. Hygienic measures may retard decline, and careful self-management may avert a sudden catastrophe; that is mostly all. Exertion and excitement must, of course, be prohibited altogether. Dr. Sibson urges the importance of limiting the amount of fluid taken by the patient, to a pint daily; in order to lessen the volume of the blood, and thus reduce the pressure upon the sac.

Dr. Headland Greenhow reports² the entire cure of a case occurring in an able-bodied seaman, aged 28, by pressure (continued, at intervals, for three or four hours at a time) with Lister's tourniquet upon the aorta above the tumor. Drs. Murray, Moxon, and Durham (in 1864 and 1872) have reported two other successful cases, under the same treatment. Dr. S. F. Speer had two recoveries under gallic acid internally, with iron.³

AFFECTIONS OF THE ORGANS OF DIGESTION.

STOMATITIS.

Definition.—Inflammatory disease of the mouth.

- Varieties.**—1. Simple stomatitis. 2. Aphthæ. 3. Thrush. 4. Inflamed ulcer or cancrum oris. 5. Gangrene of the mouth. 6. Mercurial sore mouth or salivation. 7. Nursing sore mouth. 8. Scorbutic disease of the mouth.

Simple Stomatitis.—From taking very hot or corrosive liquids into the mouth, it may become inflamed; this condition being shown by redness, swelling, soreness and heat of the tongue, gums, lining membrane of the cheeks, palate, and fauces. Corrosives (as sulphuric acid or creasote) may whiten the mucous membrane superficially.

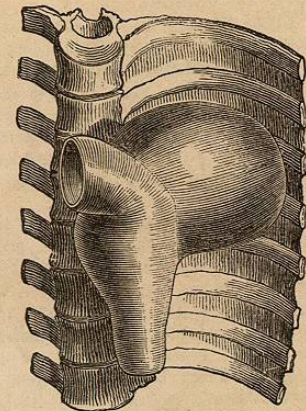
The course of such an affection is generally simple and brief—recovering in a few days under mild treatment. *Glossitis*, however, or inflammation of the tongue, may be more obstinate and serious. I have seen the tongue so swollen as to protrude from the mouth for more than a week, too large to return.

¹ W. More, in *Dublin Quarterly Journal of Medicine*, August, 1863.

² *British Med. Journ.*, June 14, 1873.

³ *Med. and Surg. Reporter*, March 23, 1874.

Fig. 69.



Aortic Aneurism.