strated by Dr. Drummond's method of auscultating the trachea during slow expiration, and by the rhythmical discharge of inhaled smoke, as in Dr. Evans's experiments; in both of which cases the rhythmical effects are usually so feeble as to be inaudible by the ear applied to the chest walls.

As I have already stated, the mere action of the heart leads in some cases to rhythmical perturbation of the expiratory sounds in the trachea, just as an aneurysm sometimes does, and for the same reason.

The next phenomenon is that of wavy respiration. This is generally best recognised during inspiration—probably in part because interference with the entrance of air into the lungs is more likely to reveal itself to auscultation of the chest than interference with the escape of air from the lungs, and in part probably because the influence of the movements of the heart is more likely to be felt by a full than by an empty lung.

The last phenomenon is the production of a definite murmur by the actual squeezing of the air out of a limited portion of lung by the impulse of the heart against it. This, as I have remarked, may occasionally be feebly heard along the edge of the præcordial area of dulness, especially in cases in which wavy respiration is present, replacing mainly during inspiration the simple rhythmical impulses of the wavy respiratory action. But it is always best heard at or near the apex of the heart, simulating a cardiac systolic murmur, but presenting the characters which I have assigned to it. I need scarcely again draw attention to the similarity in the mode of production of the *bruit de pot fêlé* and of the apex murmur in question. The main factor in both cases, and that which gives each sound its distinctive character, is the sudden compression of the lung tissue by a blow suddenly inflicted upon it, and the production thereby of a murmur due to the escape of air from the tissue into and along the bronchial tubes.

If the views I have advocated be correct, all the various phenomena above considered are intimately related to one another; and though each one may still have a diagnostic value of its own, their chief clinical interest lies in the consideration that undue importance may often be attached to their presence, and in their ready confoundability—if I may coin the word—with phenomena indicating serious organic disease.

ON LIGATURE OF THE POPLITEAL ARTERY FOR THE CURE OF ANEURYSM IN THE HAM.

By ANTHONY A. BOWLBY, F.R.C.S.

Assistant-Surgeon to the Metropolitan Free Hospital; and Surgical Registrar and Demonstrator of Practical Surgery to St. Bartholomew's Hospital.

In the very interesting paper by Mr. Holmes on the "Surgery of the Large Arterial Trunks," published in the *BRITISH MEDICAL JOURNAL* for November 15th, the question of the advisability of employing Anel's method of ligature is discussed, and the conclusion drawn by Mr. Holmes is "that no reason has been shown for the performance of Anel's operation in non-recurrent popliteal aneurysms."

I would venture to submit that there are two good reasons for preferring the ligature of the popliteal artery to that of the superficial femoral, namely, first, diminished risk of gangrene; secondly, greater certainty of cure; and, as Mr. Holmes has already alluded to the cases treated at St. Bartholomew's Hospital, I shall venture to quote some figures in support of my contentions.

During the last ten years the superficial femoral artery has been ligatured for the cure of aneurysm on twenty-two occasions, and gangrene has ensued in four cases, and recurrent pulsation, or failure to cure, in two others. Further, another case of recurrent pulsation after ligature of the femoral, performed at another hospital, was admitted for treatment. Thus, in seven cases out of twenty-three either gangrene or failure to cure ensued, and it may be added that in no case was the gangrene the sequence of an injury to the femoral vein at the time of operation.

With regard to the gangrene, I would submit that it is less likely to result from ligature of the popliteal than from a similar operation performed upon the superficial femoral. For, in the latter case, the operation results in the occlusion of the vessel destined for the supply of the leg and foot in two places, namely, at the seat of ligature and in the popliteal space; whereas, if the popliteal be tied, the artery is closed in but one place. Further,

the muscular branches of the femoral and of the first part of the popliteal, as well as the anastomotica magna being above the ligature, the circulation in the leg is necessarily better than after the application of a ligature higher up. It may also be added that in one case in which Mr. Thomas Smith did ligature the popliteal instead of the femoral for the cure of a popliteal aneurysm, pulsation returned in the tibial vessels within forty-eight hours, whilst the aneurysm became firm and ceased to pulsate.

Secondly, the failure of the ligature of the superficial femoral to stop pulsation in the sac in three cases out of the twenty-three mentioned above, indicates that failure is sufficiently frequent to demand attention. In these three cases the aneurysm was finally cured; once by pressure, and in the other two patients by ligature of the popliteal. It is certain that in such cases of failure the pulsation is maintained by the too free passage of blood from the branches of the profunda into those of the superficial femoral, and thence into the aneurysmal vessel, for it is now generally recognised that the vessel between the apex of Scarpa's triangle and the seat of aneurysm remains patent. And, this being the case, it is clear that if the popliteal itself be tied, failure from this cause could not result, a conclusion which is emphasised by the fact that ligature of the popliteal sufficed to cure both the aneurysms mentioned above after failure of the operation in Scarpa's triangle in each case, and of ligature in Hunter's canal, in addition, in one.

These facts, therefore, are apparent: (a) That in a certain number of cases of ligature of the superficial femoral for the cure of popliteal aneurysm the supply of blood to the limb is insufficient and gangrene ensues; (b) that in a few cases the blood stream is insufficiently arrested and the aneurysm is not cured. I would suggest that after ligature of the popliteal for the cure of similar disease neither of these misfortunes is so likely to ensue.

As to the objections that have been raised to the ligature of the vessel near to the sac, it may be said at once that they are purely theoretical. The examination of a number of specimens shows clearly that the upper part of the popliteal is no more likely to be diseased in a case of aneurysm at the bend of the knee than is the superficial femoral itself, and, although opinions and teaching to the contrary are abundant, the statement I make here can be confirmed by reference to any museum, and is supported by Sir W. Savory in his paper in the *Medico-Chirurgical Transactions*.

Next, I would suggest that one assumption of Mr. Holmes is unwarranted, namely, that after ligature of the popliteal no circulation goes on in the sac; for, whatever may be generally understood by the operation of Anel, I venture to assert that it is most probable that some arterial blood does continue to enter the sac (after ligature of the popliteal) through the articular branches, which are generally given off quite close to or at the seat of aneurysm itself, and that some regurgitation is practically certain to result from the communication between the anastomotica magna and the anterior tibial. The objection, therefore, which is founded upon the statement that ligature of the popliteal stops the circulation in the sac, cannot be seriously considered until the accuracy of the assumption is proved.

With regard to the relative difficulty of the operations of ligature of the superficial femoral and of the popliteal, I am of opinion that there is but little choice. I am aware that ligature of the popliteal is generally considered to be a difficult operation; but, after having seen it performed on four occasions in patients and very many times in the dead body, I feel sure that the difficulties are greatly exaggerated. The artery in the upper part of the popliteal space is not nearly so deeply seated as is commonly believed, and, with this warning before them, students of operative surgery make far fewer mistakes in exposing the popliteal than in cutting down on the femoral. The chief risk arises from the proximity of the popliteal vein; but the latter is readily avoided by opening the arterial sheath well to the inner side, as in the similar operation of ligature of the common carotid. In cases of large aneurysms occupying the greater part of the popliteal space the operation should, of course, not be attempted.

Finally, I would say that, although I venture to support what may be called Anel's method, I do so because I fully concur with Mr. Holmes when, in speaking of the operation of ligature for the cure of aneurysm, he says: "But are there no dangers in the operation except hæmorrhage? My own belief is that phlebitis and gangrene are in the present day the chief ill results of the operation." With aseptic wounds and ligatures gangrene is cer

tainly more likely to prove fatal than is secondary hæmorrhage, and its prevention merits more consideration than it has received. It is chiefly on this account that I have ventured thus to point out some of the reasons why the popliteal artery may be ligatured in cases of aneurysms in the ham.

MEMORANDA: MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

OÖPHORECTOMY FOR MENORRHAGIA, PROLAPSED OVARY, AND EPILEPTIC FITS.

In July, 1884, Miss L., aged 35, consulted me with reference to pelvic pain and menorrhagia of some months' duration. The usual drugs were prescribed with no beneficial result, and after some time a vaginal examination was made, and showed the presence of a prolapsed and tender ovary on the left side. About Christmas of that year the patient began to have epileptic fits, which occurred about once a fortnight. The menorrhagia and pelvic pain were also by this time much worse, and the former was on several occasions so profuse, that I plugged the vagina.

In this state she continued for the next nine months, by which time all the usual remedies had been tried in vain. Her condition on October, 1885, was so bad that I asked Dr. Imlach to come and see her. He advised an operation for the relief of the menorrhagia and pelvic pain, but refused in any way to promise that the operation would cure the fits. For the relief from pain and menorrhagia the patient and her friends gladly consented to the operation, which was performed by Dr. Imlach on November 7th, 1885, both ovaries being removed. We found also a small intramural fibroid, though the sound had not shown any enlargement of the uterus. She made an excellent recovery, and was out and about in some weeks. Bromide of potassium was again administered, and though at first the fits continued frequent, yet when belladonna was added to the mixture they gradually diminished in number, and the last one took place in 1888, the medicine however, as a precaution, being continued until the end of 1889. There has been no return of pelvic pain or menstruation since the operation. The patient has now been quite well for more than two years.

Southport.

CHARLES PINKERTON, M.D. Glasg.

ANTIFEBRIN IN TYPHOID FEVER.

DURING the latter part of 1887 I had several cases of enteric fever accompanied by high temperatures; the success I had in the treatment of these cases by antifebrin induces me to record my experiences with this drug.

The first case I used this drug in was a girl, aged 20. Towards the latter part of the third week her temperature, which had been high from the commencement, rose to 105.8° F.; all her other symptoms were correspondingly severe. The patient had been unconscious for four days, passing her motions involuntarily, and to all appearances a fatal result was imminent. I gave her ten grains of antifebrin; half an hour afterwards she broke out in a very profuse perspiration all over the body; this was followed by a violent shivering; her legs, as indeed the entire surface of the body, were quite cold; the temperature (axillary), taken two hours after the administration of the antifebrin, was 98.8°, that is, a drop in two hours from nearly 106° to a little over normal temperature. The patient obtained a short but quiet sleep free from delirium, and woke up much refreshed. Of course the temperature went up again, but not as high as before. Five-grain doses, and afterwards three, and even two grains sufficed to bring the temperature down to normal. The patient made a good recovery, and was soon strong and well, with the exception of a slightly cedematous condition of one leg, which, however, soon disappeared.

I have treated several cases of hyperpyrexia occurring in the course of enteric fever on the above plan, and have had uniform success throughout.

I may add that this drug does not seem to have the same effect in cases of hyperpyrexia occurring in the course of other diseases. I tried it in a case of pneumonia with high temperature, but not with such a satisfactory result. In a case of septicæmia after

confinement a five-grain dose of antifebrin reduced the temperature from 105° to 99°. In enteric fever I would advise a dose of from five to ten grains to begin with, followed by smaller doses. Wetherby. T. READMAN, L.R.C.P., etc.

VAGINAL HYSTERECTOMY.

I HAVE read with interest Dr. Clement Godson's account of a case of vaginal hysterectomy in the BRITISH MEDICAL JOURNAL for October 11th. I have another case to report. It was performed on September 13th by Dr. Granville Bantock, and was complicated by omental adhesions to the fundus, hydrosalpinx, and disease of the left ovary, which were removed. The patient recovered without a bad sign. It is worthy of note that this operation was done in private, with no other assistance than I was able to render. The bleeding vessels were tied, and no pressure forceps were left on, which must be most uncomfortable. The vagina was mopped out daily at first with absorbent wool, and on the eighth day an injection of sulphurous acid was used, and after that sulphate of zinc. Constipation was her only trouble afterwards, and this was overcome with pil. col. et hyos. and an occasional saline. I lately witnessed Dr. Bantock perform a similar operation at the Samaritan Hospital.

Camden Road.

FREDERICK SPICER, M.D.

MULTIPLE FRACTURES WITHOUT TREATMENT.

A LASCAR was injured six days before admission by a wave shipped at sea. Both femora were broken a little below their middles and the left humerus below the insertion of the deltoid; and there was a comminuted fracture of the lower jaw, with an external wound. The interest of the limb fractures lies in the results obtained under practically no treatment. The patient would submit to absolutely no restraint; and when attempts at treatment were finally abandoned, thirty days after the accident, there was free movement between the different fragments. Yet in a few weeks firm union occurred in all, the patient simply lying on his back without even sandbags to support the limbs. There was much shortening, complete eversion, and some bending outwards of the thighs, and considerable overlapping of the fragments in the arm. When the patient left hospital, eighty-seven days after the injury, he could hardly stand, being very weak, and the eversion of his feet crippled him much, but there seemed a prospect of fair locomotion ultimately. The treatment of the jaw was very unsatisfactory. There was a line of fracture across the left ramus, probably simple, and another in the posterior part of the body, compound externally, oblique from above downwards and backwards, and from without inwards and backwards, leaving all the teeth on the anterior and inner fragment. The whole jaw was drawn over to the injured side, and backwards and a little downwards, the line of teeth being nearly half an inch behind those of the upper jaw. Considerable force was needed to pull the bone up into position. It was wired to the upper jaw by pins passed through the middle line of each maxilla as far beyond the teeth as possible and supported by a bandage externally; but the pins ulcerated through, and it eventually united in its original position. Two small fragments of bone came away, and the patient was much pulled down by swallowing the pus formed. I do not think that anything short of free division of the muscles inserted into the bone would have sufficed to keep it in position. It was too broken up for wiring the fragments, and a dental cap would have needed the aid of more external pressure than could have been borne.

H. HERBERT,

Acting Civil Surgeon, Aden.

DURING the academical year 1889-90 the number of persons who obtained licences to practise medicine in Bavaria was 414. Of these, 146 "passed" at Munich, 188 at Würzburg, and 80 at Erlangen. The number of dentists licensed during the same period was 12.

ASSAULT BY A LUNATIC ON A MEDICAL MAN.—Dr. Mordret, Chief Physician to the Lunatic Asylum of Mans, was attacked a few days ago during his morning visit by a patient, who stabbed him with a shoemaker's knife in the back and the outside of the thigh. Both wounds were from 2 to 3 centimetres in depth, but fortunately no important organ was injured, and Dr. Mordret was able to return to his duties in a few days. The patient was a very quiet man, who had been a trifle morose for about ten days before the assault. His account of the matter was that he felt impelled to do something that would bring him before the magistrates.