What is the origin of this murmur? In the heart we explain all sounds and murmurs by vibrating membranes. We shall not suppose that in the veins a whirl of blood is their cause, nor the pushing of the blood against a narrow entrance. The jugular vein behind the insertion of the sterno-cleido-mastoideus is wider than elsewhere, forming the bulbus. Beneath this bulbus are valves in the narrowest part of the vein. These valves have a most important influence upon the whole circulation of blood. The pressure in the thorax being too high, they approach one another, and in this way oppose the further entrance of blood into the thorax. The part above them must be, consequently, dilated, as we remark it in cases of stagnation in the heart, the jugular vein being distended, and the jugulum growing gradually more shallow. The impulse of the blood makes these valvulæ vibrate, and causes the murmur. When the blood flows slowly the impulse is too weak, and no murmur is to be heard, just as a slight touch is not sufficient to make a string vibrate audibly. The murmur arises when the valvulæ are half opened and put into vibration by a sufficient rush of blood. Another peculiarity is to be mentioned. The bulbus is attached to the clavicle behind the articulation sterno-clavicularis; and thus being stretched out, it facilitates the flow of the blood. If the pressure in the thorax increases, by valvular failures, emphysema of the lungs, &c., the stream flows slowly, and therefore we do not find these murmurs attending disorders of the intrathoracic organs, and hence the general view that this bruit excludes insufficiency of the valvula mitralis. Another consequence of this fact is, that these murmurs are not to be heard in persons affected by anæmia when they become the subjects of pneumonia, or exudative pleurisy, and that they reappear at recovery. The two necessary requisites, then, are a speedy circulation of blood and a normal pressure of the blood in the thorax. This view affords us also an explanation of the murmur growing stronger when the respiration is more hurried. The thorax being powerfully dilated, the blood rushes in strong streams towards it, strengthening the acoustic impression. When the respiration is impeded, when it must be forced, the circulation loses the necessary quickness, and the vibration of the valvulæ becomes inaudible.

These murmurs are very rarely to be found along with mechanical changes in the heart. They accompany similar murmurs at the ostia, which are always systolic, never diastolic. They may be perhaps diastolic, but only in the most severe disorders of this kind, where it is impossible to distinguish whether there is only one continued murmur or whether the systolic and diastolic murmur meet and run into one another.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

TUESDAY, JAN. 23RD, 1872.

J. A. BOSTOCK, C.B., VICE-PRESIDENT, IN THE CHAIR.

ON THE EXCITABILITY OF DIFFERENT PARTS OF THE TRUNK OF A SPINAL NERVE, WITH A "SCHEMA OF THE CIRCULATION."

BY WILLIAM RUTHERFORD, M.D., F.R.S.E.,
PROFESSOR OF PHYSIOLOGY AT KING'S COLLEGE, LONDON.

In this communication Professor Pflüger's experiments regarding the excitability of different parts of the trunks of the motor fibres of spinal nerves are described, and his "avalanche hypothesis" founded thereon criticised. The faulty character of his experiments is pointed out, and those performed by the author are narrated. The latter conclusively show that Pflüger's explanation of his experiments is untenable; that the avalanche hypothesis regarding the transmission of nerve force has no fact in its support; and that the excitability of both the *afferent* and *efferent* fibres of a spinal nerve is inversely as the distance from the spinal cord. The possible explanations of this singular and novel fact are considered, and the bearing of this discovery upon our ideas regarding the nature of the influence which travels along a nerve is indicated.

Mr. HENRY POWER always considered Pflüger's hypothesis fraught with difficulty—that force should gain by being expended. Did Dr. Rutherford think the increased excitability due to the thinness of the coats of the medullated fibres near the spinal cord?

Dr. RUTHERFORD was glad of the suggestion; meantime, he had not made up his mind.

Dr. RADCLIFFE was glad to hear a refutation of Pflüger's views. Did not the fact that nerves die centripetally explain something?

Dr. RUTHERFORD sometimes cut the nerve at the distant electrodes, when the cutting for a time caused the excitability to increase, so as almost to equal that of the other and cerebral end.

Mr. POWER asked if Dr. Rutherford had seen Schiff's experiments, which went to show that the excitability of the pneumogastric was greatest near the brain?

Dr. RUTHERFORD had done so. They confirmed his view.

PROPOSED FORMS OF SURGICAL RETURNS AND REPORTS TO BE USED IN WAR.

BY DEPUTY INSPECTOR-GENERAL C. A. GORDON, M.D., C.B.

(Communicated by BERKELEY HILL, F.R.C.S.)

The object of the proposed forms is to present information regarding wounds received in battle and operations performed in their treatment in a manner calculated to facilitate comparison regarding their severity, results, prevalence, and fatality of complications usually met with, and also to arrange observations upon subjects of surgical interest in a definite manner.

Table No. 1. In this form wounds are arranged (a) according to their position, (b) according to severity, and (c) the deep parts of importance implicated. The different columns into which the form is divided indicate the circumstances under which wounded have been admitted, the several conditions in which they are discharged, and, in regard to those who die, the causes of death, distinguishing particularly the cases of mortality by hospital diseases and complications.

Table 2. This form is intended to contain a record of the various operations performed. The operations are arranged according to their kind, as—(a) amputations, (b) excisions, (c) resections, (d) ligatures, (e) trephining, (f) extractions, (g) other operations. The first four classes are severally arranged according to region or part of the body, and in regard to each case the return will show the manner in which it was admitted, period of operation, the circumstances under which the patient is discharged, and in cases of death, the precise cause, as far as practicable, of the fatal termination.

Form 3, or Report. This presents different "headings" under which information may be arranged for the purpose of being subsequently collected and condensed. These headings include the following points—viz. (1) those referring to form 1; (2) those referring to form 2; (3) conditions of individual hospitals; (4) as to certain diseases that may appear among the wounded; (5) as to the important question of hæmorrhages; (6) as to the relative success of primary and secondary operations; (7) as to other surgical points of interest, some of which are enumerated; (8) as to the character of wounds by new projectiles and other arms; and (9) such other general subjects as are not included under any other of the above heads.

The CHAIRMAN thought that, as an army surgeon, he ought to tender his thanks to Dr. Gordon.

Mr. WYATT said that the more succinct the form of notes to be taken in actual campaign, the more likely were they to be accurate. One would hardly be able to note all the points suggested by Dr. Gordon under such circumstances. He had drawn up a form which was approved of in the operations at Paris. It was important to have a form which would be available for use afterwards. In all the civil hospitals of Paris one definite form was used. It would be well could we have a similar one adopted in London.

Dr. CHARLES MAYO agreed with Mr. Wyatt as to the difficulties in the way of filling up these forms. Field statistics were very uncertain, especially when the army was constantly moving on. Then it would be impossible to fill them up, however desirable to do so.

Dr. RUTHERFORD next demonstrated the uses of a New Schema of the Circulation, and the meeting adjourned.