

We regret to see, from the *Daily Picayune* (New Orleans), that the State Board of Health of Louisiana and the National Board of Health have disagreed about a question of quarantine. We trust that the disagreement arises rather from a misapprehension of facts than from any dissent from the general policy of the National Board.

It is proposed to give the inhabitants of Painswick, near Stroud, a free water-supply, using for the purpose of procuring it a bequest of £5000 left to the town by Mr. F. Gyde.

THE SERVICES.

THE ROYAL MILITARY ACADEMY, WOOLWICH.

Surgeon-Major G. J. H. Evatt, M.D., has been appointed to succeed Surgeon-Major Roberts as Medical Officer to the Royal Military Academy, Woolwich. Dr. Evatt has recently arrived from Afghanistan, where he had been in charge of one of the field hospitals with the Cabul Field Force for the last two years.

Brigade-Surgeon J. Ekin, M.D., is appointed to the administrative charge of the Allahabad Division, with the officiating rank of Deputy Surgeon-General.

Brigade-Surgeon J. Hanbury is appointed to the Rawal Pindi Division, with the officiating rank of Deputy Surgeon-General, *vice* Deputy Surgeon-General A. Smith, C.B., on sick leave.

Sickness has considerably increased in the Candahar Force since the inactivity and reaction after the siege and late battle with Ayoub Khan. By the last advices, the European Army had nine per cent. in hospital, and the native troops eleven. The coming cold weather will, we trust, considerably improve the health of the garrison.

MILITIA MEDICAL DEPARTMENT.—Surgeon-Major William Batley, Royal Sussex Militia, resigns his commission; also is permitted to retain his rank, and to continue to wear his uniform on retirement.

ADMIRALTY.—Staff-Surgeon W. B. Fletcher has been appointed to Devonport Dockyard; Staff-Surgeon J. L. Sweetman to the *Fawn*; Staff-Surgeon C. J. Fennel to the *Téméraire*, when recommissioned; Staff-Surgeon W. P. L. Boyle to the *Dotterel*, when recommissioned; Staff-Surgeon Valentine Duke to the *Champion*, when recommissioned; Surgeon James Porter to the *Orontes*; Surgeon John Tyndall to the Haulbowline Hospital; Surgeon H. M. Ellis to the Royal Marine Artillery Division; Surgeon James Simms to the *Excellent*; Surgeon H. E. F. Cross to the *Téméraire*.

Correspondence.

"Audi alteram partem."

ON MEDICAL EDUCATION.

To the Editor of THE LANCET.

SIR,—The great question of medical education, at all times an urgent one, has been of late pressed forward with more vehemence than ever. And no wonder. For after all that has been said and done, a solution of the difficulty which can be, in any sense, called satisfactory seems as far off now as when many years ago the conjoint scheme was first proposed. I would suggest that our failure hitherto has been due to the fact that we have dealt with the evil in the wrong way. We have from the first been attempting to prescribe for the symptoms without previously ascertaining the cause of the mischief. Witness the lengthened discussions of the subject, and especially what was said in some of the sections at the recent meeting of the British Medical Association at Cambridge. Speak to a teacher of medicine, and he tells you how inadequately the study of medicine is carried on. Speak to a teacher of surgery, and he tells you the study of surgery is strangely neglected. The obstetric physician bewails the indifference shown to the study of obstetric medicine. The psychologist is shocked that so little heed is given to his side. Then all the teachers

of natural science with one voice declare that it is idle to expect of students, in the circumstances in which they are at present placed, anything like a genuine knowledge of anatomy, physiology, or chemistry. What is to be done? Reduce in some degree the amount of knowledge required of some of the subjects, so that more attention may be given to others? But only let some one propose to remove from the curriculum of study any single subject, or to reduce the proportion in which it challenges the attention of the student, and at once an army of champions arises not only with irresistible arguments against obliteration, or even reduction, but with many very forcible ones to show why the study of that particular subject should be extended. There appears to be one point only on which all teachers are agreed; eager criticism, always more or less unfavourable, of examinations and examiners, while examiners, in their turn, deplore the shortcoming of teachers and the way in which they waste the time of the student. The student, himself the victim, of course, heartily agrees with the criticism on both sides. Now, what does all this mean? Surely there must be something wrong somewhere. I, for one, think there is something wrong everywhere, and that it is this—*want of time*. The student has not time enough for the work which ought to be done. Only think for a few moments of what is required of a student during the period at which it is arranged he shall be at a hospital. Think of the few months allowed for anatomy and physiology, for medicine and surgery. Is it practicable for average human intelligence, or even for extraordinary ability, thus in any way to do justice to the several subjects of study? By degrees the evil has arisen, and so it has come to be endured. Surely, if we were placed at once face to face with the existing order of things, we should think it too absurd for consideration. Let us try to contrast the demand made upon a student at the present day with what it was a quarter or half a century or so since, and compare this with the additional amount of time at a hospital given to him within the same period. Surely, then, one may begin to understand how this supreme difficulty has arisen, and to anticipate, in the present state of affairs, its inevitable increase. Obviously, therefore, the first step forward to take in the way of education is to lengthen the period of the students' work at the hospital. I should say at once that, in my opinion, seven years is not an hour too long. But how impracticable! Why? I suppose chiefly or solely on account of the additional expense. Well, I cannot now, in this letter, enter into this objection further than to declare that it seems to me to have little magnitude in proportion to the evil which exists, and for which I believe it to be the sole remedy. I cannot help setting forth this view, although, of course, I have no expectation of its acceptance, and, failing its adoption, I must say, after some experience in the matter, that rather than consent to the existing state of things I would reduce within far narrower limits the area of studies, insisting, however, at the same time, that what was actually required should be thoroughly learnt. For I am convinced that the system of cramming, which now passes current for knowledge, is not only, in chief part, useless in practice for any technical purpose, but that it is positively mischievous, in no slight degree demoralising, to the student. In many it is altogether, and in all it is in some degree, opposed to honest study, to real genuine knowledge, to thoroughness of purpose, and devotion to truth. For it is, in its very nature, essentially false.

I am, Sir, yours, &c.,

Nov. 30th, 1886.

WM. S. SAVORY.

ON WATCHING THE PULSE DURING THE ADMINISTRATION OF CHLOROFORM.

To the Editor of THE LANCET.

SIR,—In reading the article on the Administration of Anæsthetics by Dr. Saundby in THE LANCET of Nov. 20th, I was surprised to find that he says with reference to the administration of chloroform, "The pulse may be disregarded, as it gives no timely warning of approaching danger." As this is in direct opposition to my own experience, I shall be glad if you will permit me to give my reasons for saying that the careful watching of the pulse during the inhalation of chloroform is of the utmost importance.

During the present year I have given anæsthetics at

St. Bartholomew's Hospital 1420 times, and of these chloroform 572 times; and in three of these cases I have had reason to be thankful that I carefully watched the pulse during the administration. I believe that had I not done so I should have lost the patients.

Case No. 7673 was a woman, aged forty, under the care of Mr. Power. The operation was iridectomy of the left eye and abscission of the right. The patient took chloroform well until the end of the operation, when the pulse failed suddenly, the respiration continuing. I gave directions for the feet to be raised (Nélaton's method), and I had drawn out the tongue and was ready to commence artificial respiration when the breathing, as I had anticipated, failed also. After three or four thorough compressions of the chest the patient gasped, but did not breathe properly for some minutes, during which time artificial respiration was maintained.

Case No. 8638 was a woman, aged seventy-six, bronchitic and asthmatic. Removal of large tumour of the breast, under the care of Mr. Thos. Smith. During the operation the pulse became weak and irregular, and then stopped, the respiration continuing. I treated her in the same way as the case above. The pulse returned and gradually improved from the time the legs were raised. The operation was completed without interruption. The respiration did not entirely cease.

Case No. 8702 was a man, aged thirty-four. The operation was for the removal of a small tumour from the scalp, and was performed by Mr. Lockwood, house-surgeon. During the operation the pulse became weak and irregular, and then stopped. Knowing what to expect, the same treatment was adopted. Respiration also now stopped, and artificial respiration was immediately performed while the patient was supported by the legs. A minute and a half elapsed before the respiration returned.

Now, in each of these cases I maintain that the pulse gave timely warning of approaching danger. No looker-on, how carefully soever he may have watched the respiration, would have suspected what was about to happen before I had given directions for the patient's legs to be raised, and had in my hand a pair of dressing-forceps ready to draw out the tongue.

It may be argued that to have three cases of the kind quoted in 600 administrations is a very unusual occurrence. And with this I entirely agree. Out of the total number of cases (nearly 9000) in which I have administered anæsthetics of one sort or another, I do not think more than half a dozen cases of this kind have occurred. To have three cases, therefore, in a year, represents merely the curious manner in which exceptional cases occur together; the last two happened within a few days of each other. It may be said, too, that in point of time a few seconds only were gained in each of these cases. But if by watching the pulse a few seconds can be gained in the application of restorative means to one case in *ten thousand*, it is in my mind a sufficient reason for most carefully watching the pulse in each and every case.

I am, Sir, yours obediently,

JOSEPH MILLS,

Administrator of Anæsthetics to St. Bartholomew's Hospital.

Nov. 27th, 1880.

M. PASTEUR'S EXPERIMENTS WITH CHICKEN-CHOLERA.

To the Editor of THE LANCET.

SIR,—The researches of M. Pasteur, published in your columns on Nov. 6th, must claim the careful consideration of all who are interested in the present state of preventive medicine and sanitary science—and who are not? Prof. Huxley had expressed an opinion that these experiments would be the means of placing vaccination upon a scientific basis, but this opinion does not seem to be justified.

M. Pasteur's chief points are—that chicken-cholera is a virulent disease, rarely recurrent, due to a microscopic parasite, capable of cultivation, and also of *attenuation* outside the body; the attenuated virus, when retro-inoculated, producing a mild disease, and securing from subsequent attack. A reference to vaccination in the paper suggests an analogy between it and the attenuated virus, but M. Pasteur is too scientific a man to insist this relation. "The difference

is great," he says, "in some respects between the two classes of facts, and it may be well to remark that as regards our knowledge and our deductions the advantage is with the study of fowl's cholera; the relations between variola and vaccine are still a matter of controversy." The experiences of the Lyons commission, conducted by M. Chauveau, were, no doubt, in M. Pasteur's mind when he hesitated to draw an analogy between small-pox and vaccinia and chicken-cholera and its attenuated derivative; this commission and its admirable report, entitled "*Vaccine et Variole, nouvelle étude expérimentale sur la question de l'identité de ces deux affections*," have been too much ignored, at least in this country. After careful and patient investigation the commissioners reported that, "Notwithstanding the apparent resemblances which, both in animals and man, exist between variola and vaccinia, these two diseases are none the less perfectly independent, and cannot be transformed the one into the other." As Dr. Cameron has tersely put it, "You can no more make small-pox into cow-pock than by stunting an oak tree you can make it a gooseberry bush."

But to return to M. Pasteur's paper, and to the most important question raised in it, By what means is the cholera virus attenuated and destroyed? The answer is clear, logical, and conclusive: "It is the oxygen of the air which weakens or extinguishes the virulence." Tubes of virus hermetically sealed retained their virulence for months; tubes of virus exposed to pure air gradually and progressively, with almost mathematical precision, lost their virulence, and became innocuous. The microscopic parasite was dead! Here was the presence of the cause (the oxygen) followed by the presence of the effect (the death of the parasite, and extinction of the virulence of the poison), the absence of the cause followed by the absence of the effect; and the greater the amount of the cause the greater was the effect. What more logical? M. Pasteur wisely asks, "May we not here be in the possession of a principle? It may be hoped the inherent action of atmospheric oxygen, a natural force which is everywhere present, will be found efficacious in other virus. May we not presume henceforth that it is to this influence we may attribute the limitation of great epidemics?" Without accepting unreservedly this plausible hypothesis, it is curious to see how readily it offers an explanation of many scattered facts with which we have become acquainted—e.g., the efficacy of isolation and the limitability of infection, the utility of oxidising disinfectants, the salubrity of the country and the morbidity of the town, the success of the cool or open-air treatment of certain diseases, the decline of zymotic disease before the progress of sanitation, and many others. The theory harmonises these facts, and supplies a reason for what was before empirical only, though none the less true.

M. Pasteur's conclusions receive additional support from experiments made by Professor Thiersch and Dr. Burdon Sanderson on mice with the poison of human cholera. It was found that the poison intensified up to the third day, and then attenuated under exposure to air or cold.

What, then, are the inferences to be drawn from these facts? Do they warrant the inoculation of all persons with the attenuated viruses of all zymotic diseases with a view to prophylaxis? Do they not rather establish a stronger plea for extended sanitation, for the means of fighting diseases outside our bodies and not within them, for making our hygiene so good that prophylactics and antiseptics shall be superfluous?

I am, Sir, yours faithfully,

W. J. COLLINS, B.Sc., M.R.C.S.

St. Bartholomew's Hospital, Nov. 16th, 1880.

GUY'S HOSPITAL.

To the Editor of THE LANCET.

SIR,—I beg leave to inform your readers, if you will kindly print this, that a committee is formed in Southwark for the reform of the government of Guy's Hospital. The first step will be to increase the committee, and then immediately to hold a public meeting at the Bridge House Hotel. Mr. Alexander Hawkins, jun., member of the School Board, is the honorary secretary. I hope members of our profession, favourable to this movement, will send their names for this committee, directed to Mr. Hawkins, Vestry Hall, Borough-road, Southwark.

I am, Sir, your obedient servant,

W. RENDLE, F.R.C.S.