

fatal doses of chloral hydrate were required to antagonise fatal doses of strychnia, and that in three instances (Nos. 111, 112, and 113) the animals died apparently from the effects of the former. The convulsions, except in No. 108, were much reduced, both in force and frequency, by the action of the chloral hydrate.

GENERAL CONCLUSIONS REGARDING THE ANTAGONISM BETWEEN CHLORAL HYDRATE AND STRYCHNIA.

It appears to be established from these experiments :

1. That, after a fatal dose of strychnia, life may be saved by bringing the animal under the influence of chloral hydrate.

2. That chloral hydrate is more likely to save life after a fatal dose of strychnia than strychnia is to save life after a fatal dose of chloral hydrate.

3. That, after a dose of strychnia producing severe tetanic convulsions, these convulsions may be much reduced, both in force and frequency, by the use of chloral hydrate, and consequently much suffering saved.

4. That the extent of physiological antagonism between the two substances is so far limited, that (1) a very large fatal dose of strychnia may kill before the chloral hydrate has had time to act ; or (2) so large must the dose of chloral hydrate be to antagonise an excessive dose of strychnia, that there is danger of death from the effects of the chloral hydrate.

5. Chloral hydrate mitigates the effects of a fatal dose of strychnia by depressing the excess of reflex activity excited by that substance, while strychnia may mitigate the effects of a fatal dose of chloral hydrate by rousing the activity of the spinal cord ; but it does not appear capable of removing the coma produced by the action of chloral hydrate on the brain.

It is scarcely necessary to point out the vast importance of these results to practical medicine and the indications they afford, not only in cases of poisoning by strychnia, but in cases of tetanus and other spasmodic diseases, reflex and central.

At a meeting of the Medico-Chirurgical Society of Edinburgh, on April 6th, 1870, and at the annual meeting of the Association at Newcastle in 1870, I demonstrated experimentally with what certainty rabbits might be saved after receiving a fatal dose of strychnia, by the injection of a solution of chloral hydrate. Take two rabbits of about 3 lbs. weight ; inject under the skin of both 1-96th of a grain of strychnia, and then in one a solution of fifteen grains of chloral : in ten minutes the first one will leap into the air and fall down tetanic and dead ; the other will go to sleep, and in about two hours will wake up as if nothing were the matter. A more certain antidote does not exist.

[To be continued.]

INTRAVENOUS INJECTIONS.—The late discussions as to the harmlessness or danger of intravenous injections of chloral appear to have been anticipated by a physician named Godefroy, who practised in Orleans in the seventeenth century, and who has left a number of very interesting manuscripts. Dr. Champignon, of the same city, laid before its Société des Sciences some extracts from these documents, in which M. Godefroy discusses transfusion of blood, which he stigmatises as murderous, whilst he strongly approves of “medicated infusions into the basilar vein”. He quotes three experiments tried by Fabricius at the hospital at Dantzic. Two of these experiments were made on two women suffering from epilepsy and some other doubtful disease. They were not cured, but there were no unpleasant consequences. The substance injected is called by Godefroy, who writes in Latin, *medicamentum purgans*, and in the *Journal des Savants* (1660-1667) *liqueur purgative*.

The third incident is interesting. A soldier was affected with syphilis of old standing, with numerous exostoses. Three drachms of the *liqueur purgative* were injected into the vein of the arm. Great pain in the elbow and swelling of the arm followed ; the medicine acted at the end of four hours with five actions of the bowels ; the following days the same action went on. The exostoses diminished, and soon there were no traces of the lues venerea left. The *Journal des Savants* of January 23rd, 1668, relates these cases, but gives no details respecting this purgative liquor (*medicamentum purgans*). Might it not have been calomel, then the universal panacea recommended by Paracelsus ? Would the direct injection of calomel or any other mercurial preparation into the blood be more efficacious than ingestion by the stomach, as the partisans of hypodermic injections in syphilis have asserted ? However this may be, it is certain that surgeons in former times have made medicated injections into the veins without any untoward consequences, though with imperfect instruments ; and even seem to have obtained beneficial results from their use.

BRITISH MEDICAL ASSOCIATION : SUBSCRIPTIONS FOR 1874.

SUBSCRIPTIONS to the Association for 1874 became due on January 1st, Members of Branches are requested to pay the same to their respective Secretaries. Members of the Association not belonging to Branches, are requested to forward their remittances to Mr. FRANCIS FOWKE, General Secretary, 36, Great Queen Street, London, W.C.

BRITISH MEDICAL JOURNAL.

SATURDAY, OCTOBER 3RD, 1874.

THE MEDICAL ADDRESSES.

WE are no great admirers of Introductory Addresses. It may very much be doubted whether the toil and anguish of mind which many of them evidently cost their authors, and the suffering which some inflict upon their audience, are at all adequately repaid by the exceptional pleasure and profit to be derived from the occasionally successful orations which October 1st evokes. A dozen of these orations were produced, and several more will be called for during the next few weeks in England, Ireland, and Scotland. It is a very hard fate which compels each member of the medical staff in succession to become that for which nature has not always fitted him ; for an orator is almost as rarely born as a poet. Fortunately, however, custom allows the speakers on October 1st a considerable range of subjects ; fortunately also the audiences are thoroughly sympathetic, and well understand that the delivery of the oration is more often an accepted duty than a voluntary display ; and it must further be said that the range of medical study and the variety of culture which it encourages are such, that the medical orators accomplish their task with a higher average of success than could be fairly expected, and one which we think no other profession could well surpass. Most clergymen are, we believe, of opinion that, if fate had ordained their lot otherwise, they would have made very good doctors, and are disposed, under any circumstances, to a little poaching ; and, after reading through a series of October addresses, the idea always passes through our mind that medical orators would for the most part cut a very good figure in the pulpit.

Granting all the difficulties of the position, it must be admitted that the lecturers have, this year, acquitted themselves of their task with great ability. The address of Sir William Gull was looked forward to with much eagerness, not only by Guy's men but by the profession generally ; and—although the announcement made some weeks since that we should, by the courtesy of the orator, publish the address *in extenso*, and that we should supply proofs for abstract to our contemporaries, may have diminished the numbers who were willing to submit to the inconvenience of overcrowding, for the sake of hearing the spoken words of one who is a born orator as well as an eminent thinker and practitioner—the crowd that assembled could not be accommodated in the precincts of the hospital, and an adjournment was necessary to a more spacious hall. This spontaneous tribute paid to the school and its great physician, the hearers were gratified with an oration which, if it failed to excite their imagination or to dazzle their intelligence, must have left them impressed with some thoughts very pregnant with germs of progress. Sir William Gull, as a teacher, has long been viewed with feelings of admiration mixed with suspicion. Gifted with a fatal facility for epigram, which springs almost unbidden to his lips, and tutored by research as well perhaps as tempted by his native keenness of intellect into cultivated scepticism, he has been regarded askance by the great body of medical workers, who shrink from a negative usefulness in practice, and long to do their work as priests of a positive faith armed with formulae that have the highest sanctions.

The study which he has made fashionable, of the natural history of

disease, the shade thrown over the "active" school of therapeutists by his recent mint-water experiments, have been very unacceptable to many very earnest but not very thoughtful men. In this address, Sir William Gull has, in a form that will be very generally acceptable, and with a clearness and depth of thought that justify his reputation, defined the course and relations of the study of medicine. Medicine, studied in this direction and under these influences, with all the aids that collateral physical research can give, and under the reserves and with the limitations that exact science requires, is a study worthy of the noblest intellects, and promising fruit that may satisfy the highest ambitions, and will surely deserve the gratitude of mankind.

Other speakers deal with more modest themes. Some, as Mr. Wheelhouse, review the achievements of our art, and, in reciting and analysing them, fire their auditors with the desire to emulate the achievements they describe, and to become worthy members of the profession. Some confine themselves usefully, as Mr. Owen, to discussion of the apparatus and methods of teaching, and the best way of getting due information from lectures and examinations. Others tread the beaten path, and produce an ingenious and interesting *olla podrida* of facts, suggestions, and exhortations, apposite, if not novel. Dr. Ferrier enters upon a forcible and very useful defence of the physiological methods of investigation, which have lately been unfairly and ignorantly attacked. We invite attention to the extracts which we publish from his able address, and could wish that it had taken the form of a more complete and separate argument on the subject. It is well illustrated by the report of Dr. Hughes Bennett and his coadjutors, which we publish in another column. It is an example of the excellent matter which is often wasted by being vented on the 1st of October, instead of being reserved for larger and more suitable audiences. The anniversary of the opening of the medical schools has been marked this year by addresses which are distinctly above the average; but the question is still worth consideration, whether St. Bartholomew's Hospital has not wisely decided that, on the whole, the custom of delivering orations to order on a wholesale scale is one more honoured in the breach than in the observance.

THE ARMY MEDICAL SERVICE.

THE position of this branch of the public service at the present moment is one which deserves grave consideration from the younger as well as the elder members of the profession. Of late years the merits and claims of army surgeons have been systematically ignored by the authorities to such an extent that the Government medical services, which ought to be looked upon as among the most honourable and best remunerated branches of our profession, have become so much lowered, both in the status accorded and the amount of emolument awarded, that it becomes a matter of serious deliberation whether it is really worth while for a gentleman to undergo the arduous course of costly study necessary to qualify for medical service. It would be advisable, therefore, for gentlemen who intend to qualify for the army to look at the present position and prospects of an army surgeon.

First, as to emolument: the rate of pay determined at the last revision in 1858 is 10s. *per diem* at the commencement, increasing 2s. 6d. *per diem* after each five years' completed service; so that for the first fifteen years, the average income would be £228 : 2 : 6 *per annum*. Increasing by the official scale until thirty years' service had been accomplished, the average professional earnings would amount to £431 : 18 : 4; assuming, of course, that during that long period everything had progressed in a satisfactory manner.

The scale of pay to the medical staff was increased in 1858 at the rate of about 17 per cent.; but the cost of almost every necessary of life has increased more than 30 per cent. since that time; so that the scale of pay now amounts really to 17 per cent. less than it was prior to the advance being made; and this is felt the more now inasmuch as several emoluments and advantages which formerly existed were by the Royal Warrant of 1858 abolished. Amongst these may be reckoned the discon-

tinuance of the forage allowance, which has been a direct loss, since a medical officer may be called upon to proceed at once on horseback to do duty at a battery, though he is actually an unmounted officer and without allowance for forage. It will be remembered how this regulation was the cause of an absurd discussion in the House of Commons last year, relative to a medical officer who accompanied the troops on a march in a dog-cart. Medical officers also, though not attached to a regiment, have to pay as much or more to the mess and band fund than is contributed by regimental officers of equal relative rank.

Besides this decrease, which is chiefly owing to the difference in the relative values of money between the two periods, the balance of income cannot by any means be considered as a net amount; since there are travelling expenses which become a heavy tax, and the practice of moving medical officers from regiment to regiment also entails considerable loss, and more especially in the case of married men. There are also compulsory payments to mess and band funds, etc.

Foreign service also, India alone excepted, invariably entails a positive loss. The allowances which were heretofore paid on a liberal scale are now cut down by the control department in a manner which is looked upon in the service as being cruelly unjust.

Assuming that the thirty years' service has been accomplished, and the maximum rate of pay attained, the practitioner will have acquired an average income of about £400 *per annum*. That this amount is far less than can be attained in civil life, or by any of the corresponding learned professions, is self-evident; whilst in the medical service there are no great, or very few, compensating prizes to be expected.

Respecting the rank and status of a medical officer: formerly, a junior surgeon ranked as an ensign; but as that position is now practically abolished, he virtually has no real status, and a man of thirty years of age takes a lower position than a boy cadet of eighteen. The nominal relative rank of a senior surgeon is frequently ignored by irresponsible officers, and the whole subject is in an unsatisfactory and anomalous state. The natural result of these evils is that a great feeling of deep discontent exists throughout the service. The feeling is totally destructive of all *esprit de corps*, and of that efficient and cheerful discharge of duty which is essential to the success of a medical man. It would be well, therefore, for the profession to consider the advisability of entering this branch of the Government service, until a thorough reorganisation has been made by revising the scale of pay, consolidating the service, reducing the term of a junior's service, readjusting the relative ranks and status on a definite basis, allowing a fixed and definite term for sick and other leave, which should be equal to that of combatant officers of the same footing, without loss of pay or allowance, and finally throwing open more prizes to the profession in the shape of Staff Hospital appointments and governorships, which are at present absorbed by military men. This reorganisation is a matter of vital moment to each member of the medical service, and one which, if left unperformed, will lead to such a want of recruits, as will entail a great scarcity of medical men in the army.

THE NAVAL MEDICAL SERVICE AS A CAREER FOR STUDENTS.

THE time has again come round when the young men of our profession, who are in future years to occupy the posts of practitioners or teachers, will assemble in the schools to gain the knowledge to qualify them for examination, and to derive the bias of their careers from the experience of their predecessors. Many there will be, whose minds will sway early towards the public services, which, if justly administered, should hold out to all who are found deserving the certainty of a respectable position in life, worthy of their calling, a fair chance of honourable distinctions for more than ordinary services, and the assurance of a sufficient maintenance, according to the rank which they have attained when their official careers shall have drawn to an end.

For such men there is already prepared, and in action, the "one portal system", which many ardent reformers desire to see established

for the profession at large. That one portal is open to competitive examination to all who already possess the legal qualifications to practise medicine; and we may observe in it, on a small scale, the types of what would be displayed on a large one were the system adopted in full. It is seen that, at those examinations, the efforts of alumni are directed to this or that service which holds out the better prospects of the future; and they strive earnestly to gain, at first starting, that token of superiority which shall place them above their competitors; and we need not doubt that, "as the boy is father to the man", so they will realise in the future that pre-eminence they have asserted in the first stage of their careers.

As there are different branches of the public service open to the beginner, so there ever will be different walks in private practice holding out their special attractions and inducements to enter them; and we may expect to find men adopting this or that line of practice, guided by its highest inducements, but generally regulated by the degree of attainments of the seekers.

This has been remarkably displayed in the public services since these competitive examinations began, so that no one can fail to see that, in the scale of inducements, the Indian service stands *facile princeps*, attracting to itself the students who achieve the highest opinions of their conjoint examiners, as shown in the numbers of merit, as well as in the higher averages of all those who obtain its appointments. Next in order stands the Army service, and the lowest is the Navy.

It was not always so, as in times past the latter service had in it many men of high professional reputation; and, if we scrutinise the present active-list, it is found to contain among its officers of standing the names of several who shed lustre on it, and stand in good professional and scientific credit.

Unhappily, that branch of the public service has been allowed to decline greatly in its attractions, and a widespread discontent reigns supreme through it at present; the result of which is, that it cannot obtain a sufficiency of candidates to meet its wants, where the other two branches of the public services are far from being deficient of such as come up to the standard.

As far as we have gone into the causes of this, together with those of the very significant resignations of most of the young officers who have passed in with highest honours, we have it strongly impressed that, in addition to the discomforts of sea life, to which it is not easy for men to bow down with contentment, there is much reason for dissatisfaction with their relative position on board ship to other classes of officers with whom they are at least equals on shore. Finding this to pervade the naval system to the highest grades of their branch, of which the greatest rewards are inferior to those of the sister service, while its highest object of ambition has been surreptitiously abstracted from the active service to which it belongs in the army, they conclude that it is best to quit in time a service thus weighted throughout, and many such have then passed creditably into the kindred services.

To oppose this desire to go, means have been had recourse to which can only appal young ardent minds; and some, regardless of technicalities, have broken the tie, and have found the terrors of the law in full force against them. Some who have tendered their resignations have been refused, until, goaded to insubordination, they have brought themselves into positions from which their natures would have recoiled. Some, who have declined to accept appointments after asking permission to resign, have been "dismissed the service"; and opposition has been offered to the appointment in another service of a blameless young physician, who, after having served three years afloat, had obtained his discharge from the Navy, and then had passed into the other service.

This organised system of "terrorism" can have but one effect—viz., to deter every considerate young man from thinking of the Navy as the starting-point in his career until the practices now in vogue are rescinded, and more temperate counsels prevail. We are aware, that Boards, as well as individuals, are sometimes led into cardinal errors which it may be difficult to retrieve; but, in such cases, it is sound policy to do all that can be done to mitigate the consequences of their

acts; and we trust that, in the face of the disastrous resignations and utterly inadequate supply of junior medical officers for Her Majesty's Fleet, such measures will very shortly be taken as will re-establish the popularity of the service in the medical schools, and draw once more into the medical branch of the Navy a sufficient amount of that professional skill and zeal which recent errors in administration have tended to diminish.

THE Lincoln County Hospital Building Fund now amounts to £16,727 14s.

By an order of the Local Government Board, the Town Council of Exeter have been constituted the Port Sanitary Authority within the Cheekstone Rock.

DR. RUTHERFORD, the able Professor of Physiology in King's College, London, has been elected to succeed Professor Hughes Bennett in the chair of Institutes of Medicine or Physiology in the University of Edinburgh. The appointment is one which will certainly redound to the honour and add to the usefulness of the University. Professor Rutherford will be much missed in London.

MANY invalids intending to winter at Cannes this year, will be glad to hear that Dr. Marcet has fixed his abode there, where his medical skill will reinforce the experience already gained by the English practitioners now established in that delightful winter resort.

At the first meeting of the Northumberland and Durham Medical Association for the session 1874-75, it was resolved to raise some memorial to the late Dr. Charlton; and the officers of the Association were constituted a committee to carry the resolution into effect.

THE INTRODUCTORY AT GUY'S HOSPITAL.

As the hour for the delivery of Sir William Gull's address, on Thursday, drew near, it was quite evident, from the crowded appearance of the corridors, the museum, and its approaches, that the anatomical theatre would be unable to hold the numbers who had assembled to listen to the lecture. Every available inch of space was occupied long before two o'clock, and still it appeared that some hundreds of expectant hearers were outside the lecture room. Under these circumstances, it was agreed by the hospital authorities, about a quarter past two o'clock, that the meeting should adjourn to the large hall of the Bridge House Hotel. This accordingly was done; and, as it seemed doubtful to each one in the crowd whether he might not be eventually excluded if he lagged behind in the race, the passers-by in the Borough and St. Thomas's Street must have been considerably puzzled to account for the sudden appearance upon the pathway of a mass of young, middle-aged, and elderly men, all using their best speed to attain the common goal. We may be sure that good lungs and fleet limbs carried the day, and landed their owners in the front seats. When the scething crowd had somewhat subsided into quietude, Sir William Gull commenced his address. We need scarcely say he was listened to with marked attention, and his most able address was justly applauded. We are happy to be able to print the lecture at this early date; so that those who were not present at its delivery may at their leisure peruse an address which justifies the great interest it excited. At the conclusion of the lecture, the Treasurer delivered the medals and certificates to the students who gained prizes during the past session.

DEVON AND EXETER HOSPITAL.

At the conclusion of the business of the weekly Board last week, the results of the annual examination of the students of the hospital were made known, and the prizes distributed by the Vice-President (C. J. Follett, Esq.) The prize given by the Committee was awarded to Mr. R. J. Bryden, who was first in Anatomy and Physiology, and who passed well in Medicine and Surgery. The medical officers' prize was awarded