diffusible and least permanent in their action should be selected, as, where a case is duly watched, the effect of these is readily maintained for the requisite time. For this purpose ammonia is perhaps the best, as it can either be given alone, or in combination with wine or spirit. One circumstance should ever be kept in view—viz., that as soon as reaction is manifestly present, stimulants should either be altogether discontinued or given with extreme caution, as, otherwise, reaction is little less dangerous than collapse itself—in fact, so far as experience enables me to judge, I believe that where the disease has been seen in its most fatal form, more cases have died from cerebral congestion than in the state of collapse. It only now remains for me to state that, in this stage, the application of *heat* is of the utmost importance, and that it should be aided by the assiduous employment of friction, not only to the extremities, but also to the trunk itself, and particularly along the course of the spine, in which region some stimulant embrocation may be advantageously superadded.

Of the saline injection I refrain from speaking, as I have had no personal opportunity of witnessing its effects. It, however, seems to be well supported alike on physiological and pathological principles.*

Third Stage.—This consists simply of reaction consequent on the previous depression of the powers of the system, and, when not vigilantly regarded, is very apt to attain such a degree as to constitute a new disease, which may be looked upon as neither more nor less than common fever with great tendency to cerebral congestion, if not actual inflammation.

To enter upon the treatment, therefore, would be of no use, as the ordinary principles on which fever generally is treated, are amply sufficient as a guide to the least experienced practitioner. Suffice it then to state, that the head must be most jealously watched, and that the first manifestation of derangement of the cerebral organs must be promptly met; in many cases it has been necessary to resort to the topical abstraction of blood, even where the reaction did not present an extreme character. In such cases the first indication may be slight incoherency or somnolency; in some the eye has been extremely sensitive to light. Whenever, then, such symptoms are present, a few leeches to the mastoid processes and a purgative will be beneficial. Should they persist, general blood-letting, blistering the neck, and cold to the shaven scalp, should be resorted to, and a turpentine enema given at intervals of three or four hours.

Another occurrence at this stage of the disease is severe bilious vomiting. When febrile action is slight, and no cerebral symptoms exist, it will generally yield to the effervescent saline draught with a few drops of the tincture of opium; if these means do not counteract it, a full dose of calomel seldom fails in doing so.

In conclusion it may be stated that, although the lavish employment of stimulants tends powerfully to increase the state of reaction, the degree of it will be found in a large majority of cases to correspond rather with the previous depression, even where such means have been most cautiously exhibited. The practical

inference to be drawn from this fact is, that where collapse has been extreme the danger to be apprehended in the subsequent stage of reaction is proportionately greater—hence the practitioner cannot be too much on his guard, or too prompt in his application of the means above enumerated.

With my best thanks for the space which you have devoted to this subject,

I have the honor to remain,

Your most obedient servant,

GEORGE FIFE, M.D.

Sunderland, May 2, 1843.

SACCULATED ANEURYSM,

WITH A NARROW MOUTH, PROJECTING FROM THE ARCH OF THE AORTA, AND PRODUCING A MURMUR OF REFLUX; WITH CLINICAL REMARKS.

By Professor HENDERSON.

Mrs. Cameron, aged fifty, was admitted into the Edinburgh Infirmary on the 28th of August, 1840. Is the mother of eight children. It appeared that she had enjoyed good general health till sixteen months before her admission; from, and ever since that period, she had been affected with the ailments for which she entered the house, and which she ascribed to the sudden communication made to her of the death of two of her sons. She stated that, on receiving that intelligence, she fell into violent hysterical fits, and continued afterwards in a state of almost uninterrupted unconsciousness for about three weeks, and that, on her recovery from that state, she was for the first time sensible of an unusual pulsation at the upper part of the left side of her chest in front, which she described as having gradually ascended as high as the clavicle; it was only after it had been noticed to have attained the latter situation that she became sensible of any considerable pain in the seat of the pulsation, and suffered from difficulty in breathing. Active exertion, and more especially the exertion of ascending a stair, produced, after that event, so much difficulty in breathing that she often felt in danger of suffocation. It is further related in the report made at the time of her admission, that the pain under the left clavicle had become much aggravated within a short time previously, and had been apt to recur in violent paroxysms, on which occasions it darted acutely towards the left shoulder, and prevented free inspiration. It was observed that the superior part of the left side of the chest, in front, was a little more prominent than the corresponding part of the opposite side, and that the left clavicle was somewhat elevated and pushed forwards, and that it rose and fell in correspondence with the systole and diastole of the heart.

She did not come under my care till the following year, and on the 14th of June, 1841, the state in which I found her is described in these words:—The left clavicle projects considerably at its sternal extremity, and a nearly equal degree of prominence is presented by the contiguous portion of the sternum. The rounded margin of a pulsating tumor is felt at the inner edge of the right sterno-mastoid muscle, having its highest point an inch above the sternum; a powerful impulse is felt by the hand all over a space extending from the right side of the upper fourth of the sternum and towards the left, nearly as far as the axilla,

* From the extreme character of the cases treated by the saline injection, a fair estimate of its actual value can hardly be formed.—G. F.

and from above the clavicle down to the space between the second and third ribs; the percussion sound is dull over a space included nearly within the same limits; there are two murmurs on the area thus defined, particularly and remarkably loud, and superficial on the second left cartilage; the second of these sounds is the more prolonged, and it is of a whizzing character; below the level of the second rib this second murmur decreases in intensity, and on the space corresponding to the ventricles, or on the fourth and fifth left cartilages, it is supplanted by the second sound of the heart, clear, loud, and pure, or destitute of the character of a murmur; the first sound, as heard over the heart, is still roughish, though much less so than higher up. On extending the examination away from the seat of the impulse on either side, the intensity of the murmurs also decreases, and towards the scapular half of the right clavicle the second murmur is feeble, and heard above, or louder than $\frac{1}{2}$, there can, at that place, be distinguished the clear second sound of the heart; posteriorly, the murmurs are not audible, but the clear pure second sound of the heart is very distinctly heard even on the right side of this aspect, and with remarkable intensity at its upper part; her pulse is 74 and regular, and there is no increased length of the interval between the impulse of the heart and the diastole of the radial artery; the impulse of the heart is moderate; she has had some difficulty in swallowing for some time past; and her voice is deep and whispering.

She soon after left the house, and returned on the 13th of September, suffering under symptoms of a dysenteric attack, which proved fatal on the 23rd. The signs, as above detailed, were unchanged.

Dissection.—Body emaciated. On removing the sternum the base of the heart is seen to be lower than usual, and the organ lies more transversely than ordinary. The aorta is lengthened between the heart and the origin of the innominate, measuring five inches between these points; it is also much dilated, measuring two inches above its origin, six inches in circumference; its inner surface, chiefly externally to the lining membrane, is covered with calcareous and steatomatous patches. In front of the left subclavian artery there is a circular opening leading into an aneurysmal sac; the diameter of the opening is one inch and three-eighths, and its margins are smooth and polished. The walls of the sac do not spring immediately from the edges of the opening, but between the latter and the points at which the walls of the sac rise from the vessel, a thin firm rim, nearly half an inch broad, projects. The sac has a globular figure, and, from one side of the opening to the other over the summit of the aneurysm, it measures eight inches. Its inner surface is lined by a layer of firm fibrine, and its cavity is filled by a soft and partially decolorised coagulum. The left vagus nerve is firmly attached to the anterior surface of the tumor, and considerably flattened. The left recurrent nerve is similarly affected. The walls of the left ventricle are very little thickened. The aorta and pulmonic semilunar valves are healthy, and quite adequate to their function; and the other valves and the chambers of the heart present nothing unusual. Both lungs are somewhat emphysematous. Traces of recent inflammation exist in the colon.

Long before the death of the patient I predicted that the aneurysm would be found to possess the figure which has been described, that it would be found to have a communication with the aorta, of small size compared with the area of the sac, and that the valves of the aorta would be found sufficiently healthy to prevent regurgitation of blood into the ventricle. It was on the clearness with which the latter circumstance was pointed out by certain of the phenomena observed during life, that the opinion was founded, that the second of the two murmurs which occurred was owing to reflux of blood from the aneurysmal sac. You will have remarked in the account of the case, that it is said that in certain situations, more or less remote from the aneurysm, a singularly clear, loud, and pure second sound was audible, which was evidently that of the heart. Now it is certain that if the valves of the aorta had not been competent to prevent regurgitation of blood into the ventricle, instead of a pure second sound on the ventricles, there would have been a murmur, and in that event it would have been as impossible, by the study of the sounds at least, to have determined whether the second murmur was produced at the opening of the aneurysm, or at the mouth of the aorta alone, as it was certain, in the actual state of the second sound created at the latter situation, that the second murmur heard on and around the pulsating prominence really proceeded from the aneurysm. You will doubtless conceive, that in such cases as may happen to present both an aneurysm and an incompetency of the aortic valves, it will be impossible to ascertain whether the second murmur, that would of course exist, derives its origin from the condition of the valves alone, or both from that and from the coexisting aneurysm; but, while this must be granted, it is not an unimportant fact, that we can sometimes clearly ascertain when an aneurysm has a narrow communication with the aorta. This fact is not merely curious; it is of practical value. Let us suppose an aneurysm of the innominate to be the subject of examination, and that a second murmur can be heard over the tumor, it would become a highly important matter to determine whether this murmur was or was not independent of an incompetent state of the aortic valves. In the latter case, the question of ligature of the vessels on the distal side of the aneurysm (an operation which has been successful) could not be for a moment entertained; while, in the former, not only might the question be justly entertained, but the very fact of there existing a second murmur, clearly traceable to the aneurysm, would form a new argument for the propriety of the operation, because it would prove that the aneurysm had a narrow communication with the aorta, and was, therefore, in a condition favorable to the formation of coagula preparatory and essential to its obliteration. It has been the general custom to consider a second murmur, when audible on an aneurysmal swelling, as transmitted from the mouth of the aorta, and was, therefore, whenever such a phenomenon occurred in an aneurysm of the innominate, or other large vessel arising from the arch of the aorta, the case would be considered improper for operation, but, from the facts which I have laid before you, you will perceive that cases may occur in which such a phenomenon may be

determined as a symptom offering no little encouragement to the procedure which it has been conceived hitherto entirely to preclude. It may perhaps be supposed that, while these statements are undeniably true, the ability to determine in a case of aneurysm, when the aortic valves are competent and when they are not, is to be attained with so much difficulty, and only after so much experience and laborious study of this class of diseases, that few can hope to be qualified to give a trustworthy opinion on any case of aneurysm, in which the second murmur exists, of the actual source of the murmur. That this is quite a mistake I shall prove to you by what I have next to say, of a peculiar condition of the arterial pulse, which can be recognised without, I may say, any previous experience, and which will always tell you what, at least, will prevent you from suggesting an operation of the kind to which I have adverted in a case in which the issue could not be but unfavorable, owing to incompetency of the aortic valves. The condition of the pulse to which I allude I pointed out six years ago as a sign of regurgitation through the aortic valves; and it is singular that, excepting among the physicians of this city, so obvious and valuable a phenomenon seems still to be overlooked, or briefly referred to, at the most, as having been noticed by me, which, indeed, is the full amount of Dr. Williams's allusion to the subject, in a foot-note contained in the last edition of his work, the only publication in this country which alludes to it at all. The sign to which I now advert is a more or less remarkable increase of the interval which occurs between the beat of the heart and the diastole of a remote artery, the radial for instance. In the healthy state of the organs of circulation there is an extremely brief, but still a perceptible, interval between these occurrences, or rather a degree of sequence admitting of the radial pulse being distinguished as posterior in point of time to the pulsation of the heart. When the aortic valves are insufficient to prevent regurgitation into the left ventricle, the large arteries pour so much of their contents back into the ventricle, that the next wave of blood from the latter finds them flaccid, and, in consequence of this, the impetus it communicates to the blood in the whole arterial tree cannot be so speedily transmitted as when the arteries are kept in a distended condition, and, therefore, the pulse of the arteries occurs with a more than usual amount of succession, or interval, great in proportion to the distance of the vessel examined from the heart. In many instances the interval is so much prolonged that the heart and the radial artery seem to beat with a distinct alternation, and often a very decided interval may be also distinguished between the pulsations of the latter vessel and of the large arteries near the heart, such as the carotids. A very extensive examination of cases enables me to affirm that the sign in question is worthy of perfect reliance as an indication of incompetency of the aortic valves, and some of you have often seen me point out from this sign alone, without having previously ascertained the other signs of incompetency in these valves, the existence of that state of them. The importance of this sign is the greater, that confidence cannot be reposed in the visible or leaping pulsation of the arteries assigned, first by Dr. Corrigan, as a symptom of incompetency of the aortic valves; for it is liable to

occur, as I have repeatedly noticed, in cases of mere eccentric hypertrophy of the left ventricle, and it may not be present, in a very considerable degree, in cases of incompetency. I have, however, to caution you as to one particular, in reference to the former state of the pulse—namely, that it cannot always be distinguished when the circulation is considerably accelerated. Another circumstance which renders the recognition of the prolonged interval between the pulsations of the heart and of the remoter arteries of consequence, in detecting incompetency of the valves, is, that sometimes, on examining parts of the chest at a distance from the heart, the murmur of regurgitation, which, with very rare exceptions, is audible in the region of the heart and its vicinity, when the aortic valves are incompetent, is lost, and instead of it a considerably augmented intensity of the pure second sound of the heart is alone to be heard.—*Edin. and Lon. Monthly Journal.*

PROVINCIAL MEDICAL JOURNAL

SATURDAY, MAY 13, 1843.

The medical, compared with the other professions, has long had to confess its inferiority in the provisions made for the welfare of its students during the period of their education. In vain have the guardians of medical pupils endeavoured to provide for them that tutelary care which is extended to the clerical and legal students—in vain have parents sought for some establishment which might enable them to obey the counsel of the poet—

"Nil dictu foedum, visuque hæc limina tangat
Intra quæ puer eat. Procul hinc, procul inde puellæ
Lenonum, et cantus pernoctantis parasiti."

None such has been found. The baneful effects of this deficiency need but little illustration. Mark the too frequent course of the medical student; he has probably spent the first few years of his career in the seclusion and quietude of a country village, or has, at least, never passed from beneath the protecting influence of parental care; he is suddenly sent to complete his studies amid the profligacies and vices of the metropolis or a large provincial town; there he is at liberty—allured by extraneous attractions, urged on by ill-selected associates, and tempted by the delusive hope that the assistance of his "grinder" may hereafter enable him to redeem his misspent time, he plunges deeply into every form of dissipation; the lecture-room and the hospital are exchanged for the theatre and the tavern, and the period allotted for the acquisition of knowledge is devoted to the acquirement of vice, and thus has the name of "medical student" passed almost into a by-word employed to designate the embodying of every species of folly and immorality.

Moral education should be inseparable from that of