Median operations, 57; with 3 deaths, or 1 in 19; of these, 9 were adults, or above 17 years of age; the deaths were, 2 adults and 1 juvenile. *Lateral operations*, 12; of which 11 were cured, and 1 adult died, aged 67. The grand total is 69, with 4 deaths, or 1 in 17. The result is, in median operations, 1 death in 19; in lateral operations, 1 death in 12. Comparing these with the statistics of the Leicester Infirmary, given in Sir H. Thompson's table, *all* of which were *lateral*, it stands as 1 to 11 in that table, and 1 to 17 in our mixed operations subsequently performed; but, in taking our median alone, as 1 to 19 against 1 to 11 lateral.

To economise time, I will not enter into further comparison of the two methods, but rather refer you to my statements, because I believe that the Italian, and its modification in the median method, have not had the due consideration by the profession to which they are entitled.

I do not regret to say that I have had very few opportunities of judging whether or not the prostate gland has or has not been lacerated or overstretched in the extraction of stone by the median operation. I can only say that I have never had any ocular demonstration of that lesion, nor have I met with any statement to that effect, and proved by *post mortem* examination; but this is a question, gentlemen, which you must decide from your experience and reading, the answer to which I shall be glad to elicit at this meeting. When I consider the structures divided in the median operation as compared with those divided in the lateral, and at the same time weigh the results of our smaller number of operations with the more generally adopted lateral, I think I have reason, in properly selected cases, to continue its use, and to bring it before your notice as worthy of your consideration. In my own two cases which died, the stones were not large; the extraction of them was easy; there was nothing to lacerate the prostate; and, in Mr. Marriott's single median death, abscess and peritonitis occurred suddenly at the end of three weeks.

In respect of hæmorrhage, I must say a few words. In one case only out of twenty-five median have I had occasion to use the lithotomy-tube, or to ligature; but in one lateral operation out of nine, I was obliged to secure two vessels, on account of sharp bleeding. Now I think it is but just and honourable to say why, in my opinion, the hæmorrhage, followed by death, occurred in that median operation, and it was this: the perinæum was deep, and I failed at first to hit the groove in the staff; and the blade of the knife passed by the side and beyond the urethra, probably wounding the artery of the bulb, or some artery abnormally distributed. In no other cases have I encountered primary hæmorrhage which was not easily controlled, or in which I had occasion to ligature or to use the tube.

On referring to Mr. Marriott's notes, which he has kindly given me, I find that he had occasion to use the tube twice in his median operations, and both patients recovered; in three cases there was smart hæmorrhage requiring ligatures: but in two out of his three lateral operations there was severe hæmorrhage requiring the plug, and one of these patients died from pyæmia in seven days; and in the third case there was free venous hæmorrhage.

I have once had secondary hæmorrhage in a child, which occurred on the tenth and eleventh days after the median operation, and which was so severe as almost to threaten death. This was controlled by ice applied to the perinæum, and by the internal administration of gallic acid, and the child recovered.

Mr. Thomas Smith of St. Bartholomew's Hospital, in a paper lately published in the BRITISH MEDICAL JOURNAL, quotes twenty lateral and one median operation, all in children, in all of which he introduced the lithotomy-tube, and he recommends its use in all cases as a preventive of hæmorrhage; but from my own experience I think this unnecessary, and, if unnecessary, objectionable; nevertheless, all his cases were successful.

In two or three cases I have observed in my own practice orchitis of one or both testicles following the median method; this I do not recollect to have seen after the lateral operation. The inflammation somewhat retarded the recovery, but occasioned no further inconvenience.

In two cases—one lateral, the other median—liquid feces passed *per urethram*; and in one of them—the lateral—flatus also escaped by the same passage. In the median, it occurred in a boy 12 years old on the thirteenth day after the operation, in which case the stone was rough and large, and composed of oxalate of lime. In the lateral case, which was a complicated operation, on account of the extraction of two large phosphatic calculi, combined with stricture of the urethra, flatus passed by the urethra at the end of three weeks, accompanied by liquid feces; but both of these recovered completely without further surgical interference. In neither of these was the rectum wounded by the knife, but, as I infer, from sloughing occurring after the operation.

In this latter case, the man, aged 32, had been the subject of stricture for several years; and although I had dilated the stricture gra-

dually for days prior to the operation, I was unable to introduce the curved laterally grooved staff; and, whilst he was on the table, I first opened the stricture by Thompson's dilator, and then readily passed Aston Key's straight staff. The first stone (for there were two) was removed after prolonged careful extraction; but I was compelled to crush the second by the lithotrite, as it could not be extracted without using undue violence. And here, I may remark, that this latter proceeding is one which Sir H. Thompson condemns as a dangerous proceeding in a bladder entirely empty of urine; but, with the exception of the sloughing before mentioned, which, in my opinion, was entirely independent of the use of the lithotrite, no untoward symptoms followed, and the man recovered.

I ought to add that upwards of thirty operations were done by my late colleagues, Messrs. Paget and Macaulay, since the year 1851; but I have been unable to obtain satisfactory details as to the method adopted, and therefore they are not included in my table.

THE MODE IN WHICH DIRECTION IS ASCERTAINED BY MIGRATORY ANIMALS.*

By FREDERICK JAMES BROWN, M.D., Rochester.

I AM impressed with the idea that migratory animals are provided with some mode of determining the course of their voyages. If such power be not conceded to these animals, it becomes necessary to refer their migratory movements to pursuit of food scented in definite directions, or to the appreciation of temperature in definite directions.

The vertebrata possess only five outward senses; consequently, fishes and birds are unprovided with special senses for determining direction, yet these classes of animals may possess olfactory and visual powers capable of guiding them in a definite course. It appears to me that the olfactory sense may enable fishes, and possibly birds and mammalia, to perceive electric and magnetic currents; and that the visual sense may enable birds to distinguish differences in the light emanating from the stars, also angles caused by the varying position of the heavenly bodies. If this be true, fishes and birds navigate the seas and the air by the aid of the same sciences that guide the mariner. And I ask, is not this highly probable? Art is nothing more than Nature elaborated by man, and Science is Nature herself. Sensational animals do instinctively that which man has learned to do by laborious research. It is possible that man may one day be able to navigate the globe by modes identical with those employed by fishes and birds.

The social instincts of man are multitudinous and exceed those of the lower animals a thousand-fold; yet by their subordination to the reasoning faculty, they render him a creature dependent on his own industry rather than on native gifts. In this way the social life of man differs essentially from that of the lower animals. The peregrinations of mammalia generally, and of the cetacea particularly, are probably guided by the same forces that guide birds and fishes. Ordinary smell and sight are capable of guiding quadrupeds for long distances; yet the return of the dog and of the cat to their homes when removed to incredible distances, renders some mode of determining direction a necessity.

I should think that experiment on the different senses would elucidate this question; for instance, migratory birds might be blinded, others might be deprived of the sense of smell, others of hearing. Should such maimed birds, duly ticketed, be found in the countries to which they usually resort, the inference would be that the birds were conducted by their companions, or that they possessed some other mode of discovering direction and locality than that which is assumed to exist.

I beg leave to record an anecdote of a sheep-dog, related to me many years since by a shepherd. A dog was taken from the Hundred of Hoo to Ashford. The dog found its way back; but, strange to say, it took a straight course through the Isle of Sheppey, and crossed the harbour of Sheerness to the Isle of Grain,† instead of passing circuitously by way of Rochester bridge.

It is evident that the faculty or power of locality, however highly developed, will not account for the return of animals to their home when removed in closed vehicles to very great distances; and in the case of migratory birds, it is known that the young cuckoo leaves this country after the departure of its parents, consequently inexperienced as to route and locality. I feel confident that experimental inquiry into this subject will demonstrate, in the lower animals generally, and in migratory animals particularly, the existence of power to ascertain direction. I would mention one circumstance taken from human experience that bears on this question. A half-witted man could tell the

* Read before the West Kent District Meeting.

† Whether by swimming or in a boat, I do not recollect.

daily hours, within half an hour, by observing the position of the sun. Now, what this *sensational man* did in reference to time, other *sensational animals* may do in reference to direction of motion.

MECHANICAL INJURIES IN A CASE OF CON- GENITAL PURPURA.

By FREDERICK WATERHOUSE, M.R.C.S., Pont-y-Pridd.

UNTIL very recently, we have been taught to regard purpura and the hæmorrhagic diathesis as disorders distinct and unconnected, and but few of us would have been disposed to consider them identical. As lately as 1867, Dr. Garrod writes (BRITISH MEDICAL JOURNAL, p. 6, vol. ii), that the hæmorrhagic diathesis "differs from purpura in being never attended with any febrile reaction"; and such was the distinction given me the other day by an eminent physician in the north. But Aitken, under the head of purpura, says (p. 820, vol. i): "To this class of cases, as a form of disease now under consideration, are to be referred those cases of profuse or fatal hæmorrhage from slight causes, recorded under the name of '*hæmorrhæa*', which have been ascribed to a diathesis termed *hæmorrhagic*, and which is supposed to be hereditary." Not finding any mention of the hæmorrhagic diathesis in the new *Nomenclature of Diseases*, I conclude that the College of Physicians takes the same view as Aitken, and considers this diathesis as a form of purpura; for, if it be not so, how can we register a death caused by hæmorrhage from a slight wound in this disorder? Congenital purpura, therefore, is the name which I will give the following interesting case—interesting as showing some of the consequences of injury in subjects of a hæmorrhagic tendency; merely remarking in contradistinction to Dr. Garrod, that purpura is "a disease not usually attended by fever" (*Nomenclature of Diseases*, p. 27).

The patient, who has been under my care upwards of two years, and whom I have had constant opportunities of observing, is a sharp little fellow of a fair, pale complexion, bright blue eyes, and thin transparent skin. There has been no enlargement of the glands of the neck, the muscles are soft and flabby, and the extremities at times cold and blue. His tongue is generally coated with a yellowish-brown fur, his appetite is good but capricious; his bowels are open as a rule after each meal. He is subject to oedema of the eyelids, to obstinate bleeding from trivial wounds, and his elbows, wrists, knees, and most frequently his ankles, swell at times to a considerable extent, and are very painful; this swelling usually continues a fortnight. Patches of ecchymosis appear also on the abdomen, thighs, and legs, and are seldom absent; it is not often that they can be traced to any injury, but they are attended with much debility, without febrile reaction. I have never been able to detect "an excess of albuminous matter, or a deficiency of urea in the urine" (Aitken, vol. i, p. 819). He is the youngest of a family of eight (four sons and four daughters). There is no hæmorrhagic history on either parent's side, except that the mother has suffered for some years from menorrhagia (*vide* Graily Hewitt, *Diseases of Women*, p. 52); the disorder has been developed in the three younger boys only, two of whom have died (aged 6 and 8 years) in consequence, having exhibited the same symptoms as described above. The eldest son (who was drowned at the age of 18) and the girls, though scrofulous, have never shown symptoms of this diathesis. I vaccinated the son of the eldest daughter, but no bleeding occurred.

Last Christmas, Mr. Walter Morgan and myself were called to see this boy, then four years of age. He had fallen against a bedpost and loosened three upper incisors, from around the roots of which blood began to flow incessantly. For three days, a fair trial was given to acetate of lead internally and externally, tannic acid, and perchloride of iron with pressure; but the gums became swollen and spongy, and the hæmorrhage did not abate. Mr. Morgan extracted the teeth and plugged the holes with lint soaked in carbolic acid, which stopped the bleeding for a few hours. It commenced, however, afresh; and, for six days, the thin almost uncoagulable blood trickled down the throat or out of the mouth. The stools were sanguineous. He lay in his mother's arms, most of the time asleep; when awake, his eye was remarkably clear and intelligent. His mouth became dry, stained and burnt with the styptics used. On the seventh day, when his skin had become cold and deathly white, his voice gone, and when, with the exception of administering a little brandy and cold water, we had given up all treatment as worse than useless, and we were momentarily expecting dissolution, the hæmorrhage ceased. Strength rapidly returned; in a few days the gums healed, and, in a week's time, he was able to go about.

On the 9th of September last, I was again called to the boy. He had fallen from a form in school twenty-six hours previously; there was a bruise over the left frontal eminence, but the skin was entire.

Blood had infiltrated the cellular tissue of the whole forehead and the eyelids; the latter were so puffed and distended that I found it impossible to see the left eye. The skin over the superciliary ridges and the right eyeball appeared natural. The eyelids had begun to swell nine hours after the injury. There were numerous small hæmic spots over the abdomen, a purple patch over the right hip, two inches in diameter, and several others on the legs. There was no pain or pyrexia. The treatment consisted of cold applications; fifteen grains of compound jalap powder, immediately; two drops of turpentine every six hours; low diet.

On September 10th, the eyelids were not so much distended. Ecchymosis extended above, among the roots of the hair to the coronal suture, and below, to the left ramus of the lower jaw. The turpentine was continued. On the 11th, he was able to walk about. There was pain over the left eye, which he could not open yet. The ecchymosis was extending into the left ear (helix) and neck. The swelling of the forehead was greater, and of a livid colour. Pressure was ordered to be applied, and the turpentine to be continued. On the 12th, 13th, and 14th, there was no further extravasation, and pressure was discontinued. On the 15th, he presented a peculiar appearance. The entire face was dusky blue. The outer half of the sclerotic surface of each eyeball was of a brilliant red colour (the blood having penetrated under the conjunctiva), the inner half remaining of a clear white. Iron was now substituted for turpentine. After this, absorption went on rapidly, and in two weeks there was very little trace of the injury. He is now in fair health.

With our present pathological knowledge, we cannot explain that peculiar condition of system which is characterised by purpuric symptoms, and which is manifested in various forms of disorder, ranging from a mere diathesis, or a non-febrile complaint, like what has been termed "*epidrosis cruenta*", to diseases accompanied by great constitutional disturbance, as cerebro-spinal fever; but I believe it will be found to be due, not so much to a morbid condition of the blood, or a defective state of the capillaries (Miller's *System of Surgery*, p. 231), as to some lesion or loss of energy of the organic nervous centres, induced sometimes by blood-poisoning. There are two curious facts observable in this case which, not improbably, may be owing to the cessation or elimination of a cause of vaso-motor palsy. They are:—

1. The stoppage of bleeding and rapid recovery after the patient had become, as it were, drained of blood. This, Dr. Allbutt tells me he has observed; and it has often occurred to the three hæmorrhagic subjects of the above family.

2. The duration of the purpuric symptoms for a fortnight. Miller describes similar symptoms as continuing the same time in the hæmorrhagic diathesis.

The therapeutic action of turpentine in arresting hæmorrhages and controlling some forms of inflammation, and its power as an antidote for phosphorus, are not improbably dependent on a stimulating influence which it may possess over the vaso-motor nerves.

CASE IN WHICH A PIN WAS SWALLOWED AND PASSED SAFELY THROUGH THE INTESTINES.

By GEORGE NEWSTEAD, M.R.C.S., Eccleshill.

ON the 6th of November, at about 8 p.m., I received an urgent summons to visit a child named Fawcett, aged 11 months, who was reported to have got a pin into his throat. The messenger informed me that he had seen the pin, and had made an unsuccessful attempt to extract it. I inferred, from the statement which he made to me, that the pin had been then resting obliquely across the fauces, with the head pointing downwards in the direction of the oesophagus. On my arrival at the house, the child's mother told me how the accident had occurred; and the manner of it was a singular one. She had taken the infant to her breast, having, at the time, the pin in her own mouth, from which it accidentally dropped and was received by that of the infant. The woman also mentioned that she had (a few minutes before my visit), at the suggestion of a neighbour, let the crying child have the breast, which it took greedily, and soon became perfectly quiet. I looked into the child's throat, in which I could not detect the presence of any foreign body said to have entered its mouth, nor could I (supposing it had been ejected therefrom), after very careful search round the place, discover its whereabouts. Under a strong impression, therefore, that the pin had really passed down the child's oesophagus, I requested the mother closely to watch for and examine the alvine evacuation. With a vigilance which no detective could have exceeded, Mrs. Fawcett appears to have followed my instructions; for, at the expiration of three days from the time of its being swallowed, the pin was found by her