SURGERY ON THE FARM AND IN THE HOME.

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"OUR BOYS" FIRST AID TO THE INJURED ASSOCIATION.

In this department will appear a series of articles, or lectures, careful attention to which will enable our friends to render valuable aid, in case of accident, "until the doctor arrives." We are sure that this departure will be thoroughly appreciated by "our boys," and that they will follow closely the instructions given by the writer of the articles, who is a gentleman much interested in the work of "first aid to the injured."—[Ed.

Part I.

Our young readers must study what follows very carefully and preserve this first article for future reference, as in the course of the papers they will require to go back to it occasionally.

THE HUMAN BODY.

As our work pertains to the human body, that body will necessarily form the ground work of our talks. It is, as you know, the masterpiece of God's creation—to be taken care of for its own sake as well for the soul it possesses; it is like a delicate piece of machinery, consisting of levers and pipes with joints and valves, supports and props; its pumping apparatus, the heart, is constantly at work, from our entrance into, to the hour of our exit from the world; its telegraph and telephone systems, the nerves, are perfect; fuel and water are, too, alike necessary for its working, for it derives sustenance from food swallowed and air breathed; and as the ashes are a result of the burning of the coal and wood, so waste materials are thrown off from the body by the organs of excretion.

How necessary then it must be for the greatest of care being exercised in the management of this complex piece of machinery. By following carefully the advice given in these columns, we trust you may be guided thereto.

THE BONES.

These form the props, supports, and levers of your body. They vary in size and shape—long and flat—small and large—as is necessary for the purpose they each serve, but held together, or jointed, to make a framework (the skeleton) which serves to carry the muscles, blood vessels, nerves, etc

There are three cavities in this skeleton to be noticed: (1) The head, which contains the brain; (2) the chest, formed by the ribs, which contains the lungs and heart; and below this (3) the pelvis which protects the bladder and other vital parts, and supports a column composed of 24 small bones, "the spinal column." At the top of this is found the head, and passing out from either side at its upper part you will notice the ribs spoken of as forming the chest. These three cavities are supported upon two columns, the thigh bones and bones of the legs, not firmly fixed on each other but held together by strong bands where they are "jointed," thus permitting of walking, jumping, etc., and not forcing us to move about as boys on stilts—perfect movement being given by the column resting upon "an arch," the foot, composed of a number of small bones, deftly jointed. But this does not complete the skeleton, for how could you work, eat, write or do a thousand other things without your arms and hands? The framework of these parts is attached in a peculiar manner to the upper part of the chest as you will see in figure 1.

We now come to discuss briefly the various portions of the skeleton. The construction of each will be found most interesting and instructive—curious the design, but wonderfully perfect, when you consider the use for which each portion of this, the framework of the machine, is intended.

We will deal with them in the following order: 1 The Head, 2 Chest, 3 Pelvis, 4 Spine, 5 Lower Limbs, and 6 Upper Limbs.

(1). The head is formed of 22 bones, all closely united and immovably locked together, with the exception of the lower jaw. Eight of these bones form the upper and back portion, that part which is rounded, and so shaped, the better to protect that most delicately constructed and important organ, the brain. The other bones, 14 in number, form the sockets for the eyes, the cavities of the nose and mouth. They form the face.

(2). The chest is formed in the manner indicated in the early portion of the article, viz.: the spine and the ribs, twelve of the latter each side and united in the centre in front, by the breast bone. Just consider for a moment the peculiar arrangement of the ribs whereby the chest wall is elastic and springing and the better able to resist severe squeezes or blows, and allowing of expansion of the chest cavity in breathing. Behind, the ribs are attached to the spine by movable joints, and in front, by pliable gristle,

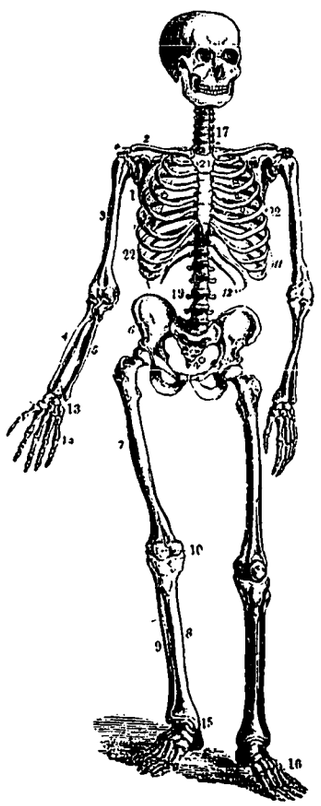

Fig. 1. SKELETON.

to the breast bone. The chest is separated from the belly by a fleshy or muscular partition, the midriff or diaphragm.

The pelvis is a very strong irregularly shaped cavity. It is formed, at the sides, of two haunch bones, firmly united in front, and immovably jointed behind to the triangular or wedge-shaped rump bone. This cavity contains and protects the bladder and various other vital parts; it sustains the supporting column, the spine. Between this cavity and the chest is what is familiarly called the belly, containing the stomach and intestines, the liver, pancreas, kidneys, spleen, and important nerves and blood vessels.

The spine or backbone is composed of 24 bony pieces, called vertebræ, lying one upon the other, with pads of gristle in between, and instead of being straight there is a double curve. To these two peculiarities are due the elasticity and flexibility of the spine. Besides supporting the brain it contains within itself the spinal marrow which is a continuation of the brain substance.

The lower limbs, which have to support the whole weight of the body, are strong and massive, the bones being connected by joints of great strength. We shall speak of the lower limb as composed of 3 parts. The thigh, being that part above the knee, is composed of one bone connected with the pelvis by a movable joint of wonderful strength. This is known as a "ball and socket" joint. The lower end of this bone is united to the upper end of the two bones of the leg by the knee joint, protected in front by the knee cap. Understand, reader, that the expression "leg" is meant to include only that portion of the lower limb from the knee to the ankle. The leg is supported by the bones of the foot which includes (1) the heel and instep, made of seven bones; (2) the foot proper, five bones; and (3) the toes, fourteen bones.

The upper limbs consist of the (1) shoulder, (2) arm, (3) forearm, (4) hand. The shoulder comprises the blade bone and collar bone; the former is triangular and movable upon the upper and back part of the chest; the latter divides the chest from the neck and is united in front, to the breast bone, and to the blade bone behind. This, the collar bone, is the bone most frequently broken, and when such is the case the shoulder sinks down towards the chest. The arm consists of one bone which extends from the shoulder to the elbow. The upper end of this bone is rounded like a ball and it fits into a socket in the blade bone, thus allowing a very movable joint. In the forearm are two bones which extend from the elbow to the wrist. They are connected at the elbow with the arm bone by a movable joint, like a "hinge;" but a peculiarity is here to be noticed, the bone nearest the thumb is capable of rolling around the other. Just watch the motion in your own forearm; you can have either the palm or back of your hand uppermost. The hand itself consists of the wrist, in which are 8 small bones, and the hand proper, 5 bones, forming the palm; and the fingers, comprising 14 bones.

We will not weary you with any more words of a descriptive character. In your spare moments review what has been said. Look over the figure of the skeleton carefully, and figure out on your own body, as far as possible, the several portions as described. You cannot fail to be interested, and do not forget, if you master this portion of the instruction, which we have given as simply as possible, that the "first aid" lessons, to be given subsequently, will be most interesting and will be easily learned and remembered.

THE DUKE RODE ON.

When H.R.H. the Duke of Connaught was at Aldershot, and held the rank of lieutenant-colonelin comm and of the Rifle Brigade, a military order was issued by direction of the Queen that he was only to be saluted as an officer in charge of a battalion.

The Duke himself was very strict about the observance of this rule, but, in spite of all precautions, the Royal salute was often given, to the apparent provocation of the Prince. One morning H R.H., with the Princess seated by his side, was driving in his dogcart through the part occupied by an Irish regiment, when the sentry before the guard-room door called out the guard.

The sergeant of the company was at once cognizant of the mistake, but, thinking to make the best of a bad matter, ordered the guard to remain at their post and give the Royal salute in the usual way.

The Duke immediately called the sergeant to book for this utter disregard of orders, and gave him a piece of his mind; but the ready-witted son of Erin smartly replied:

"The guard is not out for you, sir, but for her Royal Highness, who, being a member of the Royal Family, is, of course, entitled to it."

The Duke drove hurriedly on, evidently finding the Irishman altogether too much for him.