hardly perceptible. He continued to bring up the thick black fluid till half-past nine, and died thirty-two hours after admission, and about fifty-one hours after the accident.

On *post mortem* examination, the heart was found lying in the position above indicated: it retained its natural direction. The pericardium was much injected, and its layers were slightly adherent by recent lymph. The right lung was a little pressed upon by the heart; it was everywhere crepitant, but excessively engorged. There was a little fluid in the pleura. The left pleura contained at least six pints of black and rather thick fluid, in which pieces of food were floating. The lung was lying at the upper and back part of the thorax: it was quite carnified and free from air, except just along the margin. At the lower part of the chest, protruding through an opening in the diaphragm, was found the whole of the stomach, with the great omentum, the larger portion (from ten to twelve inches) of the transverse colon, and the spleen. The stomach was collapsed, nearly empty, and lying with its greater curvature turned upwards; the œsophagus forming a very abrupt curve, with its convexity downwards. At the posterior surface, near the cardiac extremity, the coats of the stomach were much thinned, and had given way at one point, forming an opening about the size of a half-crown. On opening the stomach, it was found to contain some dark semifluid material, similar to that in the cavity of the pleura, which was partially digested blood; this would seem to have escaped from a large vessel which could be traced to the ulceration, and seemed to have been opened by it. The opening in the diaphragm was in the left portion of the tendon, near its posterior part; it was large enough readily to admit the hand; its margins were rounded and thickened; and the serous covering of the fissure seemed continuous with the pleura on the one side, and the peritoneum on the other: it was quite perfect, except at the left border, which appeared to have been lately torn to the extent of an inch. This opening in the diaphragm commenced about an inch to the left of the œsophageal opening. The peritoneum was everywhere exceedingly pale, and contained a fluid precisely the same as that in the pleura, to the amount of two or three pints. There were old adhesions at the upper part, from old peritonitis.

REMARKS. The interest of this case has induced us to publish, by Mr. Lawrence's permission, a slightly abridged edition of his notes, although they have recently appeared in another journal. The peculiarity of the case, and one which distinguishes it from any other of the kind which we can remember, consists in the very clear history of a previous accident, joined with the *post mortem* appearances of an old rupture of the diaphragm, which had been extended by a more recent laceration. It may be used, therefore, to show how little disturbance to the vital functions may ensue upon this injury, when uncomplicated; and such cases may be fitly associated with those others (such as the one published at p. 285) in which no injury has been known to have been sustained, but where a large portion of the abdominal viscera have been found to have passed through the diaphragm, and to be lying in the thorax. These "congenital" cases (as they are called, though it is questionable whether some of them, at any rate, have not been the result of accident) are known to be accompanied by no symptom whatever, either of dyspnoea from the incompleteness of the diaphragm, or of dysphagia from the altered position of the stomach; and there seems little reason to doubt that in this patient, between the first and second accident, the case was of a similar nature.

SOCIETY FOR RELIEF OF WIDOWS AND ORPHANS OF MEDICAL MEN. At the half-yearly general meeting of the members of this Society, held on October 13th, the following gentlemen were elected officers and directors for the ensuing year:—Officers elected: *President*—T. A. Stone, Esq. *Vice-Presidents*—Martin Ware, Esq.; E. A. Brande, Esq.; J. Nussey, Esq.; Sir B. C. Brodie, Bt., F.R.S.; P. M. Latham, M.D.; John Bacot, Esq.; Thomas Turner, M.D.; D. H. Walne, Esq.; A. J. Sutherland, M.D., F.R.S.; E. Tegart, Esq.; E. Stanley, Esq., F.R.S.; G. Burrows, M.D., F.R.S. *Treasurers*—J. Miles, Esq.; J. Clarke, M.D. (Acting); J. T. Ware, Esq. *Directors elected*—G. J. Squibb, Esq.; H. Combe, Esq.; A. M. Randall, Esq.; H. Jeaffreson, M.D.; J. Hilton, Esq.; H. Oldham, M.D.; R. S. Eyles, Esq.; H. Sterry, Esq.; G. Hamilton Roe, M.D.; H. K. Owen, Esq.; H. Lee, Esq.; R. B. Todd, M.D., F.R.S.; Robert Nairne, M.D.; W. Cathrow, Esq.; E. Barker, Esq.; J. Paget, Esq., F.R.S.; J. Adams, Esq.; F. J. Farre, M.D.; A. B. Barnes, Esq.; E. Dew, M.D.; J. Love, Esq.; H. A. Pitman, M.D.; C. Collambell, Esq.; S. Stedman, Esq.

Original Communications.

EXPERIENCE IN MEDICINE:

BEING THE INTRODUCTORY ADDRESS DELIVERED BEFORE
THE LIVERPOOL MEDICAL SOCIETY,
OCTOBER 7TH, 1858.

By THOMAS INMAN, M.D.

GENTLEMEN,—It devolves upon me, as one of the vice-presidents of the Medical Society, to deliver the opening address upon this occasion. Of course, I should have been very glad if the duty had fallen upon one of my colleagues, and I had been able to enjoy the ease and pleasure of a listener, rather than perform the more onerous and somewhat nervous task of author. However, as I accepted with satisfaction the honour of office, it becomes me to discharge this part of its duties to the best of my ability. The main difficulty to be overcome is the selection of an appropriate subject for discourse. Upon ordinary topics, you are all equally informed with myself; and the interest of extraordinary subjects is small, unless they have practical bearings. If we were to content ourselves with a simple retrospect of what has recently been done, we should have little difficulty in framing an elaborate mosaic out of Brown-Séquard's new views respecting the nervous system, and the influence of Claude Bernard's experiments upon our knowledge of diabetes. All honour to the Frenchmen for their untiring energy, perseverance, and acumen! We prefer, however, to take as the subject of our paper one of individual interest; and to found our discourse on the single word *experience*.

There is probably no set of proverbs so constantly before our minds as that founded on this word. We have the short "*Experientia docet*" of our Latin *Delectus*, the "Experience makes fools wise", the "Learn wisdom by experience", of our maturer years. The ideas intended to be conveyed are, that we learn more by seeing and hearing than we do by reading and thinking; that we necessarily grow wiser as we grow older: and therefore, the maturer the age of an individual, the more mature must be his knowledge and his judgment.

Notwithstanding these proverbs and the concentrated wisdom they are supposed to infold, it is strange and somewhat interesting to observe how continually they are ignored, and how completely the practice belies the theory that men uphold. According to theory, the world ought to be growing wiser as it is getting older; the knowledge possessed by our forefathers ought to have been steadily advancing and increasing, like a descending avalanche or a rolling snowball. Our own profession, now three thousand years of age, ought to stand for precision and acumen far higher than the comparatively recent and ever changing systems of law and theology. But we find ourselves, if possible, in a worse position than either. As the jurists are ever pointing back with triumph to Hale, Coke, and Littleton, and the theologists to Chrysostom, as men the like of whom they never will see again, so medicine triumphs in the worthies that are gone, and depreciates in comparison those that remain behind. Distance ever lends enchantment to the view: the faults of the dead are glozed over; their frailties forgotten; their good deeds alone embalmed in memory. *De mortuis nil nisi bonum* is the motto for the past; *De viventibus nil nisi malum* is too often the motto for the present. Even in Solomon's time, a period to which all can look back as being grander than any other that history records, there were individuals whom the preacher rebuked for saying that former days were better than their own; and in the Augustan age of Rome, we find Horace speaking of those who were *laudatores temporis acti*. Strange commentaries these on the time-hallowed notions of the value of experience. "*Experientia docet*", say our tongues at one moment; while at another they grumble, "knowledge grows only as a cow's tail, downwards."

We may, however, say that theory and practice on this subject are far more nearly united at the present day than they have ever been before. "Look forwards, not backwards," is the motto of a vast number of individuals; and each one feels that, if he is to excel in the race of life, he must not be constantly turning to consult those who ran before his day. He must be like the mariner who looks ahead for the shoal, the lighthouse, and the buoys; and not like the oarsman, whose

back is ever towards the goal. In this respect, we may say that the present generation are cutting their wisdom-teeth, and practically testing the truth of the real value of experience.

But there are a vast number, nevertheless, who have still a strange jumbling of ideas respecting experience in general, and especially in those departments of knowledge to which experience is commonly supposed to be necessary. The world in general admires and pins its faith on the practical man, who is handy with his tools, quick with his fingers, and a close stickler to his business alone and the good old ways of his fathers; and they deride and discourage, if they do not persecute, the inventor who prefers his newfangled plans to ancient customs; and their opposition is often proportionate to his apparent ingenuity and success. Yet in the next generation the inventor is almost worshipped; and no epithet is sufficiently strong to express the contempt which is felt for his opponents. What has happened in the past, is taking place around us daily; and we are not more perfect than our ancestors.

The reason of all this is obvious; it consists essentially in the indolence of our own minds, which prefers to take a general verdict rather than exercise its own independent judgment. The majority prefer to go with the herd, and to follow the leaders rather than to be leaders themselves. This indolence of mind has ever existed in the human race, and will do so to the end of time. It runs through the whole history of medicine, tincturing it with one particular hue, and in one form or another, showing itself in every individual man—even in those who appear to be most ardent and energetic in the pursuit of knowledge. Of all the various forms this indolence assumes, none are more common than, *first*, to repose with implicit and unvarying security upon conclusions once formed; and, *second*, as soon as one error is exposed, to run for shelter to something the most directly opposed to the former one. We are content to toil on for years in the accumulation of facts, in the dissecting of former theories, and in the careful examination of the results of treatment, until at last we consider that we are in a position to build our castle and establish ourselves on a firm foundation; and, when once there, we allow nothing to shake us. The task of reconsideration is too great; and we are content to explain away new facts rather than pull our building down and reconstruct it for the sake of a single flaw—a fault from which even the mind of the great Harvey was not free. This affects us chiefly as individuals. The second propensity is more common in the mass. As in the older days of medicine, solidism succeeded humoralism, and this is again becoming in vogue; as vitalism succeeded chemicalism, and empiricism dogmatism; so we have seen in our own times that some have flown directly from allopathy to homeopathy, that the reign of pills and boluses has been succeeded by that of globules, and heroically large doses have been supplanted by absurdly and infinitesimally small ones. Indiscriminate venesection is being replaced by another system in which bleeding has no place; and the antiphlogistic treatment of inflammation is fading away, while a totally opposite system is advancing. Tired of such oscillations, the mind too often gets weary, and determines to make a stand; it adopts the most popular theory of the day, and thenceforth, like a constant lover, refuses to see any fault in its deliberate choice.

We see this fact exemplified under many different circumstances. Let us take one example—John Hunter—a name of which we all are proud, and whose memory we revere. One of the characteristics of the man was, that his theories were constantly changing as new facts were developed. Eager to interrogate Nature, his interpretation of her teachings varied with every answer he received. The views he taught as true in one year, he proclaimed as being unworthy of confidence in the next; and his students had to hold fast by his skirts, and to make rapid strides, to keep up with his seven-league steps. By the young and active minded, he was almost adored; but as they progressed in years, and lost the opportunities they once had for acquiring knowledge, they lagged behind their successors. It was ever the youngest students who came in for Hunter's newest views; the older ones got weary in changing perpetually. Tired of seeing, as they thought, the weathercock constantly veering, they determined they would not look at it; so they repo-ed upon the idea that it would continue to point as they last had seen it. In other words, the first admirers of Hunter gave him at last the cold shoulder; and he was unpopular amongst his contemporaries, for the very reason that we respect him. He was ever for gaining more and more experience: his contemporaries were content with what they had. If we might take other examples from history, we would

point to the frequency with which despotic misrule is hailed as a boon after a series of political disasters arising from visionary theories. Nothing more than the wild views of the republicans of France paved the way for the accession of the first and third Napoleons; and nothing in theology has recently given so great a number of adherents to the Church of Rome, as the desire to find in its despotic sway a rest from the conflicting teachings of the various parties into which Protestantism has been divided. There is a time in the existence of every one when controversy loses all its charms, even though it promises the acquisition of truth; but this rarely happens until the period when the grasshopper is a burden, and all desire fails.

Leaving, however, these generalities, let us examine a little closer into the popular fallacies which hover round the proverbs respecting experience. The word simply means a knowledge obtained by personal observation and repeated experiments or trials. But, in common parlance, it has a far wider signification: it implies not only the means of learning, but the learning itself; and an individual who has had abundance of opportunities for acquiring knowledge is supposed absolutely to possess it. Thus age and experience are words commonly associated together; and the union of grey hairs and wisdom has long been held sacred. There can be no doubt that experience is not one of the attributes of extreme youth; a boy can have little knowledge of the ways of the world, and of the instability of human things: we allow at once that he must gain his wisdom by experience. But here we stop, and ask, Does he continue to gain experience after a certain period? Does his stock of knowledge unceasingly increase from the cradle to the grave? Is old age necessarily more experienced than middle life? and middle life than mature youth? Is the man who sees his thousands of cases annually, and who spends almost all his waking hours at the bedside, more learned, more practical, more trustworthy, more experienced, than the man whose time is divided between his patients and his library? Do we owe the advances which have been made in medicine to the former, or to the latter? In answering these questions, the old story of "Eyes and No Eyes" starts to our recollection; and a host of other memories crowd upon us to show that it is possible to live in the midst of interesting phenomena, and yet to be unconscious of them all. The shepherd knows little of the nature of the mountains over which he leads his flock, or of the movement of those stars to which his eyes are so frequently turned up. The seaman knows little of the course of storms, or of the countless fish that are daily swimming near him. But, as a general rule, the world believes that the mariner must know more of the weather than a simple landsman; and that the man who sees with his own eyes must necessarily know more than he who sees chiefly through those of others. Thus we have individuals pinning their faith upon the bone-setter and quack, if they have large practice, to the exclusion of the educated surgeon who has more limited means of observation. Monthly nurses, midwives, and old hospital sisters, whose time is spent in the closest intimacy with sickness and death, are believed by the multitude to know more than the physician, whose relations to his patients are more restricted. Not long ago, there was a celebrated woman in the midland counties, who went by the name of "the wise woman of Wing". Her practice was so enormous that a railway company made a station for the convenience of her patients, and her votaries had to wait for whole days ere they could obtain an interview; yet all the means she had of obtaining knowledge was having been a nurse (or servant of some kind) in a hospital; and the chief, if not the sole medicine, she used, was some preparation of quinine, which was generally made in a large brewing-tub.* While we smile at such credulity, we may endeavour to extract a moral from it, and to distinguish between that familiarity with broad outward appearances which passive experience gives, and that true knowledge which is obtained by reflection and the collating one fact with another. An individual who has the former alone can never leave the beaten track, while one possessing the latter can adapt himself to any circumstances, and bring out new truths.

Experience, then, we conclude, can only give wisdom when it is associated with a well stored mind, steady powers of observation, habits of continued thought, and a power of calm judgment. It demands memory, discrimination, elasticity of mind, and self-reliance. Without these powers, experience is barren; and age is no wiser than youth. It was my fortune

* For an amusing account of this interesting lady, see a letter by Dr. B. W. Richardson in the ASSOCIATION MEDICAL JOURNAL for April 8th, 1853.

once to know a surgeon whose boast it was that he never read any book on medicine, as he was determined to trust to experience alone for an increase of his knowledge. He had a large practice, and ordered vast quantities of his favourite pills and mixtures; but he descended to the grave with the notions of his youth; for, though progressing in years, he stood still in medical science.

What this man did from deliberate choice, others do from paramount necessity. After they once leave the medical schools, they become so deeply immersed in a laborious practice, that they have not leisure to read, and are generally too fully occupied to think upon anything but the salient points of the cases under treatment. The mind, moulded in the form given to it by its teachers, and modified by its own individuality, remains in the form it originally assumed. It has neither the energy nor the knowledge necessary for remodelling its views; and the experience of such men is worth no more, than that of a railway guard confined for all his life to the same eternal round of duty on a short line. In conversation on this subject with a country medical friend in very large practice, he bitterly complained of the dilemma into which practitioners were thus thrown, and contrasted his own position with those of his town brethren. The latter, he remarked, were daily meeting their contemporaries, each of whom added to each other's stock of current knowledge; while those who laboured in a country district, could only get an increase of light from some occasional consultation.

But if experience alone, apart from reading and thought, is insufficient to increase our real knowledge, are we justified in running into the opposite extreme, and eulogizing reading and closet speculation at the expense of personal individual observation? Certainly not; for mere erudition is, we believe, as useless as mere experience. It is in the judicious combination of these two that true progress can alone be made. There must be the power to interrogate nature, as well as the wish to do so. There must be a question put, and an answer noted—not simply guessed at. A man who is contented with mere erudition, who is satisfied when he *knows* what is known by others, is in the same position as one who is content to see what others have seen, and no more. It is, as a recent author observes, the man who is intensely moved to know and see for himself, who extends the circle of what is known to be seen. As long as medical men pinned their faith on Hippocrates there was no growth in learning; no wisdom was gained by experience. The motto of each physician was "*Experientia Hippocratem docuit*"—not "*Experientia docet me*;" and so long as we pin our faith upon any writer, no matter how learned he may have been, so long are we doing our utmost to prevent the progress of knowledge.

Let us take some examples in which a most prolonged and varied experience has failed in giving us real wisdom or reliable information.

There are few diseases more generally known than hysteria. It has been before the notice of physicians for ages—the views taken of its true nature and of the best plan of treating it have been infinite. At one time, its cause was supposed to be in the uterus and its appendages; now it was held that women were hysterical simply because they had wombs; now because those wombs were ulcerated or otherwise diseased; now because the womb was a generative organ—and generative organs implied the presence of sexual passions—and sexual passions ungratified must produce hysteria; now the theory was that the womb was destined to undergo certain changes; and if its destiny were not fulfilled, the nervous system would undergo some changes, and play unusual pranks; now it was held that hysteria implied a desire for sympathy; and now that it implied a desire for marriage. We can now readily understand how such theories were built. We know that the disease is most common amongst females; that it is often connected with disorders of menstruation; that a touch on a uterine ulcer has produced an hysterical paroxysm; and that many an hysterical virgin makes a comparatively healthy wife. But we know, at the same time, that there were many other conditions present which were never taken into consideration. We doubt, however, whether these conditions would have been thought of, unless the treatment based upon the older views had become offensive to modern notions. The older theories led the physician to prescribe nasty medicine, castigation, purgation, leeches to the vulva, hip-baths, pediluvia, and the like. These failing, marriage was recommended with such delicate pertinacity that the world began to consider hysteria to be synonymous with *salaciousness*; and a fit of hysterics was supposed to be the analogue of the leaping of one cow

upon its fellow. Others, taking another view of the complaint, armed themselves with the speculum. By this they considered they penetrated to the citadel of the disease—the stronghold of the almost invincible Proteus. With this instrument (if we take Dr. Lee's statement as correct) the sexual passion was duly encouraged, and any disease of the womb was cured. But success did not follow even this clever plan. Others attacked the disease with steady determination; now, with the mystics, they made an infinity of Mesmeric passes, magnetic sprinklings, or electric inductions; now they used strange charms of cabalistic origin; now they called to their aid the whole medical armoury of blisters, issues, moxas, cauteries, mercury, and the like; and now, with Fabian tactics, they did nothing but "put on time" with globules or bread-pills, hoping that the disease would at last disappear like the snows of winter.

So far experience has hitherto conducted us; but who is contented with the guide? Has experience, then, been wrong? Certainly not; for if she had been asked, she would have shown that there was little if any truth in the assumptions of her so called disciples. She would have shown that hysteria exists in males, who have no uteri; that it is frequently unattended with any signs of uterine disease; that it is rare in cases of cancer or other genuine diseases of the womb; and, as regards marriage, she would have shown that the complaint was as common amongst wives and kept mistresses as amongst virgins; that common prostitution is no bar to its presence, and complete virginity no lure for its accession. Statistics* recently collected have demonstrated that good has followed marriage in only twenty-nine cases out of three hundred; and that in four hundred cases, only one hundred and thirty had any appreciable uterine disease.

But the errors of our predecessors were not confined to the causes, nature and treatment of hysteria; they were equally at sea respecting those symptoms which they considered to be characteristic of the disease. Their reasoning was something like this, hysteria is a mysterious complaint, and common amongst young women; therefore every mysterious or unaccountable symptom in a young female is to be considered as hysterical. Of course, with such a pathology, experience was almost useless. With all the experience of the past, can any of us say that we thoroughly understand the disease, and are never baffled in its treatment? Can we even say whether it is a cerebral or an uterine malady—a disease of the body or an affection of the mind?

Let us next ask what experience has done for us in pneumonia. Has it enabled us to discriminate perfectly between acute phthisical deposition or strumous engorgement, and genuine inflammation? Has it yet taught us the natural history of the disease in town and country? Has it shown us why pneumonia selects the lower lobes for its seat, and phthisis the upper ones? Has it told us whether pneumonia is as definite in its course as is small-pox, erysipelas of the head, measles, or varicella? Has it enlightened us as to the best method of treatment? So far from having told us that there is one proper treatment, experience shows that it gets well under all plans, and in such proportions that it is morally impossible to draw any definite conclusions as to which is better than another. Thus, in a recent and very learned article in the *British and Foreign Medico-Chirurgical Review*, we have no fewer than thirteen thousand cases collected which have been treated by profuse bleeding, mild bleeding, and no bleeding at all. On the whole, the numbers are in favour of the old method; yet, when we dissect the returns, we are unable to give the palm branch to anyone. Of those who bleed largely the proportions of deaths vary from one in two to one in sixty-four; of those who bleed moderately, the proportions vary from one in three to one in twenty-seven; while of those who do not bleed, the numbers vary from one in two and a half to one in ninety and even to none at all. With such results, who can say that experience has made us wise in pneumonia? Who can affirm that he whom experience has taught to swear by venesection is inferior to him whom experience has taught to swear by expectancy? With the facts before us all such assertions must be valueless.

Let us take our next remark from the domain of surgery. What more common than strumous abscesses about the neck, or other exposed parts of the body? Surgeons for many years past have had abundant opportunities for studying the best methods of opening them, so as to leave the smallest mark behind; yet with all our knowledge we still see people seamed

* Briquet in *L'Union Médicale*. Quoted in *Medical Times and Gazette*, October 31st, 1857; and in *Rankin's Abstract*, vol. xxvi, p. 243.

with scars, whose origin none can ignore. As yet, the books have not got beyond the recommendation to open such places with the smallest possible lancet. I know of one person only—and sorry I am that I am unable to record his name—who has proposed to open the abscesses through the centre of one or more leech-bites, thus ensuring no scar beyond the well known one produced by these useful creatures. Where has the acumen of our leading surgeons been reposing, while their experience has been unable to suggest a plan originated by a parish doctor?

Once again, let us turn to medicine, and inquire what experience has taught us with respect to fever. Starting with the notion that fever was a proof of increased action, the first line of rails along which the doctors ran was that of starving the disease, or knocking it down with sledge-hammer blows. After having exhausted all their efforts to reach the goal with credit, they changed their plan, and let things take their course. Then they endeavoured to lead out, through some of the natural emunctories of the body, the poison upon which they considered the disease to depend. By and by, again, they thought they saw in fever a mark of too rapid combustion of the frame, too energetic an expenditure of power; and they concluded that the extraordinary waste of tissue must be met by corresponding profuseness of supply. Who can say that here we have learned wisdom by experience, or that we have done much more than clear away the ground for future observers?

Pass we on next to the subject of infantile convulsions. How common the complaint! how vast the amount of experience on the subject already accumulated! Yet all this experience was for a long period absolutely useless from being misdirected. False theory led to false practice; and false practice to false deductions. Young children were the most common victims to the disease; the most of them were cutting their teeth; lancing the gums sometimes relieved the convulsions; therefore it was argued, that the teeth were the most common causes of convulsions, and lancing the gums the most important means of cure. This being the pathology, the treatment was adapted thereto, and experience was developed only in our estimation of mortality, the effects of scarifying the gums, the time or duration of attack, and the most *unfavourable* methods of treatment. At last, some one more sagacious than his fellows saw that the previous experience was one-sided. He argued that all children had teeth; but that few comparatively had convulsions; and that of those who had convulsions, comparatively few were cured by lancing the gums alone. No sooner was attention aroused to these points, than experience suggested a variety of other facts which had long been ignored; and, for the first time, the substance was followed in place of the shadow, and the treatment therefore was rational; and the results were no longer as indefinite as deplorable.

If we turn to the action of remedies we meet equally with the influence of false or insufficient experience. Colchicum, says the practical man, is unquestionably good for gout. The *dictum* is at once adopted as a fundamental truth; and all that experience then pretends to do, is to ascertain in what manner the drug can be most satisfactorily exhibited. Passing by the facts that in many if not in the majority of cases of chronic gout, the drug is of no service whatever, and that many victims die from over doses, the physician attempts to extend his knowledge from the original *dictum*. Experience says, colchicum does good in gout; in gout, experience says, there is an excess of lithic acid in the blood, or in the urine, or in both. Experience says, colchicum diminishes in a notable manner the quantity of lithates in the urine. Therefore, says the inductive reasoner, gout depends upon lithic acid; and colchicum cures it by diminishing that ingredient. Following out this argument, the physician bethinks himself that there is an excess of lithic acid and of lithates in the urine in rheumatism, and concludes that colchicum will do good in that disease too. He gives it with unswerving faith; experience tells him that his patients get well, and he enlarges his inductive reasoning to believe that gout and rheumatism are more or less allied—if not identical. This process of thought seems so clear, that no farther consideration is given to the subject; and for years colchicum is supposed to be the chief reliable drug in these two complaints. By and by, however, it occurs to some more vigorous observer that experience has shown us that lithic acid abounds in the urine after an excess of animal food, after great exertion; and that lithates in urine are abundant in diseases of the liver, in influenza, and in every form of indigestion. In these cases he sees no

particular results from the administration of colchicum; and he then, as Dr. Garrod has done, puts to the test the time-hallowed notion that colchicum really does diminish the lithic acid in gouty patients, and finds it totally devoid of truth. Dr. Garrod in a recent paper, after a most painstaking series of experiments, has demonstrated—1st, that there is not habitually any unusual quantity of lithic acid or of lithates in gouty subjects; *i.e.*, they have no more than is quite compatible with a perfectly healthy state; 2nd, that colchicum has no marked effect in diminishing the quantity when in excess; and consequently, that after all our so called experience in the use of this drug, we must begin our observations upon it almost *de novo* both in gout and rheumatism.

Let us borrow our next illustration from a recent article in *Blackwood's Magazine*, upon the circulation of the blood. From the earliest ages of medicine down to the time of Harvey, the popular belief was that the veins carried blood to the tissues. "It was thought that the arteries had their origin in the heart; the veins in the liver; and from the liver the veins carried the blood to every part. A single fact familiar to every surgeon and to every barber who ever opened a vein ought to have revealed the error, since, every time a ligature was applied the operator must have seen that the vein swelled below the ligature not above it; from which the deduction seems obvious that the blood in the vein flowed to the heart and not from it. But here, as in so many other cases," continues the author, "familiar facts were not observed—they were *seen* but not interpreted. Cæsalpinus was the first to notice this and guess the truth; a few years later Fabricius, under whom Harvey studied, discovered the valves in the veins; which, preventing any flow from the heart and only admitting of a current setting in the opposite direction, ought to have suggested to their discoverer the true interpretation of their use. But forty-five years elapsed before any one arose who had the sagacity to perceive the real value of this anatomical structure in respect to the blood currents—and when he promulgated his theory, he was, as we all know, most vehemently opposed, though for a short time only."

What has experience taught us in reference to the circulation of the blood and its disorders. For numbers of years, the heart has been considered the sole cause of the circulation of the blood; and whether the current has been too weak or too strong, it has unhesitatingly been put down to some change or other in the condition of that organ. If fever is present, venesection is resorted to, or antimony administered to diminish the force of the heart; and if, on the contrary, there is frigidity and pallor, stimulants are given to increase its power. Experience, we say, has taught us this; and with that we rest content. But is that all that we ought to have learned? Is the heart the sole cause of the circulation? and are disorders of the circulation due to the heart alone? Have the arteries and the capillaries no power? The late Dr. Dunn, of Scarborough, told me that on two occasions he saw the arteries in the umbilical cord pulsating for some minutes after the placenta had been expelled from the body; and, fortunately for him, he was able to fetch Dr. Kennedy (I think) as a witness. Mr. Wall, the House-Surgeon of the Northern Hospital, informed me that on one occasion he found the pulse at the wrist considerably faster than that in the carotid, and that this again was different from the pulsations of the iliac, and all different from the pulsations of the heart. Experience tells us that the circulation of blood begins in the embryo before the heart takes it up; that it will go on sometimes for many hours in the frog's tongue when it is separated from the body. The author in *Blackwood*, before quoted, has recently called attention to similar facts. He shows that circulation will go on in some of the reptile class for a long time after the heart has been removed from the body; that some so called monsters have been born without hearts, whose blood, it is to be inferred, circulated through their bodies and the placenta during their sojourn in the womb. Experience has shown us that circulation will continue apparently as usual, even though a degeneration of the heart has gone on to such an extent that scarcely a single muscular fibre can be detected after death. It tells us that the circulation through the liver is to a great extent independent of the heart, as there is the whole capillary net-work of the intestines intervening between the heart and the vena portæ. The same author states that, in fish, the heart only drives the blood to the gills, whence it flows into their aorta, whose circulation is far more rapid than that in the capillaries from which the blood came. Dr. Dowler, he states, has shown, in speaking of yellow fever, that the veins become frequently so distended with blood within a few minutes after the cessation of

the heart's action, that, when they are opened, the blood flows in a good stream, being sometimes projected to the distance of a foot or more. Experience also tells us that the arteries are always empty after death. Experience with the microscope has long told us that, from some cause or other, the motion of the blood is arrested in many capillaries, while the current in others is equable and steady; and Dr. G. Johnson has shown that, when this retardation has existed for some time in the kidney, the arteries of that organ are hypertrophied. With all this teaching, must we not conclude that there is a motive power in the circulating system entirely independent of the heart? and, as we can have ocular demonstration of the retarding power of the capillary vessels,* we need not hesitate in believing that in them resides a large, if not the largest, portion of this circulating force. In aid of this belief, the microscopist can bring in a host of analogical evidence. He is familiar with the circulation of the sap in the vessels of plants; with the march of the globules of chlorophyll round the cells of the *valisneria*; with the regular march of the nucleus, etc., round the inside of the hair of the *marchantia*; with the prolonged circuit taken by the plasma round the cells of the *chara*. He sees the sporules of *conferve* enjoying the power of locomotion; and hosts of cilia moving perpetually, each of which are infinitely smaller than the finest muscular fibre. And if it be conceded, as unquestionably it must, that the capillary system has a motive and retarding power peculiar to itself, and entirely independent of the heart, how greatly must we modify our views of inflammations and fevers; and how comparatively useless is the experience accumulated without reference to this power!

Take another illustration from the obstetric branch of our art. From the earliest ages of the world women have borne children, and we see proofs that thousands of years ago midwifery was followed as a profession much the same as it is to-day; yet, with all the accumulated experience of centuries, no real knowledge appears to have been possessed of the natural position of the child's head as it was coming through the pelvis, until the advent of Nægelé, barely fifty years ago. The great William Hunter was here at fault, and the well known Smellie was no better. Why? Not because they lacked opportunity; not because experience was wanting; not because they were mere closet philosophers; but simply because they started with a fixed idea, and never cared to inquire into its truth. They believed the assertion drilled into their young ears as implicitly as any child believes in a mother's love. No doubt ever came into their minds; and, without doubts, there is no inquiry.

Ever since midwifery has been practised, the fearful nature of placenta previa must have been known. Yet it appears to have been reserved to our own days for an extended and enlightened experience to teach the best method in which this accident is to be met. The same may be said of presentation of the umbilical cord, and the manner in which safety may be almost ensured both to mother and child in cases of contracted pelvis.

[To be continued.]

TREATMENT OF DIPHTHERIA.

By W. A. BRYDEN, M.D., Mayfield, Sussex.

HAVING been written to by gentlemen from different parts of the kingdom, with reference to a paper which I published in the BRITISH MEDICAL JOURNAL of November 21st, 1857, perhaps I may be permitted to answer them through the medium of the same JOURNAL.

First, as to the cases in which I think the guaiacum to be most useful: I use it in all cases, whether of "diphtheria", properly so called, or of what in this neighbourhood we have styled "cynanche maligna". I combine it with the chloride of potash, and use a gargle of chlorine at the same time.

In cynanche tonsillaris, I order a warm bran poultice, sprinkled with vinegar, to be applied externally, and give the guaiacum in ten-grain doses, with three or four grains of nitrate of potash, every three or four hours.

The following prescription is one which I have frequently used in cynanche maligna and diphtheria, the dose being for an adult:—

R Pulveris guaiaci 3ij; sacchari purificati 3j; pulveris acaciæ 3ss; aquæ 3vj. Misce, et adde potassæ chloratis 3ss. Fiat mistura ejus sumantur cochlearia ij magna 2dâ quâque horâ.

Instead of the application of the solid nitrate of silver, which I think often does harm, I always use the following gargle, or one similar to it:—

R Solutionis sodæ chlorinatæ 3j; sacchari purificati 3iss; aquæ 3vj. M. Fiat gargarisma sæpe utendum.

I see that other gentlemen, writing since my paper was published, have been recommending both the chloride of potassa and the chlorine in the treatment of diphtheria. Have any of them tried these in combination with the powdered guaiacum? and, if so, with what result?

CASE OF INTESTINAL OBSTRUCTION.

Under the care of S. W. J. MERRIMAN, M.D.,
and T. HOLMES, Esq., F.R.C.S.

[Reported by T. HOLMES, Esq.]

ON August 27th, 1858, I was requested by Dr. Merriman to see a woman labouring under protracted constipation. The patient, whose name was Louisa Clack, aged 34, was a person of imperfect health, having a weak digestion; and had been under Dr. Merriman's care, at frequent intervals, for a good many years, for dyspeptic ailments, which required a more or less prolonged attention, as she very slowly regained that amount of health which with her constituted being "well". Latterly she had suffered from irregularity of the bowels, and had been liable to diarrhœa and colicky pains. On August 16th, the bowels had acted naturally, though scantily. She was then just convalescent from a prolonged attack of diarrhœa, lasting more or less since the beginning of June; and went into the country. On arriving at her destination, she was seized suddenly with great pain in the abdomen, and the belly swelled up rapidly to a great size. The bowels had not acted since this time, except once under the influence of enemata, when a small amount of fecal matter had passed with the injection. Various purgative medicines had been given, but without effect. She had vomited for the first time to-day, only a small quantity of grumous fluid, apparently the contents of the stomach or duodenum. The tongue was very red and dry; the countenance distressed; the pulse weak and rapid. The belly was uniformly, but not excessively, distended (she was very fat); and there was no great tympanitis. She had complained principally of pain in the right iliac region, but this had been replaced latterly by pain in the neighbourhood of the umbilicus. There was nothing to be made out by palpation of the abdomen, except that, in the ileo-cæcal region, a large coil of intestine could be felt distinctly when any attack of tormina occurred. These attacks were rather frequent. The coil of distended intestine ran, as well as could be made out, nearly transversely across the abdomen, and therefore much below the situation of the transverse colon. There was no obstruction to the passage of a tube into the rectum, but it was arrested at a distance of about eight inches from the anus, apparently by a bend of the gut, and not a constriction, as any quantity of water could be passed without resistance.

From the readiness with which a large quantity of injection was passed and retained, as well as from the suddenness and completeness of the obstruction, and the pain being first complained of in the region of the ileo-cæcal valve, it was thought most probable that the obstruction was at or near that part of the intestine.

It was decided to try the effect of a powerful purgative; and, with this view, three pills, each containing half a minim of croton oil and five grains of compound extract of colocynth, were given during that night. They produced no effect, beyond a slight temporary aggravation of the colicky pain. Next day, she was in much the same condition. One grain of opium (in Dover's powder, or compound soap pill) was given every four hours. This gave her some relief; and on the following day (August 29th), her face looked certainly more calm. In other respects, she was much the same, except that the pain was more decidedly referred to the ileo-cæcal region, and that it was more easy to feel the coil of intestine above referred to. Chloroform was administered (which she took with wonderful rapidity and ease, becoming quietly insensible after very few inhalations), and a very large quantity (considerably above

* In thus speaking of the capillary vessels, we wish to include the parts or tissues through which they run, and not to attribute the power entirely to the thin elastic capillary cylinder.