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.

were, therefore, simply damp, and on the outside appeared some patches of whitish mildew. The coffin-plates were in good preservation, being only slightly rusted at the backs and edges. These particulars are mentioned as bearing on the condition in which the bodies were found.

The coffin of the elder boy contained a quantity of shavings. These were damp and discoloured, like shavings kept in a cellar, but were not actually wet. The smell given forth from the bodies was peculiar. It was unlike any dead-house or dissecting-room smell; and, though offensive, was not nearly so much so as might have been expected. Perhaps there is not such a thing as a salt smell, but that is the term which would convey some idea of the odour. I have smelt something similar in close bedrooms where red herrings have been cooked.

The face of the elder boy was dry, and of a dark brown colour; the soft parts of the nose were gone, and the mouth was wide open, the lower jaw looking as if dislocated. From the right upper jaw, one of the teeth was hanging out of its socket. When the head was lifted, the skull at the back separated entirely from the muscles and scalp as if it had been macerated, and the muscular structures were seen to be of a grey colour, moist and pulpy. The brain, as seen through the foramen magnum, was a mere pulp; and of the eyes, only traces were seen at the bottom of the orbits. The skin of the chest and abdomen was of a reddish-brown colour, as was that of the thighs. These last were in good preservation, and had a mummified appearance. The genitals were converted into a mass of adipocere; but it would have been quite possible to ascertain from them the sex of the child had it not been known.

The younger child had been a well nourished infant. The face had only slightly shrunk; the cheeks still showed the plumpness of babyhood; the lips were only slightly separated, and one could almost fancy a smile on them. The soft parts of the nose were gone, and the orbits contained a thick yellow fluid. The skin of the chest and abdomen was dry, and reddish-brown in colour. After an incision had been made down the sternum, the skin and muscles left the ribs on a slight touch, and were rolled back as easily and completely as if made of thin lead. The genitals were converted into adipocere; and in this case also the sex could have been determined. The feet of this child were covered with woollen socks, which appeared soaked in a fluid like that in the orbits.

In both children the lungs were the most decomposed of any of the internal organs. The heart of the younger child was in a capital state of preservation; internally it was moist, and really looked as if it were that of a recently deceased subject.

M. Devergie, as quoted by Dr. Chambers (*Lectures, Chiefly Clinical*, p. 3), says, from notes made on the bodies at the Morgue at Paris, that it is four and a half months before complete destruction of the face occurs, and the bulky muscles of the neck and thighs are converted into adipocere. In the cases of these children, seven months had elapsed between the burial and the exhumation. In a wet soil the process of decomposition would have been hastened. The bodies had been buried within a few days (nine, I believe) of each other, but not in the same grave.

It would have been exceedingly interesting to have had an opportunity of examining the body of the father of these children. He had been buried more than twelve months. Every search was made for him; but the absence of any record of the place of burial, and the firm conviction on the part of each person who attended the funeral, that the man had been buried at a spot where nobody else who had been present remembered his being buried, and the sexton's general bewilderment, and the fact that the names had, in many instances, been effaced from the coffin-plates, in consequence of their having only been painted on in some material which does not stand damp, caused the search to be abandoned.

Exhumations are not of common occurrence, but they do occur; and I shall always retain the idea that the grave of the man we sought really was opened, and that the failure in identifying his coffin was caused by official carelessness.

Where no head-stones are erected, it would be easy to have a number or the initials of the deceased burnt on the coffin. Certainly it would not, to the popular eye, look so well as the name in full, inscribed on tin plate impressed with the figures of angels furnished with anatomically impossible wings, but it would be efficacious in preventing such a failure as happened at St. Helen's Auckland; and some plan ought to be adopted by which, if it be necessary to exhume a body, there might be a reasonable chance of finding it.

Since the above paper was written, I have been informed that arsenic has been found in the bodies of these children.

MUSCULAR TREMORS, IN THEIR RELATION TO LEAD-POISONING.

By W. A. HOLLIS, M.D.,

Medical Registrar and Casualty-Physician to St. Bartholomew's Hospital.

IN several cases of suspected lead-poisoning, I have noticed the presence of considerable muscular tremor. This tremor may or may not be associated with distinct symptoms of saturnine paralysis; and it usually affects, in the first instance, the muscles of the forearms, subsequently the muscles of the face, and in one case (that of an oil-cloth printer) it attacked the muscles of the trunk and lower extremities generally, simulating in its severity well-marked mercurial tremor. In a former number of this JOURNAL (February 10th, 1872), I noticed the case of a brass-finisher, who, with other well-marked symptoms of lead-poisoning, had both paralysis of the extensors of the forearms and considerable muscular tremor of those extremities; and in a previous volume (July 1st, 1871), I also recorded the case of a looking-glass silverer, wherein there appeared to me to be poisoning by both lead and mercury conjointly. In this patient there was great muscular tremor. I have since had the opportunity of comparing several other cases of lead-poisoning, and I conclude from them that the mode by which the lead obtains access to the system operates greatly to determine the character of the subsequent symptoms. A comparison of the cases which I had recorded in my notes showed that occupations involving the use of the metal or its combinations in a heated condition greatly favour the early production of muscular tremor in association with symptoms of lead-poisoning; whilst, on the other hand, employments in which the metal is used in a cold state are far less frequently the cause of this peculiar symptom in the workmen, although they may be affected with saturnine colic or even paralysis. In the cases of the oil-cloth printer before mentioned, the tremor was especially severe at night-time, and was associated with the distinctive blue-gum-line and frequent attacks of colic. I have observed this tremor with other well-marked symptoms of lead-poisoning in brass-founders and finishers, type-founders, looking-glass silverers (although in these cases possibly the mercury employed may complicate the symptoms), and lead-pipe makers, all of whom employ the metal in a heated state. I have occasionally, although rarely, found white-lead workers, engine-fitters, and plumbers, affected with the tremor, but painters are generally exempt.

As regards white-lead workers, I find, upon inquiry, that persons employed in such factories are necessarily exposed to considerable heat for hours together. In the case of plumbers and gas-pipe-fitters, although their occupation does not necessarily involve a prolonged stay in an apartment containing the heated metal, yet they are frequently brought more or less closely into contact with it in a hot state. With regard to gas-fitters, I have notes of one man who had well-marked muscular tremors, with colic and constipation, without, however, a distinct blue-gum-line, although the gums were spongy. This man was accustomed to apply his mouth to the lead and other metal pipes, and, by an inspiratory effort, to test the joints after the process of soldering. I think this last case supplies a clue to the explanation of the appearance of muscular tremors in the others. From it I conclude that heat is not a necessary, although a frequent, factor in the production of saturnine tremor, as it is unlikely that the tremulousness of the muscles in this case was induced to any great extent by the heated solder. Heat probably aids the rapid production of lead-poisoning in persons engaged in the above-mentioned occupations, by permitting the aspiration of the metal or its compounds in the form of a vapour. We can readily imagine, if this conjecture be correct, that the action of a poison, when it obtains access to the body by means of the great mucous surface of the respiratory system, should be more rapid and general than when it is conveyed in small quantities through the integument of the extremities, especially (as is the case with lead) when the poison is essentially slow and local in its operation on the system.

If we look for a physiological interpretation of the cause of the tremor in such cases, perhaps the best one will be found by adopting Heubel's views (*Pathogenese und Symptome der chronischen Bleivergiftung. Experimentelle Untersuchungen*. Berlin, 1871). He accounts for the fact that in lead-palsy, muscles, which are innervated by a single nerve, are not all equally weakened, by supposing the lead to affect the peripheral intramuscular extremities of the nerves rather than the main branches, so that certain bundles of muscular fibres may be deeply affected by the lead, whilst others closely adjoining them are much less so. Supposing this reasoning to be correct, we can easily understand why tremor occurs in the early stages of this disorder. "Tremor", to use the words of Sir Thomas Watson, "is always a token of debility". If certain fibres in a muscle be weakened, partly by the implication of