

thermore, like iodine, osmic acid broke up the larger masses into the smaller elements of which they were composed.

Popoff draws the conclusion that the hyaline masses above described are really red blood corpuscles in a state of metamorphosis.

In the liver a considerable amount of fat was found in the connective tissue which accompanies the hepatic capillaries; it was seen more especially in the branched cell of the connective tissue. Besides the occurrence of fat in the liver there was usually a granular change of the hepatic cells sometimes attaining a high degree. Acicular crystals formed very readily in sections examined in glycerine.

Among the appearances in the *kidney* after ligation of the ureters was especially increase in volume and hæmorrhage into the capsule and surrounding connective tissue and partially into the kidney itself. The organ in most cases was in a more or less pronounced condition of anæmia, especially in the cortical portion. On section usually a considerable quantity of yellowish watery turbid fluid flowed out and in such cases the pelvis was considerably distended by urine; microscopic examination showed the capsules of the Malpighian bodies to be in the same condition, and the vessels of the glomerulus to be pushed aside. The epithelium of the tubules, especially the convoluted ones, was for the most part very granular, some of them showing a marked fatty or colloid degeneration. In the lumen of both convoluted and straight tubules various crystals are frequently met with, the chemical nature of which requires special investigation. The kidneys whose arteries were ligated appear somewhat diminished in size or shrunken. The cortical portion had a very striking grayish-yellow color, and was sharply bounded from the dark-red medullary portion which usually exhibits a general venous hyperæmia. Microscopic examination showed a high degree of fatty degeneration of the urinary tubules of the cortical layer.

The *spleen* showed no special change in either set of experiments. The *stomach* and *intestines* in both cases presented the appearances of a more or less considerable catarrh. Usually the *heart* was filled with abundant firm coagula, its tissue had a grayish color and was flabby, and the muscular fibres often appeared decidedly granular under the microscope. The *pericardium* and *pleura* were often hyperæmic, and not rarely small ecchymoses were found in them. The *lungs* usually exhibited no special change. The *muscles* of the body and extremities were usually of a very pronounced dark-red color, and with the microscope often showed a greater or less marked granular degeneration, like that of the heart.

To formularize the symptoms:—

(1.) The animals in each case lived about the same length of time. Almost always death occurred in the course of the third day; in ligation of the ureters a few (four to five) hours later.

(2.) The chief phenomenon, which in both cases occurred soon after the operation, was sinking of the temperature. The use of narcotics during the operation, as chloroform, morphia, or opium, made the depression of the temperature more marked (on the first day), but could not be regarded as the cause, since the temperature also fell in cases where no narcotics were used. This fall of the temperature, while it fluctuates only a little at first (especially on the second day), becomes more considerable as time goes on. Inflammatory com-

plications, as of the peritonæum, may exercise an influence on the height of the temperature and raise it a little; nevertheless it sinks even here below the normal.

(3.) Besides falling of the temperature, diminution in the frequency of the pulse was often observed (the strength of the pulse was not diminished, at least at first).

(4.) Vomiting and diarrhœa, sometimes accompanied by blood, were observed in both cases.

(5.) Most constant and characteristic, in all the animals operated on, were the appearances of relaxation and somnolency, which generally ended in coma.

(6.) Tonic and clonic convulsions were very often present, and strongly marked in ligation of the ureters. They were only observed in one case after ligation of the renal arteries, and then only very slightly marked.

It was found that the crystals observed in the liver were due to the storing up of urea in that organ. They were observed more especially in ligation of the ureters, and were not constant in ligation of the renal arteries.

Csokor, Adjunct and Docent in the Veterinary Institute in Vienna, in a late number of Virchow's *Archiv*, calls attention to the fact that the changes described above by Popoff, as occurring in the brain after ligation of the renal arteries and ureters, are met with in healthy dogs, and are to be regarded as indicative of a normal senile change which occurs in the brain of every dog.

Hospital Practice and Clinical Memoranda.

BOSTON CITY HOSPITAL.

CASES IN THE SERVICE OF DR. GAY.

REPORTED BY DR. J. N. BULLARD, HOUSE SURGEON.

COMPOUND COMMINUTED FRACTURE OF ELBOW-JOINT: EXCISION.

CASE I. Frank M., nine years of age, fell from a fence, September 3, 1880, striking directly upon the left elbow. On entrance, a small opening was found over the external condyle, large enough only to permit the passage of a probe, which impinged upon the bone. The elbow was much swollen and distorted; the external condyle appeared to be displaced downward, the internal condyle not being made out. The patient being etherized, an incision was made, under Lister spray, three inches long over the external condyle. The lower end of the humerus was found to be denuded of periosteum and comminuted into three pieces, the internal condyle being forced downwards back of the olecranon, with the external condyle displaced downwards and forwards, there being a third smaller fragment resting in the head of the ulna. The humerus was excised about two inches above the condyles, the periosteum, however, being torn from the bone for a distance one and a half inches higher than this. The wound was carefully washed with carbolic water and dressed with Lister gauze, and the arm laid in a straight position on an oakum pillow.

September 8th. Dressed on alternate days under the spray. Discharged considerable. Edges of wound healing slowly.

September 25th. Not having improved was etherized and an incision made two inches long over inner aspect of arm. A single flow of pus followed, a drainage tube was passed through to the other opening; wound was directed to be syringed through and dressed every other day under spray.

October 1st. Patient was etherized and under spray the external opening was enlarged and nearly two inches of the humerus, bared of periosteum and roughened, was removed. Dressing of Lister gauze continued.

October 25th. It was healing rapidly. Inner wound was entirely closed. Very little purulent discharge. Lister dressing continued.

November 3d. Dressed with zinc ointment. Patient gets up.

November 16th. Arm all healed but a little point of granulation over outer side, through which the probe passes to dead bone. Uses arm very well, can touch with his fingers his forehead but not his nose.

November 27th. Condition as above. Is discharged at own request.

COMPOUND COMMINUTED FRACTURE OF ELBOW-JOINT: EXCISION.

CASE II. Lawrence H., aged ten, was struck by a horse-car in crossing Washington Street, September 26, 1880. On entrance was etherized. Examination showed a piece of skin two and one half by three inches forcibly torn away from over the inner condyle and anterior aspect of the arm. A small opening here existed leading into the joint. There was a T fracture of both condyles, the external being displaced downward upon the head of the radius. The olecranon was completely broken off. Under the spray, an incision was made in line of the olecranon and the end of the humerus sawed off. The head of the radius and ulna were also removed, the insertion of the biceps not being destroyed. Very little hæmorrhage. Washed with a strong solution of carbolic acid and drainage tube passed through. Lister dressing applied.

November 29th. Some sloughing about the edges where skin was torn away, and a slight redness extending up the arm. Dressed under spray every other day, each dressing causing him considerable pain.

October 26th. Edges granulating slowly. The opening into joint has entirely closed, the tube being removed ten days ago. Considerable purulent discharge from granulations.

November 5th. Lister dressing omitted and zinc ointment substituted. Discharge much less. Healing fast.

November 13th. Gets up with arm in sling. Granulating surface nearly closed.

December 14th. Arm entirely healed for some time. Very fair motion at joint. Can swing arm forward but cannot touch the top of his head nor his face. Discharged well.

NECROSIS OF ELBOW: EXCISION: DEATH.

CASE III. M. G., a scrofulous looking young man of twenty-one, from Prince Edwards Island, entered hospital October 25, 1880, with following history. One year ago his elbow became sore and swollen from no known cause. Abscesses had formed and broken and showed no tendency to heal. The elbow had slowly enlarged and became stiff. There are now several sinuses leading to dead bone about the joint. At the

middle of the forearm was an opening apparently superficial, discharging pus. Patient was put to bed with poultice for elbow, and treated with tonics and extra diet.

October 29th. Etherized, and under the spray, an incision was made over the olecranon. The ulnar nerve was reflected to the inside and muscles and tissues dissected away from the bones. The bones were roughened, and surrounded by a jelly-like material. Three inches of humerus and two of the radius and ulna were bared and removed. A drainage tube was put in, the opening on the forearm enlarged, and the arm dressed with carbolized gauze.

November 3d. Has been dressed daily. Considerable suppuration with pus burrowing about the arm. Suffers from no pain. Temperature reaches 102° F. in evening with morning remission.

November 15th. Wound dressed with soda wash under carbolized gauze. A few small abscesses have formed about the wound and discharged pus. Granulations looking well.

November 30th. Has been dressed with weak solution of nitric acid. Wound looks healthy.

December 7th. Temperature running to 105° F. every night. Very little discharge. Brandy, five ounces daily.

December 13th. Has been very stupid and quiet of late. Is passively delirious. Takes very little nourishment. Tongue dry, brown. Fingers of right arm tonically contracted. Temperature 105° F.

December 18th. Has been slowly failing of late. Has to be roused for food, of which he takes but little. Very little suppuration.

December 20th. Died 8.20 P. M.

CASES OF TRACHEOTOMY.

CASE I. Willie D., aged six, entered hospital October 3, 1880. Suffering from severe dyspnœa. His skin is purplish, respiration quick and labored, with deep retraction of intercostal spaces. Discharge from nostrils constant, but no bleeding. No membrane can be seen in his throat, although his brother, aged eight, who entered with him, had well marked patches upon both tonsils. No swelling about the neck. Administration of ether produced marked lividity of face. A spasm of the glottis occurred before the trachea was opened, with cessation of respiration for a moment. Hæmorrhage free, partly due to cutting vessels, partly to congestion of parts; this ceased on introduction of tube, and respiration became easy. The next day temperature rose to 101.5° F. Took nourishment well and breathed with no difficulty.

October 9th. Was troubled with cough and mucopurulent discharge which disappeared in two days more.

October 20th. Tube was finally removed, seventeen days after operation, all attempts to remove it before having been futile. Coughed some, and respiration had a croupy sound.

October 25th. Wound was entirely healed over, he breathed easily, voice was natural. Discharged well.

CASE II. Murtagh D., a feeble-looking child of eighteen months, entered November 2, 1880, with history of measles and whooping cough the past summer. Two days ago he developed symptoms of trouble in the throat. Examination showed the whole back of the pharynx covered with a diphtheritic membrane, thick and yellowish, respiration labored; pulse rapid and

weak. An incision was made, without ether, down to trachea, this was very soft and entered with difficulty. Patient collapsed for a moment after insertion of tube but soon rallied and breathed easily. Next morning patient had pulse of 160, with very rapid respiration. Refused nourishment. Failed rapidly, and died at 2.45 P. M.

CASE III. Ellen C., three years of age, entered November 21, 1880. One week ago caught cold but had no trouble till yesterday when she began to choke up. Her breathing is very labored with deep depression of intercostal spaces in inspiration. Face is livid, and pulse rapid and feeble. Etherized and tube inserted without difficulty, a large vein lying over trachea being drawn to one side. After ether, patient suffered with repeated attacks of coughing between which breathing stopped entirely. Pulse very rapid and feeble. Given enema of brandy two drachms. In three quarters of an hour breathing became easier and she was transferred to ward. Next day the neck was somewhat swollen, pulse and respiration rapid, would take but little nourishment. Failed rapidly and died at 4.30 A. M.

CASE IV. Joseph G., seven years of age, entered hospital November 23d on medical side, and next day developed measles. A younger sister had died at home, a short time previous, of membranous croup[?]. His mother entered hospital November 15th suffering with diphtheria, for which tracheotomy was performed. She died November 22d. By November 27th the eruption had disappeared on the boy and his tonsils became much swollen with a small white patch upon the right. Croupy cough and hoarse respiration, with swelling at the angle of the lower jaw. November 28th was etherized slowly, and trachea tube inserted without difficulty, considerable mucus being forcibly ejected on incision of trachea. Patient breathed easily afterwards. Pulse good. Given brandy, 3ij., in milk every four hours. Tr. ferri chlor., gtt. iij., pot. chlor., gr. v., every three hours. Next day the neck was badly swollen. Temperature 104, pulse rapid and feeble. Takes but little nourishment. Respiration was difficult and labored. Tube removed, when some pieces of tough, thick, membrane were coughed up. Tube replaced, and removed again later, but with no relief. Membrane was evidently invading the trachea below the tube; respiration became hurried and labored. All nourishment was vomited. Died of suffocation at two A. M.

[The most satisfactory manner of performing tracheotomy is as follows: The first incision is made by transfixing the skin with a narrow knife. By careful and repeated strokes in the median line the tissues, including the thyroid gland, are divided down to the trachea. The large vessels can usually be seen and avoided, the small ones require no special attention. The trachea having been seized on each side by a hook an incision is made between them, when the wound immediately opens sufficiently to allow of the introduction of the tube without the use of a dilator.

I no longer use a director in dividing the structures over the trachea, as in two instances, while making a careful dissection with the aid of this instrument, the cellular tissue became engorged with air and blood, the depth of the trachea was increased, and the operation was finished entirely by the sense of touch. In a small trachea the dilator takes up too much room, and, besides, the blades, not infrequently, get

between the rings of the trachea and fail to open the wound.

Unless the color of the skin is pretty good it is better to do this operation without ether. The pain is not great, and there can be no doubt that this agent obstructs respiration very much in patients enfeebled by great dyspnoea. It is said that chloroform relieves rather than increases the dyspnoea in these cases, but the prejudice against this anæsthetic is so strong in this city that one hesitates to make use of it. G. W. G.]

Reports of Societies.

PROCEEDINGS OF THE BOSTON SOCIETY FOR MEDICAL OBSERVATION.

A. T. CABOT, SECRETARY.

FEBRUARY 7, 1880. DR. G. M. GARLAND reported at length a

CASE OF ULCERATIVE ENDOCARDITIS,

which appears in this number of the JOURNAL.

DR. F. C. SHATTUCK expressed himself as much interested in Dr. Garland's case, which brought to mind a recent case in the service of Dr. G. C. Shattuck at the Massachusetts General Hospital.

A man of twenty-three, previously in good health, entered the hospital November 25th with what seemed acute articular rheumatism, confined to the left knee, which was much swollen, painful, and tender. Five days before he had had a chill after decided exposure to wet and cold. Nothing abnormal was discovered about the heart or kidneys, and there were no remarkable developments in the case till December 1st, when two small abscesses were noted, one above the left elbow, the other on the outer aspect of the right thigh. During the night both testicles became swollen, hard, and painful, and then the left leg rapidly became the seat of a phlegmasia alba dolens. On this day it was noticed that the apex of the heart was visible inside of and on a line with the left nipple, and that a slight, short systolic murmur was audible in the region of the apex.

The following day this murmur was more distinct and longer. The patient grew steadily worse, the breathing became labored, and the lungs filled with râles. In the superficial cardiac space a sound suggesting friction was heard. The man died on December 7th, thirteen days from entrance into the hospital, and seven days after the first serious symptoms. The temperature vacillated considerably, but was never very high. All efforts to procure an autopsy were unavailing. The clinical diagnosis was acute rheumatism, pyæmia, and probably ulcerative endocarditis.

DR. PARKS said that he thought the disease was more common than might be supposed from reported cases. The cardiac symptoms appear late, and often are not characteristic. In a case seen at the Philadelphia Hospital there were no symptoms till near death, then those of pericardial effusion.

DR. F. C. SHATTUCK remarked that the disease known as ulcerative endocarditis is to be distinguished from ordinary endocarditis resulting in loss of substance in the valves and embolism, the difference being that the former is septic, the diseased products starting in the heart, and the emboli resulting from them being filled with micrococci, while the latter is relatively be-