

the patient need not know that he has a diseased heart at all, but this very seldom lasts long, and ultimately the muscle stretches, so that the auricle or ventricle behind the affected valve becomes a thin walled sac, which is quite unable to contract sufficiently to drive the blood adequately along the vessels. This condition is known as dilatation of the heart, and while it is most commonly due to this deficiency at the valvular orifices, it may result from obstruction somewhere in the blood vessels of the system; or may be due to weakening of the heart muscle apart from any obstruction at all, by an attack of some acute illness, such as typhoid fever or influenza, or from the effect of certain substances, as tea, tobacco, or alcohol taken to excess for a prolonged period.

From what we have seen, it will be evident that the symptoms of heart disease depend on the inability of the heart to maintain the circulation of the blood at its proper pressure through all the parts of the body, whether that inability be due to leaking back of the blood through a damaged valve or to simple weakness of the muscle from dilatation. In order to understand the effects of the disease on the patient, we have, therefore, simply to see what will happen when the various organs receive an inadequate supply of blood.

Obviously, in the first place, the symptoms will depend very much on the amount of work which the heart is called upon to do, and in some slight cases symptoms only occur when the patient exerts himself, so that if he leads a well regulated, sedentary life, he will feel, and in fact be, quite well. Only there is no reserve power for emergencies.

In the more severe cases there will be some further signs. The pulse will be quick and irregular, and, inasmuch as the blood has to be propelled uphill to reach the brain, but can return from it quite easily, the first effects will be that the brain gets too little blood and becomes anaemic; in the legs the reverse is the case, for the blood can easily get there, but returns with difficulty. Hence we get, as signs from the brain, dizziness, faintness, and even complete loss of consciousness in a fainting fit, and in the legs we have swelling, beginning at the ankles and ultimately reaching up the thighs even to the abdomen, and, in advanced cases, ascites or a collection of serum in the abdominal cavity itself.

Then, as the right side of the heart is unable to keep up the circulation through the lungs, we get shortness of breath, which in extreme cases is shown by an inability of the patient

to breathe at all except in the upright position, and also some accumulation of fluid in the lower bronchi, or congestion of the lung, as it is termed.

Then, from the deficient circulation through the abdominal organs, we get enlargement of the liver, indigestion from congestion of the stomach, and albuminuria when the kidneys become affected.

All the above symptoms may occur in disease of any of the different valves of the heart, and the distinguishing feature between the different forms of cardiac affections become apparent when the heart is examined by the physician, and consist in differences in the nature and site of the various murmurs, and alterations in the size of different parts of the heart. From the nursing point of view, inasmuch as we do not have to treat the murmurs, but the effect of the failure of the muscular part on the patient, we can consider the treatment of all forms of heart disease together.

(To be concluded.)

Shelters.

"Our success depends upon the strength of our purpose, and if we would make progress we must use much diligence."

THOMAS A KEMPIS.

Considering the supreme importance of fresh air to the victims of tuberculosis, and the infectious nature of their disease, it is a surprise how much money is still spent on solid masonry in the erection of modern sanatoria. The ideal is a structure as slight as is consistent with the comfort of the patient, and this has led to the introduction of the canvas tent or shelter such as is used at Merivale, Sandon, near Chelmsford, where Dr. H. Norman Marrett, who designed it, is Resident Physician, and of which, by his courtesy, we are able to give an illustration. It will be seen that the opportunities for infection to find lodgment in these shelters are of the smallest, while the patient can have the maximum amount of fresh air and sunlight.

The sides and doors of the tents are made entirely of canvas, supported by a framework of wood, and the floor is raised some twelve inches from the ground, thus permitting a free current of air to circulate beneath the tent. All skirting is avoided, so that there is no possibility of an accumulation of dust. The tents are twelve feet square, which is found to give ample room for the requirements of the treatment.

The roof is of a special composite material,

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