inflammatory process, we know that they are directly injurious in certain ascertained effects. The loss of blood will increase the tendency to serous effusion and convulsion, which are great sources of danger, while the free purging will eventually favour a similar result by impoverishing the blood through the drain of albumen which it involves. Both processes are exhausting, and inimical to the ready repair of injured tissues.

On the other hand, we know that careful feeding, healthy surroundings, a judicious regulation of symptoms by drugs, the assistance by artificial means of natural functions which are in abeyance, favour recovery from disease generally. These measures we must adopt in acute hydrocephalus as in the rest; and, when symptoms indicative of serous effusion within the cranium become apparent, such as dilatation of the pupil, slowness of pulse, and stupor, we may legitimately attempt to relieve this by a brisk purge or by diuretics. I have seen the most remarkable improvement follow a cathartic dose of calomel; and I believe the reputed efficacy of purgatives in this disease is due to their influence in temporarily lessening the fluid in the cranium. The condition of the patient in such cases is probably utterly hopeless, and the advantage gained transient and futile; yet we must give such relief where we can. It is, however, I think, our duty to do even more.

While we are bound to avoid those rude and violent measures which, we have reason to believe, do positive harm by their general action on the system, there are two powerful agents which we may bring into play, which certainly do not seem to be injurious in their general effect upon children—at any rate at the time—and during the administration of which, if not by their influence, recovery has taken place in certain instances. I allude to mercury and iodide of potassium: they are both well borne by children. You may here see this with regard to the former every day in cases of congenital syphilis, and in certain forms of chronic vomiting and diarrhoea, in which mercury is given in small doses in the form of grey powder for a considerable time, not only without producing the specific effects of the drug, but usually with the most positive and palpable good results.

A few seemingly hopeless cases of acute hydrocephalus have recovered under mercurial treatment; and it is well at the outset to attempt to regulate the torpid bowels and to relieve vomiting by small doses of grey powder twice or thrice a day. That iodide of potassium may be taken in considerable quantity by children with equal impunity is exemplified by the case before us, and by many others of syphilis and chronic hydrocephalus, in which I have administered it continuously for a length of time without any evil result whatever.

Now, many of the cases of recovery from the meningitis of infancy which have been recorded recently, including the two in Niemeyer's experience, and which he judged to be undoubtedly tubercular, have occurred under the free use of iodide of potassium: and modern cases, since diagnosis has become more accurate, give more valuable indications than could be drawn from the looser pathology of former times. Such considerations as these induced me to adopt the full treatment by this drug in the present instance. But whether the favourable event which followed was due in any degree to the influence of the remedy, can only be determined by more extended experiments.

ON AMERICAN MEDICAL INSTITUTIONS.

By FRANK UNDERHILL, M.R.C.S., Tipton.

HAVING lately returned from a tour in the Northern States of America, undertaken partly for recreation and partly with a view of becoming acquainted with the medical institutions of the country, I think it may not be uninteresting to my professional brethren at home, if I write a brief outline of the several courses of medical study pursued there, together with a few remarks on the chief medical schools; and I am the more emboldened to do this, when I consider the little that has been written or said upon the subject by authors and journalists. With regard to medical affairs on the continent we are well informed; every remarkable case is duly published, each new plan of treatment widely known, and the names of the various professors are to us almost as household words. Students flock to Paris, Vienna, or Berlin, but few indeed find their way across the Atlantic. That this should be the case is a matter for regret; for I can, from personal experience, assure those who have leisure to travel, that they will not only reap much benefit from a visit to America, but will be received in the most cordial manner by the profession there. There is unfortunately a proneness to undervalue everything coming from our sister country, which only more extended personal intercourse will dissipate.

The number of medical faculties and colleges is very great; indeed

it has been said, and with some show of truth, that there are more of such institutions in America than in the whole world besides. Every city of any size or importance possesses one, two, or more; each endeavouring, in too many cases, to out rival the other in giving facilities for obtaining diplomas. This naturally leads to much competition and corresponding laxity in the course of instruction and final examination. One can hardly be surprised that where the portals are thrown so widely open many rush in. Also, as no previous examination in arts is required in nine-tenths of these institutions; as the time required for attendance on lectures is extremely short; and as candidates are rarely rejected by the examiners, who are usually their own teachers, the ranks of the profession are yearly swelled by those who reflect no credit upon it, but rather tend to lower its status with the public generally.

It must be admitted in extenuation of this, that in so vast a country as America, to which the tide of emigration is constantly flowing, where in a few years, or even months, small settlements spring up into towns, and towns into large and populous cities, the demand for medical men must be great, and the supply great in proportion.

I have in my possession records and prospectuses of a large number of these institutions, most of which I have personally visited; but these are only a tithe of the whole. They are nevertheless amply sufficient as a foundation for the following remarks.

The only professional title given in the States is that of Doctor, there being no institutions analogous in any way to our colleges of physicians and surgeons. This degree, which every legalised medical school has the power to grant, entitles the holder to practise medicine, surgery, and midwifery; and the qualifications necessary for obtaining it, speaking generally, are as follows.

1. The candidate must have attained the age of 21 years, and be of good moral conduct.

2. He must have been for three years, including the time spent at the medical school, the pupil of some respectable medical man.

3. He must have attended two full courses of lectures, with dissections and clinical instruction, at a recognised college, the latter course at the school where he proposes to graduate.

4. He must present at the time of examination a thesis on some medical subject written by himself, and be prepared to defend it if necessary.

5. He must pass the professional examination in a satisfactory manner.

Each course of lectures is of about five months' duration, and extends from the beginning of October until the end of February, being somewhat equivalent in time to our winter session. Each course is complete in itself, and embraces all the subjects necessary for graduation. These are much the same as those taught in our own schools—namely, anatomy, physiology, medicine, surgery, midwifery, chemistry, and materia medica. In most of the schools there is a summer session of three or four months, where auxiliary lectures are given on collateral and special subjects, and practical work is pursued in the laboratory, dissecting-room, and elsewhere. Attendance upon this course, though not necessary for a degree, is very generally recommended to the students, and many avail themselves of its advantages, more especially as in a large number of schools no fee is required. Several have preliminary terms of a few weeks' duration just before the regular winter session, in order that those just entering may be better prepared for the regular routine of professional study. Almost all offer private instruction to those willing to pay for it.

Owing to the short time which students are *compelled* to spend in the prosecution of their studies—not much more than equal in point of time to a year's instruction in a British school—the lectures are much crowded together, and an unusual number are of course obliged to be given daily, allowing little leisure for reading, and less for hospital work. The result which must and does follow, is partly obviated by the better class of students almost invariably taking some hospital appointment immediately after graduation, and thus obtaining that practical acquaintance with disease without which they are totally unfitted to become efficient practitioners.

The lectures are eminently practical, are illustrated, when possible, by drawings, preparations, and specimens, and are usually listened to with very great attention. They are of an hour's duration, and often follow each other in such quick succession that the students are engaged for several hours without leaving their seats.

Of the clinical lectures I can speak in terms of almost unqualified commendation. They are delivered daily either in the theatre of the medical school or in the hospital. Here, at the appointed hour, all the interesting and instructive cases are exhibited, and the various necessary operations performed before the whole class, the steps of each being minutely described, and the remarks illustrated by every possible means. The students are thus brought into direct contact with the patients. Shortly before each lecture, the professor selects from the

hospital wards or from such out-patients as present themselves for the purpose, those cases which he thinks most suitable. Unless the theatre be in an hospital building, a few private wards are provided in which are received those upon whom capital operations have been performed, or who are from any cause unable to return to their own homes.

With regard to the examinations, I cannot speak from personal experience; but, judging from the short time required for study and the small number of rejections, I am bound to conclude that they are not very searching.

To the general system of medical education I have mentioned I am happy to record exceptions. The authorities of the medical school connected with the Harvard University, near Boston, have recently not only framed, but put in practice, a plan for lengthening the course of study and rendering it much more efficient. In this institution, the academic year now begins in October and ends in June. It is divided into two equal terms, with a recess of one week between them. Either of these terms is more than equivalent to the former winter session. The course of instruction has been extended so as to embrace three years, and is so arranged as to carry the student progressively from one subject to another. Practical work is much more insisted upon. Instead of the former hasty oral examination for a degree which was held at the termination of the period of study, a series of examinations has been arranged which may be passed either at different times during the course, or at the end. The subjects to be studied in progressive order are—First year: Anatomy, Physiology, and General Chemistry. Second year: Medical Chemistry, *Materia Medica*, Pathological Anatomy, Medicine, and Surgery. Third year: Pathological Anatomy, Therapeutics, Obstetrics, Medicine, and Surgery. Examinations are held yearly in the subjects previously studied, and no student will receive his diploma until he has passed satisfactorily in all the above mentioned branches. He must also produce a certificate of having dissected the whole body. As these new regulations have only lately come into force, I have not had the opportunity of hearing the result, but they are steps in the right direction to which we may heartily wish every success.

The course of study pursued at Yale College also presents some points of difference. The year is divided into winter and spring terms, each consisting of about four months. The spring terms, though not absolutely necessary for graduation, are nevertheless strongly recommended to be attended, and count as a part of the time spent in medical study. Unless the student be a graduate in Arts of this or some other university, he is required to spend three years in the acquirement of professional knowledge. It is intended soon (as at Harvard) to adopt a systematic classification of study, so as to place medicine on the same footing as the other branches of science taught at the University, by making the course extend over three successive years.

Most of the dissecting-rooms visited were spacious, and fairly ventilated and lighted. Owing to the number of lectures during the day, dissection is chiefly done in the evening, a jet of gas being suspended over each table. These tables are mostly covered with marble or slate, perforated at the centre or end for the escape of fluid. Very little disagreeable odour is noticeable. The bodies are injected either with arsenic or preparations of zinc, the latter being generally preferred, as it is alleged to preserve the "material" much longer, and entirely prevent smell. In most large cities "subjects" are very easily obtained, and are correspondingly cheap. The Anatomy Act in force in Philadelphia allows "any officer having control over the same, to give permission to any physician or surgeon in the city or county to take the bodies of deceased persons required to be buried at the public expense, to be used by him within the limit of the State for the advancement of medical science, preference being given to medical schools. The number assigned to each of these is in proportion to the number of students; provided, however, that the deceased shall not have previously requested burial, or that no relative shall have claimed the body. If, also, the deceased person was a traveller, who died suddenly, the body shall not be handed over. Any one buying or selling such bodies shall be deemed guilty of a misdemeanour, and fined or imprisoned accordingly." An act similar to this is in force in many other places.

The list of text-books recommended and used at most of the schools embraces nearly all those manuals and professional works read in England, in addition to those by the best American authors. In the following allusions to some of the principal medical schools, brevity is my chief object; but I shall at all times be happy to give fuller information to those desiring it.

In New York and vicinity, there are four separate and distinct medical schools, each granting diplomas and having its own teachers—namely, the University, the College of Physicians and Surgeons, the Bellevue Hospital Medical School, and the Long Island Medical College.

In all, the requirements for graduation are the same as those previously mentioned; in all, the regular session begins in October and ends early in March; all have summer courses of lectures, attendance upon which is optional. The fee for a full course in each is about £30.

The Bellevue College is most conveniently located in a comparatively new building in the grounds of the Bellevue Hospital, upon the banks of the East River, affording students great facilities for clinical instruction in this institution, and at the Charity and other hospitals on Blackwell's Island, a short distance from the shore, and to which a steamer runs several times a day for the convenience of those having business there. In this school, besides the above-mentioned courses, there is a preliminary term just before the regular October session for the purpose of initiating students into the general medical work. During the regular session at least four didactic lectures are given each day, besides a daily clinic. There are two annual examinations for degrees. The class last year consisted of about four hundred and fifty students, one hundred and thirty-four of whom graduated. The Faculty consists of some of the most eminent men in New York, comprising among the number Wood, Hamilton, Sayre, Van Buren, Barker, Austin Flint, and many others equally well known both at home and abroad. The building is in every way suited for the purpose of a medical school, having a good theatre and dissecting-room, with a fair anatomical and pathological museum. Lastly, a new theatre has been built in Bellevue Hospital, which greatly facilitates clinical instruction.

The College of Physicians and Surgeons, situated in Twenty-third Street, is the medical department of the Columbia College. The theatre and dissecting-room are both good. There are five or six lectures daily, exclusive of clinics. The Medical Faculty is excellent, and the class in 1870 numbered upwards of three hundred, seventy of whom graduated.

The Medical Department connected with the University of New York is situated in a new building close to Bellevue Hospital, and enjoys equal advantages with that school. Having only recently been erected, the institution contains all the modern improvements, and is very complete in its various arrangements. The nucleus of what promises to be an excellent museum has been established by Dr. Darling, the Professor of Anatomy. The dissecting-room is one of the best in the country, and among the professors are Drs. Paine, Draper, Loomis, Darling, and Gouley.

In addition to these regular schools, there is a Women's Medical College, where much the same course of study is pursued. Among the professors are the names of Elizabeth Blackwell, Professor of Hygiene; Emily Blackwell, Professor of Obstetrics; and several other female teachers. There are also Dental and Pharmaceutical Colleges.

The two regular medical schools of Philadelphia are the University of Pennsylvania and the Jefferson Medical College.

The University was founded in 1749, and is, therefore, one of the oldest in the States. The present building having been found too small and inconvenient, a large new one is in process of erection on the outskirts of the city, and will probably soon be ready for the reception of students. The general requirements for a degree are precisely the same as those already mentioned, but the division of the year differs in a slight degree. Besides the ordinary summer and winter sessions, there is an auxiliary term just before the latter. There are five or six lectures a day in addition to the daily clinic, frequent instruction in the Dispensary, and the students are admitted to the clinic at the Pennsylvania and other hospitals in the city.

For the accommodation of patients requiring surgical treatment, wards and proper attendants are provided in the College building, in order that the students may have the benefit of the clinical instruction. During the past year, upwards of four hundred operations were performed here for almost every variety of disease.

The summer term comprises lectures by the auxiliary Faculty upon various collateral subjects, as Botany, Jurisprudence, Hygiene, etc., attendance upon which is optional, and no fee is required from those who have taken the tickets of two of the lecturers. A degree of Doctor of Philosophy is conferred upon graduates who attend two of these courses and pass a satisfactory examination therein. The College Museum, founded a hundred years ago, is one of the best in the states, and contains a large number of morbid specimens, most of which are used in illustrating the lectures. A cabinet, collected by Dr. Wood, contains an excellent series of drawings and wax models, illustrating the various diseases of the skin and internal organs. Owing, however, to want of proper accommodation and light, and consequent crowding, much of interest is lost to the visitor.

Before leaving the subject, I would say a few words on the difference between this institution and the notorious University of Philadelphia in the same city. The former is one of the most respectable of

American schools; the latter has lately been rendered infamous by the barefaced sale of diplomas without residence or examination. The mistake of confounding the two is constantly made, and, whilst the fact that such an institution could ever have existed has been deeply deplored by all respectable men, nothing has tended more to foster that suspicion concerning all American degrees which exists in the minds of the profession at home and abroad. This subject has been frequently the theme of conversation and correspondence, and I rejoice to see that steps have at last been taken by the State legislature for the suppression of this disgraceful traffic.

The Jefferson College was first incorporated as a separate institution in 1838. The regulations and fees are the same as those of the University, the course of instruction also being nearly identical. The building contains good theatre, dissecting-room, and museum, with wards fitted up for those operated upon at the surgical clinics. The session 1869-70 was attended by 435 students, 160 of whom received a diploma. The Faculty is, I believe, the best in America, containing the names of Gross, Pancoast, Wallace, Meigs, Da Costa, and others of equal reputation.

The clinics, at many of which I was fortunate enough to be present, are unusually good. Among other operations, Dr. Pancoast removed the whole of the branches of the third division of the fifth nerve for neuralgia. The patient, an elderly man, with spare face and figure, had been a martyr to the disease for many years, during which time every imaginable remedy had been tried without success. The operation was performed by making an incision in front of the condyle of the lower jaw, dividing the masseter, removing the coronoid process, and dissecting down upon the nerves, which were removed just at their exit from the foramen ovale. The internal maxillary artery was secured, and very little blood lost. Relief was immediate, and promised to be permanent. Dr. Pancoast had previously operated with success in two or three similar cases.

At this time, when so much discussion is taking place concerning the admission of women into the profession, and as the verdict is decidedly in their favour in America, it may not be uninteresting to say a few words about the Women's Medical College. This institution is situated in the confines of the city, adjoining the Women's Hospital, and is now in its twenty-second year. The college was originally a private house, but, by alterations and extensions, has now been made suitable for the purposes of instruction. The dissecting-room, though small, is well warmed and ventilated, and there is the nucleus of a museum containing preparations and models for the lectures. The general course of study is on the whole the same as that pursued at other institutions, and embraces attendance upon clinical lectures and dissections. The Faculty claim the right to refuse examination to a candidate on the ground of moral or mental unfitness for the profession. Students have the privilege of attending the practice of their own hospital, at which several thousand patients, chiefly women and children, are annually treated, and, under appropriate direction, are permitted to take obstetrical cases either in the hospital or homes of the patients. They also follow the practice and clinical instruction at some of the large city hospitals, more especially the Pennsylvania, in which institution two weekly clinical lectures are given especially for their benefit by members of the staff. Several are annually appointed from the class to act as assistants in the Women's Hospital. For the purpose of encouraging women to join the profession, six students are annually admitted to the entire privileges of the college course on payment of a merely nominal fee. During the last year's session there were nearly sixty pupils, seventeen of whom graduated. The Dean and several of the professors are women, and the institution is well supported by those interested in the cause of "women's rights."

The Dental Colleges of Philadelphia have obtained great and deserved celebrity throughout the country; and for the information of those interested in the subject, I will briefly state a few of the more prominent facts in connection with them. There are two in the city, the Philadelphia Dental College and the Pennsylvania Dental College; but, as the regulations are precisely the same in each, I will content myself with describing the latter. The qualifications for the diploma of Doctor of Dental Surgery are much the same as those expected from a student at the regular schools, embracing apprenticeship, two courses of lectures on dentistry and collateral subjects, and a thesis. In addition, he must treat thoroughly some patient requiring all the usual dental operations; he must take up at least one artificial case, and bring the patient before the Professor of Mechanical Dentistry; he must also prepare a specimen of his work to be placed in the college museum. The operations must be performed, and the specimen prepared, in the college building. Satisfactory evidence of having been in practice for five years is considered equivalent to one course of lectures. The Faculty consists of six professors, who are assisted by two demonstra-

tors and assistants. Each of the former delivers three lectures a week, and occupies a certain part of every Saturday in clinical instruction. Four hours a day are devoted to mechanical and operative work. To afford the students an opportunity of acquiring a practical knowledge, a large operating-room, one hundred feet by twenty feet, has been provided. It is furnished with twenty-eight chairs, so arranged as to command every advantage of light and comfort. To these chairs, the students are assigned in regular order, and certain hours are fixed by the demonstrator for each one to operate. Patients are always to be had in abundance, as no charge is made except for the actual cost of gold used in stopping teeth, etc. The nitrous oxide gas is administered twice weekly for the purposes of painless extraction.

In the laboratory are all the conveniences for the preparation of metals and manufacture of teeth. Every process known in dentistry is fully taught and explained, the student being required to go through all the necessary manipulations, from taking the impression of the mouth to the proper adjustment of the artificial teeth.

The museum contains some capital illustrations of the various diseases of the jaws, with large wax models of unusual deformities. Many of the specimens prepared by the students previously to the third examination are of excellent workmanship. All of these are collected together in a special cabinet. There are also samples of every substance used in dentistry. The number of students attending last year was seventy-four, of whom thirty-eight obtained their diplomas.

In addition to those already mentioned, there are several other sources in Philadelphia for obtaining medical knowledge, such as the Medical Institute, the Summer School of Medicine, the School of Anatomy, and the College of Pharmacy. Of these I would gladly speak did space permit.

The Medical School connected with the Harvard University is in Boston, where the advantages of clinical study can be better obtained. In addition to the usual qualifications for a diploma, the student, unless a graduate in Arts, is required to show a competent knowledge of Latin and experimental philosophy. The class of 1870 numbered more than three hundred, and the Faculty comprises many well known names.

Connected with the school, and in the same building, is the Warren Museum, named after the late Dr. John C. Warren, who formed the nucleus of the collection many years ago, and on his death presented it to the College. It is unusually rich in anatomical and rare pathological specimens, and possesses, among other things, a fine set of coloured lithographs illustrating various diseased structures. In this collection, also, is the skull taken from the body of a man who survived more than twelve years the passage of an iron bar completely through the head, and is widely known and ridiculed as the "crowbar case". This specimen is open to the fullest inspection, and I may add that, together with Dr. Jackson, the able curator, I carefully examined it, and have no doubt concerning the accuracy of the statements made in reference to the case in the catalogue of the museum.

In Washington and vicinity, there are three medical colleges, each having much the same regulations with regard to qualification and course of study as those I have previously mentioned. In the Howard University, in addition to these, the candidate must possess a thorough English education and a competent knowledge of mathematics and Latin. At this College, moreover, females are admitted, and encouraged to present themselves for degrees, and many of the students are coloured men.

Among the other medical schools visited were those of Baltimore, Burlington, St. Louis, Cincinnati, Chicago, Buffalo, and Columbus. In all these the regulations are much the same; but in several of them four years' reputable practice, after studying under a preceptor, is considered equivalent to one course of lectures.

ON THE APPEARANCES PRESENTED BY THE BODIES OF TWO CHILDREN EXHUMED AT ST. HELEN'S AUCKLAND.*

By R. T. MANSON, M.R.C.S.E., etc., Howden.

OPPORTUNITIES for the examination of bodies that have been for some time interred are very rare; and it may, therefore, be of interest to state the appearances presented by the bodies of two children, one aged ten years and the other fourteen months, who were both buried in March last, and were exhumed on October 15th, at St. Helen's Auckland. The soil of the churchyard is comparatively dry; that is, beyond the ordinary dampness of alluvial soil there was no moisture: the coffins

* Read before the Northumberland and Durham Medical Society.