

PART III. ORGANIC DISEASES OF THE HEART

LECTURE VII.

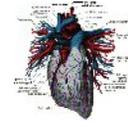
GENTLEMEN : You have followed me with excellent attention through the lectures on Functional and Inflammatory Diseases of the Heart. It is now my duty to give you the history and treatment of those diseases of the heart which are termed *structural*, for the reason that they all present some lesion which changes its normal structure, and I will commence with the various forms of

HYPERTROPHY.

**Definition and Varieties of Hypertrophy—Enlargement by Hypertrophy—
Concentric Hypertrophy — Symptoms and Pathological Effects — Physical
Signs and Diagnosis of Enlargement by Hypertrophy—Summary of the
Physical Signs of Hypertrophy with Enlargement of the Heart—Treatment.**

Enlargement of the heart is a term which embraces abnormal increase of this organ, as regards either volume or weight, or, as is commonly the case, increase both in weight and volume. Increase of the volume of the heart, and increase of its weight, are different forms of enlargement, either of which, although they are usually associated, may exist independently of the other. The heart may exceed the limit of health as regards weight, from an increased thickness of its walls, the normal volume being retained. This is a condition sometimes found after death, although in the vast majority of the cases in which the weight is augmented the volume exceeds the healthy limit.

On the other hand, the volume of the heart may be abnormally great, the cavities being enlarged, while the thickness of the walls is so far diminished that the normal weight is retained. The latter form of enlargement is also of very rare occurrence, the organ generally increasing in weight when its volume is greater than in health. Abnormal increase of the heart in weight, due to morbid thickness of the muscular walls of the organ, constitutes the morbid condition called Hypertrophy. Abnormal increase of the heart in volume, due to the morbid size of its cavities, constitutes the morbid condition called Dilatation. These names, hypertrophy and dilatation, thus denote different forms of enlargement of the heart, which exist sometimes separately, but usually together. Hypertrophy and dilatation have been subdivided by writers into several varieties, the subdivisions being based on well-marked distinctions.



First. Hypertrophy exists, in some cases, without any alteration of the cavities, the latter remaining normal. This has been called pure or simple hypertrophy.

Second. The cavities are sometimes found to be diminished in size below the limit of health. This has generally been admitted as a variety of hypertrophy, although its existence, as a morbid condition, is open to doubt. It has been distinguished as concentric hypertrophy, or hypertrophy with contraction.

Third. The variety occurring much more frequently than the others is characterized by the co-existence of dilatation to a greater or less extent.

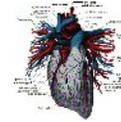
This variety has been called eccentric hypertrophy, or hypertrophy with dilatation. Dilatation, on the other hand, differs in different cases, according to the thickness of the walls of the heart.

First. It exists in some cases, the walls retaining their normal thickness. This has been called pure, or simple dilatation. It is obvious, however, that in proportion to the dilatation, the heart is hypertrophied, assuming the walls to preserve their normal thickness, inasmuch as the quantity of muscular structure and the weight of the organ, under these circumstances, must be increased.

Second. In other cases, in which the capacity of the cavities is increased, the thickness of the walls is diminished. In this variety, the weight of the heart may not exceed, and may even fall below, that of health. This has been distinguished as dilatation with attenuated walls, or attenuated dilatation.

Third. The variety of dilatation which occurs with far greater frequency than either of the other varieties, is characterized by increased thickness of the walls, or well marked hypertrophy, the dilatation, however, being predominant. These subdivisions, although based on distinctions which are valid, are embarrassing to the student. They are consistent with the different morbid conditions of the heart, as determined by examinations after death; but they are not accompanied by diagnostic criteria, by means of which they may be discriminated at the bedside during life. A simpler arrangement is clinically more available, and suffices for all practical purposes.

We may distribute all cases of enlargement of the heart into two groups: 1st, Enlargement by hypertrophy; and, 2nd, Enlargement by dilatation. These groups will include, respectively, cases in which the hypertrophy or the dilatation is either simple or predominant.



In cases of enlargement by hypertrophy, the cavities may, or may not, exceed their normal capacity. Cases in which the cavities are diminished will also fall in this class. If the hypertrophy be neither simple nor concentric, it is included in this class whenever it is greater than the co-existing dilatation. The symptoms and signs enable the diagnostician to determine, often with positiveness, the existence of hypertrophy, which may be either simple, or predominant over a co-existing dilatation; but to discriminate between the cases in which the hypertrophy is simple, and those in which it predominates over co-existing dilatation, is a problem in diagnosis by no means easily solved.

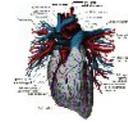
So, in cases of enlargement by dilatation, the quantity of muscular structure may, or may not, exceed the limit of health. The diagnostic criteria of predominant dilatation are often sufficiently positive; but it is far less easy to decide whether the dilatation be accompanied with hypertrophy or attenuation. Moreover, as regards prognosis and treatment, after the existence and degree of enlargement are ascertained, it is enough to determine which form of enlargement predominates, namely, either hypertrophy or dilatation.

ENLARGEMENT BY HYPERTROPHY.

Under this head, it is to be borne in mind, I include, not only enlargement due exclusively to increased thickness of the muscular walls, but enlargement by hypertrophy with dilatation, provided the former predominate over the latter. In examining the heart, after laying open the cavities and removing their contents, the predominance of either hypertrophy or dilatation is generally obvious to the eye. The two forms of enlargement are combined, in different cases, in every degree of relative proportion.

In determining, then, whether the enlargement be by hypertrophy or by dilatation, the question is, which contributes most to the morbid size, increase of the structure, or increased capacity of the cavities. Instances, however, occur in which these two forms of enlargement are about evenly balanced. On measuring and weighing the heart, the excess of weight is greater than the abnormal dimensions, in proportion as hypertrophy preponderates.

The walls are more solid and resisting. The ventricles retain their rounded form when the heart is placed on its posterior surface, not being flattened by the collapse of the ventricular walls. If the increased thickness of the walls of the ventricles be due purely to hypertrophy, they present externally, and on section, the appearances of healthy muscular structure, and the microscope shows the characters of the normal tissue;



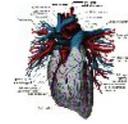
the hypertrophy, causing abnormal volume and weight, is due to increase of the muscular substance.

The heart may be more or less enlarged by an accumulation of fat upon the surface and between the muscular fibres, or by the presence of different morbid products in these situations. Under these circumstances, notwithstanding the abnormal volume and weight, the muscular substance may be diminished; that is, instead of hypertrophy, there is atrophy of the heart.

The several portions of the heart may collectively participate in the enlargement, or it may be confined to one or more of the anatomical divisions, without extending to the whole organ. In the majority of cases, all portions are involved, but they are rarely affected equally; the enlargement is more marked in some divisions than in others. The different portions may predominate in one part and dilatation in another. If the enlargement be limited to, or be seated chiefly in, the left ventricle, the vertical is more increased than the transverse diameter; the heart is elongated, and the conoidal form may be more marked than in health. If the enlargement be great, the right appears to be merely an appendix of the left ventricle. The apex is lowered, and is more or less removed to the left of its normal situation.

On the other hand, if the enlargement be limited to, or be seated chiefly in the right ventricle, the width, more than the length, is increased; the conoidal form is less marked than in health; and the apex, formed in part or entirely by the right ventricle, is blunt instead of pointed. The apex extends lower than in health, and more in a direction toward the epigastrium than when the enlargement is seated in the left ventricle. If both ventricles be considerably enlarged, the organ has a globular form. The papillary muscles are not infrequently more or less increased in size when the ventricular walls are thickened. The degree of hypertrophy varies greatly in different cases. The thickness of the left ventricle may be increased to an inch, an inch and a half, and even two inches. The walls of the other compartments may, in like manner, be doubled, tripled, and quadrupled. The vertical and transverse dimensions may be five or six inches, or more. The weight may exceed two, three, four, and even more than five times the normal average.

Is enlargement by hypertrophy due to an increase in size of the muscular fibres, or does it involve an abnormal multiplication of the fibres? If the term hypertrophy be applied exclusively to morbid growth, it implies that the enlargement is due to the former, that is, to an increase in size of the muscular fibres. The term is thus restricted by Virchow, and others. The multiplication of fibres, on the other hand, is

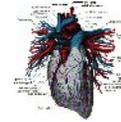


called hyperplasia, or hypergenesis. Measurements in normal hearts, and in hearts more or less hypertrophied, show an increase of size of the muscular fibres, their diameter in the latter sometimes being four times greater than in the former. The heart may, therefore, be enlarged so that the volume will be four times greater than in health, by hypertrophy, in the restriction sense of the term. This, however, will probably not account for the increase of the muscular substance in all cases; and, if not, the multiplication of fibres must be admitted. Enlargement of the heart by hypertrophy, therefore, may be due wholly to hyper-nutrition, or increased growth of the muscular fibres, and hyperplasia may be superadded.

What causes the pathological processes, namely, hyper-nutrition and hyperplasia, which increase the quantity of the muscular substance of the heart?

Generally, if not invariably, enlargement by hypertrophy is the result of prolonged abnormal force of the heart's action. It is difficult to account for this form of enlargement, except as caused by augmented muscular power continued for a long period; and generally there are present obvious causes which account, in this way, for the enlargement. The mechanism is the same as in the familiar examples of certain voluntary muscles becoming disproportionately developed when inordinately exercised. The muscles of the arms of the blacksmith are strikingly in contrast with the muscles of the lower limbs; and the reverse is true of pedestrians and dancers. Involuntary muscles, aside from the heart, also present examples. For instance, the muscular structure of the urinary bladder may become enormously hypertrophied, when the power of contraction of this organ has been for a long time increased in consequence of obstruction to the expulsion of the urine. Clinical observation shows, that in most cases of enlargement of the heart by hypertrophy, there are prior morbid conditions which stand to it in a causative relation. The practical bearing of this pathological view of hypertrophy is vastly important. It follows, that enlargement of the heart by hypertrophy, as a rule, is compensatory; or, in other words, a conservative provision to meet the difficulties incident to the morbid conditions upon which the hypertrophy depends. This truth cannot be too strongly impressed.

In the great majority of cases, enlargement by hypertrophy is consecutive to, and dependent upon, morbid conditions within the heart, namely, on valvular lesions. These give rise to hypertrophy when they involve over-repletion of the cavities, in consequence either of obstruction to the free passage of the blood through the orifices, or of regurgitation due to valvular insufficiency. The organ being unduly distended and



stimulated by the accumulation of blood, its action becomes abnormally forcible; the causes of accumulation being permanent, and often progressively increasing, the increased power of action continues and augments, and hypertrophy is the result. The hypertrophy commences in that portion of the heart which is primarily affected, but the several portions sustain to each other, in their anatomical structure and functions, relations so close and reciprocal, that causes which at first are limited to one portion, affect, ultimately, the whole organ. The enlargement, however, preponderates in the portion which is first affected.

Directing attention, with some detail, to the mode in which valvular lesions give rise to enlargement, we shall be led to consider the development of the affection in the different anatomical divisions of the heart, respectively, taking them up in the order of their greater relative liability to become hypertrophied.

Of the several portions, the left ventricle is oftenest enlarged; next in liability to enlargement, is the left auricle; next, the right ventricle; and, last, the right auricle.

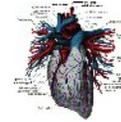
The valvular lesions which especially lead to hypertrophy of the left ventricle, are seated at the aortic orifice. Lesions in this situation may involve, as will be seen hereafter, either contraction, and consequently obstruction; or incompetence of the valves, and consequent regurgitation of the blood from the aorta into the ventricular cavity.

Obstruction seated in the aorta, either near to or at some distance from the heart, such as is incident to aortic aneurism, may lead to hypertrophy of the left ventricle primarily, and subsequently of the other portions. Enlargement commences in the left ventricle, in connection with lesions affecting the mitral orifice and valves, and involving either contraction or insufficiency, or both these immediate effects.

Contraction and valvular insufficiency at the orifice of the pulmonary artery occasion, primarily, enlargement of the right ventricle, precisely as aortic lesions induce, first, enlargement of the left ventricle.

Lesions at the tricuspid orifice being extremely infrequent, enlargement of the right auricle rarely occurs, except consecutively to an affection of the right ventricle.

Enlargement of the heart, not associated with valvular lesions, may be due to obstruction at a distance from the centre of the circulation. Obstruction to the pulmonary circulation incident especially to



emphysema of the lungs, and occasionally to chronic pleurisy, collapse, and dilated bronchi, leads to enlargement.

The researches of Larcher, Ducrest, and others, show that a certain amount of hypertrophy, limited to the left ventricle, is incident to pregnancy. It would seem that the hypertrophy, under these circumstances, is to be regarded as normal, and that it disappears after confinement.

The changes which occur in the muscular structure of the uterus, in connection with gestation, are thus represented, on a small scale, in the heart. The increase in weight of the heart in pregnancy, it is estimated, may amount to one-fifth of the previous weight of the organ. Doubtless this temporary hypertrophy is compensatory or conservative, as it is when it occurs in other connections.

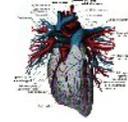
It was formerly supposed, that the prolonged functional disorder of the heart frequently eventuated in the development of hypertrophy. This supposition does not derive much support from clinical experience. At first view, the statement just made may appear inconsistent with the fact that the abnormal growth of the muscular walls of the heart is the result of abnormal muscular action of the organ. The inconsistency disappears when it is considered that functional palpitation, even when intense, does not involve the increase of power or strength of muscular action which is incident to the over-accumulation of blood from an impediment to the circulation.¹

Enlargement by hypertrophy, as already stated, is almost always a secondary affection. In the great majority of cases it is consecutive to valvular or aortic lesions. It is also an effect of certain chronic pulmonary diseases, more especially emphysema of the lungs. It occurs in certain cases of Bright's disease. It is a physiological event in pregnancy. It may be produced—but the examples are very rare—by long-persisting functional disorder. Its occurrence, when it is not evidently a secondary affection, is so infrequent, that there is room for doubting whether it ever be a truly idiopathic affection. (Flint.)

SYMPTOMS AND PATHOLOGICAL EFFECTS OF HYPERTROPHY.

The symptoms of hypertrophy, in the cases which come under the cognizance of the physician, are generally intermingled with those of concomitant cardiac or other affections, of which the hypertrophy is an

¹ (See " Functional Disorders," page 50, where this opinion is controverted. *Hale.*)



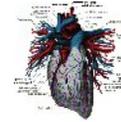
effect. Cases of hypertrophy not associated with, and dependent upon, other affections, are so rare, that its clinical history cannot be said to have been established by observation. The symptomatic phenomena which are described as distinctive of it, are determined inferentially, rather than by facts observed in well-authenticated cases. Rationally considered, it is clear that the symptoms would be those indicative of abnormal power of the heart's action. Undue determination of blood to the head might be expected to occasion certain phenomena, such as cephalalgia, flushing of the face, throbbing, epistaxis, vertigo, etc. These symptoms have relation especially to hypertrophy affecting the left ventricle. Assuming the absence of aortic and of mitral lesions involving obstruction or regurgitation, the pulse would represent by its force, fullness, and incompressibility, the power of the ventricular systole. Dyspnoea, when, from any cause, the action of the heart is increased, as, for example, after exercise, would denote that the hypertrophy affected the right ventricle. Of the powerful action of the heart the patient would be conscious when his attention was directed to it, and it would be apparent from the movements of parts of the body and the dress. The digestive and assimilative functions would not. be expected to offer any marked symptoms of disorder. The muscular strength would not be diminished; nutrition would not be impaired; nor the functions of secretion and excretion interrupted. (Flint.)

Hypertrophy of the heart, not consecutive to either 'valvular or aortic lesions, and not an effect of either emphysema or any other pulmonary disease, constitutes always presumptive evidence of the existence of renal disease.

SUMMARY OF THE PHYSICAL SIGNS OF ENLARGEMENT OF THE HEART.

I cannot do better, in order to bring to your observation in a practical way, the prominent physical signs of enlargement, than to quote from Flint on Diseases of the Heart.

1. Percussion.—The area of the superficial cardiac region extended beyond the range of healthy variation. The degree of dullness within this area greater than in health, and the sense of resistance more marked. The limits of the deep cardiac region—in other words, the boundaries of the heart —generally defined by careful percussion; the dimensions of the space which the heart occupies being thus ascertained with precision, and the form of the organ delineated on the chest. Enlargement of the right or left auricle, sometimes determined by the extent of the area of dullness at the base of the heart, on the right or left side of the sternum.



2. Palpation.—The apex-beat moved to the left of its normal position, and lowered; the extent of variation, in either respect, being proportionate to the degree of enlargement, provided extrinsic causes be excluded. The area within which the apex-beat is felt extended beyond the range' of health. Abnormal impulses felt in two, three, or more intercostal spaces, the additional impulses either synchronous or alternating with the apex-beat, in some instances referable to the auricles, although due to the ventricular systole; and, when felt in the epigastrium, due to the action of the right ventricle.

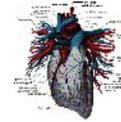
3. Auscultation.—The respiratory murmur not appreciable within the superficial cardiac region in tranquil breathing, * and sometimes wanting when the breathing is forced; feeble over a larger area within the praecordia than in health. The boundaries of the heart defined by abrupt cessation or notable diminution of vocal resonance, and the augmented space which the organ occupies, in this way determinable in corroboration of the evidence afforded by percussion.

4. Inspection.—Abnormal projection of the praecordial region in some cases; the projection considerable if the enlargement take place in early life. The movements of impulsion determined, which are also ascertained by palpation ; movements sometimes seen which are not perceptible to the touch, especially movements which commence by depression with the systole of the ventricles. Alternate movements of intercostal spaces often apparent to the eye, which are imperfectly ascertained by palpation.

5. Menstruation.—Prominence of the praecordia greater than the corresponding portion of the chest on the right side; in some cases apparent on inspection, but determined with precision by diametrical measurement. Menstruation also employed in determining with accuracy the dimensions of the superficial and deep cardiac regions, the position of the apex-beat relatively to the nipple, median line, etc.

SUMMARY OF PHYSICAL SIGNS DISTINCTIVE OF ENLARGEMENT BY HYPERTROPHY.

1. *Palpation*.—Abnormal force of the apex-beat, denoting not merely excited action of the heart, but augmented power of the systole of the left ventricle, the impulsion prolonged and strong. A strong impulse in the epigastrium in cases of hypertrophy of the right ventricle; the impulses sometimes communicated to the lower part of the sternum, and extending more or less over the site of the liver. A strong, heaving movement of the praecordia, in distinction from the shock, more or less violent, due merely to augmented functional activity of the ventricles.



2. *Auscultation*.—Increased intensity of the aortic second sound, and especially of the element of impulsion of the first sound, in hypertrophy of the left ventricle, rendering the first sound dull and prolonged, as well as abnormally intense, Exaggerated intensity of the pulmonary second sound, in hypertrophy of the right ventricle, especially if associated with obstruction to the pulmonary circulation. Augmentation of the tricuspid valvular element of the first sound in some cases of hypertrophy of the right ventricle.

TREATMENT.

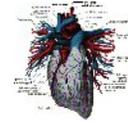
The treatment of hypertrophy of the heart, *i.e.*, enlargement by hypertrophy, by the allopathic school, presents some of the strongest arguments against the willful bigotry of that school, and their persistence in adhering to a routine treatment, even when the facts of pathology are against them.

Up to a recent date, the allopathic treatment universally adopted, was equaled only by that of Dr. Sangrado, as depicted in Gil Bias. Repeated venesections; a diet so low as to result in partial starvation, was insisted on, not only by Vausalva and Albertini, but more recently, by Hope, Bouillard, and even Wood.

I do not know of any disease where the results of such treatment could be more destructive to the integrity of the general system, for by it the heart was weakened, and *dilatation*— a condition ten-fold worse than *enlargement* — was generally caused.

The very *object* of the allopathic treatment was an error. A diminution of the *size* of the heart was considered a desirable result, but, as Flint observes, "A better understanding of the pathological relations of hypertrophy leads to the conclusion, that therapeutical measures designed to diminish or prevent it, are likely to do harm, in so far as they have efficiency in promoting these ends."

I am sorry to inform you, that the homoeopathic treatment of hypertrophy of the heart has been as erroneous in principle, although the results have not been nearly as disastrous as those produced by the opposite school. The same remedies, in the same potency, have been used for the two opposite conditions of enlargement and dilatation. Even Baehr, otherwise sound, gives no separate and distinctive treatment for the two diseases.



I propose to present you with the treatment of *enlargement by hypertrophy*, and in a future lecture give you the true treatment of *dilatation*.

At present, the best authorities of both schools agree on one vital point, namely, that, considered in connection with the antecedent morbid conditions which give rise to it, condition's involving impediment to the circulation, hypertrophy, so far from being an evil, is an important provision against the dangers incident to the accumulation of blood within the cavities of the heart, and against the evils of dilatation. Hypertrophy compensates for the disturbance of the circulation caused by valvular lesions, and so long as the enlargement consists of this compensating increase of muscular structure, and consequently of muscular power, the patient experiences little or no inconvenience, providing nothing occurs, like anemia, for example, to weaken the force of the heart's action. It is when hypertrophy has reached the limit of its progress, and dilatation has followed, that serious inconveniences, referable to the heart and circulation, begin to be felt.

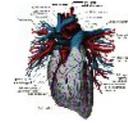
The general indications for treatment which I will now give for your adoption are:

1. To prevent those impediments to the circulation, arising generally from valvular lesions, which give rise to hypertrophy.
2. To prevent dilatation, by keeping up, if possible, the normal tonicity of the muscular structure of the heart.
3. To quiet undue excitement and irregular action of the heart.

The rules in relation to the general management of the patient are so uniformly agreed upon by all writers, that nothing original can be said. Baehr and Flint, the two representative authorities, have nearly the same views.

It is obvious that all influences that might stimulate the already over-excited heart should be avoided. Coffee, spirits, strong spices, salt in excess, also fat food, should be avoided. Mental excitement, especially anger, should be guarded against by the patient.

Very large and hearty meals should be avoided; small and frequent meals should be advised, and on no account should heavy meals late at night be allowed. The occupation, of the patient may sometimes be changed to advantage. A sedentary life, attended by much excitement of mind, should be changed to a more active one, with less mental irritation. As



regards exercise, your own judgment will have to be depended on. In some cases, general exercise, unless moderate, must be prohibited; in others, the physical activity may be greater. Local coldness of the hands and feet must be met with such gymnastics as exercise the extremities alone, the body being quiet.

The circulation should be equalized as much as possible ; especially should remote parts of the body be supplied with blood, in order that the heart may not be overburdened and excited. The extremities should be warmly clad, and the whole body protected by flannel underclothing.

All influences tending to debility, nervous prostration, anemia, or blood-impoverishment, should be avoided. Remember that the main object of treatment is to prevent *weakness* of the heart. Losses of the fluids of the body in excess tend to such weakness. Excessive venery, undue lactation, diarrhea, purgation, a too meager diet, and the improper use of medicines, should be guarded against. Mental depression will have the same unhappy result, and you should strive to have your patients placed under those influences which conduce to a happy, pleasant state of mind.

The medicines indicated for hypertrophy with enlargement are best presented in four classes, arranged according to their peculiar spheres of action, thus:

I. Those medicines whose primary effect in large doses is to depress the action of the heart and weaken its muscular power, namely:

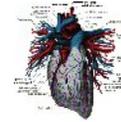
Aconite, gelseminum, veratrum viride, veratrum album, kalmia, tartar emetic, colchicum, sanguinaria, lobelia, and tabacum.

II. Medicines whose primary effect, is to increase the strength of the muscular power of the heart', by stimulating its nervous life; and whose secondary effect is to depress and paralyze the nervous and muscular power of that organ. Among the most prominent of this class are:

Digitalis, cactus, lilium, hydrocyanic acid, primus virginiana, amygdalus, and A. amara, persica, lycopus virginica, and laurocerasus.

III. Remedies which primarily tend to increase the nervous power and nutrition of the heart; and secondarily, to weaken and paralyze the same cardiac functions, namely:

Nux vomica, ignatia, hydrastis, collinsonia, cinchona, ferrum, cimicifuga, helonias, phosphorus, and sulphuric acid.



IV. Certain antipsoric or alterative remedies, whose effects cannot be classified into primary and secondary sequences, namely:

Spigelia, rhus, iodine, graphites, natrum mur., bismuth, lycopodium, and sulphur.

INDICATIONS FOR THE REMEDIES IN CLASS I.

In selecting a remedy for the symptomatic or pathological results of this form of enlargement, you should first assure yourself that the *force* of the heart is actually increased. Remember that the heart may be in excessive *action*, without having increased *force*.

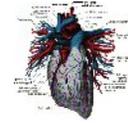
If the hypertrophy occur in robust, strong, full-blooded persons, with bright complexion, disposition to changes of color of the face, glistening eyes, injected conjunctiva, headache, stinging pains in the region of the heart, *aconite* is the remedy, and should be given in the lowest dilutions, and frequently repeated, until an amelioration occurs, when the medicine should be withdrawn. Remember that these symptoms are like the *secondary* effects of *aconite*, and this obliges us to prescribe it in more material doses. All of Class L follow this law, and if indicated by the increased *force* of the heart's action, and the general symptoms correspond, the dose should be the same as *aconite*.

Veratrum viride is indicated by the more forcible impulse of the heart, the stronger pulse, and the greater congestion of the head and chest.

Gelsemium, by the same symptoms, but in a less degree, and an apparent torpor of the functions of the brain and lungs, and a less active congestion.

Veratrum album, according to Ch. Muller, causes "Extreme agony, which takes away the breath; palpitations, with anxiety, and quick audible respirations; paroxysms of agony about the heart, which beats very violently, and feels as if it were too warm; violent beating of the heart, which forces up the ribs; the heart beats up very high and forcibly, so as to force the hand away, without pain." He remarks that "the entire absence of pain about the heart, while it beats so violently as to shake the chest, elevate the ribs, and lift the hand of the auscultator, deserves particular attention, for this almost never occurs, except in hypertrophy with dilatation."(?) (He should have said with *enlargement*, for in dilatation no such forcible impulse is present.)

"*Physical signs.*" The percussion sound may be dull over a very large space, (the apex of the heart may beat directly beneath, outside of, or



above the nipple,) bulging of the ribs over the heart; action of the heart visibly very violent; sounds of the heart very loud and clear, or else one or both sounds accompanied with abnormal murmurs."

If *veratrum alb.* causes this array of symptoms—and it appears to me that the primary and secondary are mixed in the above—the increased impulse or force of the heart's action must be a secondary effect, for the immediate effects of *white hellebore* are marked depression of the heart's action, even to pulselessness. If this medicine is given for concentric hypertrophy, it must be given in the same doses as advised for *aconite* and others of its class.

Kalmia may be useful in certain cases, but the indications are not yet certain.

Tartar emetic should be resorted to if pulmonary engorgement is feared, and there is at the same time hepatic congestion, dyspnoea, cough, etc.

Colchicum, if the urine is scanty, red, and deposits a brick dust sediment, and the heart's action is excessive and strong.

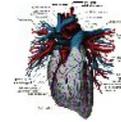
Sanguinaria will prove a potent remedy if the hypertrophy is complicated with suppressed or scanty menses, congestion

of the lungs, cough, dyspnoea, and sometimes congestive cephalalgia.

Lobelia should not be forgotten when there are *asthmatic* symptoms with the enlargement.

Tabacum is secondarily homoeopathic to hypertrophy, and Baehr advises smoking small cigarettes for palliative relief of the excessive palpitations. If they are marked by increased impulse, tobacco may be used occasionally; if the impulse is weak it should be prohibited.

In regard to the administration of these remedies, I wish to impress upon your minds this important fact, namely, that if you wish to get *permanent* curative effects from any remedy in hypertrophy, you must continue its use for days and even weeks. If you have selected *aconite* as the appropriate medicine, do not supplant it for some other in a few days because you do not see an improvement in the action of the heart. Our doses do not rapidly depress the excessive cardiac action, therefore the physiological or normal action which we wish to induce does not come suddenly.



As a general rule, the remedies above named may be given every three or six hours, according to the severity of the case, and always in the lowest potencies, and sometime* the mother tincture.

INDICATIONS FOR THE MEDICINES IN CLASS II.

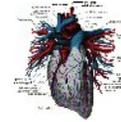
Of all the medicines in this class, the *digitalis purpurea* is the most important, but even to this day its true method of action is not understood by a portion of the profession, who persist in believing it to be a primarily depressing medicine. Those of you who have read my paper on *digitalis*, published in the *United States Medical and Surgical Journal*, and reprinted in pamphlet form, need not be told that many years ago I adopted the views of Prof. Tully, who was far ahead of his time in his estimate of some medicines. Within a few years, Handfield Jones, Hammond, and others have adopted the same view of its action.

Digitalis, when given in medicinal doses, causes pathogenetically a condition similar in effect to hypertrophy with enlargement of the heart. It does not cause actual enlargement, but such a hyper-stimulation of the heart that the results are similar.

When death occurs from acute poisoning by *digitalis*, the muscular substance is hard and firm; the heart is rigidly contracted, and no blood is found in its cavities. Now, if death should suddenly occur from concentric hypertrophy or enlargement, the heart would be found in the same condition as in digitalis-poisoning.

It is obvious that if we accept this as the true action of *digitalis*, namely, that it is, in large doses, a cardiac tonic, you can readily understand how injurious, and even dangerous, it would be to give large doses in hypertrophy with enlargement, t. e., when the heart has already an excess of muscular power. It is in such cases that, when given by the old school, dangerous and alarming symptoms occurred, which led to the fears of its use which we find so prevalent. It is as if an allopath were to give a massive dose of *belladonna* in a case of cerebritis, or *nux vomica* in spinal congestion, or *arsenic* in gastritis. In such cases, the remedy being intensely homoeopathic, a severe or fatal aggravation would occur.

The deduction I would have you draw from this is, that as *digitalis* is primarily and intensely homoeopathic to a condition similar to hypertrophy with enlargement, in which the contractile power and impulsive force of the heart is increased, it should be prescribed in the smallest dose consistent with reason. I will explain what I mean: the 3rd of *digitalis* may not be *stronger* in reality than the 30th of *lycopodium*, for while the former appears to lose its medicinal power after the 3rd, the



latter seems to gain in power at every remove upwards from the 3rd trituration. This difference is due to the fact that certain medicines have different qualities of inherent power; and, in the future, it should be the aim of our school to ascertain the inherent medicinal power of each drug, instead of quarreling about the dose.

The dose of *digitalis*, then, in this disease, should lie in the first three dilutions of the tincture, or the triturations of ' *digitaline* from the 3rd to the 6th. With these doses, repeated every few hours, or as often as every hour, no aggravation, but much benefit, will be derived.

Cactus grandiflorus is an analogue of *digitalis*, and not of *aconite*, as some suppose. If you will look at the provings you will see that the evident primary symptoms are those of hyper-stimulation of the heart, even to spasmodic contraction of its muscular tissues. What else can that characteristic symptom, " constriction in the chest and in the heart, as if from an iron hand," mean? The general symptoms of *cactus* all tend in this direction, for it causes ' constriction' everywhere. I have carefully analyzed the clinical cases wherein *cactus* has proved curative, and am convinced that in those cases where the high dilutions were beneficial, there was present a condition of increased tonicity of the heart; in other words, the palpitations and so-called congestions of the heart were due to cardiac hyper-stimulation. In cases of true hypertrophy, then, do not use *cactus* lower than the 6th decimal dilution. Lower than this I have found it to aggravate all cases where the impulse of the heart was *too strong*.

Lilium is, according to its recent provings, a very near analogue of *cactus*.

Acidum hydrocyanicum is another remedy closely allied to *digitalis*. In proof of this, I have but to cite you to Dr. Handfield Jones' experiments. He says, "In poisonous doses it produces tetanic convulsions, preceded by faintness and giddiness. After death the heart is well and firmly contracted, its tissue remarkably firm, the cavity of the left ventricle almost quite obliterated, that of right small, but little blood in either, coagula in both auricles." Stille says, " the whole venous system is gorged and distended with dark uncoagulated blood," which implies that, owing to the tetanic contractions of the heart, the circulation was suspended. I consider this remedy useful in high potencies to quell the excessively forcible action, pain like angina pectoris, and for other symptoms found in its pathogenesis. Use the 6th or 30th centennial dilution.

There are many agents, chemical and vegetable, which contain *hydrocyanic acid* in appreciable quantities. These all have, in a less



degree, the same specific action on the heart and its nervous supply. The most potent of these is the

Cyanide of potassium, which may be used in the 6th or 30th potency for similar symptoms and conditions.

Laurocerasus is another which possesses many notable and important heart symptoms.

Prunus virginiana (wild cherry) and *amygdalus persica* (peach) both contain *acidum hydrocyanicum*, and have long been used to quiet and regulate abnormal action of the heart. Their use, in infusion of the bark, has doubtless been injurious in hypertrophy with enlargement, but in the 2nd or 3rd dilution would no doubt be beneficial.

*Lycopus virginicus*² possesses powers closely allied to the above medicines. In the dilutions below the 3rd you will find it beneficial in hypertrophy with a tendency to, or actual haemoptysis and cough.

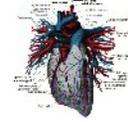
Amygdala amara (bitter almonds) contain *hydrocyanic acid*. I have known patients troubled with palpitations from hypertrophy get considerable relief from eating two or three after each meal.

Repetition of medicines. If you have carefully selected one of the above for the case you are treating, give it a fair trial. Do not change the medicine unless the symptoms materially change, but continue its use for days and perhaps weeks. The repetition of the dose will depend on the amount of cardiac disturbance. Four doses a day, unless frequent palpitations or severe congestions occur, in which cases the medicine may be repeated every hour or two.

The remedies of the third class, namely: *nux vomica*, *ignatia*, *cinchona*, *ferrum*, *hydrastis*, *collinsonia*, and *sulphuric acid*, do not differ very widely, in their ultimate effects on the heart, from those of Class II. Both classes primarily increase the innervation and tonicity of the heart, by acting through different channels. *Nux vomica* acts through the cerebro-spinal nerve-centers, while *digitalis* operates through the great sympathetic.

I will now give you the indications for this class:

² New Remedies. 2nd Edition.



Nux vomica, I assure you, has not been sufficiently appreciated in hypertrophy of the heart. It is indicated in the concentric and eccentric form. But it is of the former only that I will now speak. .

Dr. Ch. Muller³ says of this medicine, "It causes palpitation in frequent short paroxysms, with commotion of blood; pulsating throbs in the direction of the heart; great anxiety, with severe palpitation. In the numerous and careful *postmortem* examinations which have been made in cases of poisoning with *nux*, no organic alterations about the heart have been found. Its influence on the heart must be referred to the nervous system. It causes increased activity and evident irritation of the ganglionic system, which may be propagated to the mind and senses; hence the abovementioned heart-symptoms may arise in consequence of sympathy with the ganglionic and mental affections. For this reason Hahnemann laid so much stress on the presence of vexability, oversensitiveness to all impressions, hypochondriacal humor, passionate irritability and sudden cholera, great anxiousness, starting in affright, fearful, anxious dreams, etc., as strong indications for the use of *nux vomica*. Hence, *nux* cannot prove homoeopathic to any heart affection dependent upon any organic or material change of structure."

I cannot agree with Dr. Muller in his estimate of this medicine. Because no structural change was found in the heart from acute *nux*-poisoning, it does not prove that hypertrophy may not be caused by its long-continued pathogenetic effects. You will remember that hypertrophy is rarely a primary disease. It is generally brought on from obstructions somewhere else, in the circulation, or in important organs. That the chronic poisonous effects of *nux vomica* on the liver, intestinal canal, and spinal cord, will cause hypertrophy, I have no doubt. It will not cause, directly, the thickening or thinning of the heart-walls, but it will cause disorders which lead to that result.

The translator of Dr. Muller's paper says, "*Nux vomica* acts predominantly and specifically on the motor side of the spinal marrow and the muscular system in general, and tends more particularly to cause tetanic spasms; as the heart is a very muscular organ it is probable that it exerts a similar action on it; in fact, the spasm of the heart may become so complete and persistent, that this organ remains tightly contracted for some time, during which little or no impulse is felt, the respiration being difficult and the pulse extinct. If the spasm of the heart be less complete and tonic, *i. e.*, more atonic, then violent palpitation may ensue. But *nux vomica* constantly tends to produce long-continued spasmodic contraction of the heart. According to Sorbenheim

³ Homoeopathic Examiner, Vol. V.



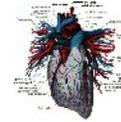
it often causes an asphyxiated condition, dependent upon an extremely violent contraction of the respiratory muscles and heart. Every one familiar with diseases of the heart must be familiar with this state of things: a patient with organic disease of the heart will be suddenly taken with what he calls spasms; he sits in speechless agony, his hands clasped over the cardiac region, his eyes protruded, his face livid; the physician attempts to feel the pulse and can scarcely find it; he places his hand or ear over the heart, and finds everything still and motionless as death itself; after a while the spasm relaxes; more or less palpitation follows, and the patient recovers for the time. Such attacks are often mistaken for paralysis, exhaustion, or debility of the heart, and treated with stimulants."

This writer asserts that *nux* is homoeopathic to enlargement of the heart with thickening of its walls, which assertion I accept, but only as relates to, its primary effect, for the secondary effects of the above-described action of *nux* will just as certainly be dilatation of the heart, with atony of its remaining muscular fibres, even to paralysis.

You will doubtless read some authorities, who, like the writer I have quoted, will assert that the action of *digitalis* is opposite to that of *nux*. This is not the case, unless the statement is qualified. The primary action of both is very similar, so is the resulting secondary effect. It might be said that the secondary effect of *digitalis* was the opposite of the primary action of *nux*; *such* an assertion would be correct.

Nux vomica, therefore, is indicated for simple hypertrophy, i. e., when the walls of the heart are thickened, the cavity retaining its natural dimensions; also in that variety of hypertrophy in which the walls are considerably thickened, and the cavity dilated; and in hypertrophy with contraction, in which the walls are thickened and the cavity diminished in size. But, before you venture to prescribe *nux vomica*, be sure of your diagnosis, for if you give it in too large doses in the above conditions, you will surely get severe aggravations, and injure your patient, because they are conditions simulating the primary effects of *nux*, and calling for the highest attenuations, namely, from the 12th to the 200th, or even higher.

Ignatia is indicated for the same pathological conditions as *nux vomica*, but the selection must depend on the mental symptoms and the sex of the patient. *Ignatia* is- more suited to women, or men with feminine dispositions, to patients who weep easily, or laugh and cry alternately; in other words, persons of hysterical temperament; and for hypertrophy when caused by the remote effects of grief, care, or other mental trouble. Prescribe the higher attenuations, not too often repeated. (*Mix* and



ignatia are also homoeopathic to hypertrophy with dilatation and attenuation of the heart-walls, but of this I will speak in my next lecture.)

China, or *cinchona*, has not been used by the homoeopathic school to any extent in diseases of the heart, yet I consider its action analogous to that of *digitalis* and *nux*, or as holding an intermediate relation to them. Hahnemann's observation that in cases of poisoning from *digitalis*, *china* causes terrible anxiety and aggravation, is one of the best proofs that, in their primary action on the heart, they act similarly.

The following symptoms from the *Materia Medica Pura* will remind you of the symptoms of *nux* and *digitalis*:

" Palpitation of the heart, also with rush of blood to the head, and heat and redness of the face, with cold hands."

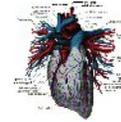
" Strong, violent beats of the heart, also with anxiety, also with feeble pulse and cold skin."

" Pressure in the region of the chest (heart), particularly when the trunk is bent forward, when sitting or standing, also with anguish and oppression of breathing."

In the proving of *quinine* you will find similar symptoms, to which I add the following: " distressing constriction about the throat, and sense of *fear* about the heart; " and, if you should happen to practice in malarious districts, where people are poisoned with *quinine*, you will have excellent opportunities of observing its effects, namely: its primary symptoms, like those I have just quoted, denoting over stimulation of the heart; and its secondary effects, namely, weakness, irritability, and irregular action of the heart. I have no hesitation in asserting, that many of the cases of hypertrophic debility of the heart, supposed to arise from ague, have their origin in the enormous quantities of *quinine* given to suppress that disease.

I believe, also, that the free use of *quinine* will cause hypertrophy with enlargement, of a *temporary* character, and as a large proportion of the cases of dilatation of the heart is preceded by this condition, we have in *quinine* a medicine which is homoeopathic to that variety of cardiac disease. I shall refer to *china* again in the next lecture.

Dose: In hypertrophy with enlargement, having the above symptoms, give the 6th or 30th dilution.



Ferrum has an action not so far removed from *nux* and *china* as some have supposed. All the preparations of iron cause pathogenetically a pseudo-plethora, *i. e.*, a plethora not of a healthy physiological character. I do not look upon iron merely as a blood-enricher, acting in the same way as beef or other blood-food. To suppose that it acts simply by imparting *iron* to the blood is too crude a notion. The more rational theory is that it has a two-fold action, namely, of, entering the blood and then stimulating the nerves of nutrition until the blood-making process goes on in a normal manner. This ferrum-plethora closely simulates that condition which we sometimes see in cases of hypertrophy with enlargement. The *symptoms* indicating its use are: Rush of blood to the head, with puffiness around the eyes and swelling of the veins; vertigo, staggering, hammering and throbbing headache, and roaring in the head; faint feeling in- walking, with blackness before the eyes; hard, strong beating of the heart; pulse hard, large, and slow, or quickened by exertion; heat, with anxiety and oppression, proceeding from the pit of the stomach; tightness in the chest, as if constricted, with difficult, anxious breathing, and contractive spasm of the heart. For these symptoms give *ferrum*, but not lower than the 6th trituration.

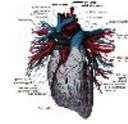
Hydrastis has no special heart-symptoms, but I recommend it, on theoretical grounds, when the hypertrophy is impending from obstructions in the liver, or chronic stagnation of the portal circulation. *Podophyllum*⁴ *leptandra*, *cesculus*, and *collinsonia* have the same action, and are especially indicated if the patient is subject to haemorrhoids, and when the cardiac symptoms are worse when the piles are least troublesome.

The medicines of the *fourth* class, namely: *belladonna*, *glonoine*, *lachnanthes*, *stramonium*, *agaricus*, *cimicifuga*, *aurum*, and *solanum*⁵ are all excellent palliatives in hypertrophy, when the impulse is so strong as to throw an undue amount of blood to the head and lungs, causing headache, vertigo, frightful dreams, etc. They have the best effects in the 3rd to 6th dilution.

Plumbum aceticum, according to Raue, is homoeopathic to true hypertrophy with the symptoms: "Stitch in the region of the heart during inspiration, with anxiety; heat and redness of the face; rush of blood to the region of the heart during a rapid walk; anguish about the heart, with cold sweat; palpitation. *Post-mortem* after poisoning has shown, that the serous coat of the pericardium is lined with a layer of reddish grey,

⁴ See Symptoms of *Podoph.* in New Remedies.

⁵ U. S. Jour, of Horn., 1870.



fine, villous, meshy, firm, exuded lymph. *The heart is more than double
Us natural size. The wall of the left ventricle is more than an inch thick.*⁶

⁶ Raue's Pathology.