from the superior extremity of the glenoid cavity, to the bicipital groove of the humerus. Parallel to the internal edge of this tendon, the ligament may be felt, and then exposed by dissection. The tendon of the subscapular muscle, in passing to its insertion, rests in a *notch* in the superior and internal part of the edge of the cavity; from the edge of this notch the ligament arises, broad and flat, then proceeds along the internal edge of the biceps tendon, becoming smaller and rounder, and is finally inserted into a distinct *pit*, in the anatomical neck of the humerus, at the internal edge of the bicipital groove. Its inferior surface is covered by the synovial membrane, and the superior is applied to the fibrous capsule. I suspect there is an error in describing the biceps tendon as splitting to circumscribe the glenoid cavity. The truth is, this tendon is first inserted above the glenoid cavity, next winds round the external and inferior edge of this cavity, and then ascends along its margin to be continuous with the ligament I have been describing. In its *triangular form*, its origin at a *notch* of the articular fossa, and its insertion in a *pit*, it strongly resembles the ligamentum teres of the hip joint.

Dublin, January, 1830.

RATIONALE OF THE DISTURBANCE OF RESPIRATION PRODUCED BY PARACENTESIS ABDOMINIS.

By JOHN WHITE, Esq. M.R.C.S.

THE practice of tightening a bandage round the abdomen during the evacuation of fluid in ascites and other abdominal collections of fluid, is a most beneficial practice. Great praise is due to Dr. Mead, who, by discovering and making known the utility of this practice, conferred a lasting benefit on mankind. However unanimous authors may have been in directing this means to be pursued, there is great discrepancy in their opinions as to the manner in which the bandage produces its effects. The opinions being contradictory, some must be erroneous. It is important that every false conclusion should be banished from our minds, for though a particular error may not in itself seem to be important, yet, being admitted as a truth, it may gain entrance for other false and more dangerous conclusions.

Believing the following statement by Dr. Arnott to be generally received as a correct explanation of the phenomena in question, I transcribe it, and will add some comment. "The operation of tapping for dropsy in the abdomen would often bring on fainting, but for the precaution of tightening a broad bandage upon the abdomen as the water flows; the reason is, that the sudden removal of a large quantity of fluid which had been com-

pressing the abdominal vessels, and keeping them, perhaps, half full of blood, allows them again suddenly to receive their natural quantity, and thus produces a relaxation of the other parts of the vascular system."* If this compressed state of the abdominal vessels ever occurred, it is evident that some particular circumstances would attend this condition. The calibre of the femoral arteries would be diminished; that of the veins increased. Such conditions of the vessels are not met with. The veins of the lower extremities are sometimes varicose in ascites; but the disturbance of respiration produced by the evacuation of the fluid in that disease, always occurs in a greater or less degree, if no means of preventing its occurrence be had recourse to. It is difficult to conceive that the abdominal parietes can, through the medium of a fluid, exert such pressure upon the aorta, as to impede the passage of blood through that vessel. In the smaller vessels, we know what force is required to compress the bounding pulse, and it appears that the force must be increased as the calibre of the vessel increases, to produce an equal effect upon the passage of the blood. It seems evident, then, that the pressure upon the abdominal vessels is not more in ascites, than the continued pressure of the abdominal parietes in their natural state; or, if more considerable, that it is not sufficient to alter the calibre of those vessels. The pressure may, perhaps, be diminished in ascites; possibly the contractile power of the abdominal muscles may be weakened, and the elasticity of the parietes diminished by distention.

The effect supposed to be produced upon the vessels by the accumulation of fluid, seeming to be improbable, and being, perhaps, impossible, it is desirable that we should know the real cause of the distressing phenomena observed during the evacuation of the fluid from the abdomen.

During the evacuation of the fluid, the abdominal parietes are flaccid, the respiration is hurried, imperfect, and extremely anxious; the diaphragm loses the accustomed pressure on its abdominal surface, and consequently cannot afford its wonted assistance in expiration. This is the cause of the dangerous and distressing symptoms. The power of performing expiration is extremely impaired, and may be wholly lost, if assistance be not given by pressure of the abdomen. The disturbance of the action of the heart is clearly observed to be secondary to the disturbance of respiration; a sufficient proof that the symptoms are not caused by the sudden removal of pressure from the blood-vessels, and consequent disturbance of the action of the heart. By those who will

* Elements of Physics, p. 564.

study attentively the function of respiration, it will be clearly seen, that the removal of all pressure from the abdominal surface of the diaphragm, must produce precisely the effects which I have witnessed and have stated.

If the consideration of this subject did not lead us to any practical suggestions, it would nevertheless merit our attention; but it suggests the necessity of continuing the pressure over the whole surface of the abdominal parietes, until they have completely regained their power and elasticity. It suggests, too, the propriety of using a bandage having considerable elasticity, which will yield during inspiration, and compress the abdomen during expiration; thus affording, as completely as artificial means can, the important assistance to respiration, which is required of the abdominal muscles. A steel spring would probably best effect the desired end; but perhaps a broad flannel roller will be found effectual.

It is probable that sudden parturition produces this disturbance of respiration more frequently than is noted, and that this disturbance may be the exciting cause of uterine hæmorrhage. It might at all times be prevented by having a broad bandage applied round the abdomen, before the expulsion of the fœtus or the discharge of the liquor amnii; and it is advisable that this should always be practised, to ensure the comfort, perhaps the safety, of our patient.

The difference in the statements of the most eminent surgeons and physiologists relative to this subject, is remarkable. Sir Astley Cooper directs, that "immediately after the operation (paracentesis abdominis) has been performed, a belt is to be tightly applied round the abdomen, to prevent the re-accumulation of water, by lessening the determination of blood to the parts."* Mr. S. Cooper states, that "In consequence of the sudden removal of the pressure of the fluid from the viscera and diaphragm, patients are very apt to swoon,"† and he directs the application of a bandage to prevent this syncope. Richerand says, "The same effect (syncope) is produced by drawing off the water contained in the abdomen in ascites; a considerable number of vessels cease to be compressed. The blood which they before refused to transmit, is sent to them in profusion; the quantity sent by the brain to the heart is lessened in the same proportion, and becomes insufficient for its excitement."‡ This statement agrees with

that given by Dr. Arnott, and differs from that given by the two writers just quoted.

With such contradictory and unsatisfactory statements, the young surgeon might, perhaps, be excusable if he neglected entirely the practice recommended; with a correct detail of the *modus operandi* of the disturbing cause, and of the function disturbed, he will be highly culpable if he neglect the simple and effectual remedy, a bandage.

St. Neots, Jan. 19th, 1830.

REMARKS ON TUBERCLES IN THE LUNGS, &c., OF ANIMALS.

By R. VINES, Esq.

SOME TIME ago, having occasion to examine into the opinions on the nature and causes of tubercles in the lungs, &c., which have, from time to time, been advanced by various eminent anatomists and physiologists, I found them to differ so much, that I was of necessity led to practically investigate the subject myself; and as I had, at that period, frequent opportunities of obtaining the very able assistance of my lamented friends, the late Dr. George Pearson and Surgeon Ellerby, I made considerable progress in my researches; but the loss of both my scientific coadjutors, and the pursuit of other studies, for a time caused me to suspend my observations and experiments; but, on subsequently renewing them, I arrived at the following conclusions, which I now beg leave to lay before the public in as brief a manner as possible, through the medium of your valuable and extensively circulated Journal.

By very minute inspections, and from numerous examinations of the lungs and other parts of animals, under a variety of states, and at different stages of disease, I have generally, and, I may add, invariably, found tubercles existing under one or other of the following appearances:—

1st. In an inflammatory state approaching to suppuration.

2dly. In a state of actual suppuration; and,

3dly. In a chronic form—having, I conceive, passed through the former states, in which the parts are mostly left thickened and condensed, and, in some instances, without the inflammation having produced any considerable disorganisation, so as to impair the general health of the animal.

It is this last state, or description of tubercle, I apprehend, that the French writers term *miliary*, and which is frequently to be seen in the lungs of sheep after they have been killed by the butchers, and when they

* Lectures on Surgery, by F. Tyrrel, Esq., vol. ii., p. 383.

† First Lines of Surgery, p. 449.

‡ Elements of Physiology, by J. Copland, M.D., p. 341.