TRANSACTIONS OF THE PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, May 6, 1901.

The President, De Forest Willard, M.D., in the Chair.

TWO CASES OF LIGATION OF THE EXTERNAL CAROTID FOR SEVERE HÆMORRHAGE,—ONE AFTER TONSILLOTOMY, THE OTHER AFTER A SLIGHT INTRANASAL OPERATION.

By WILLIAM W. KEEN, M.D., F.R.C.S. (Hon.),
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The following two cases are of sufficient rarity to make it desirable to record them. Persistent hæmorrhage from the tonsil or the posterior nasal cavity, while infrequent, is a cause for the greatest anxiety when it does occur.

I do not wish to advocate indiscriminate ligation of the carotid, but, in view of its effectiveness and of the slight danger which attends modern operations, I would urge that it be resorted to more frequently and not postponed too long. The prompt recovery of both of these and other patients similarly treated warrants a relatively early operation. Of course, when I say ligation of the carotid, I mean the external carotid. It is a perfectly easy operation, requires but a few minutes, and is followed by no evil consequences. To ligate the common carotid when the bleeding vessel is a branch of the external carotid is an inexcusable surgical blunder. Not infrequently the cutting off of the circulation from the brain through the internal carotid has resulted in cerebral softening and death.

Another encouraging feature of the operation in both cases was that the operation wound did not bleed. The natural fear that renewed uncontrollable bleeding might attend the new wound may have deterred surgeons in the past from resorting to the operation, but this fear is not generally realized, and should be cast aside.

Case I.—*Ligation of External Carotid for Hæmorrhage after Tonsillotomy.*—Mr. L. B. R., aged twenty-three years, had long suffered from a greatly enlarged left tonsil, which Dr. Walter J. Freeman removed on November 6, 1897, by a tonsillotome between 9 and 10 A.M. No special hæmorrhage occurred at the time of operation, but the bleeding did not cease. Dr. Freeman applied cold and, later, hot water, pressure, packing, styptics, etc., and all in vain. I was called to see him at 3.30 P.M. At this time Dr. Freeman estimated that the patient had lost not less than three pints of blood. He was very blanched and faint. We decided at once on ligation of the external carotid, which was done as soon as he could be taken to my hospital.

He made an uninterrupted recovery, the highest temperature being 100.6° F. the day after the operation. The hæmorrhage ceased immediately upon ligation of the vessel, and he left the hospital nine days after the operation, having remained there that length of time in order to regain his strength.

Case II.—*Ligation of External Carotid for Severe Hæmorrhage following an Intranasal Operation.*—Mr. Van D. was first seen by me at the request of Drs. B. A. Randall and Walter J. Freeman on February 12, 1901, at 4.30 P.M. Dr. Randall has very kindly furnished me with the following detailed earlier history, showing the necessity for the operation, which is so instructive that I give it in full.

"I first saw the patient on January 24, finding a postnasal catarrh with marked grayish hypertrophies on both sides of the septum, decided that mild measures would prove insufficient for his relief. The anterior nares were rather unduly free, as if by shrinking after previous hypertrophy; the accessory sinuses seemed unaffected; the sphenoids being readily probed, and the trouble apparently limited to the septal cushions. These half-filled the choanæ and overlapped the back edge of the septum in a heart-shaped mass, larger on the right. History of polyp removal four years before made snaring of the posterior turbinal ends seem the real operation. There had been sharp primary but no secondary hæmorrhage at that time, and the proposal to curette the hypertrophies was promptly accepted. This was done with a sharp curette under aseptic precautions, making from the front one firm sweep on each side from the back of the septum forward one inch. There was not more than a drachm of bleeding from each side. Cocaine had been very sparingly mopped upon the surfaces attacked.

"He returned two days later with good retraction on the left side; but on the right the lower part only of the cushion was smaller, while the

large upper portion was little reduced. It was therefore again curetted at the higher point, and the instrument seemed to grate along the periosteum. The bleeding was again slight. He was to return on the 28th, but did not come in; was pressed with work at the office till rather late; felt stuffy and headachy, so he took a short Turkish bath and hurriedly dressed and dined, then took a lady to the theatre. Towards the close of an exciting play he was attacked by sharp hæmorrhage, and had to summon medical aid, as it proved uncontrollable.

"I was called just after midnight, and found him with the bleeding nearly controlled, thanks to the firm anterior packing of both nostrils which had been done by two practitioners who had been earlier called. He had lost not less than twenty ounces, and more than an hour had been spent in the efforts to stop it, before I could help him to a cab and place him in bed in the Polyclinic Hospital. There was then a firm, dark clot filling the posterior nares, around which traces of blood still oozed, and both anterior nares, and even far back on the right, were tightly packed with sterile gauze. Bleeding recurred several times during the night, requiring the replacing of the packing; a spray of hydrogen dioxide seemed very helpful in controlling the flow. In the morning there was quiet; but sharp bleeding recurred during the day, incompletely controlled by packing and dioxide only after an hour. I removed the packing and worked back with adrenal glycerole until the bleeding points were definitely located at the curetted areas on each side of the septum, and these were lightly seared with 25 per cent. trichloracetic acid. All clot was removed and a clean, bloodless tract found. Slight recurrence of hæmorrhage in the evening called for renewed but superficial searing with the trichloracetic acid.

"All seemed secure on the 30th, and I told him he could leave the hospital, but a trace of bleeding when he packed his bag led him to remain that evening. He came next day to my office showing no signs of oozing, and was dismissed to his boarding-house, but warned that care must be exercised in a couple of days, when the eschars would be loosening. I was summoned in haste that evening to find him again bleeding severely from the *right* side, but with free flow into the throat and from the left nostril when impeded on the right. Not until a firm postnasal plug was introduced could full cessation be secured. That left naris was also packed from the front, as he felt insecure without it, and he was taken back to the hospital. I was recalled to him at midnight, and stayed by him during the night, although there was but slight oozing at intervals.

"February 1 was almost undisturbed; but on the 2d bleeding recurred, and after brief control baffled all efforts at its complete control. Dr. Freeman saw him in consultation, and emulsion of adrenal, melted gelatin, and other styptics were injected from back and front without avail. Dr. Agnew's recommendation of a tampon of ham-fat was then adopted, and it was introduced from the front until its end protruded from the choana, and its anterior end was secured by a ligature and supported by a small gauze tampon. Little oozing was noticed during the evening, but when an enema was given at ten o'clock he vomited some ten ounces

of blackish blood, and his following stools were tarry. All seemed quiet on the 3d, and Dr. Kyle, who had once treated him, saw him in consultation, but thought the plugging too efficient to be disturbed for study. Opium and lead acetate were substituted for the calcium chloride which he had been taking. Little portions of dark clot came away at times on the 3d and 4th, and tenacious mucus worked out along the plug front and back, but there was no fresh bleeding. On the 5th the plug was quite offensive, and so loose that it seemed best to remove it after gentle spray with Dobell's solution. A linear adhesion was apparently torn loose, and bleeding recurred as vigorously as at any previous time. Dr. Kyle was summoned, as he had asked to see it if again bleeding; but no measures availed to more than lessen the flow until the galvano-cautery was lightly applied to the curetted area, when immediate control was gained. A ham-fat plug was replaced, but too tightly, causing crushing of it in pressing it back, and it disintegrated, especially on the second day, and permitted fresh hæmorrhage. A better plug was introduced after renewed cauterization and, with careful cleansing and use of aristol, was retained until the 10th, when brief bleeding recurred frequently during the day and twice sharply in the night. On the 11th Dr. Freeman saw him again in consultation, and advised that the external carotid be tied, as he felt that his condition was growing critical and that local measures had been tried to the full. Dr. Keen was called in on the 12th, and, concurring in this advice, tied the external carotid that afternoon. The nasal plug was at once removed without hæmorrhage, the nasal passages thoroughly cleansed and dusted with aristol, and no further bleeding has since taken place, except that some crusting at the anterior nares caused at times trifling excoriations, and a drop or two of blood oozed at these points. The patient left the hospital in two weeks after primary closure of the cervical wound. Pulsation in the vessel above the ligature was very uncertain until the eighteenth day, when it became positive and fairly strong."

Dr. Randall estimated that he had lost probably ten pints of blood in all. So much blood had been swallowed that the stools were tarry. When I first saw him his pulse was weak, his face blanched, and it seemed pretty clear that he would soon succumb if the bleeding was not stopped. I therefore concurred in the judgment of Drs. Randall and Freeman that immediate ligation of the external carotid was indicated. This was carried out an hour later, the artery being tied with silk without any difficulty. The wound through which the artery was reached did not show any tendency to bleed, and no ligature was required. While I was ligating the external carotid, Dr. Stern gave the patient a quart of saline solution by hypodermoclysis.

He made an uninterrupted recovery. His highest temperature only once went above 99.4° F., and he left the hospital on February 27, fifteen days after the operation. On February 18, six days after the operation, about a drachm of blood was lost, but from the *left* nostril near the vestibule, where a crust had been torn away. There was occasionally a little oozing from the left nostril, probably from superficial excoriation, but no bleeding whatever on the right side, and that on the left was very insig-

nificant. Fifteen days after the operation, pulsation had not returned in the artery, but three days later there was a slight but distinct pulsation perceptible.

CARBOLIC ACID TREATMENT OF ANTHRAX.

Dr. Louis H. Mutschler read a paper with the above title, for which see page 147.

A REPORT OF TWO CASES OF FACIAL ANTHRAX TREATED BY INJECTIONS OF CARBOLIC ACID, WITH RECOVERY.

By LOUIS H. MUTSCHLER.

At a meeting of the Philadelphia Pathological Society in December, 1899, Dr. Jopson reported a case of anthrax that came under his care at the Episcopal Hospital dispensary. In his paper he mentioned three other cases besides his own, making four in all that had been reported in Philadelphia. Of these four cases, three terminated fatally, and the outcome of the fourth was unknown. During the past few months I have had two cases of anthrax under my care, and on investigation I have learned of three other unreported cases that have occurred in Philadelphia. Briefly, they are as follows:

The first case was seen, five years ago, by Dr. Harry Deaver. The man was employed in a tannery; the point of infection was on his neck; he had slight fever; his head, neck, and chest were œdematous; he died in a few days. Pure cultures of anthrax bacilli were obtained from this case.

Dr. Loeb supplied me with notes of the second case. The patient came to the dispensary of the Jewish Hospital about one year ago. His occupation was that of a tanner. The point of infection was on his neck, and when he applied for admission his neck and chest were œdematous; he had a slight fever, otherwise he felt well. Microscopical examination of the discharge from ulcer showed the presence of anthrax bacilli. He was refused admission to the hospital and referred to his own physician. Dr. Loeb called to see the patient the following day and found him dead.

The third case came under the charge of Dr. Ellis Given while a resident at the Episcopal Hospital. Dr. Given kindly

furnished me with the following notes. In May, 1900, J. McM., thirty-six years old, a wool-sorter, presented himself at the Episcopal Hospital dispensary. The point of infection was on the left forearm (Fig. 1), which was swollen; he had a temperature of 104 1/5° F.; pulse, 122; respiration, 35. He was denied admission at the Episcopal Hospital and referred to the Philadelphia Hospital. At the latter place he was treated by injecting pure carbolic acid about the ulcer. This patient recovered. Pure cultures of anthrax bacilli were obtained from this case.

Case I.—The first case of my own which I wish to report came to my dispensary at the Episcopal Hospital on December 21, 1900. C. S., a robust German, twenty-one years old; for the past three months he has been working in a morocco factory. He said lately he has been handling goat-skins principally, and that most of the skins came from China. One week ago a small pimple appeared over his left eyebrow; this he squeezed with his fingers. Three days later he noticed the pimple getting red and larger. When I first saw the patient, which was about five days after he infected himself, he had a sore two centimetres by three centimetres over the left eyebrow. In the centre was a dark slough and about the margin, which was elevated, were papules and vesicles, there being a free discharge of serum from the latter. He had some œdema extending above the ulcer, also in temporal region, eyelids, cheek, and some slight œdema of the neck. (Fig. 2.) He said he had no pain, and complained merely of slight discomfort caused by the swelling. I could detect no enlargement of any glands. His temperature was $99^{1}/_{5}$° F. I suspected the case as one of anthrax, and an examination of the discharge by Dr. Ghriskey revealed the bacillus of anthrax in large numbers. The patient being refused admission at the hospital, I agreed to treat him at his home. The method of treatment was as follows: On the first day I injected twenty-five minims of pure (95 per cent.) carbolic acid about the periphery of the ulcer, introducing the needle at eight different points. He complained of some pain as the acid was injected, but this readily subsided as the tissues became anæsthetic. I saw no other ill effects from the acid. A wet bichloride of mercury (1 to 2000) dressing was placed over

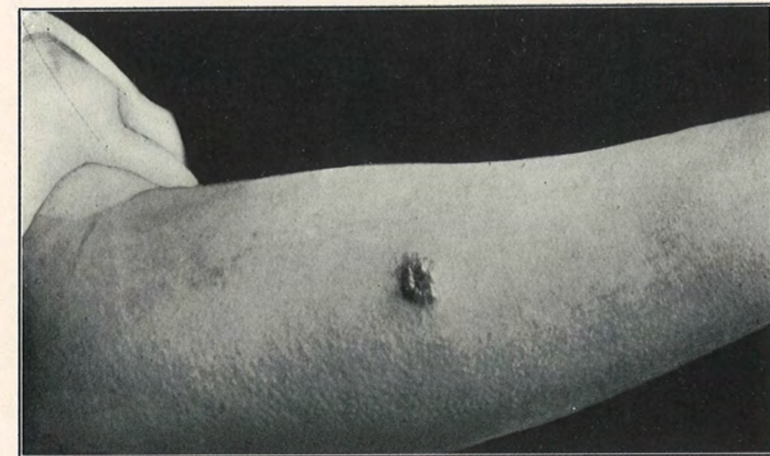

Fig. 1.—Anthrax of forearm about thirty hours old.—(Given.)

the ulcer, and hot applications ordered to be kept over the face. I instructed him as to the hygiene of the case. The following day the œdema was more extensive, his eye being entirely closed and the swelling of neck greater. The treatment of the previous day was repeated. On the third day the swelling had subsided somewhat, and the injections were omitted, the ulcer being dressed with the wet bichloride only. During the remainder of the course of the disease the bichloride dressings were continued. He received no internal medication. The slough separated in about three weeks, and when I last saw him, one week ago, he had a scar not as large as a quarter of a dollar over his brow; otherwise he seemed to be perfectly well.

Case II.—My second case, although he is still under treatment, is so far along the road to recovery that I feel safe in reporting him as cured. He came to the Episcopal Hospital dispensary in April, 1901. As he was denied admission to the wards, the superintendent asked me to treat him at his home. I elicited the following history.

E. B., aged forty-four years, married, born in Poland. He is employed in a leather factory. Recently he has been working on goat-skins. He says the skins came from Russia. I first saw him on Saturday. One week previous he had a small red spot on his left upper eyelid. This grew rapidly, so that when he reported for work the following Monday his employer thought he had been fighting, and sent him home. He was treated at a drug store in his neighborhood, and when I first saw him, about one week after the commencement of the disease, he had the appearance shown in the photograph (Fig. 3). The picture shows fairly well the amount of the swelling. The œdema extended up into his scalp and down on to his neck. The distention was so great under the jaw that the patient asked me to incise it at this point, being under the impression that he had an abscess. The œdema was confined entirely to one side; it extended up to but not beyond the median line of the body. I could find no glandular enlargement in this case. His cheek was very red, firm, and had a few vesicles at different points, so that it looked not unlike erysipelas. The black slough which was originally on the upper lid had extended to the lower. Around the periphery of the slough there was an ugly, elevated margin of papules and vesicles, from which there was a copious discharge of serum. This pa-

tient, like the first, had no pain, and complained only of a sense of fulness in his head. He had a few chills; his temperature was not above 100° F. at any time I saw him. His sleep was disturbed, and when the disease was at its height there were a few nights that he did not sleep at all. Pure cultures of anthrax bacilli were obtained from this case. The first day I saw him I injected twenty-five minims of the pure carbolic acid at six different points of the base of the ulcer, and followed this by a wet bichloride of mercury (1 to 2000) dressing. This treatment was repeated the next day. The patient was advised to keep hot applications on the face. I saw him every day for one week, thereafter less frequently. The œdema gradually disappeared and the slough separated in about sixteen days. At present he has two granulating surfaces, one on each lid. There is a strip, about one centimetre wide, of healthy skin intervening between the sore and the free margin of the upper lid; the same condition exists on the lower lid. He will have some eversion of upper lid, also slight ectropion of lower. A thorough bacteriological study was made of these two cases by Dr. Ghriskey. The appended is Dr. Ghriskey's report.

Bacteriological report on the case of C. S. (Case I), referred to the clinical laboratory of the Protestant Episcopal Hospital for examination.

Cover-slip smear preparations were made from beneath surface of the lesion, the fluid obtained being rather clear serous. Agar-agar slants (Esmarch dilutions) and a bouillon tube were inoculated. The cover-slip preparations, stained with Löffler's alkaline methylene blue, showed microscopically the presence of polyneuclear leucocytes in fair number, and a few large bacilli deeply stained, singly, in pairs, and short chains with square ends and clear interspaces between the segments. Some involution forms were found, indifferently stained, and appearing as short and longer filaments. In several of the polymorphonuclear leucocytes were three and more bacilli. Numerous micrococci then were noted. All of the slant agar tubes, after twenty-four hours in the incubator, showed a universal surface growth. Smears from these tubes examined microscopically showed the presence of micrococci. The bouillon culture was diffusely opaque, and a small, tenacious growth was evident in bottom of tube when shaken. Cover-slip preparations from this showed long chains of

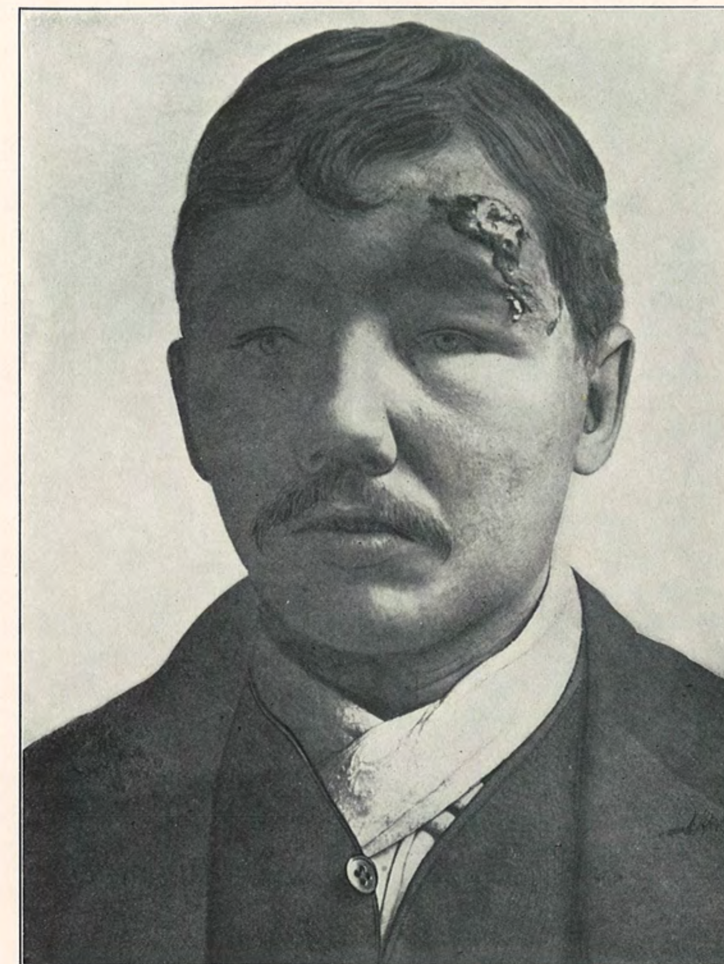

FIG. 2.—Anthrax of brow.

a large bacillus, suggesting the Bacillus anthracis in its morphology. Inoculations with agar-agar (Petri plates) were made from the bouillon culture, and two organisms observed, a staphylococcus, later identified as the Staphylococcus pyogenes aureus, and a bacillus; the latter, from subsequent inoculation in various culture media, was identified as the Bacillus anthracis. A white mouse, inoculated with this bacillus, was found dead after thirteen hours, and a pure culture from heart's blood was recovered.

[NOTE.—The above bacteriologist found spores on bacillus serum.]

In the case of E. B. (Case II), the Bacillus anthracis was very numerous in the smear preparations, being likewise found within the leucocytes, and was recovered as well as the Staphylococcus pyogenes aureus in pure culture from the primary cultures. This organism was virulent for white mice, the animal dying in less than twenty hours.

Bacteriological examination in case of J. McM., patient of Dr. Given.

Cover-slip preparations made from the clear serous fluid of vesicle stained with Löffler's blue showed the presence of large bacilli singly, in pairs, and short chains. Only stray polymorphonuclear leucocytes were seen, and none was observed enclosing bacilli. A bacillus was recovered in pure culture, and a detailed study was made. In its behavior in various culture media,—growing characteristically in gelatin,—stab inoculations, the microscopic appearance of the colonies, and the slow liquefaction of blood serum, the organism was found to be identical with the Bacillus anthracis. The agar-agar culture unfortunately died out during the writer's absence from the city, and no animal inoculations were made.

Doubtless there have been other cases of anthrax that have occurred in Philadelphia and never been recorded. Probably some of the cases of sudden death that have taken place in people employed in handling wool, hair, hides, etc., have been due to either pulmonary or intestinal anthrax. I trust this report will show the frequency of sporadic cases of anthrax in Philadelphia. As most of these cases can be traced to the direct importation of the disease from foreign countries, it is

my intention to call the attention of the Department of Agriculture to the importance of establishing some form of disinfection on the class of imported animal products that is most liable to convey the disease.

DISCUSSION.

Dr. Jopson said that he had reported a case eighteen months ago, with Dr. Ghriskey, which he had observed at the Episcopal Hospital, where, it will be noticed, a number of cases had been first seen. The Episcopal Hospital is located in a large manufacturing district, where woollen mills and tanneries are in operation. Many of the workmen who apply there for treatment are particularly exposed to this form of infection. He had collected four cases occurring in Philadelphia, besides his own, including one, which Dr. J. Chalmers Da Costa had given him notes of, seen at the Jefferson Hospital. His own cases—five—and those referred to by Dr. Mutschler made ten cases of this rare and malignant disease occurring in this city.

He found on questioning his patient, and several other tanners at the Episcopal Hospital whom he treated, that they had no knowledge of any such disease as anthrax, and that there were no precautions taken in their work to prevent infection. In the article on Anthrax in Clifford Allbutt's system, written by Bell, who was the first to point out the true nature of the pulmonic form of the disease, he mentions that in the wool-working district in Bradford, England, where anthrax has frequently occurred, a number of measures have been instituted to protect the workers. Ravenell, of this city, has done some work on the possible sterilization of hides for destruction of anthrax germs and spores. It seemed to him that the attention of the Agricultural Department and of the business community, especially the employers of men who handle such things as hides and wool, should be called to the possibilities of protecting them against such a malignant condition as anthrax.

Dr. J. Chalmers Da Costa said that in the case which came to the dispensary of Jefferson Hospital, it was recognized clinically as undoubted anthrax, and the culture developed the characteristic organisms. He never knew what became of the man, who refused treatment and was not traced.

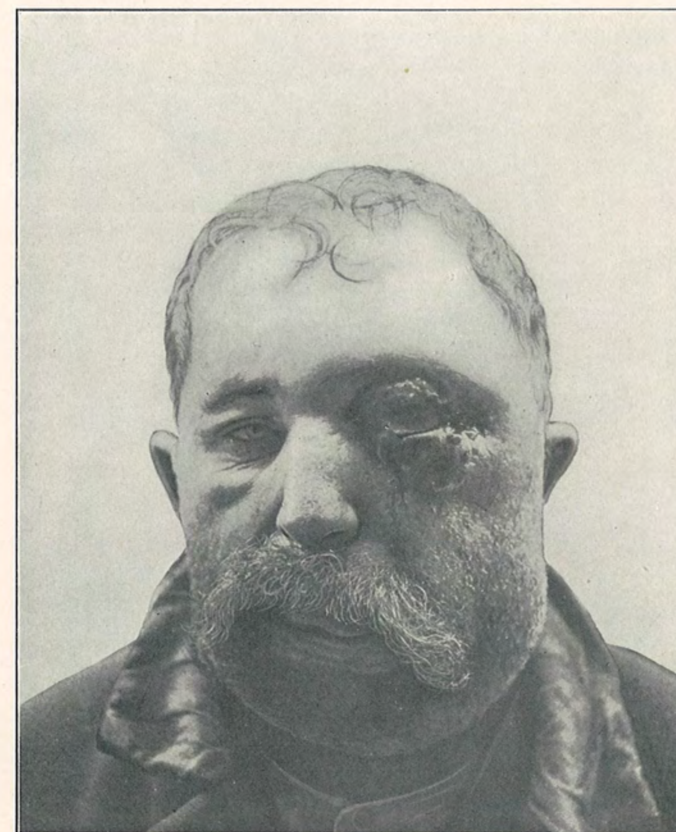

Fig. 3.—Anthrax of eyelids.

The Philadelphia Hospital case which Dr. Jopson had mentioned he saw, and was misled as to the condition, thinking it was malignant œdema; the œdema was so marked it led to diagnostic confusion before cultures were obtained.

It seemed to him important to remember that leather-workers are liable to other forms of ulceration, one being undoubtedly the tubercular ulcer probably identical with the verruca necrogenica of Wilkes, the other being an ulceration resulting from the acids employed in tanning.

Dr. De Forest Willard. Those who handle hides occasionally suffer from a very peculiar form of ulceration which he had observed eight years ago. It is apparently due to coccidia or yeasts, and is possibly a dermatitis due to blastomycetes.

Dr. Mutschler remarked that in the case of the ulcer on the arm, had this been his case, he would have dissected the ulcer out entirely, then applied the pure carbolic acid to the raw surface, and left it open as a granulating sore. That would have materially shortened the course of the disease. In his cases, the sore being so near the eye, he did not think it justifiable to do this.

THE ULTIMATE RESULTS OF AN INTERSCAPULO-THORACIC AMPUTATION.

Dr. Robert G. Le Conte reported the latter history of A. E. T., a patient subjected to interscapulo-thoracic amputation in April, 1899, and shown at the May, 1899, meeting of the Academy of Surgery (see Annals of Surgery, September, 1899). The man had a recurrent sarcoma of the shoulder, which microscopical examination proved later to be mostly composed of spindle-cells. Five weeks after the operation the man went on duty as elevator-boy in the Pennsylvania Hospital, and remained at work until twelve hours before his death. During the summer and fall of 1899 his health was very good, except for an occasional slight attack of asthma with dry cough. In November, 1899, he noticed a small nodule the size of a split pea under the skin, at about the tubercle of the first rib. By January 1 this had grown to the size of an almond, and he consented to have it removed. It was excised, the periosteum of the rib being removed with it. By the end of April, 1900, a second nodule was made out in the same relative position as the first. This was excised in June, when half

the thickness of the first rib was removed with it. No further local recurrences occurred. His chest was carefully examined about every three months for signs of metastases, but nothing definite was ever demonstrable. He continued in fair health, neither gaining nor losing much in weight, but having asthmatic attacks, with shortness of breath, at recurringly shorter intervals, until the evening of February 24, 1901, when he complained of severe pain in the chest, very difficult respiration, and a short, hacking cough, with bloody expectoration. The pulse was small and rapid, heart action feeble, and temperature 100° F. He did not respond to free stimulation, gradually growing weaker and respiration more difficult, until he died, the morning of February 25, 1901.

The post-mortem examination was made by Dr. Newlin, the resident physician, who kindly furnished the following notes:

Post-Mortem Examination.—Body of poorly nourished man. Rigor mortis absent.

Chest.—Both lungs markedly emphysematous. The right lung adherent in many areas, anteriorly and posteriorly. A few pleural adhesions of left lung.

Left Lung.—Seat of fibroid degeneration at apex involving pleura and few scattered patches beneath it; otherwise negative.

Right Lung.—At apex the pleura is slightly thickened, and at this area the lung has undergone fibroid degeneration. In the posterior portion of the middle lobe there is a hard mass the size of a small orange, dirty white in color, tough, and resistant on section. Bronchi in neighborhood of growth filled with reddish, mucopurulent casts. Bronchial glands in the region are enlarged and hard.

Heart.—There is slight thickening of the aortic valve; otherwise negative.

Liver.—Seat of slight fibroid change more marked at its edge, which is quite sharp.

Spleen.—Normal in size and is the seat of yellowish-white growth, occurring on its anterior aspect and curling over edge of organ, one inch in thickness, very resistant on section, with areas of chalky deposit. There are also numerous small fibromatous nodules scattered over surface of spleen, many of which are chalky.

Pancreas normal.

Stomach and *Intestines* normal.

Mesenteric Glands slightly enlarged and infiltrated.

The pathological sections were examined by Dr. Simon Flexner, who kindly gave me the following notes:

(1) *Lung* with tumor nodule; tumor circumscribed; separated by fibrous capsule from lung tissue; capsule infiltrated with numerous small round cells; tumor proper composed of strands of spindle cells with elongated, spindle-shaped nuclei and distinct nucleoli. There are scattered irregularly among these main tumor cells larger cells with several or numerous nuclei; nuclei are sometimes peripherally, at others centrally placed in protoplasm, and in general they are superimposed. They are not uniformly distinct among other cells, are more numerous in some areas and rare in others. Blood-vessels of tumor are imperfectly developed, having thin walls. A microscopical area of coagulative necrosis in centre of tumor.

(2) *Apex* of lung. Section includes thickened pleura and adjacent lung substance. There is coal pigmentation with thickened tissue and focal accumulation of round lymphoid cells; alveoli are emphysematous.

(3) *Liver Capillaries* in general are dilated. No increase in connective tissue of liver generally, but the capsule shows irregular thickening: new tissue penetrating a short distance into liver tissue; in this there is moderately rich new formation of bile ducts.

(4) *Spleen.* Splenic tissue not especially altered. In places the pulp contains a great deal of blood. Malpighian bodies are strikingly apparent; the capsule is thickened throughout, but not uniformly.

The thickened capsule consists of dense hyaline, almost cartilaginous, connective tissue. No tumor present.

Bronchial lymph glands contain much anthracoid pigment, which is present especially in the lymph cords and the endothelial cells of sinuses, and only rarely in the lymph nodes. There is no evidence of tumor in the sections examined.

Kidney. Section shows only some contraction of glomerule and increase of capsular space. No increase in connective tissue and no special degeneration of epithelium. No tumor.

Tumor. Composed chiefly of spindle cells, and contains a moderate number of giant cells of the megacaryocytic type.

VESICAL CALCULI DUE TO LIGATURES AND BONE SPICULE IN THE BLADDER.

Dr. John B. Roberts reported that a year ago a patient was brought to him for a urinary fistula in the anterior abdominal wall. She had been recently operated on in a distant part of the State for what was supposed to be extra-uterine pregnancy. The fistula formed before the wound healed, and closed spontaneously under Dr. Roberts's care. She came to him about a year after the operation, complaining of vesical pain, and showed a little concretion that she had passed per urethram. It was about the size and shape of the little finger-nail, and from it a little piece of silk ligature protruded. The patient was suffering intensely with vesical pain.

He examined the bladder twice with a sound and found no stone, but thinking that there might be other calculi, and seeing that she had an active chronic cystitis with intense pain, he decided to make a vaginal cystotomy, so as to find any stones and give the bladder rest and drainage. As soon as he opened the bladder, he came upon a stone, about as big as the thumb-nail, which had a silk ligature attached to it. The ligatures used in preventing hæmorrhage at the time of the original operation had evidently ulcerated into the bladder and acted as nuclei for the phosphatic concretions.

He also mentioned a case operated upon about a year ago, in which he extracted a stone from a female bladder by vaginal cystotomy, and found that a spicule of bone was the nucleus. That woman had been shot in the right hip months before with a Winchester rifle. The shot wound in the hip was still suppurating; but it was the bladder symptoms that caused the woman to seek surgical aid. She was very comfortable after the calculus was removed.

Dr. Roberts frequently explores the bladder with the finger introduced through the dilated urethra, but in this case, and some others, he prefers making a vaginal cystotomy, because it gives such free drainage and affords rest to the bladder for several weeks. One can do the cystotomy with cocaine with great ease.

VESICAL CALCULUS FOUND ABOUT A SILK LIGATURE.

Dr. Wharton said that he had operated upon a woman some four or five years ago for strangulated hernia. The patient did well after the operation, but developed some time afterwards —five or six weeks—symptoms of intestinal obstruction, due apparently to an adhesion of the gut in the hernial ring. He opened the abdomen and found this to be the case, very marked adhesion producing a kink of the intestines in the region of the internal ring. He tied off with heavy silk ligature and closed the wound, and heard nothing from the patient, who did well for a year. Then he heard that she had a great deal of irritation with her bladder. Finally he saw her, and she showed him a silk ligature, which looked very much like the one he had applied, covered with a phosphatic deposit, which she said had passed from her bladder.