into the heart cavity. Only rarely do they form diffusely infiltrating growths. Many are of congenital origin. The majority of cases occur in young or middle-aged individuals; a few have been found in old age.

The *myxoma* is the most frequent variety of primary neoplasm of the heart, eighteen cases having been observed. Of these the majority were pure myxomata, the others fibromyxomata. In one case the growth was described as an angiectatic myxoma. As a rule they form polypoid growths projecting into the heart cavities. It is very doubtful, however, if some of the polypoid formations found on the endocardium were really of the nature of neoplasms; rather is it probable that they were masses of newly formed connective tissue of myxomatous type resulting from the organization of thrombi. In a case of fibromyxoma of the left auricle occurring in a girl of four years, Jacobsthal found large numbers of newly developed fibres of yellow elastic tissue. In the majority of cases the myxomatous tumor has been found in the left auricle, very often being attached to the endocardium by a slender pedicle. Papillary myxomata have also been found upon the tricuspid flaps.

Next in order of frequency of the primary cardiac neoplasms is the *rhabdomyoma*. Its peculiar histological structure gives to it a great interest. Cases have been described by von Recklinghausen, Virchow, Hlava, Kolisko, Cesaris-Demel, and Seiffert. The tumor is of congenital origin, and is usually multiple. The nodules are not encapsulated, but are well outlined from the cardiac muscle, and quite sharply demarcated from the pericardium and endocardium. The growths may be as large as walnuts, and are scattered through the ventricular walls and the interventricular septum. On section the nodules are reddish-gray in color. The microscopical appearances are very striking. Trabeculæ of varying thickness showing transverse striations are arranged so as to form small spaces. These spaces do not communicate with each other; they contain large polygonal cells of irregular outline having one or more oval nuclei which are centrally situated. Their photoplasm shows a faint striation. In some cases the cell appears to form part of the wall of the space and sends prolongations across the latter. Both the protoplasm and prolongations of these cells stain like muscle. The spaces and their contents have received very different interpretations from the different observers who have studied this tumor. Hlava regarded them as intracellular, Kolisko as intercellular. According to Seiffert each space and its wall represents a greatly enlarged embryonal heart-muscle cell. The smallest tumor nodules may consist of bundles of delicately striated fibres only, without the peculiar spaces. Of the significance and mode of formation of the cardiac rhabdomyoma we as yet have no satisfactory explanation.

Primary *sarcoma* of the heart is much more rare; and it is very probable that some of the cases diagnosed as such were secondary to some undiscovered focus elsewhere in the body. The reported cases have been in both young and old individuals. The varieties observed were round and spindle-cell forms, myxosarcoma, fibrosarcoma, and angiosarcoma.

Cases of primary *fibroma* of the heart have also been reported, but the true nature of these cases is uncertain. It is quite probable that they represent organized thrombi. Observations have also been made of the primary occurrence of *lymphadenoma*, *cavernous angioma*, and *lipoma* in the heart. The polypoid *cysts* which have been described by a number of writers as primary cardiac neoplasms are without doubt to be regarded as degenerating or partly organized polypoid thrombi. They are found most frequently in the left auricle, are reddish-gray in color, and have a smooth shining surface. On section they show a cystic space filled with the products of the simple softening of the central portion of the thrombus. When organization of the periphery of the thrombus has begun the resemblance to a true cyst is very close.

Primary neoplasms of the valves are more rare than those of the heart wall. A *papillary myxoma* of the posterior tricuspid flap, *multiple myxomata* of the size of peas of the same valve, and *spindle-cell sarcoma* of the pulmonary valves have been reported.

Secondary neoplasms of the heart are also rare but much more frequent than the primary. Secondary *carcinoma* is the most common tumor of this organ. Primary cardiac cancer is of course an impossibility, though in the older literature descriptions of growths regarded as such are found. These cases were either cancer-secondaries, or, as was not infrequently the case, sarcomata were diagnosed as carcinomata. Secondary carcinoma of the heart may arise through metastasis, or by extension through continuity or contiguity through the pericardium from carcinomatous growths in the lungs, œsophagus, or secondary deposits in the mediastinal lymph glands. Metastatic carcinoma of the heart may arise from emboli of cancer cells in the coronary vessels, on the mural endocardium, between the papiliary muscles, and on the valves. From a secondary focus thus formed further extension may take place through the cardiac lymph channels. In this manner diffuse carcinomatous infiltration of the entire cardiac wall may take place. In other cases multiple metastases in the heart may be found. These may be found in the walls of both auricles and ventricles. There does not appear to be any favorite seat of deposit. In the majority of cases the carcinoma is of the medullary type. In the event of carcinomata breaking into the vena cava large emboli of carcinomatous tissue may be carried to the right heart where they may become attached to the endocardium or develop as free carcinomatous masses.

Secondary *sarcoma* of the heart, while less common than secondary carcinoma, has been observed by a number of writers. The growths are usually metastatic, but the heart may be involved also by extension through the pericardium from primary mediastinal sarcomata. The tumors may be single or multiple. They may be nodular, diffusely infiltrating, or in the form of flattened plate-like growths more or less sharply outlined. Free sarcomatous masses may be found in the right heart in cases in which the primary tumor has invaded a large vein. In a case described by Osler of sudden death in a child the tricuspid orifice was found blocked by a sarcomatous mass coming from the renal vein. In a case of primary sarcoma of the nose reported by the writer the entire heart wall was found to be infiltrated with sarcoma, while in the right ventricle there was a free sarcomatous mass of the size of a walnut.

Small tumors of the heart may produce no symptoms; larger growths may lead to cardiac hypertrophy, dilatation, valvular stenosis or insufficiency, rupture of the heart wall, secondary embolism, etc. An absolute diagnosis in the majority of cases is impossible. In suspected cases the Roentgen ray might reveal changes of size or form in the heart. If the pericardium is involved and a pericardial exudate present, some of the latter should be withdrawn for examination. The presence of a hemorrhagic exudate would be regarded as favoring the presence of a malignant tumor. Of greater diagnostic significance would be the character of the cells found in the exudate. The presence of numerous mitoses in these, particularly atypical mitotic figures, could be taken as almost positive evidence of the presence of malignancy. The treatment is wholly symptomatic.

Aldred Scott Warthin.

HEART DISEASES: NEUROSES.—The Nervous Mechanism of the Heart.—It has become known to physiologists that the power of pulsation of the heart is not engendered in, or derived from, the nervous system, but rests in the musculature of the organ itself. In the frog and other cold-blooded animals the heart continues for a short time to pulsate with a true rhythm after removal from the body and complete separation from nervous or other connection. The same is true in a minor degree in the higher animals, and while not actually verified by observation, will undoubtedly hold good in the case of man himself. Although striated the cardiac muscular structure is incompletely differentiated, and thus retains the power of spontaneous movement common to all primordial protoplasm. The nervous system, however, exercises a supreme influence over the cardiac movements. Two important sets of nerves derived from the cerebro-spinal and the sympathetic systems are concerned in the regulation and control of the circulatory centre. The scope of this article does not contemplate a complete and detailed description of the nervous supply of the heart and the phenomena of its mechanism. It is sufficient for our purpose to call attention in this place to the major facts relating to the functions of the two kinds of cardiac nerves which have been well established by physiological research.

1. Those derived from the vagus which are chiefly inhibitory or slowing to the action of the heart when subjected to a stimulation of either a direct or a reflex character. The vagus is thus known as the anabolic nerve of the heart. The pneumogastric trunk also conveys the depressor cardiac nerve which enables it to govern and regulate the arterioles in accordance with the demands of the heart.

2. The accelerator, or more properly the augmentor, nerves of the heart, derived chiefly from the first, second, and third cervical ganglia of the sympathetic system. The function of this cord, known also as the *katabolic* nerve of the heart, is to accelerate the frequency of the cardiac contractions and at the same time to augment their force. But when the question is asked, by virtue of what events produced in the heart itself do the impulses of one kind bring about inhibition and those of another augmentation of the impulses, we are met with difficulty. We may speak if we choose of an inhibitory mechanism placed within the cardiac structure, but we have no exact knowledge of the nature of such a mechanism, still less of an augmentor mechanism (Foster). It has been suggested that some of the intracardiac ganglia may serve as a medium for the distribution of these inhibitory or augmentor influences, but the evidence goes to show that the inhibitory impulses produce their effect by acting directly on the muscular fibres themselves. Nor are we in a position at the present time to assign the proper function of these ganglia, although it is believed that their influence is chiefly of a trophic or nutritional character. But, while the nervous system neither initiates nor controls the rhythmic movements of the heart, this function at once goes astray if removed from nervous governance. It is by the nervous system that the heart-beats and the calibre of the small arteries are brought into relation with each other and with almost every part of the body. It is by the nervous system acting either on the heart or on the small arteries that a change of circumstances affecting either the whole or a part of the body is met by compensatory or regulating changes in the flow of blood; that an organ has a more full supply of blood when at work than when at rest; that the tide of blood through the skin rises and ebbs with the rise and fall of the temperature of the air; that the work of the heart is tempered to meet the strain of overfed arteries, and that the arterial gates open and shut as the force of the central pump waxes and wanes. We have thus learned the seat of the automatic and rhythmic action of the heart, and are able to descry the part played by the nervous system in controlling the force, frequency, and rhythm of the muscular movements, and the tonicity or laxity of the vascular walls. But this knowledge does not aid us greatly in a definite appreciation of the pathogeny of the various disordered states of the organ which we designate as neuroses, nor does it quicken to any great extent our perception of the clinical phenomena, or our knowledge as to the therapeutic management of these conditions. The physiological relations existing between the vagus and sympathetic supplying cords on the one hand and the intracardiac ganglia and muscular structure on the other have not been sufficiently defined to enable us to agree upon any fixed or definite anatomical, pathological, or even clinical basis in our attempts to explain the cardiac neuroses.

Nomenclature of the Cardiac Neuroses.—Until a very recent period the term palpitation was made to cover practically all of the nervous disturbances of the heart. With increased experience and additions to our clinical knowledge this restrictive appellation no longer serves its former purpose. It would appear indeed that we are in danger of going too far in the other direction. During the last decade or two there has developed a tendency to an embarrassing multiplication of terms in labelling the functional derangements of the heart. Furthermore, no two writers appear to agree exactly in classifying these disorders. It thus transpires that the nomenclature of the subject is at the present time in a most bewildering, it might almost be said chaotic, state. This is perhaps to some extent inevitable. Some of the conditions which we find it convenient to describe under distinctive titles so shade into each other that it is difficult to decide where one begins and another ends. For example, the condition described as palpitation may present at times the symptoms of neurasthenia cordis, or of arhythmia; while in tachycardia, the features of palpitation, or even of pseudo-angina, may obtrude themselves. Some of the terms employed do not constitute true symptom groups—they are mere symptoms themselves and not distinct diseases.

After much anxious thought and study of this subject, it has seemed to the author proper to present an account of these nervous manifestations, each under the head of the most prominent clinical features exhibited, noting the points of contact with other neurotic manifestations and such additional facts as our present state of knowledge would appear to warrant. It must be said that no perfectly satisfactory clinical classification of these disorders is possible until further light has been shed upon the physiological inter-relations existing between the supplying nerves, the cardiac ganglia, and the muscular structure of the organ itself. It has seemed to the writer, however, that all we know at the present time concerning the clinical and pathological features of the cardiac neuroses may be properly included under the following heads: (1) Palpitation; (2) tachycardia; (3) bradycardia, (4) the dyspeptic heart; (5) neurasthenia cordis; (6) the irritable heart; (7) arhythmia, including delirium cordis and tremor cordis; (8) the heart in Graves' disease; (9) angina pectoris and pseudo-angina. Of these terms it may be said that palpitation, tachycardia, neurasthenia, arhythmia, and angina are necessary and essential; the remainder might properly be omitted, but they are found in contemporaneous literature and may for the present be used provisionally as marking points of which we have no exact scientific conception.

Palpitation.—According to Balfour all who suffer, or think they suffer, from disease of the heart are prone to palpitation. Under Laënnec's definition, any person whose heart's action obtruded itself upon the consciousness might be said to have cardiac palpitation. In accordance with the modern terminology, however, the name is used to cover a much more limited class of cases. One by one symptoms formerly referred to as falling under this term have been relegated to other forms of disorder, until at the present time palpitation has become quite unfashionable. Several writers mention it only as a symptom of other neuroses. In the author's opinion, however, it may still be regarded as a substantive affection covering a distinct symptom group.

Symptoms.—Probably some palpitation of the heart falls within the experience of every one. Being very near to our consciousness, eccentricities of the heart are usually attended by great perturbation of the nervous system. The attacks usually come on suddenly, independently of any mental or physical effort, and vary in severity from a mere sense of discomfort or uneasiness to a high degree of pain and distress. Some persons experience darting pains through the heart during the attacks, especially on attempting to take a deep inspiration. It is often brought on by a full meal and the belching of gas gives relief. The heart appears, as variously described by the patient, to jump, to roll, to throb,

or to stand still. On physical examination the apex beat will probably be found to be increased in frequency and possibly in force during the attacks. It strikes the palpating hand with a quick throb which extends to the greater arteries. No murmur is present except in anæmic cases. Nor are there other signs of disturbance or lesion except possibly a slight intermittence or irregularity at times. The attacks may last for from a few moments to several hours, or at intervals for days together. One paroxysm generally implies a susceptibility to others.

Etiology.—The causes of this disorder are legion. Any sudden emotion—surprise, grief, fear, joy, or disappointment—may cause a transient palpitation in nervous persons. More severe and persistent forms are usually the result of some error or indiscretion on the part of the patient. Inordinate use of tobacco, tea, or coffee, dietary indiscretions, excessive venery, self-abuse, and late hours are fruitful causes. The condition is far more common among females than in males, and is especially frequent in the anæmic conditions of young girls. More or less palpitation is a common accompaniment of organic disease of the heart, brain, and spinal cord.

Like other pure neuroses, simple cardiac palpitation gives rise to no morbid structural changes which are tangible to our senses.

Prognosis.—The disorder is as a rule readily amenable to treatment, a withdrawal of the cause being usually sufficient to cause a speedy disappearance of the symptoms. At times, however, it is exceedingly obstinate and taxes the resources of the practitioner to the utmost. It may extend over years of time, but never *per se* endangers life.

Treatment.—This consists first in the removal of the cause, if it can be ascertained. It is quite useless to administer drugs with a view to relief of this disorder to a person consuming habitually excessive quantities of tea or tobacco. A careful mode of life is an important desideratum. Prudent and regular habits of eating and sleeping and moderate outdoor exercise are points to emphasize. A morning shower bath of moderately cold water followed by a vigorous friction of the skin with a coarse towel is a useful measure in lessening the liability to the attacks. In habitual cases the daily administration of three five-drop doses of the tincture of digitalis, combined with ten-grain doses of bromide of potassium, or sodium, has a valuable effect in warding off the paroxysms. It is important to give the patient full assurance that he is in no danger whatever as to his life. During the paroxysm the administration of some of the diffusible stimulants or antispasmodics to excite vagus inhibition is indicated. The old-fashioned combination of valerian, Hoffman's anodyne, and lavender is very serviceable. A good formula is as follows: ℞ Spiritus ætheris compos., Tinct. valerian., āā ʒ vi.; Spiritus lavandulæ compos., ʒ iv. M. et Sig.: ʒ ss. every half-hour until relief is obtained. The writer has found the application of some form of cutaneous irritant, in the shape of a small section of mustard leaf or thapsia plaster, to some section of the body remote from the heart so as to attract the patient's attention elsewhere, to serve a useful purpose. The administration of small quantities of brandy or ammonia may be useful in some cases, but it is seldom that morphine is required in simple palpitation. The application of a sinapism or a belladonna plaster to the heart is sometimes useful. It is said that certain mechanical means, such as holding the breath after a deep inspiration, pressure on the abdomen, etc., will sometimes abort an attack, but the author has discarded these measures after repeated futile trials. Compression of the vagus and sympathetic nerves in the neck and the use of faradism are worthy of a trial in obstinate cases.

Tachycardia.—Etymologically (ταχύς, quick, καρδία, heart) this word means a quick heart, but the name does not afford altogether an accurate conception of the disease. Tachycardia is characterized by an increased frequency of the cardiac pulsations, but not every person with a quick heart can be said to be a victim of the diseased condition which we now recognize under this appelation. Although the term has been subjected to great abuse, tachycardia properly embraces a fairly constant symptom group, and as such is entitled to be regarded as a separate and distinct morbid entity, and not a mere symptom. Many persons have normally a heart's action of 100 or more, but this does not constitute tachycardia, nor does the rapidly acting heart of emotional disturbance, or that associated with tuberculosis, fevers, organic disease, or Graves' disease. Many theories have been proposed in explanation of this strange affection, but none of them is fully satisfactory. In the present state of our knowledge we can do little more than guess whether the immediate causes lie in the augmentors of the heart, the vagus, the ganglia, or the musculature, or whether it be of centric origin. Possibly it is due at times to some eccentric irritation, such, for example, as a diseased ovary, a floating kidney, or a neuritis of distant cords. It seems rational to attribute the trouble in most cases to overstimulation of the accelerators or paralysis of the inhibitory nerves; probably in extreme cases both factors are operative.

Morbid Anatomy.—This condition is essentially a neurosis. It follows therefore that in the few autopsies which have been made in the case of persons who suffered from tachycardia during life no constant primary changes have been found, although there have been as a rule some marks of cardiac decadence in the shape of secondary degeneration of the muscular structure. Examinations of the vagus, the sympathetic, and the intracardiac ganglia have been negative.

Causation.—The etiology of tachycardia is in many cases past finding out. It is most likely to occur in persons of a neurotic or hysterical temperament, and in some cases it appears to be hereditary. Possibly such factors as worry, overexertion, frequent excitement of the emotions, and the abuse of alcohol and tobacco are concerned in the causation. Dyspepsia and diseases of the uterus and ovaries form a basis for many cases. Probably onanism and sexual excess or repression have some bearing on the causation. In a recent case, under the writer's observation, of convalescence from typhoid fever the pulse would quickly rise from 80 to 150 without apparent cause. The disease occurs with about equal frequency in the two sexes. It is rare under twenty, but no age is exempt. Perhaps a majority of cases are seen in persons in middle life.

Symptomatology.—The following clinical features are fairly uniform. The patient may have felt in an average state of health for a variable period, when a peculiar sensation of lassitude or restlessness steals over him. His apprehensions may be aroused and slight vertigo experienced. Perhaps the extremities become cold and numb, and a shivering feeling creeps up and down the spine. The face may become ashy or mottled. A sensation of oppression or tightness, but not of palpitation, is felt about the heart. This may occasionally amount to actual pain. During a marked attack the patient is quite helpless. He can neither stand, nor sit, nor lie with comfort. He is irritable and generally miserable. An examination of the heart will now show a pulse rate of 120 to 140 or 160. Sometimes it is so frequent as to be counted only with the use of the sphygmograph. A case was reported by Dr. Bristowe of 308 per minute! The use of the stethoscope shows no murmur or other evidence of organic disease of the heart. The pulsations have a tick-tack sound and not all of them are propagated as far as the radial artery. In most cases the urine is scanty, but nervous polyuria may exist. The attacks may last for a period ranging from a few minutes to several hours or even days. In a case reported by Bouveret the patient suffered for thirteen days (Allbutt). Permanent tachycardia is an expression of organic disease, usually in the course of the vagus or medulla, or an evidence of pontine softening with paralysis. The paroxysm generally ends suddenly with a few parting twinges of pain or twitching. During some attacks, especially in long-

standing cases, signs of cardiac dilatation with œdema of the lungs, swelling of the ankles, and albuminuria may supervene. Death may possibly occur from asystole or syncope, probably nearly always from the latter. During the intervals patients recover their ordinary health but the substratum remains.

Prognosis.—This has to some extent been foreshadowed in the preceding paragraph. The ultimate termination in individual cases is always doubtful, but the immediate prospect, especially during the early years, is hopeful. Patients sometimes tolerate the affection for many years, dying eventually of old age.

Treatment.—We cannot with certainty arrest a paroxysm of tachycardia when it is under way, but we can lessen the tendency to recurrence by prudent and regular habits of life, by the avoidance of excess in every direction, and by the cautious administration of such tonics as strycnnine and arsenic combined with a little digitalis or caffeine. During the attacks the exhibition of two or three half-ounce doses of brandy combined with five or ten drops of tincture of digitalis may be found useful in mitigating their severity. Strong coffee internally and the application of the ice-bag to the præcordium may have the effect of inhibiting the vagus, as may also electrization of the vagus, placing the positive pole over the inner border of the sterno-mastoid muscle and the negative up and down the lower part of the sternum. According to Whittaker, morphine is of little value in pure vagus tachycardia. Nitrite of amyl and nitroglycerin are likewise useless. Compression of the chest has been recommended by several well-known observers. The patient lying on his back thrusts his feet as hard as possible against the foot of the bed, then pressing his arm closely to his sides he takes a long inspiration. Now closing the glottis he makes a strong expiratory effort, thrusting hard at the same time against the walls of the chest with the upper arms and clasping them with the forearms. By this means it is stated that the rate of the heart may be controlled and the organ even caused to intermit in its action. A morning shower bath and the graduated douche or cold pack has been employed with advantage. When tachycardia is due to recent strains of the myocardium, the best treatment seems to be absolute rest, the full action of belladonna or atropine as indicated by slight dilatation of the pupil, being maintained at the same time.

Bradycardia—(from βραδύς, slow, and καρδία, heart), otherwise known as araiocardia, oligocardia, pulsus rarus, pulsus tardus, etc. This condition cannot in our present state of knowledge be identified as a distinct affection. The name connotes nothing and signifies nothing more than a phenomenon common to many definite groups. There is not, as in tachycardia, a particular symptom group of which bradycardia itself is the centre. Several cases of what was supposed to be essential paroxysmal bradycardia have been reported, but a closer and more continued observation has shown that these cases were always secondary. A description of the condition therefore can consist only in detailing the various diseases or disorders of which it is one of the clinical features. The phenomenon is no doubt partly due to direct or reflex irritation of the vagus centre, or the vagus trunk, and partly to increase of arterial pressure by vasomotor or purely muscular contraction of the peripheral arteries. It may also be brought about by diminution of pressure due to loss of blood, to direct influence on the heart muscle of substances circulating in the blood, and finally to anatomical changes occurring in the musculature of the heart or of the endocardium. Some persons have naturally a slowly acting heart, without apparent detriment to their vital functions. The well-known case of the first Napoleon is a familiar example. According to his physician, Corvisart, the apex beat of this by no means slow individual averaged only 40 per minute. While bradycardia is undoubtedly produced through some form of defective innervation, it cannot be accurately defined as a neurosis. It is an incident of organic disease of the brain and its meninges and of the spinal cord. During the progress of a case of pachymeningitis in a little boy, aged five years, lately under the writer's care, the heart beats fell as low as 48 per minute for several days before death. It may occur as a result of fracture of the vertebræ with compression of the cord, usually in the region of the fifth or sixth cervical vertebra. It occurs in epilepsy and is an incident of many infections, including typhoid fever, pneumonia, erysipelas, and rheumatism. Slow heart is often observed in puerperal women, and it may result from the presence of bile in the blood, of anæmia, of diabetes, or it may be due to many of the disorders of the intestinal tract. It is probably not often caused by alcohol or tobacco, nor is it an incident of organic disease of the heart, except when the myocardium is involved. It is occasionally seen in aortic stenosis and may result from occlusion of the coronary arteries.

The condition calls for no special form of treatment, its management being involved in the general treatment of the associated disease or disorder. It is usually advisable, however, to administer digitalis in moderate doses so as to maintain the metabolism of the myocardium and enable it to withstand the great strain produced by the conditions under which the circulation is carried on.

The Dyspeptic Heart.—Here we have another name applied to certain neurotic states of the heart. The term has not acquired extensive vogue as yet, but its use appears to be increasing. Is there a symptom group referable to the heart as its centre occurring with sufficient frequency or uniformity to warrant the addition of the term dyspeptic heart to our nomenclature as a separate and distinct affection? After much careful thought and observation the writer is led to answer this question in the negative. Aberrations of the digestive functions lead to all kinds of disturbances of the heart's action, whether it take the form of palpitation or of tachycardia, of neurasthænia cordis or of pseudo-angina; but they present nothing peculiar or distinctive. The neurotic cardiac manifestations due to digestive trouble are quite similar to those resulting from other causes, plus the presence of clinical features referable to the stomach or intestines. The association of gastric and cardiac trouble is one of extreme frequency, so much so that it is important to investigate every case of functional cardiac disorder for a possible digestive origin. These disturbances are of two kinds: first, reflex, giving rise usually to simple nervous palpitation, but not infrequently to tachycardia, to bradycardia, and even to pseudo-angina. It is probable that almost every case of so-called *tremor cordis* is of gastric origin. Second, the most severe and even dangerous symptoms of mechanical disturbance of the heart arise from the presence of an overloaded or tympanitic stomach. Some of these cases closely resemble in their manifestations organic disease of the heart itself, and it is not to be doubted that not a few sudden deaths attributed to heart disease might more justly have been credited to an abused and rebellious stomach. These cases of mechanical interference with the action of the heart are not, however, strictly speaking, neuroses, and do not properly fall within the domain of our present subject. It need only be added that in all cases of cardiac trouble of gastric origin therapeutic measures are to be addressed to the stomach and not to the heart.

Neurasthenia Cordis; The Weak Heart.—This condition is very similar in its manifestations to the irritable heart of some authors. It is practically identical with the not infrequent class of cases somewhat loosely denominated weak heart. The condition denotes aberration or insufficiency of the heart, the result of defects of innervation. It is clearly a neurosis, and in our present state of knowledge excludes all organic disease, although the time is probably close by when keen observers will be able to distinguish pathological departures in the intimate structure of the cardiac ganglia or nerve trunks, or perhaps in the muscular substance of the myocardium. Patients suffering from this affection usually belong to the neuropathic type, which may or may not be the result of defective endowment, hereditary or oth-