We may well call the success of the B. N. A. unprecedented.

There is, however, in this connection, one matter to which we desire to call our readers' special attention. In 1867 the British Medical Association numbered, as we have said, about three thousand Members. In twenty years these numbers have increased to over twelve thousand, so that now more than one-half of the Medical Profession are Members. By all independent authorities it is admitted, that the greater part of this rapid increase of strength is due to the ever-increasing influence and able editorial conduct of the Journal of the Association, which, as the articulate voice of its Members, drew them ever closer and closer together. We cannot but believe, from what we hear from many sources, that our efforts for the advancement of the British Nurses' Association have not been altogether unproductive, nor without some share in its success. To-day we celebrate our first birthday. We have endeavoured to live up to the aspirations with which we began our literary life, and we have been rewarded by a success in every way beyond our expectations. We have weighed carefully both the schemes to which, a year ago, we promised to give attention. We have found the Pension Fund wanting in every particular, and have warned Nurses against it. We have found the Nurses' Association to fulfil every requisite of success and give every prospect of usefulness, and to it we shall accord, in the coming year, all the assistance in our power. We dedicate these pages afresh to Nursing matters, and we shall devote our energies to forwarding in every way, and by every means in our power, the interests, the wishes, and the wants of Nurses.

## A GUIDE TO MEDICAL AND SURGICAL NURSING.*

### CHAPTER X.—THE CIRCULATION OF THE BLOOD.

THE principle by which the blood is circulated throughout the entire frame is that of a force pump, by which the blood is driven, with successive strokes, through a series of elastic tubes. This engine is the heart, which is situated between the lungs, and lies obliquely towards the left side. It is somewhat the shape of a pyramid, and is about the size of the closed fist; the broad end, called the *base*, is turned upwards, the lower end, lying towards the left, the *apex*.

The whole is enclosed in a covering called *pericardium*, which is like a double bag, one layer of which is attached to the heart, while the outer layer is fixed for support to the diaphragm. The space between the layers is filled with a fluid similar to that contained in the peritoneum. The heart consists of four chambers, or properly speaking, muscular cavities, namely, the *right and left auricle*, and *right and left ventricle*. The right auricle and ventricle are divided from the left auricle and ventricle by a thick muscular wall or partition extending from the base to the apex, whilst another but thinner division crosses and separates the auricle from the ventricle on either side. Communicating with these four chambers are four sets of tubes or conduits, leading to and from all parts of the body generally, and to and from the lungs specially. These are the *arteries* and *veins*. The capillaries are slender vessels or tubes forming a complete network between the arteries and veins; so minute and general are they, that it is impossible to prick the skin without penetrating them and drawing blood. From the capillaries arise the veins, which are tubes differing from the arteries in having thinner walls. There are also in most of the veins valves, which prevent the blood from returning to the capillaries, but allow it to pass on towards the heart. The muscular pressure to which most of the veins are subject, therefore, assists the progress of the blood in the right direction; and it is in this way that exercise acts as a healthy stimulus to the circulation. The principal deep-seated veins and the arteries follow much the same course, but there are, however, a superficial set of veins, and these sometimes become *varicose*, that is, being unnaturally dilated, the valves cannot act.

The two great veins of the body are the *vena cava superior*, and the *vena cava inferior*, the former receiving the impure blood through the smaller veins from the head and upper extremities for transference to the heart, whilst the latter receives that from the trunk and lower extremities. The heart is the pump or engine which forces the venous blood to the lungs for purification. It is there acted upon by coming in contact with the external air breathed into the lungs. The arterialised or life-giving blood is propelled by the heart through the whole system for its nourishment. Communication between the auricles and ventricles is maintained by apertures or valves, through which the blood passes. The right auricle communicates with the right ventricle, and the left auricle with the left ventricle. The passages between the auricles and ventricles are provided with valves, which have the power of effectually closing the communication. They open in one direction only. The valve on the right side of the heart is called the *tricuspid* valve, that on the left the *bicuspid* valve, said to resemble a bishop's

* These articles are partially from the pen of the late Miss Alice Fisher and Mrs. Norris, and will eventually be published in book form, being revised by the latter.

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