them. The cases referred to by him manifested no retinal changes."¹

The apparently trifling but continuous jar to which traveling railroad officials are subjected is declared sufficient in itself to provoke nervous disease, "characterized by a loss of visual power, and of hearing, and a sensation of feebleness and numbness which renders the acts of walking and standing painful. Persons affected grow thin; the generative power dies out; the body is agitated by starting and convulsions, and the intelligence is weakened." One fifteenth of the drivers and firemen of the Lyons and Paris Railroad, in 1857, were found to be suffering from affections of the brain and nervous system.² I am informed by one of the most experienced railroad superintendents in New England, that in his opinion, this statement would apply with equal truth to engineers and conductors in this country.

If constant traveling by railroad engenders a morbid predisposition to disease, the motto *periculum privatum, publica utilitas*, which George Stevenson inscribed on the first car, drawn by the first engine, along the first railroad track, would not inaptly adorn the panels of those which nowadays carry many a half-invalid, middle-aged, and over-worked professional or business man, fifty or more miles a day, from a house in the country, or at the seaside, to his office or counting-room. The wear and tear of engrossing affairs; the high-pressure work of a day which is shortened to the interval between morning and evening trains; the strain of the hurry and running to reach the station, aggravate the pernicious jar of habitual travel, by which railroad men are, as they say, "torn to pieces," and reveal their combined effects in the "nervous exhaustion" so often experienced by the class of persons alluded to, and constitute a circumstance, not without importance, in connection with many cases where the injuries of a collision, or other accident become the subject of litigation.

The opinion is sometimes expressed in evidence for the defense given before juries that the injury was inflicted at a point so low down in the back that the spinal cord cannot have been hurt; that the cauda equina is alone involved, and consequently that symptoms such as might occur if the cord itself were implicated do not exist in reality, or must be otherwise explained.³ No more erroneous statement could be made. The severest form of myelitis as well as the subjective symptoms of concussion of the spinal cord may follow such an injury. A case reported by Mr. Curling⁴ is in point. A fall on the nates while sliding, which did not prevent the boy from getting home unaided, was followed, in five days by paralysis of the lower extremities, subsequently by loss of reflex action, retention of urine, bed sores, etc., and finally by a fatal result. At the autopsy no injury of the spinal column was found, but the cord was softened and the seat of universal pathological changes. Here there was no motive for deception and the symptoms followed the course of a recognized disease. In a case, however, reported by Dr. S. Cabot, where a woman fell on the floor in a sitting posture, a child having pulled away the chair in which she was about to place herself, no part of the spine being struck, insensibility and con-

vulsions occurred at once, followed by blindness, deafness, and loss of the sense of smell.⁵ These anomalous, if not hysterical symptoms, together with others assumed to be those of concussion of the spinal cord, made the subject of them a permanent pensioner on the bounty of the family with whom she lived. In the estimation of those who knew her, complete restoration eventually took place.

(To be concluded.)

FOREIGN BODIES IN THE BLADDER.⁶

BY ABNER POST, M. D.

THE little specimen I have to show to-night as a basis of this paper is a lead pencil about three inches long, covered with urinary salts. Its history is as follows: The patient, while at sea, fell from aloft, striking astride of some object on deck, bruising his perineum, but not otherwise injuring himself. This contusion was followed by retention of urine. The ship's medicine chest not being furnished with either a catheter or a bougie, with a sailor's ingenuity he constructed an instrument by fastening a lead pencil to the end of a wire. The lead pencil had the additional portion, which is glued on to retain the lead, removed. When the instrument was passed into the bladder the urine escaped by its side. Catheterization was successfully performed three or four times, but at the succeeding attempt the pencil separated from the wire and slipped into the bladder. There it remained about three months without causing much inconvenience. At the end of that time, being then ashore, he was seized with retention. Consulting an apothecary in whose skill in urinary difficulties he had reason to have confidence, he was given a diuretic, with instructions to hold his water as long as possible, then to pass it suddenly with all his force. Following directions, he failed to pass his water, and came into my hands in the anxious condition common to patients with retention, with the end of the pencil just visible within the meatus. He was immediately etherized, and the pencil extracted (not without the application of considerable force) by means of a pair of dressing forceps. Weil-marked cystitis was present, but the patient almost immediately passed out of my care, and his subsequent history is unknown. There was nothing to particularly awaken suspicion at the time, and his story was accepted as probably true, the not uncommon use among sailors of bougies of their own manufacture giving an additional air of probability to the account. At present I should be a little less ready to accept a similar history, and be more inclined to believe this might have been one of the very numerous cases in which a foreign body is passed into the bladder from other motives than the very legitimate one of relieving strangury.

The possession of this little specimen has interested me in the various accounts of foreign bodies in the bladder, and led me to give a short *résumé* of such cases as seemed of more than usual interest. This paper has no other value than the slight interest attaching to a superficial history of unusual cases.

Foreign bodies in the bladder (calculi not being under consideration) may be classed under the following heads:—

⁵ Roston Med. & Surg. Journal, Feb. 5, 1880, p. 132.

⁶ Read before the Boston Society for Medical Improvement, April 12, 1881.

¹ Lancet, March 19, 1881, page 462.

² Lancet, Jan. 18, 1862, page 80.

³ The spinal cord terminates and the cauda equina begins at the lower border of the first lumbar vertebra. They occupy respectively three fourths and one fourth of the spinal canal.

⁴ Transactions of the London Pathological Society, vol. viii., p. 31.

(1.) Portions of instruments introduced by surgeons and accidentally broken off.

(2.) Articles not ordinarily classed as surgical instruments, but introduced by patients for legitimate purposes.

(3.) Articles introduced accidentally in some other way than through the urethra.

(4.) Articles introduced for other than legitimate purposes.

A very large proportion of foreign bodies in the bladder consists of portions of urinary instruments which have broken while in use or have accidentally slipped from the surgeon's hands. Certain instruments are particularly liable to break, as gutta-percha bougies, which grow brittle with age, and fortunately are now seldom used. The elm-bark bougies, which are said to have been very common at one time in the South, were specially liable to fracture. In the earlier days of lithotomy it was not very unusual for the lithotrite to separate, and Lallemand's porte caustique has often left the cup behind. Cases in which the whole or parts of instruments have slipped into the bladder are known to every surgeon of large experience; they occasionally appear in every hospital, and the specimens adorn every well-furnished museum. Of such ordinary cases it is unnecessary to make further mention.

One of the most curious cases in this category was a calculus removed by Sir Astley Cooper, which had formed around a female catheter which had lain for months in a woman's bladder. The instrument had escaped from the surgeon's hands into the urethra, and fearing to meet the responsibility of the accident he said nothing about it, but allowed it to remain. The affair was unknown until the extraction of the stone by Sir Astley.

Patients are often led by necessity or a desire for economy to substitute, for instruments regularly made, articles of domestic manufacture. Wooden bougies were not unfrequently exhibited by patients at the marine hospital during my residence there, and a similar instrument is mentioned incidentally in a case of cystitis reported some years since by Dr. Arthur Cabot as occurring in the practice of his father. I have so far hit upon no accident from the breaking of such an instrument, though several pieces of wood have been found in the bladder. I have no doubt some of them were introduced in this way.

The accidents that befall these extemporized instruments cause strange revelations of domestic economy, and are of particular interest in connection with this specimen, which would probably be classed under this head. From among the many curious cases of this character the following may be taken as samples:—

Sir Astley Cooper tells a case occurring in the practice of a provincial surgeon as follows: A man had had difficulty in passing water for two or three years, and for many months before his death had been in the habit of relieving his bladder by introducing a piece of straw. He became quite expert in the use of this instrument. One day, however, he unfortunately let the straw slip, or it broke off, and from this day he became worse. Notwithstanding his sufferings, he never made known the real cause of them, and the matter was revealed only by the post mortem; further details were then given by the wife. There were found in his bladder, behind an enormous prostate, several calculi, with bits of straw for a nucleus, three such concretions being formed at intervals along a single straw.

In the *New York Medical Gazette* for 1852 is an account of an attempt to use a piece of sealing-wax as an instrument for dilation. An old gentleman, the Hon. Mr. H., had been troubled for some years with difficulty in urinating. Various medicines giving no relief, he resorted to the mechanical assistance of a piece of sealing-wax three eighths of an inch in circumference. Of this bougie he left a portion two and one half inches long in the urethra; to remove this the gentleman had recourse to a wire, and pushed the sealing-wax on into the bladder. There it was made the subject of various experiments in regard to the solvent action of chloroform, which were successful in causing it to adhere to the walls of the bladder, whence it was finally removed by lithotomy, many small portions adhering so firmly as to necessitate their being left to separate by themselves.

In Guy's Hospital Report for 1837 is figured a calculus formed about a piece of the stem of an ordinary clay pipe, which had been used as a bougie by a man while intoxicated.

An important case in the history of surgery is given in the *Medico-Chirurgical Transactions* for 1807. Mr. Thomas, in whose practice it occurred, related the case substantially as follows: A lady was seized with retention of urine, and her husband, "who had read much in surgical books," undertook to relieve her; for this purpose he used an ivory ear-pick, and was successful in causing the urine to flow. The stream, however, was not satisfactory to him, and he re-introduced the ear-pick, which slipped from his fingers into the bladder. This gentleman's reading had given him a very well-grounded horror of incision of the urethra, and he declined the operation when proposed by the surgeon; Mr. Thomas accordingly dilated the urethra with sponge tents, and succeeded in removing the extemporized bougie.

Mr. Thomas did not claim originality in this matter. It had been previously proposed, at least. A case had also been reported by Mr. Broomfield, where he had effected dilatation in a young girl by introducing the cæcum of a small animal in a collapsed state into the bladder and filling it afterwards with water.

[Incidentally, it is worthy of mention that at the close of the same article Mr. Thomas gave an account of the introduction of his whole hand into the rectum in pursuit of a stick which a young man had passed in to bring about an evacuation.]

This case of Mr. Thomas had very important results. In 1817 Sir Astley Cooper published a paper in which he said he had resolved to employ Mr. Thomas's principle on the first opportunity, and having used it successfully and told his cases in his lectures, two others had been communicated to him by former pupils. The use of the sponge was not only painful, but very disagreeable, as the woman was usually obliged to retain her urine while the tent remained in place, which must have been almost impossible in bladders rendered irritable by the presence of a foreign body. To meet this difficulty Sir Astley first proposed a groove by the side of the sponge or a catheter through the middle. It finally occurred to him that the dilatation might be mechanically done by an instrument which would allow the escape of the urine. He acted on this idea, and in 1822 read a paper on the removal of a stone and a piece of catheter by a dilator made for him by Mr. Weiss, who, as Sir Astley says, "with his accustomed ingenuity immediately suggested an instrument infinitely better devised

than any I could have contrived for the purpose." In his first case the dilator was retained in place from eight A. M. to four P. M., when the finger could be introduced. The patient never lost the power of retaining her urine.

From the ease of dilation Sir Astley determined to do the operation in minutes instead of hours, and gave the history of his second case: A patient, occasionally subject to retention, had acquired the art of catheterizing herself; on one occasion the catheter broke, and a part remained in the bladder. The dilator was introduced, and in two minutes the urethra was sufficiently dilated to allow the introduction of a finger. Her urine passed involuntarily until the next menstrual period, after which she gained control of it.

The same article contains in an appendix an account of a case by Thomas Chapman, of Wandsworth, in which a female catheter slipped into the bladder while the operator left the bedside to reach a basin from a table. The extraction was accomplished by digital dilatation, forceps, little finger, and forefinger being successively introduced, without patient or anybody else being aware of the accident or the means taken for the recovery of the instrument.

Such are some of the steps which have led up to the now not unusual operation of rapid dilatation of the female urethra. Sir Astley Cooper's lead was not steadily followed, however, and his connection with the operation has for the most part been forgotten.

The annals of military surgery contain numerous cases in which shot-wounds of the bladder were complicated by the presence of foreign bodies in the viscus. These bodies may be either the projectile or fragments of bone, bits of clothing, or splinters of wood. Sometimes these bodies, if small, may be evacuated through the urethra. More often they form the nucleus of a calculus, which can be removed only by surgical interference. During the war of the Peninsula a sailor was struck by a ball which penetrated the right ileum. After suffering from retention for five days he passed per urethram a roll of shirting and trousers material, two inches in length. A month later lithotomy was done by the elder Cline, and a flattened ball with a piece of bone adhering to it, and encrusted with urinary salts, was removed.

One of the specimens of the Army Medical Museum is a calculus formed about an arrow-head, removed from the body of an Indian.

The cabinet of this society contains a large phosphatic calculus which formed about a conical musket-ball. The man was shot through the sacrum at Gettysburg, and the calculus was removed by lithotomy, in 1871, by Dr. Cabot.

The medical history of the war gives a table of twenty-one cases of lithotomy for the removal of traumatic vesical calculi, with extended accounts of several cases, and exceedingly interesting notes from a very wide field.

In several cases pins have been found in the bladders of children a few months old, which had apparently penetrated either from the rectum or by some other indirect passage, and parasites of various kinds have gained admission, and been passed per urethram.

In Eve's Remarkable Cases is the story of a young woman who passed from her urethra, one week before the birth of an illegitimate child, a hair-pin, which she

claimed to have swallowed two years before. She produced three witnesses who were in the room when the hair pin had gone down her throat.

The catalogue of substances introduced for other than legitimate purposes is a very long and curious one. Pieces of French chalk, barometer tubes, a watch chain, stilettos, pins, hair-pins, hair, feathers, pencil cases, pen holders, matches, an ivory whistle, small keys, a mustard-spoon handle, a leather boot lace, grass heads, and a portion of a suspender buckle.

It is but charitable to suppose that some of the individuals who thus abused their urethrae were insane, as was certainly the case with the patient at the McLean Asylum who introduced the portion of the suspender buckle, which is now preserved in the museum of this society.

The most prominent position in this list must be given to the hair-pin; as a foreign body in the bladder it knows no limits of age, sex, or nationality. Its occurrence in that situation is almost too common to need more than mention, though the difficulty of extraction will always make it a subject of interest.

Dr. Bigelow reported a case, some years ago, where a girl repeatedly introduced both hair-pins and common pins.

Of the other cases some few are worth giving in detail. In the *Lancet* for August 23, 1873, is reported the case of a woman who on admission to hospital complained of intense pain in the abdomen. The urethra, which was abnormally dilated, easily admitted the introduction of a finger into the bladder where there was felt a hard voluminous body, evidently the cause of the pain. The woman then mentioned that on account of great difficulty in making water she had passed a candle through the urethra and had let it fall accidentally into the bladder; forceps were easily passed through the canal, and after some efforts the candle was caught by the wick and drawn out. The end of the candle, which had been rounded with a knife, was seen to be covered with calcareous matter.

The reasons assigned for the introduction are often as singular as the articles introduced. Mr. Beckett, in Holmes's System of Surgery, tells the case of a man who introduced the wooden handle of a steel penholder with the intention of stirring up some sediment which he believed to be there. It was necessary to open the urethra for its removal.

One of the most ludicrous cases was that of a man who introduced a piece of French chalk of convenient size and shape to the middle of which was attached a piece of string, to the other end was tied a piece of an ordinary shoe-horn. The man actually entered Guy's Hospital with this dangling from his penis.

Patients are sometimes made the subject of experiments by others. Mr. Harrison, of Liverpool, tells the story of a militiaman who was thus made the subject of a practical joke; while under the influence of liquor a prostitute, in whose company he was, introduced up his urethra a pencil case about four inches long, which Mr. Harrison was fortunate enough to remove the next day.

In 1851 Dr. Mackenzie, of Edinboro', removed five calculi from the bladder of a laborer which were remarkable for their uniform size and shape. They were found to contain ordinary field beans as nuclei. Six months previous, while intoxicated, he had quarreled with two companions who had knocked him down and, while he was insensible from the combined effects of

liquor and the blow, had crowded beans into his urethra, as well as into his mouth and his rectum.

In 1853 Dr. Van Buren removed a stone formed upon a piece of slate pencil which the young man claimed had been slipped into his urethra by a boy with whom he was in the habit of playing.

When I was first told of the directions given by the apothecary to my patient I was inclined to look upon it as the advice of a man, unable to carry out further treatment, more desirous of receiving a fee than of returning a proper equivalent (as without doubt it was), and the result as a happy accident; but the number of cases in which similar means have been followed by an equally fortunate result would seem to show that it is not an altogether irrational procedure. A most extraordinary result of this kind is given in the *Philadelphia Medical Times* for 1872. Dr. W. Hunt reports a case of a boy who passed a galvanized watch chain down his urethra. The watch chain, which had a string attached to the middle, slipped into the bladder; in pulling upon the string the watch chain doubled upon itself, and at last the string broke. The boy was directed to drink copiously, and to resist the desire to micturate as long as possible. Fortunately the chain presented longitudinally and was passed with the first force of the full stream.

Mr. Hutchinson, as quoted by Coulson, gives directions for distending the bladder by injections in cases in which the symptoms are not urgent. Several cases are recorded in which different articles have been ejected from the bladder after repeated attempts to find and extract them have been fruitless.

Since the establishment of the greater tolerance of the bladder of operative interference such failures are less likely to occur. It is perhaps well to know that such attempts to induce the bladder to empty itself are occasionally successful, as it does not leave a man entirely helpless who does not possess proper instruments for extraction. Possibly Dr. Bigelow's straight tubes and repeated washings might be of service with certain small substances.

Cases left to themselves are not always by any means so fortunate in results, as in a case from Cooper's Surgical Dictionary: a surgeon, during catheterization of a female, was noticed to exhibit signs of confusion. He quitted his patient abruptly. The same day he left his home, and was never seen afterwards. The lady's urinary difficulty continued for several years until an abscess in the sacral region gave exit, to the astonishment of all concerned, to a blackened female catheter.

Mr. Harrison figures in his *Urinary Surgery* a head of meadow foxtail grass with a long portion of the stalk. It had been passed into the bladder, through the coats of which the stalk passed into the peritoneal cavity, causing peritonitis and death.

Articles introduced into the male urethra seem to have a tendency to pass into the bladder; certain it is that a small body once beyond the meatus is most likely to fall at last into the bladder. An attempt at an explanation was made by Christopher Heath, in 1866, in a short article on the endoscope. "I have noticed," he writes, "in perfectly healthy urethræ that there is a constant vermicular contraction of the wall of the canal, apparently passing towards the bladder, and this accounts for the well-known fact that foreign bodies in the urethra tend to pass in that direction. This is wanting in cases where any induration exists."

Sir Henry (then Mr.) Thompson took exceptions to

this statement, and maintained that the motion was in exactly the opposite direction and that foreign bodies have a strong tendency to pass outwards to the meatus and not inwards to the bladder. Several letters were exchanged but without any positive settlement of the question at issue.

The tendency of deposit to form about the central portion of an elongated object is hinted at by the deposit on the pencil, which is much thicker a short distance from the pointed end than at either extremity. Probably the roughened spot left by the knife in sharpening the pencil was the first point upon which deposit was made. The ends must naturally be subject to more or less attrition unfavorable to deposition. In certain cases, however, the deposit has taken place at the end.

An article on Foreign Bodies in the Bladder, in 1856, by M. Denucé, was copied from a French journal into the *Medical-Chirurgical Review*. The writer had collected particulars of three hundred and ninety-one cases. In closing his article the author compares the termination of cases prior to and after the introduction of lithotripsy. Before 1830, when lithotripsy may be considered to have been generally established as an operation, but four cases of extraction were recorded in the male and sixteen in women to one hundred cases of lithotomy for similar causes; while from 1830 to 1856 forty-six cases of extraction in males and twenty-seven in females are recorded, while lithotomy had sunk to twenty-one times, — a marked progress in favor of the less serious method.

An equal improvement is shown since his day when we compare his remark that "urethral lithotomy is generally to be preferred in women, but we must remember that in women the urethral operation is almost always followed by incontinence of urine, and the vaginal by vesico-vaginal fistulæ," with our present method of extraction through a rapidly dilated urethra and our more successful means of dealing with vesico-vaginal fistulæ.

A MEDICAL SKETCH OF LIMA.

BY A. C. HEFFINGER, M. D.

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It is seldom that our medical periodicals contain notices of medicine in South America, and indeed there is so little progress that it is rarely necessary; a sketch of the history and present state of the profession in Lima, the most advanced city on the west coast, may not, however, prove uninteresting to the readers of the JOURNAL.

The medical history of Lima dates from the sixteenth century or from the founding of the *University of San Marcos* by royal decree of Charles V., May 12, 1551. Twenty years later Pope Pius V. conceded special privileges to this off-shoot of Salamanca, and the title was changed to *The Royal and Pontifical University of San Marcos*.

The first university of the new world was established at the instigation of the Dominican friars, who controlled and supported it during its infancy, and for many years thereafter. Its scope was sufficiently comprehensive even for a much later period; it embraced the classics, the sciences, and professions, and polite learning in general. It was probably the first school west of the Atlantic to give medical instruction and issue medical diplomas, which privileges it held exclusively, in Peru, for two and a half centuries.