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CANADA
MEDICAL RECORD

JANUARY, 1900.

Original Communications.

**PYOPERICARDIUM FOLLOWING PLEURO-
PNEUMONIA—PERICARDIOTOMY—
RECOVERY.**

By J. BRADFORD McCONNELL, M.D. (1)

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The fact that but a few cases of purulent pericarditis, with its treatment by pericardiotomy are on record seems sufficient justification for placing the details of this case before you.

The following history of the case is condensed from the detailed daily record: The patient, Charles D., occupation; jeweler, aged 33 years, was first seen on April 12, 1897. The previous day he had been seized with chills and a severe pain at the lower part of the left thorax in front, which radiated towards the umbilicus. It continued to increase in severity, and was accompanied by cough and fever. Two months previous to this time he had suffered from an attack of La Grippe, from which he had fairly well recovered, except the cough, which continued off and on up to the time of the present attack. At the first examination the pain appeared to be in the region of the diaphragm on the left side, and diaphragmatic pleurisy was suspected. The pain was increased by coughing and by deep breathing. Pain was also complained of in the infraclavicular region, on front. Pulse was 120; respiration, 24; temperature, 103° F.

(1) Read at the Montreal Medico-Chirurgical Society, Oct. 15, 1897.

There was also headache. Other than diminished respiratory sounds, no abnormal physical signs could be made out; powders containing caffeine, acetanilide and codein failed to relieve the pain, and a hypodermatic injection of morphine and atropine was required. On the 14th the pain had not diminished. Respiration, 28; pulse, 104; temperature, 104° F. There was dullness on percussion over the upper lobe of the left lung, diminished fremitus at the base behind and a grazing pleuritic friction sound. Cough not severe, well-marked rusty viscid sputum. Ice-water compresses were applied, and internally liq am. acet. fl. ext. ergot, acidi boric, Tr. Camph. Co., Syr. Limon and aq. Camph. Morphine and atropine, hypodermically, had to be given daily. On the 15th tubular breathing was present in the upper lobe in front. On 17th this condition was much the same, with dullness on percussion at the left base behind, and increased vocal fremitus throughout the left lung. On the 20th symptoms had all abated and lung was clearing. There were rales at the base before and behind.

On the 21st he complained of a pain at the left margin of sternum, respiration, 48; pulse, 112; temperature, 100.3-5°. A pericardial friction murmur can be heard over the heart; heart sounds distinct, clear and normal. On the 23rd no friction murmur could be made out. Pulse, 116; respiration, 44; temperature, 98°. Each alternate systole gave a peculiar accentuated flapping sound. This disappeared on the following day, rhythm normal. Coarse rales are heard more or less generally over left lung.

On the 24th and 25th pain was complained of at right base in front, and a pleuritic friction sound was well marked there. Sinapisms were applied, and he required almost daily hypodermatic injection of morphine, atropine and digitalin. He had occasional vomiting attacks.

The general condition remained the same until the end of the month. There was now evidence of an extensive accumulation in the pericardium. Temperature remained normal, pulse averaging 120 and respiration 36. From the 1st of May to the 10th the effusion gradually increased; he now had difficulty in swallowing; the act caused him

severe pain at the cardiac end of the stomach and lower end of œsophagus. The pulmonary condition had now cleared up—there was but little cough—and there is no marked dyspnœa and no chills nor febrile attacks nor sweating.

The physical signs on the 12th were as follows: Decubitus on back and left side. Cannot lie on right side: There was diminished movement on the left side and below the fourth rib, the interspaces were widened and pressed to a level with the surface of the ribs. No heart impulse is visible. The epigastrium is somewhat prominent. Palpation does not give evidence of any impulse of the heart; the interspaces from the 2nd to the 6th are tense. The upper margin of the first rib could be felt to its sternal attachment, a symptom of these cases pointed out by Ewart. No fremitus could be made out on the lower two-thirds of the front or side of the left chest, it was diminished behind, but increased at the apex on front and behind. Percussion shows extensive dullness radiating from the cardiac region. At the 4th rib it extends from $1\frac{3}{4}$ inches to the right of the sternum to 1 inch to the left of the left nipple. The line of dullness then slanting down to the fourth intercostal space in the axilla. It extends from the upper margin of the 2nd costal cartilage to the liver, which is depressed about 2 inches. Three days before the date of this examination a square patch of dullness existed to the left of the spines of the vertebræ from the 9th to the 12th, described by Ewart as the posterior patch of pericardial dullness, but it had now increased and extended into the axilla, and up as high as the angle of the scapula. There was probably some pleuritic effusion as well, as the dullness extended down to the 10th rib in the axilla. The sternum was absolutely dull as was also the fifth right intercartilaginous space, the line of dullness curving outwards to that of the liver, the cardio-hepatic triangular area of resonance being quite obliterated. By placing the rod of the phonendoscope over the heart and rubbing with the finger, vibrations were perceived which enabled the heart to be outlined in its normal position, and of normal size, thus differentiating it from the dullness of the surrounding effusion. The liver dullness could also in the

same way be distinguished from that of the pus accumulation. Traube's semi-lunar space was quite obliterated. Stethoscopic auscultation revealed the heart sounds very indistinct and muffled, the 2nd pulmonic sound was accentuated. No respiratory sounds at left base in front up to fourth space nor below the axilla, feeble behind, tubular at the angle of the scapula and along the edges of the vertebræ down to the 8th. No tubular breathing could be made out below the right mamma, exaggerated respiration at the apex. A creaking sound is heard in the left infra axillary region, most distinct during expiration. The patient could not swallow solids, and liquids caused pain, and they were sometimes regurgitated through the nose. No rales, and the patient has no cough. On the 13th pulse, 144; respiration, 40; temperature, 101°; a hypodermic injection of morphine, atropine and digitalin was given in the evening. On the 14th a.m. paracentesis pericardii was performed; no anæsthetic was given. Before the operation, P. 132, R. 28, T. 97.4-5°. I was assisted by Drs. F. G. Finley and H. S. Shaw. The trocar entered in the 5th left interspace $1\frac{3}{4}$ inches from the sternum. Sixty ounces of creamy pus was removed. He experienced marked relief. The pulse remained regular and of good volume, and after the operation had slowed down to 92, R. 32. The pus was submitted for examination to Dr. MacPhail, who reported that the diplococcus of Fraenkel was found in pure culture, reacting to all the usual tests for this micro-organism. No other species was found.

The following day he developed a mild conjunctivitis, and later a small ulcer appeared at the lower part of the right cornea, which healed within a week. The heart sounds were now quite distinct and regular, no abnormal signs present. A pain in the cardiac region in the evening required a hypodermic injection; and this was required almost daily, giving rest and improving markedly his general condition.

On the 18th the heart sounds were less distinct. A cardiac dullness extended from right edge of sternum to $\frac{1}{2}$ inch to left of left nipple, and from 2nd space to liver on right, and joined the pleuritic dullness on the left. The pulse

and respiration became more rapid up to the 22nd, when the cardiac dullness equalled what it was at the time of aspiration eight days previously. No heart sounds could be heard, and the cardiac dullness did not extend over two inches to the right of the sternum. On the 22nd May, assisted again by Drs. Finley and Shaw, pericardiotomy was performed. Morphine $\frac{1}{4}$, atropine 1-150 and digitalin 1-100 were given half an hour before; a mixture of chloroform, 2 parts, and ether 1 part was used. It was given cautiously by Dr. Finley, and not pushed to deep anæsthesia. The interspaces were wide; but it was not thought necessary to excise any of the ribs. An incision an inch long was made in the fifth interspace, its outer end extending to about 2 inches from the left edge of the sternum; the intercostal muscles retracted from the incision, leaving a free opening, through which could be seen the distended pericardium. It felt hard, and was pulsating, giving the impression of being a dilated auricle or ventricle, a small exploratory trochar gently pressed through allowed a few drops of a thick pus to appear. The pericardium was then seized with a mouse-tooth forceps and incised; when pus welled out freely, in it were several large fibrinous flocculi. The quantity measured 66 ounces. The air would rush in and out with each act of the heart's beat; the pericardium was about $\frac{3}{4}$ of an inch from the ribs. The opening was now behind the fifth rib, and the pericardium required to be seized with forceps and pulled down to put in the drainage tube. For this purpose, a portion of a soft rubber catheter, No. 12, was used. The rounded extremity readily entered the cavity. It was retained with a safety pin and rubber adhesive plaster, and packed around and covered with sublimated gauze, and, over this, jute. The sternum and all the left side of the chest, except the lowest part in the axillary line, was now hyper-resonant. The heart sounds were distinct, and the pulse had remained regular.

At the first dressing, next day, it was found that a large quantity of purulent fluid had escaped, passing through the thick dressings, clothing and sheet into the mattress. On the 24th, the respiration was 36, P. 130, T. 100-4-5°; but there was no pain nor cough, nor distress, and he was taking nourishment freely. The temperature was normal the next

day, and remained so. The wound was cleansed daily with hydro-naphthol solution; none entered the cavity of the pericardium; but the space between the pericardium and chest wall required washing out, and at each dressing, aïrol was freely dusted in. The drainage tube entered about 2 inches into the pericardial sac. After removing the dressings, a continuous puffing in and out of air through the chest opening occurred, caused by the heart's movement, which could be readily seen. The discharge gradually ceased, and by the 1st June had almost entirely stopped. The tube was shortened from time to time, the cavity gradually closing after it. There was a keen tendency for the outer wound to heal, which required firm packing with the sublimated gauze to prevent it. The phonendoscope on the left side revealed one preponderating sound only, the puffing through the opening in the chest. There is dullness in the infra-axillary and infra-scapular regions; respiratory sounds very indistinct in the same region.

On the 11th of June the tube was removed, and a small piece of sublimated gauze placed in the outer wound daily, to allow the cavity beneath to fill out before the intercostal opening closed. By the end of the month the parts had entirely healed, and, on July the 3rd, all dressings were finally removed. P. 132, R. 24, T. 98 2-5°. Heart sounds now clear, but distant in character. The patient has been taking, since the operation, Iron Quinine and Stychnine, and has steadily improved and gained in weight, and presents a marked contrast to the emaciated condition which obtained at the time of operation. He has been walking about the room for about a week; the ankles are very much swollen each evening; this gradually disappears during the night. In about three weeks this ceased entirely.

Although not bearing on the case, it may be noted that the patient passed through a subsequent attack of pneumonia from July 30th to August 7th, 1897, the consolidation occupying the lower and middle lobe of right lung.

At the present time (Oct. 15th, 1897)—as you may ascertain by examining the patient—he is in a fairly normal condition, and weighs more than before he became ill. There is an appreciable dyspnoea on exertion, and when talking

continuously. Chest measurement is equal on either side (15½ inches). There is no visible impulse, nor can the heart's beat be felt on palpation, unless the tip of the finger is pressed into the cicatrix of the incision wound. There is moderate hypertrophy, but none of the usual signs of adherent pericardium other than a slightly marked diastolic shock. The heart's sounds are normal, but somewhat frequent, averaging 85 beats per minute. Vocal fremitus is diminished in the lower half of left chest, as also are the respiratory sounds.

The number of recorded cases of suppurative pericarditis appears to be very limited, and especially so the number of cases in which the treatment by incision and drainage has been adopted.

A case was recently reported by Bohn (*Deutsch Med. Wochenschr*, Nov. 26, 1896) somewhat similar to the present one. It followed La Grippe and pleuro pneumonia. The pericardial sac was opened one month after the beginning of the disease, and over a litre of pus removed. He was unable to introduce a drainage tube, and had to drain with gauze. The sac was washed out with a solution of boracic acid. The opening in the pericardium closed in three weeks. Three months after the pericardiotomy the heart and lungs were in nearly a normal condition. He speaks of his as the fifteenth case on record. Eight of these recovered. Of the seven deaths one resulted from the irritation of the irrigating fluid; one from the degenerations of heart muscle; one had aural abrasions; the other from such complications as pneumonia, empyema and nephritis.

In the journal of the *American Medical Association*, June 26, 1897, Dr. Frank W. Garber, of Muskegon, Mich., reports a case of traumatic origin. Only about an ounce of pus was removed, the patient recovering. A *résumé* of the literature on the subject is given by him. It was in 1819 that pericardiotomy was first performed. He says Romero, of Barcelona, operated on two cases. Two recovered. In an article by Delorme and Mignon, *Revue de Chirurgie*, October, 1896, a *résumé* of which appears in the *Montreal Medical Journal*, April, 1896, it is stated that puncture of the pericardium was first proposed by Riolan in 1646.

In 1840 Schier performed paracentesis in pericarditis due to cancer. The patient lived for six months after. The first case of tapping the pericardium in the United States was in 1852 by Dr. Warren, of Boston, and the first authentic case of incision and drainage in purulent pericarditis is reported in the *Berliner Klin. Wochenschrift*, 1881, 5th No. The patient was a boy, ten years of age, by paracentesis several ounces of pus were removed; later, incision and drainage led to recovery.

The operation of pericardiectomy was first performed in England by Dr. Samuel West in 1883. The case recovered. He refers to 79 cases with 36 recoveries. In 1885 Michaeloff operated, the patient dying a short time after the operation.

Gussenbauer, in the same year, had a successful case; after incision, drainage and irrigation, the ribs were revealed.

Davidson reports two cases in the *British Medical Journal*, March, 1891; two boys aged seven and six were treated this way, one recovering.

Beckman and Stall report a successful case; Bronner, one which terminated fatally. Scott, in the *New Zealand Medical Journal*, July, 1891, reports a successful case where irrigation with 15 to 1,000 carbolic was part of the treatment.

Edwards, in the *International Medical Magazine*, June, 1896, operated on a child six years of age, purulent pleuritic effusion and death followed.

Eiselberg, of Utrecht, reports a case of traumatic purulent pericarditis. Three tappings failed to give permanent relief. They occurred at intervals of a few days, and one litre was removed each time. The fourth costal cartilage was removed a few days after, and two litres of sero-purulent fluid containing fibrinous clots were noted. He irrigated the borders of the pericardium, which were stitched to the outer wound, to prevent infection of pleura. He injected iodoform and glycerine emulsion daily. Tube was removed in 17 days, and, 4 weeks after, the wound had completely cicatrized.

William Pepper, J. H. Mussen and John B. Deaver, of Philadelphia, in the *University Medical Magazine* for Feb., 1894, mention a case in a man, following influenza, where, paracentesis and the incision and drainage were performed.

Improvement was temporary only. The patient died two weeks after the operation.

Wilson, of Nashville, Tennessee, operated on one case of serous effusion in the right fifth intercostal space.

R. Siewers, of Finland, in 1894 reported nine cases; four successful.

Medical Press and Circular, January 27th, 1893, Koerte mentions the removal of a litre of pus from the pericardium from a girl of seven years; the patient died.

Ferier, in 1890, had collected 22 cases with 20 deaths, in 16 of purulent effusion, 11 aspirated died; the remaining 5 were incised, 3 recovering.

Musser, in his work on medical diagnosis, reports a case of tuberculous pericarditis, where 64 ounces of fluid was found in the pericardium at the autopsy; he had previously been tapped.

The most recent case was one by Drs. Shattuck and C. B. Porter (*Boston Medical and Surgical Journal*, May 6th, 1897) in a man 26 years of age. Purulent pericarditis followed pneumonia, aspiration was followed by rapid reaccumulation, incision and drainage led to complete recovery.

From this brief *résumé* of the literature, it will be seen that it is not very extensive, and one cannot very readily separate the cases of simple serous effusion where the treatment was by paracentesis or incision, from those of purulent pericarditis. If Bohm's statistics are correct, then the case will be the nineteenth on record where pericardiotomy has been resorted to in purulent pericarditis, with seven recoveries.

The points of interest in this case are first, the causation by contiguity of an active pneumococcus growth in the lung, with the comparative absence of symptoms of sepsis; not only did the heart accommodate itself to this large accumulation but gave slight evidence of distress, and there was but little constitutional disturbance in the way of fever; the derangements resulting were apparently only mechanical.

The quantity is the largest for an accumulation of pus yet recorded; larger amounts of serous and seropurulent collections have been described.

Louis, in 36 cases, found 9 serous, 5 sero-sanguinolent

13 sero-purulent, 7 purulent, reports the quantities removed as ranging from 200 to 1,000 gms. and in one case 1,500. The rapidity of the re-accumulation of the pus is also noteworthy. An important point in diagnosis is illustrated in this case, which I have not yet seen mentioned ; it is the advantage afforded by the phonendoscope in helping to distinguish pericardial effusion from dilatation and from pleural accumulations. In this case, and doubtless in all where the effusion does not force the heart too far from the chest (if it ever does so), one could with the phonendoscope readily make out the heart in the midst of the effusion, while the latter was outlined by percussion. In a recent case of large left hemorrhagic pleuritic effusion also, out of the uniform flatness of percussion one could clearly locate the heart, which was not pushed to the right, although 86 ounces were removed by aspiration, doubtless owing to the age of the patient and the rigidity of the attachments which retained the heart in its normal position. This is one advantage of the phonendoscope which is worthy of further investigation. I found in this case and in others that the phonendoscope is less to be relied upon than the stethoscope. Misleading sounds resembling crepitus or grazing are produced by the instrument itself when not in perfect contact with the surface, as over the ribs in one emaciated, and in a recent case of double pneumonia, tubular breathing was not revealed by the phonendoscope, although quite distinct with the stethoscope.

It is of surgical interest also in the case, which I believe is the rule, that one can rapidly remove the accumulation without any risk of heart failure symptoms. The avoidance of the internal mammary artery—which descends half an inch from the edge of the sternum—and the pleura are among the chief points for consideration in incision or tapping. The latter is considerably pushed aside by a large accumulation, and normally recedes towards the left from the upper border of the fifth costal cartilage. They are both avoided by selecting a point $1\frac{1}{2}$ to 2 inches to the left of the sternum. The general results have so far been fairly good for incision, and, doubtless if the diagnosis and operation are made earlier, the mortality in these cases will be much less than in the past.

Delorme and Mignon have collected 102 cases; 61 died; 82 were punctured, with a mortality of 65 per cent., and 18 incisions with 38 per cent. mortality.

A case is recently reported by Menetrier and Reneau, of purulent pericarditis due to the pneumococcus, where pneumonia was not present, and where a primary pericarditis was suspected. The autopsy revealed only bronchitis the primary source, then an enlarged mediastinal gland, from which the pericardium received the infection.

One of the most recent contributions on this subject is the paper by J. B. Roberts, A.M., M.D., Philadelphia, which was read at the meeting of the American Surgical Association, May, 1897, which should be read by all surgeons contemplating this operation (published in the December No., 1897, *American Journal of the Medical Sciences*). The author considers it mostly from the point of view of its surgical treatment. He strongly advocates incision in all cases of pyopericardium, and, even where the effusion is serous, most cases should be treated preferably by incision rather than cardiocentesis.

He says it establishes diagnosis in dubious cases, avoids cardiac injury, saves the pleura from puncture, affords complete evacuation of effusion, permits extraction of thick pus and membranous lymph, and gives opportunity for disinfection of the sac when that is necessary.

In most of the methods of operation hitherto employed there is danger of wounding the pleura by the puncturing needle. Hence, Dr. Roberts advises exploring through the upper part of the left xyphoid fossa, and if pus is found, to incise the pericardium after resecting the 4th and 5th costal cartilage on the left side; a sort of trap door is made and turned upwards utilizing as a hinge the soft tissue in the third intercostal space.

Dr. Roberts gives a classification of thirty-five cases on record of incision of the pericardium, with operator's name and results. The following is a *résumé* of it: Hilsmann, 1844, recovery; Langenbec, 1850, recovery; Rosenstein, 1879, recovery; West, 1882, recovery; Partzevsky, 1882, death; West, 1883, death; Savory, 1883, death; Scott, 1883, recovery; New-

man, 1885, death; Mikhailov, 1885, death; Gussenbaum, 1885, recovery; Rouse, 1887, recovery; Underhill, 1887, death; Larkin, 1888, death; Halsted, 1890, death; Delorme, 1890, death; Davidson, 1890, death; Davidson, 1890, recovery; Teale, 1890, death; Deacon, 1890, death; Sievers, 1892, death; Korte, 1891, death; Eiselberg, 1894, recovery; Edwards, 1892, death; Jacobson, death; Gabszewicz, 1892, recovery; Robinson, 1893, recovery; Marsh, death; Klefberg, death; Bohm, 1894, recovery; Allen, 1892, death; Stoker, 1892, death; Björkman, 1895, recovery; Porter, 1895, recovery; Garber, 1897, recovery.

PROCEDURE IN POST-MORTEM MEDICO-LEGAL EXAMINATIONS.

By CHARLES A. HEBBERT, M. R. C. P., London, F. L. S., Lecturer on Anatomy, etc.

CASE III.

The next case in this series is that of a fracture of the base of the skull, the result of a blow on the point of the jaw by the fist of an assailant.

This was one of two similar cases occurring within a short period, and has been selected for illustration for the reason that the fracture is not complicated by any other fracture which might have been caused by a fall on the ground—a condition present in my other case.

The injury was the result of an altercation in the street between two working men, the assailant a burly powerful man of six feet in height, and the victim, though muscular, somewhat smaller and weaker. Several blows were exchanged.

The description is as follows:—

The body was that of a young man, 25 years old, of spare muscular power, 5 ft. 6½ in. high, with dark hair and brown moustache. Eyes brown in colour and pupils moderately dilated. Rigor mortis present; hands clenched. The left eye was ecchymosed, and at the external angle there was an irregular lacerated wound ⅝ in. in diameter. There was clotted blood in both ears. On the left cheek, opposite the angle of the mouth, there were two abrasions 1 in. and ¼ in.

respectively in diameter (caused probably by contact with the ground on falling).

HEAD.—The dura mater at the vertex was apparently normal, the sinuses containing some black fluid and clotted blood.

On removing the brain an hæmorrhage about the size of a half crown was noticed over the 2nd left frontal convolution, and some smaller superficial hæmorrhages over the crura cerebri and pons varolii. The substance of the brain was superficially injured, but beyond that the substance was apparently healthy. The lateral ventricles contained some blood-stained serum.

On examination of the base of the skull, two linear fractures were discovered, one in each middle fossa, running diagonally from the centre of the anterior surface of the petrous bone to the body of the sphenoid. Each cavernous sinus was opened, and blood had also escaped into the internal ear and external auditory meatus on either side. The glenoid fossa is immediately below the centre of the fracture, which ran backwards through the pétrous bone and forwards through the great wing of the sphenoid. There was also fracture of the basilar portion of the sphenoid.

HEART.—There was old pericarditis and some thickening of the mitral valve. The walls flaccid, and the cavities contained some black fluid blood.

THE LUNGS.—The larynx and trachea and bronchi showed some softening and swelling of the mucous membrane, and the lungs were markedly congested and oedematous; otherwise normal.

THE STOMACH contained about one pint of black coagulated blood. This had evidently drained into the pharynx through the basilar portion of the sphenoid from the cavernous sinus and pterygoid plexuses, and had been swallowed. The other organs were somewhat congested, but the substance was in each case apparently normal. All the organs gave the characteristic odour of alcohol.

The case ended fatally about 12 hours after admission to the hospital, the man never completely recovering consciousness.

The principal point of interest in this case was that it illustrated the injury suffered by the knock-out blow on the point of the jaw, the blow most devoutly to be desired by the pugilist either for infliction on his opponent or avoidance by himself. The injury is two-fold ; it may, as in this case and in another under my observation, be fracture of the base of the skull, and, in addition, injury of the brain substance. Or it may, and probably is, in such cases as recover consciousness within a reasonable period, be simply due to a sudden severe shock to the centre of vitality, the medulla oblongata, the complete unconsciousness being due to the suspension of the functions controlled by the *noeud vital*. The examination of the skull and lower jaw will show that the long axes of the condyles of the jaw being prolonged backwards will meet at the basion, the centre of the anterior border of the foramen magnum.

Immediately in front of this point the medulla is situated, and the issuings of the pneumogastric, glossopharyngeal, spinal accessory and hypoglossal nerves are closely adjacent.

Now, a blow delivered on the point of the jaw or slightly to either side of the point would be directly transmitted upwards along the thickened oblique ridges to the rami and thence to the condyles, and in consequence of their oblique direction backwards and inwards, the force from either side would centre directly at the important point of the basion. I believe this will explain the temporary annihilation of consciousness from the terrible blow. The injury has fortunately only been occasionally fatal, and, as this case would indicate, when only fracture complicates the shock to the nervous system.

In my other case the injury was more severe, a portion of the left petrous bone being driven inside the skull. There was no escape of blood into the pharynx, and the case was further complicated by a fracture of the occipital bone by a fall on the pavement. The man died during removal to the hospital, a distance of 100 yards or so. It was, in fact, a distinctly accurate "knock-out blow" deliberately inflicted, and the death could only have been due to the sudden and severe direct shock to the brain, *i. e.*, the medulla. Post-

mortem, but little hæmorrhage was found, and that only superficial.

There was no reason to suppose that the injury in the first case was anything but the result of a clumsy "upper cut" given by a man unaware of his own strength, but it well illustrates the danger of such a blow, and by how much the more dangerous when given with skill and deadly intent.

Selected Article.

BLISTERS IN PNEUMONIA.*

By JESSE EWELL, M.D., Ruckersville, Va.

When I announce my subject to be "The Use of the Blister in Pneumonia," I feel that, at once, you regard me as an unqualified crank; or, at least, a Rip Van Winkle of no recent type.

That I came from, or near the mountains, is true; and that I champion a remedy almost as old as the hills, is equally true; and still it is a conviction, on my part, that my medical brethren are allowing a most valuable remedy to lie idle; that brings me to the front to claim for a short time your kind consideration and attention.

There can be no doubt that the Cautidal Blister was in general use in the profession one hundred years ago, and to-day it is used only by a few *moss grown* individuals like myself. This, to many minds, is *prima facie* evidence that, being "no good," as a remedial agent, it has been consigned by the profession to oblivion. I deny this impeachment, and, as an example to the contrary, I would point out the to-day fashionable cold water treatment of Brand. This was no new treatment one hundred years ago, for James Currie (a friend of Burns and editor of his poems) wrote his medical reports on the effect of water, cold and warm, as a remedy in fevers and other diseases. Vincent Priessnitz, the founder of hydropathy, was a German, and, though not a doctor, is said to have treated three thousand patients in two years, and only lost two cases. Yet, after cold water had been tried for many years by the profession, it was laid aside, to be brought to the front again by Brand; and is so popular to-day that I think some of the younger members

* Read by title at request of author before the Medical Society of Virginia, during its Fourtieth Annual Session, in Richmond, Va., October 21-26, 1899.

of our profession seriously contemplate laying aside the time-honored saddle pockets, the insignia of the country doctor, and go armed simply with a watering-pot and a rose sprinkler.

Since we have concluded that pneumonia is a germ disease, it is especially easy to spend our time in bacteriology, and lose sight of the fact that we have inflamed lung to treat, regardless of what may be the cause of the inflammation. When the hurried breathing, short cough and high temperature assures us of this fact, the application of a blister will often work wonders.

In the language of the older writers, I will say that "blisters draw both the nervous and circulating fluid to the seat of their own immediate action, and thus relieve irritations and inflammations of the internal parts;" and I agree with them in thinking that the serous discharge results in the unloading of the inflamed parts in close proximity.

I know the old writers drew fine lines as to the proper time to apply a blister in pneumonia; my own experience, and that of my medical friends who blister at all, would lead me to say, without hesitation, that the proper time is just as early as possible. As soon as you find you have a case of pneumonia to treat, blister at once; and oftentimes, on your second visit, you will find that a third visit is not required.

If, however, as is sometimes the case, the disease refuses to yield to this rude onslaught, examine the chest again carefully, and it may be you will find inflamed lung tissue at some point too remote to be benefited by the blister you have already applied. When such is the case, do not hesitate to apply as many blisters as would seem to be indicated. However, as the effect of a blister is to reduce both the temperature and pulse (and sometimes both drop), I rarely apply a blister larger than 6 x 6, though I often order that, when removed, it shall be applied to some other part of the chest, and have thus drawn as many as three blisters on a patient in twenty-four hours. As ugly as a raw blister looks, and however much the patient and friends may object to its first application, there the opposition ceases, and I have had patients to call for the blister to be applied.

That a blister may add to the irritation, and thus excite additional inflammation and make your patient worse, there can be no doubt; but this is the fault of the treatment which the blister receives rather than the fault of the blister itself. My plan is this:

I use the blistering plaster, or ceratum cantharides, U. S. P., which I spread on a piece of cloth of suitable size,

and usually cover the face of it with very thin gauze. While the gauze retards the action of the plaster to some extent, it is of use in preventing any portion of cerate from adhering to the skin when the plaster is removed, to which is sometimes due the strangury which follows a blister. Strangury but seldom occurs, and may be prevented in subjects especially liable to it by the use of demulcent drinks, beginning with the application of the blister. The skin should be free from grease, and should be wet with spirits of camphor, which is supposed to lessen the tendency to strangury. A compress and light bandage will hold the plaster in position. The directions to the nurse are—to wait from two to four hours, as may be most reasonable, and then only raise one corner of the plaster, and if fine watery vesicles are to be seen, to remove the plaster and apply dressing. When no vesicles show, press the corner of the plaster back and examine again in from thirty to sixty minutes, until it is ready to come off. If doubt rests on the mind of the nurse as to whether it has drawn enough, let it remain till there is no longer a doubt.

Then comes the dressing: I direct that all dressings should extend at least one inch beyond the edge of the blister all around, so that if it should slip a little the blister will not be exposed to the air. I prefer to first dress it with cabbage leaves, or with the leaves of the wide leaf plantain; and these should be softened by dipping in hot water and laid on the blister several layers in thickness; a compress and bandage completes the dressing. These leaves should be exchanged for fresh ones every four hours, and always applied as warm as is comfortable. They develop up a better blister than any other dressing, but if not obtainable, a poultice may be used from the first. When a sac forms holding as much as half a drachm of serum, it should be carefully opened with scissors or needle.

After twenty four hours I direct the leaves to be laid aside and a poultice to be used instead. This should be made of fresh milk, thickened with flour; it should be thin enough to pour into a bag made of soft white cotton and the end sewed up to prevent the contents from escaping, and the side to be applied to the blister well greased with hog's lard.

These poultices require to be changed every six to eight hours only, but should not be allowed to sour or to get cold and stiff. When patient has been convalescent for thirty-six or forty-eight hours, the blisters may be healed by the application of simple cerate on a cloth. Before one dressing

is removed the other should be ready and waiting, as air is painful to the raw surface and should be avoided. Sometimes a blister heals under the dressing before the patient is convalescent; when the tendency is in this direction, you can re-apply plaster for ten to thirty minutes, or a little blistering salve may be mixed with three times its bulk of lard, and used to grease the poultice once or twice.

All this detail may be very tedious, but I think it worth remembering.

I practiced medicine for years before I ever used a blister, but now I agree with a good many of my older brethren, and believe that a blister in pneumonia gives the patient the best chance to get well. I do not rely on blisters alone, but use such other remedies as are commonly used by the profession. But when I see in a newspaper, as I often do, that such and such a life (a bright one perhaps) has gone out, another victim to pneumonia has been laid low, I often wonder if a blister has been used. Should I lose a patient with pneumonia without having applied the blister, my conscience would tell me I had not done my duty.

Now, I have no statistics to offer you, for country doctors do not keep records of their cases as they should, but I find no patient too young and none too old to be treated and benefited by the blister. And, laying aside my modesty for the moment, I can boast of the recovery of as unfavorable cases as falls to the lot of any one, and these recoveries are due, in a large measure, to my creed, "In pneumonia, blister early and often."—*Virginia Medical Semi-Monthly*.

Progress of Medical Science.

MEDICINE AND NEUROLOGY.

IN CHARGE OF

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THE FAILURE OF ANTISTREPTOCOCCIC SERUM.

DR. WM. CLARK in *Cleveland Medical Gazette* writes as follows on the subject;

With the advent of antidiphtheric serum and its successful place in the therapeutics of the majority of the profession,

came the attempt to produce serum for the cure of that class of diseases caused by streptococcic infection ; and great hopes were entertained that we had at last found a remedy powerful enough to cure such diseases as puerperal fever, cerebro-spinal meningitis, etc., which have always been a thorn in the flesh.

During the past year reports have been published by the score from all parts of the country, some highly eulogistic of the serum and many reporting it valueless.

It has seemed to the writer that, in those cases in which a favorable report was made, too little was ascribed to the stimulating and antiseptic treatment of the physician, and too much to the serum. Upon the intelligent use of the serum is dependent its value. In some cases too little is used.

The writer has noticed in many of the reports of cases in which this remedy was used an utter disregard has been paid to ascertaining whether the cases were of streptococcic infection or not. Particularly was this true in reports of puerperal fever and cerebro-spinal meningitis. In puerperal fever a sterile swab should always be introduced into the uterus and smears taken for examination, while in cerebro-spinal fever, lumbar puncture should be performed, and the serum examined for the active disease-producing agent. If then, the streptococcus is found to be the cause of the disease, the serum can be used with some prospects of success.

When we reflect that in puerperal fever the woman may be infected by the colon bacillus, Klebes-Loeffler bacillus, scarlet fever, erysipelas and the various pus-producing organisms, and that in spinal meningitis of a typical form the condition is not produced by the streptococcus but by the diplococcus intracellularis, meningitis of Weichselbaum, we can readily see how ineffective this agent might be in those cases. It has come to be a conceded fact that there are kinds and classes among the chain-baccilli, just as there are kinds and classes among all other things ; and the serum made from one kind of streptococcus is no more a protective against ravages of another kind than antidiphtheretic serum is protective against yellow fever.

Undoubtedly there were some cases reported in which the serum was of value, and possibly of great value ; but they were cases of infection by the same kind of streptococcus as that used in producing the serum, and in which no general streptococcic infection existed.

One disadvantage in using this serum is its quick loss of power. Sometimes within a period of six weeks after its

first production it has lost nearly all its efficacy. Another is the inability to form a correct estimate in the majority of cases of how much to use.

The writer deprecates the hit or miss method of using this agent—the giving of it on the presumption that if it does no good, it will do no harm—on the grounds that, first, it is not scientific, and, next, there is no remedy in general use to-day that could be discredited by the same general and indiscriminate use.

The writer holds the opinion that at present the value of the antistreptococcic serum is limited, but hopes that some time in the near future a serum will be made that will have the same definite value and results as that of anti-diphtheretic serum.

THE TREATMENT OF DIABETES MELLITUS.

The discovery by Claude Bernard of the glycogenic function of the liver apparently threw a flood of light upon the origin of this disease, and has dominated the treatment of the affection for the last quarter of a century, until within a comparatively recent period. The aim has been in all cases of glycosuria to eliminate starches and sugars from the diet and to keep these patients upon a strictly non-diabetic diet. Theoretically, this elimination was supposed to lessen the amount of sugar in the blood and thus lessen the toxemia.

The delightful simplicity of this theory commended it to therapeutists, but a study of considerable proportion of these cases in which starches and sugars have been almost eliminated from the diet has shown that they did not do nearly as well as those who were allowed a moderate amount of these substances. The further study of these cases has shown that the whole question in diabetes is not apprehended in the elimination of sugar. We have differentiated glycosuria, so-called, from diabetes, recognizing that the former is not nearly so serious a disease as the latter, but that no hard and fast line can be drawn between the two conditions, as there are cases which partake somewhat of the character of glycosuria and others of diabetes, while occasionally these conditions are interchangeable in the same patient. A further study of these cases shows that there are other elements than the mere sugar production which enter into the clinical picture. As a rule, the diabetic has an excessive appetite, with a craving for starches and sugars. This is due to the enormous elimination of sugar and a consequent demand of the system for water and for materials for the manufacture of sugar. Even if his diet is re-

stricted in the matter of starches, he will still consume a larger quantity of food than the average individual. It may well be questioned whether the restriction of diet to protein substances is not beneficial, from the fact that it reduces the whole quantity of food taken. As a result of an ingestion of large quantities of food, there is frequently set up in the alimentary tracts of these patients fermentation, with occasional attacks of diarrhea, alternating with constipation, the latter being favored by the enormous watery drain from the kidneys.

The latter treatment of diabetes does not aim to cure the affection by eliminating starches and sugars from the diet. Undoubtedly the older writers believed that if all carbohydrates could be eliminated from the diet and kept out of it for a sufficient length of time the patient would recover. The latter conception of the disease regards all this as error, and looks upon all confirmed cases of the disorder as largely incurable, but which with medical attention will live for years leading fairly useful and comfortable lives. The main thing to be avoided by a diabetic is excessive consumption of food, by which the organs of digestion are overtaxed and their function disturbed. The diet should be a mixed one, in which the carbohydrates are considerably reduced, but in which they are not altogether eliminated. The quantity of food taken should be just sufficient to meet the needs of the patient; it should be apportioned carefully for each meal, and under no circumstances should the patient be allowed to over-indulge. Careful attention should be directed to the alimentary tract, and fermentation or the results of constipation should be carefully eliminated. In all severe cases in which there is alimentary disturbance, lavage of both stomach and bowels should be employed.

Medicinally there is comparatively little treatment, but antipyrin combined with bicarbonate of sodium does favorably influence the general condition of the patient, and has some action in diminishing the production of sugar. Iron and arsenic are useful as tonics, and liberal quantities of water should be allowed, which dilutes the urine and washes out the accumulated sugar from the blood.

THE MEDICAL TREATMENT OF TUBERCULOSIS.

The *Journal of Tuberculosis*, July, 1899, contains the following résumé of Schulz's paper on this subject. In this age of rapidly extending lists of drugs and the preval-

ence among the profession of a state of therapeutic nihilism in regard to their use, one is led to sympathize with the reaction against drug treatment when viewing the full extent of our capabilities in respect to their use in this wide-spread affection, and to realize that to a large extent in regard to our therapeutic resources generally, when antitoxin and surgery are not available, climatic and hygienic measures, hydrotherapy and probably electricity are the physician's chief resource.

Schulz, of Greifswald (*Deutsch. Med. Wochensch.*, May 25, 1899) says that generally speaking the remedies used against tuberculosis vary little from one century to another. It frequently has happened that a remedy advocated by the profession has been discarded by the latter only to be taken up by the public.

Aside from a few synthetic chemical remedies and certain exotic newly discovered plants, the materia medica of phthisis is old. On account of the malignancy of tuberculosis the number of remedies which have been used in its treatment is of course very great; but all of them may be grouped under two heads.

The first division is composed of remedies directed against the disease itself which have actually shown themselves to be possessed of real therapeutic efficacy.

The second group, on the other hand, comprises all substances which have no real efficacy against the disease, and which have been given oftentimes with intent to deceive the patient and encourage false hopes, and which through the influence of suggestion may appear to produce benefit at times.

The author attempts to enumerate all the articles of the materia medica which have been recommended for phthisis. For convenience he divides these remedies into two groups, one of which comprises such drugs as benefit the organism at large while the other is limited to remedies having special indications.

He enumerates drugs once officinal but now used only by the laity, and other plant products no longer thought of by physicians in connection with phthisis but which once enjoyed great favor among the members of the profession.

Some of the substances mentioned by him are agrimony, chelidonium majus, marrubium vulgare, pulmonaria officinalis, sticta pulmonaria, and so on through an endless list of plants, a number of which have entered into the formulæ of secret remedies, popular "teas," etc.

The use of fats, including milk, for phthisis is old.

Goat's milk, Kumyss, neat's-foot and olive oil, cod liver oil, etc., have all had extensive vogue in particular ages and regions, and the principle of using substances of this sort has become universal.

Among chemical alteratives which have been extensively used for phthisis are iodine, arsenic, mercurials, gold, sulphur, phosphates and hypophosphites.

Gases have been used medicinally by inhalation—oxygen, nitrogen, hydrogen, ozone—without any resulting advance in therapeutics.

The balsams so-called are of especial interest in the treatment of phthisis, and the Balsam Peruvianum is perhaps the best known in this connection; the fact that its active ingredient cinnamic acid and its sodium compound are largely used in the treatment of phthisis through the labors of Landerer is regarded by the author as a step in the direction of rational therapeutics.

Tar and creosote and allied substances enjoy a wide vogue in the treatment of phthisis at the present time.

Schulz now comes to the discussion of serum therapy and organotherapy. Under the former head tuberculin and several sera have been extensively tried, including the use of extracts of lung tissue.

The author next discusses those remedies which fulfill a single indication such as expectorants, haemostatics, antihydrotics, antipyretics, etc., etc. Under expectorants, antimony and other nauseants, and sal ammoniac are mentioned. For haemoptysis an endless number of remedies has been used without any exhibiting special excellence. For colliquative sweats a large number of remedies has lately been brought forward, such as thallium acetate, chloralose, camphoric acid, cotoin.

Most of the remedies in use against phthisical diarrhoea are old—bismuth, opium and astringents.

Antipyretics have been used in great variety. This group includes quinia, salicylic acid, benzoate of soda, alcohol. They were not very successful in bringing down the temperature, while the more modern antipyretics, however effective, are not adapted for continuous exhibition.

Schulz concludes by saying that when all these curative and symptomatic remedies fail to yield a hopeful result, we have to prescribe for the pain, and to that end must make use of narcotics, sedatives and hypnotics.

THE RELATIVE TOXICITY OF COCAINE AND EUCAINE.

Dr. H. H. Peck (*Journal of the American Medical Association*, September 9th) says that his experiments lead him to the following conclusions :

1. The action of cocaine is inconstant ; one never knows whether the symptoms occasioned by like quantities of the drug, in animals or individuals, under like circumstances, will be similar or dissimilar.

2. The action of eucaine is constant. The symptoms occasioned by the use of like quantities in animals under like circumstances, and, so far as the author's experiments have gone, in different individuals also, are the same.

3. The first action of cocaine on the heart is that of a depressant, and on the respiration it is that of a mild stimulant, the after-effects being, on the heart, that of a decided stimulant, and, on the respiration, that of a decided depressant.

4. The first action of eucaine on both the heart and respiration is that of a stimulant, the after-effects being those of a decided depressant.

5. Cocaine causes death in animals by paralyzing the muscles of the respiratory apparatus, the heart's action continuing in a feeble way for a brief period after breathing ceases.

6. Eucaine causes death in animals by paralyzing the muscles of the heart and of the respiratory apparatus, which cease to operate simultaneously.

7. Eucaine in toxic doses nearly always causes nausea, and occasionally vomiting.

8. Cocaine is much less nauseating and scarcely ever causes vomiting.

9. Eucaine is decidedly a diuretic, causing renal discharge in a majority of instances in which a toxic dose is used.

10. Cocaine is not a diuretic to any appreciable extent. renal discharge having occurred in only one instance in connection with all the author's experiments.

11. The pupils of the eyes, in nearly all cases of cocaine poisoning, do not respond to light, and the eyes are more or less bulging from their sockets.

12. The pupils of the eyes, in most cases of eucaine poisoning, do respond feebly to light, and the eyes rarely bulge from their sockets.

13. The action of toxic doses of eucaine is more like that of a paralyzing, tetanoiding, convulsion producing agent.

than of an anæsthetizing one, the plantar and cremasteric reflexes nearly always responding.

14. Toxic doses of cocaine cause general anæsthesia in connection with the other symptoms in the majority of cases.

15. True tetanus of all striped muscles of the limbs, and Cheyne-Stokes breathing nearly always occur with the use of cocaine, but seldom does either occur when eucaine is used.

16. Cocaine is at least three times more toxic than beta eucaine, and alpha eucaine is as toxic as cocaine.

17. Boiling does not destroy the efficacy of cocaine, but it does modify it, and boiling in no degree lessens the efficacy of eucaine.

The above deductions have been made only after many experiments in connection with each individual point. The author has observed many interesting features in connection with the relative worth of these drugs as local anæsthetics, but his paper does not treat of this phase of the work. There is much experimental work yet to be done in this connection, the results of which he will present at some future meeting.

N. Y. Med Jour.

DIET IN TYPHOID FEVERS.

By FRED C. SHURTLEFF, M.D., Los Angeles, Cal.

Much has been written both *pro* and *con* in reference to this or that article of diet in the management of typhoid fever. It is a settled fact that the food must be fluid, highly nutritious and easy of digestion, for the maintenance of nutrition is imperative in this wasting disease. Milk is probably the most extensively used, and will form the main article of diet so long as fever lasts. I have used milk in nearly all its various forms in the care of my cases, from frozen or boiled sweet milk to butter milk, from sweet milk, milk with lime water, to that partially digested with pepsin or pancreatin when digestion was enfeebled. The tendency in milk diet is to overfeed by forcing too large quantities at one feeding, and thereby cause a disgust for that diet upon which we have pinned our faith. If one insists upon an absolute milk diet, not infrequently will you find your patient has gone without it rather than take it. They fret under its administration, digestion is interfered with, curds swarming with bacteria of decomposition are found in the increased diarrhoeal discharges, plus the bacteria of typhoid fever already existing; hence the object which we wish to attain so far as it is possible (that of rendering the gastro-intestinal tract aseptic) is defeated from the outset by error in diet. I have often been puzzled as to what to substitute for milk in this class of cases until the stomach became more tolerant. I have tried various farinaceous substances, and discarded them on account of the increase of flatulency they almost invariably produced.

For some time past I have tided my patients over their critical period by tablespoonful doses of liquid peptonoids every two hours, giving nothing else in the way of nourishment but the above remedy. I cannot speak too highly of this elegant preparation where digestion is below par as a highly nutritious food that will not curdle upon the stomach, or leave a residue in the intestinal tract. It is a slightly stimulating food, consequently your cases as a rule will require less alcoholic stimulants, a great desideratum in some cases. I do frequently carry through my cases of typhoid successfully where no other article of diet is given from the time I make the diagnosis until convalescence is firmly established, and I call the attention of the profession to it for that class of cases in which milk cannot be taken.—*Southern California Practitioner.*

HEROIN TO RELIEVE COUGH AND CHEST-PAINS IN TUBERCULOSIS.

Dr. A. W. Beketoff (*Amer. Jour. Med. Sci.*, August, 1899) has made use of heroin in the treatment of twenty-five patients suffering from tuberculosis, in dose of one-tenth of a grain in powder or pill. In about fifteen minutes after its administration cough ceases, and sleep is possible. The respiration, especially when increased by coughing or pleuritic pain, is slower and deepened. In case of disease of the heart, or oxygen-hunger from encroachment upon the respiratory area (large cavities), this remedy is of little or no value. It has but little influence upon the circulation as regards either frequency or fullness further than that respiration is benefited. It relieves chest-pain, and so favors sleep. Insomnia due to mental excitement is not markedly relieved. It is well borne, even if digestive disturbances exist. It is indicated in the treatment of hemoptysis because of its beneficial action on cough. Patients do not become readily accustomed to its action, and it may be administered for a month without necessity arising for increase of dose.—*Virginia Medical Semi-Monthly.*

TREATMENT OF MIGRAINE.

Dr. Henry Hanford, in an article on migraine and the vasomotor theory, speaks of the treatment as follows: "It is well known that when, with headache the extremities are cold, some relief is obtained by warming the hands and feet at the fire. In many cases the recumbent position is required in addition. In a large class of patients the attack may be cut short by many hours by going to bed, applying hot bottles to the extremities, and taking a hot drink (as soon as the stomach will retain it)—some hot tea or milk. A glow

soon pervades the surface, and the spasm is relaxed. Relief so obtained is not very liable to relapse. After a few hours the ordinary duties of life may be resumed, and, although sleep is the best completion of the cure, its place may sometimes be taken by a good dinner. I believe this treatment, when it can be carried out, to be far superior to any drug treatment, although it may be aided by a good dose (thirty to sixty grains) of bromide potassium. It is a curious fact, and may be taken as the exception which proves the rule, that a few patients find that the recumbent position aggravates their pains, and often prefer to spend the night in an arm chair rather than go to bed. And also, in the last stages, moving about sometimes seems to hasten the end of the attack more than remaining quiescent."—*Edinburgh Medical Journal*.

BLOOD-LETTING.

The backward swing of the pendulum is somewhat anticipated in regard to bleeding by Briscoe in the *Clinical Journal* for the September issue.

He states that the condition of the system indicating blood-letting is expressed by the word suffocation.

Local conditions may require bleeding as alveolar abscess, ordinary inflammation, chronic inflammation, thecal abscess or any tissue requiring the relief of tension.

He states that every surgeon should carry some kind of venesection in his pocket.

The states of the general system denoting venesection are included in the following conditions :

When you find the venous system gorged in primary affections of the lungs or in the secondary congestions, as in heart disease, or from paralytic conditions, as in apoplexy, you cannot be wrong in bleeding ; you relieve the venous system as well as the heart, and allow the circulatory apparatus to right itself. The objection sometimes made that the patient is too weak, as indicated by the pulse, is futile, since, owing to the small amount of blood which reaches the left ventricle to be propelled onwards, the pulse is naturally small.—*Charlotte Medical Journal*.

THE SERUM TREATMENT OF TYPHOID.

A London correspondent of the *Interstate Medical Journal* for July writes that the main point of interest centres round the serum-treatment experiments which are being conducted in different parts of the world. One of the late com-

missioners, Prof. A. E. Wright, of the Army Medical School, Netley, took advantage of his visit to the typhoid districts of India to avail himself of the opportunity of inoculating certain British troops against this dread enemy of the soldier on foreign service. It appears that in the "West Riding" regiment, stationed at Bangalore, 250 of the soldiers volunteered to be inoculated with the typhoid serum as a protectionary or prophylactic measure. When at Rawal Pindi, Dr. Wright addressed the "Queen's" regiment on the advantages of inoculation, mentioning that 1,500 soldiers annually fell ill with enteric fever, and that one out of five dies. Out of 200 attendants at the Maidstone Asylum in Kent in the south of England, ninety-five persons were inoculated and none contracted fever, while of those who refused to undergo the process nineteen suffered from the disease. At Khartoum, of eight young subalterns six consented to inoculations, and the other two agreed to take their chance; of these latter, one was very ill with typhoid, the other died; the inoculated officers escaped. Professor Wright also inoculated the troops in garrison at Lucknow, 300 of the Third Hussars and 120 Cameronians. Diligent experiments are being made with the typhoid serum in more than one physiological laboratory in this country.—*N. Y. Med. Jour.*

SURGERY.

IN CHARGE OF

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OPERATIONS IN GASTRIC ULCER.

Dr. Leonard A. Bidwell (*American Journal of Medical Sciences*, September) recapitulates as follows the class of cases of gastric ulcer in which an operation should be done: 1. In all cases of perforation at the very earliest possible moment; also in subphrenic abscess. 2. In cases of hæmorrhage (*a*) when there is continual oozing of blood, especially if the stomach is dilated, and (*b*) in cases of repeated severe hæmorrhage. 3. In cases where there are severe pain and vomiting unaffected by treatment, and which are producing progressive emaciation. 4. In cases of dilatation of the stomach from contraction within or from adhesions outside

the stomach. The operations to be performed are : In class 1, laparotomy and suture of the ulcer ; in class 2, gastrotomy and suture of the ulcer with a purse-string suture, combined with gastro-enterostomy ; in class 3, gastro-enterostomy, in order to give physiological rest to the ulcer ; and in class 4, either gastro-enterostomy, or, if the pylorus is affected, pyloroplasty or pylorotomy. As the surgery of gastric ulcer is a comparatively new subject, the author has had, so to speak, to make a case in its favor. It has been his endeavor to show that no patient ought to be allowed to die either from perforation or from hæmorrhage from a gastric ulcer without a surgical effort being made to save him ; that the earlier such effort is made the better the chance of success, and, finally, that surgery offers much hope of success in other cases which resist the art of the physician.—*N. Y. Med Jour.*

THE SPHERE OF DRAINAGE IN SURGERY OF THE APPENDIX.

W. S. McLaren divides cases of suppuration about the appendix into two classes : the first comprises those in which the abscess is localized, being shut off from the general cavity by adhesions ; the second includes those more serious cases in which the pus has entered the general abdominal cavity. Cases of the first class are simple abscesses, and should be treated like abscesses of any other region. In these cases drainage is a perfectly proper, though sometimes unnecessary, procedure. In cases of the second class drainage is irrational, because it does not drain and because any foreign body must add to the already-existing irritation. Filling the abdomen with saline solution is considered to be rational, because it dilutes the poison which is generated during the few hours immediately following operation, and vastly increases the area of the peritoneum, which is called upon to resist that poison. Two cases are reported in which this method was used ; there was an abundance of pus in the general cavity, which was washed out with peroxide of hydrogen ; the abdomen was then filled with saline solution and the abdominal incision closed. Both patients made good recoveries.—*N. Y. Med. Rec.—Med. Review.*

THE PREPARATION AND AFTER-TREATMENT OF CHILDREN FOR OPERATION.

By FREDERIC N. WILSON, M.D.

Much has been written in our text books and by numerous other writers of the general and special technique

of operations upon children, but the preparation and after-treatment, except in a very general way, have been rather neglected. It is with the object of urging greater care and consideration of these points that this paper is written.

The two most important dangers to be avoided are dietary disturbances and hemorrhage. I place the dietary disturbances first, because they are very often the most difficult to overcome. When it is possible to select the season for operation, cool weather should be our first choice, for less gastro-intestinal disturbance may be reasonably expected then. It is of the greatest importance when a child is not taking its feeding well, or its food is not agreeing with it, as evidenced by vomiting or diarrhœa, or both, or loss of weight, that some modification should be made and a diet found which the child will retain and digest, so that after operation we are likely to be spared the necessity of further experimenting in that direction. In breast-fed babies clock-work regularity in feeding will, with perhaps a little temporary medication, place the patient in suitable condition. In bottle-fed babies I have seldom found one who could not take and digest some one, or two alternating, of the following preparations:

I. *Egg-water.* The white of one egg to four (4) ounces boiled water, to which is added ℥xv aromatic spirits of ammonia.

For older children: The whites of two (2) eggs to six ounces of boiled water; add ℥xxv aro. spts. amo.

II. *Fresh condensed milk* in the proportion of one (1) part with ten (10) to one (1) part with six (6) of boiled water, the proportions all depending upon the age and digestive ability of the child.

III. *Sterilized milk.* Temperature of 212° F., for fifteen (15) minutes.

IV. *Pasteurized milk.* Temperature 170° F., for fifteen (15) minutes.

V. *Peptonized milk.* The cold process is preferable, the result being less bitter. To a pint of fresh milk is added soda bi-carb. gr. x. Ex. Pancreatin gr. v. The process of peptonizing is allowed to continue for three (3) or four (4) minutes, the milk is then placed on the ice to stop the process. When the milk is warmed for consumption it becomes still further peptonized.

VI. *Top milk, barley malt water,* sterilized water, equal parts. The barley malt water is prepared in the following manner:

To two ounces of barley (Robinson's preferred) is added

30 ounces of water, boil ten minutes, then add 26 ounces of cold water in which has been dissolved half a teaspoonful of extract of malt. This is allowed to stand 15 minutes, is then heated again for 15 minutes, and after straining is ready for use.

VII. *Mutton broth.*

VIII. *Expressed beef juice* in proportion of one (1) part with four (4) to one (1) with eight (8) of boiled water. This often slightly increases the number of stools.

If the mother's milk is sufficient in quantity and quality, breast feeding should be insisted upon, provided the child is able to nurse, some cases of hare lip and cleft palate being the chief exceptions.

There being no food for nursing babies so good as breast milk, provided the child does well upon it, it certainly would be most irrational to change the feeding at time of operation, when it is to be expected that for a few days at least digestion is going to be a little below par. The gastro-intestinal tract can often be placed in a more receptive and tolerant condition by one or two washings of the stomach with warm boiled water, at a temperature of 105° , to which has been added a few grains of soda bi-carb and soda borate. This may be combined with rectal irrigations with warm water, containing a little soda borate, or with normal saline solution. During these few days of preparation when the condition and disease will admit of such a delay, the patient should be kept out in the open air as much as possible, provided the weather is suitable, and it is only in cases of pulmonary complications with the weather cold and damp that confinement to the house is to be recommended. A high temperature, except in these pulmonary cases, is not a contra-indication to out-door life; in fact, I believe it is actually indicated, provided the child is properly clothed. Very young children do not stand hemorrhage well; but, aside from an attempt to get the patient in the best possible general condition, there is not much to be done in the way of preparatory treatment. Some have advocated the intra-venous injection of normal saline solution before operation, but this procedure seems to me rather to favor bleeding by distending the blood vessels and also by increasing the blood pressure. If the saline is used before operation it is preferably introduced high in the bowel in small quantity, when absorption will take place as the blood needs it.

The examination of the urine, a procedure often neglected in children, is quite as important as in adults, for the knowledge of an unexpected kidney lesion might often

modify the course pursued at time of operation as well as the anaesthetic used.

The immediate preparation of the patient should be quite as carefully carried out as in the adult, though in a rather less vigorous manner. Shaving, not so much with the idea of removing hair as with that of removing the superficial epidermic scales, should always be done. The skin should then be thoroughly washed with green soap, using a piece of ordinary gauze; this is then carefully washed off and the skin is ready to receive the mascerating poultice. In my experience green soap has often proven too irritating, and I now use white castile soap rubbed into wet gauze and applied for six to eight hours. This gauze is then removed, the skin washed with plain water, followed by alcohol and then the bi-chlorid gauze poultice 1-1000 is applied. This is allowed to remain till the patient is on the operating table. There the same washing with soap, this time green soap being used, followed by alcohol to thoroughly remove the soap and fat, and then bi-chlorid complete the preparation of the field of operation. Ether, so often used to remove the soap and fat, I have discarded since once seeing a baby collapse immediately following the pouring of ether over the abdominal wall. The child's bowels are best emptied by a soap enema four hours before operation.

The time of giving the last feeding varies with different men, and has seemed to me often to be too far removed from the time of operation, and it has been my practice to give a child solid food eight hours before operation, or, if an infant, milk five hours before and plain beef soup two hours before. Hot soup is readily absorbed by the stomach, furnishes additional fluid for the blood, is decidedly stimulating, and in my experience has never complicated the anesthetic.

On the table, I cannot too strongly urge the necessity of protecting those portions of the body not immediately concerned in the operation with dry wraps of flannel or cotton. In operations below the chest a flannel shirt should always be worn and kept dry, the limbs wrapped in cotton and bandaged. Dry sterilized towels are always to be preferred to wet antiseptic. Many patients, adults as well as children, taken from a warm bed, placed upon an operating table, given an anaesthetic which lowers the body temperature, covered with wet towels, allowed to lie in a bath of irrigating fluid without any attempt being made to keep the body temperature up, have been sent back to bed suffering from shock which might have been avoided by protecting the body with warm dry clothing. Why we should expect a sick person breathing a temperature-reducing gas to withstand

such influences, which would be trying, to say the least, to a person in good health, is beyond comprehension; and I am very sure the number of cases of pneumonia, nephritis and death which can be justly charged to this lack of care must be very considerable.

The immediate after-treatment consists in stimulation of heart and keeping up of body temperature. Strychnine and caffeine head the list of drugs, while hot normal saline solution supplies heat and fluid. If the abdominal cavity is open and the patient is in need of stimulation, there is no method so quick and effective as to pour into that cavity a quart or more of hot sterilized normal saline solution, temperature 115° . If we cannot use this method, the high rectal irrigation, preferably continuous or as an enema, of saline solution at the above temperature is advisable for those cases where infusion cannot be done. The difficulties of doing an intra-venous infusion in a small child are not imaginary. To the hot rectal enema one to four ounces of strong coffee is often a valuable adjunct.

The child once in bed (the foot of which may be raised to increase the cerebral blood supply if necessary) should be wrapped in a warm flannel blanket carefully pinned so that no portion of the patient can possibly become uncovered except the face. The object of the flannel blanket applied in this way is two-fold; first it prevents loss of body temperature by radiation, flannel being a poor conductor of heat, and second it guards against the possible immediate contact of hot water bottles which, in spite of the serious and painful accidents which have occurred from their use, I consider a very valuable means of supplying heat, and I heartily recommend it. The distressing burns which have not been infrequent have always been due to carelessness and lack of attention, and I see no reason to condemn a method, as some have done, when the fault lies altogether in the unskillful application of it.

Vomiting, which so often complicates convalescence, is best treated by withholding all feeding by mouth until the stomach is in condition to digest food. I have found teaspoonful doses of hot water, plain or with essence of peppermint, decidedly carminative, and all my cases receive this at first whether they vomit much or not at all. If vomiting is long continued, even this is stopped, the patient's mouth kept cool and clean with diluted solution of listerine, a mustard paste, 1 to 8, placed over the epigastrium, and food and fluid supplied by rectal feeding.

Peptonized milk, liquid peptonoids, and normal saline

solution have in my hands proven to be the most satisfactory. Whether the child vomits or not, the first food it receives by mouth is either mutton broth or egg water, for I have found these to give rise to less disturbance than milk in any form, and it is only when I feel sure the stomach is capable of digesting the latter that I give it, and then very cautiously at first. In the after-treatment, as well as preparation, I consider fresh air of great value, and as soon as all danger of pulmonary trouble, *i. e.*, either bronchitis or pneumonia, is over, I send the cases out of doors at least a part of every day provided the weather is suitable, care being taken to see that the flannel underclothing is worn, light or heavy, according to the atmospheric temperature.—*The Post-Graduate.*

THE PREVENTION OF POST-OPERATIVE THROMBOSIS IN THE VEINS OF THE LOWER EXTREMITIES.

The author directs attention to the occasional occurrence after certain operations on the abdomen, such as laparotomy, resection of the appendix, and the radical cure of hernia, of thrombosis of the superficial, and it may be also the deep veins of the lower limb, which thrombosis is frequently observed in the trunk of the femoral vein, and may extend into the external iliac vein. This complication, which, when it occurs, usually presents itself in the second or third week after an operation which in other respects has, as a rule, been most successful, cannot fail to cause anxiety on account of the risks of embolism of the pulmonary artery, and of pulmonary infarction, and necessitates an unduly prolonged confinement of the patient in bed. The author holds that this thrombosis is not in most cases the result of infection, but that it is due either to retardation of the circulation in the veins of the lower extremities, or to local changes in the walls of these vessels. With the object of preventing this serious complication, the author makes it a rule in his surgical practice, after every operation on the abdomen and for hernia, to elevate the lower end of the patient's bed. If the organs of the patient be absolutely or relatively healthy, the elevation need not exceed 4 inches, but should be increased for exhausted and anemic patients, and those already affected with varicose veins. In a case of an anemic patient suffering also from weak heart and varicose veins, or of one who has been previously affected with thrombosis in the lower extremity, the end of the bed is raised on wooden blocks each about 20 inches in height. The elevation, if in this degree disagreeable to the patient, should be commenced at 4 or 6 inches, and afterwards be gradually

increased. If, after the operation, the blood tension be low, and the heart's action weak or irregular, the author would endeavor to increase the force of the circulation, and to strengthen the heart by subcutaneous infusion of salt solution, and by suitable tonic and stimulating medication. Much improvement is attached to high elevation of the foot of the bed, and such treatment is strongly advocated, not only in surgical practice, but also in cases,—such, for instance, as enteric fever, chronic entero-colitis, and chronic peritonitis,—in which an anemic condition, general exhaustion, and a morbid state of the blood, may favor the development of venous thrombosis of the lower extremity.—*Dr. Lennander, in Centbl. f. Chir. Brit. Med. Four., Post-Graduate.*

A NEW ABSORBABLE LIGATURE MATERIAL.

The author reports the clinical results of his experience with a new absorbable ligature and suture, which he finds to be absorbed a little more slowly than catgut, but to be capable of absolute sterilization. The ligature is made from the *ligamentum nuchae* of the reindeer by dividing it in the direction of its fibres. The process of preparation is the following: Removal of fat in ether, soaking in juniper oil for 14 days, removal of oil with ether and alcohol, soaking for two days in a one-third per cent. sublimate solution; preservation in alcohol. Bacteriological examination and the clinical test of 83 major operations have proved the absolute sterility of this material, and that it is absorbed as soon as desirable. *Dr. Sneguireff, in Centbl. f. Chir., Am. Four. Med. Soc., Post-Graduate.*

TREATMENT OF BURNS AND OTHER SURFACE WOUNDS.

In a recent issue of the *Railway Surgeon*, Dr. G. Archdall Reid states: "I venture to place before the profession a method of treating surface wounds so simple and obvious that I think it must have been tried before. Briefly, I do not place the surgical dressings on the wound, but on a light wire cage or support, which thus, while permitting them to afford protection, prevent them acting as foreign bodies. The wire support is easily manufactured. If the wound be on a flat surface—as the chest—a stout wire of suitable length is bent into such a shape that when placed over the wound it surrounds the latter, but rests everywhere on uninjured tissue. On this wire as basis is woven a wide network of lighter wire, so that a shallow dish of wire work, shaped somewhat

like the wound, but larger, results. If the wound be on a limb a cylinder of similar wire work is made in two parts, which is hinged together so that the cylinder may be easily applied to or removed from the limb. The circumference of the shallow dish and the ends of the cylinder are padded by wrapping some soft material—carbolized wool, for instance—round the thick supporting wire. When in place the apparatus may be covered by any dressings the surgeon chooses, and is retained in place by strappings or bandages.

“On one detail of the treatment it is necessary to insist with the utmost emphasis, the surface of the wound must be kept absolutely clean. It should be gently sponged daily, twice, thrice or oftener, if necessary, with some mild antiseptic fluid, such as boric acid or weak (1 in 40) carbolic lotion. Otherwise the discharges coagulating on the surface form a cake under which pus is retained, and which proves in experience more hurtful than any other foreign body. In order as much as possible to prevent the discharges drying and caking, I usually cover the supporting cage with wet lint, and the whole with waterproof. If, in spite of precautions, the lymph does cake, it may be softened by soaking in olive oil and then removed.”—*Interstate Med. Four.*

THE INTERNAL DERANGEMENTS OF THE KNEE.

The internal derangements of the knee may be classified as follows: (1) Loose bodies; (2) detachment or displacement of the semilunar cartilages; (3) enlargement with nipping of hypertrophied synovial fringes, and (4) elongation of the ligamentum patellæ. In all these derangements, except the last, it may sooner or later become necessary to open the knee-joint if a radical cure is to be obtained. Walsham believes that the knee-joint may be opened with a freedom equal to that of opening the peritoneum, but likewise an equal amount of care for strict asepsis should be taken in opening the joint as in the peritoneal cavity. He calls especial attention to the five following points: (1) Preparation of the patient, *e. g.*, rest in bed three days to a week previous to operation, with the limb in a splint, regulation of bowels, etc., and careful asepticising of the skin; (2) arrest of all hemorrhage; (3) accurate suture of the synovial membrane and capsule; (4) postoperative absolute rest for the limb; (5) early passive movements and massage. As to the treatment of elongation of the patellar ligament, it is best to transplant it further down the tibia by the use of an ivory peg.—*Interstate Med. Four.*

Jottings.

In the Northwestern *Lancet* of 15th November, 1899, Dr. Fliesburg, of Minneapolis, published the report of fifty cases of membranous croup with 38 recoveries and 12 deaths. Of the fatal cases, two were instrumental, viz., one tracheotomy and one intubation. The treatment adopted in all cases was the same. It consisted of hydrochlorate of apomorphiæ, one fifth of a grain; calomel, twenty grains; bi-carbonate of soda, half a drachm. To be divided into twenty powders, and one to be given every hour dry on the tongue. Equal parts of turpentine, eucalyptol, carbolic acid and Cologne water, to be poured into hot water, letting the child inhale the vapor under a thin blanket made into a canopy. On the second day the powders should be diminished to every two hours. On the third day the improvement is nearly always so marked that they can be discontinued. Then give a mixture every three hours in appropriate doses for age, containing pilocarpine, codeine, hydrochloric acid and syrup of tolu. During convalescence give a tonic of iron, quinine and strychnine.

When the os uteri is rigid and tense, try:

R. Sol: cocaine, 5 per cent..... 1 drachm.

Atropine 1 grain.

M. Sig. Apply to external os, and, if possible, to the inside of neck of womb.

In five minutes you will have a good dilatation, and the parts will lose all their rigidity, and labor terminate readily and without danger of laceration. Also applied to the perineum in rigidity, it acts most kindly. Applied to the rectum where there is a tense, hard sphincter ani, to prepare for exploration by speculum or finger, will greatly facilitate the operation and give comfort to the patient.—DR. BALL, in *Medical Brief*.

Onions are a kind of all-round good medicine. A whole onion eaten at bed time will, by the next morning, break the severest cold. Onions make a good plaster to remove inflammation and hoarseness. If an onion is mashed so as to secure all the juice in it, it will make a most remarkable smelling substance that will quiet the most nervous person. The strength of it inhaled for a few moments will dull the sense of smell and weaken the nerves until sleep is produced from sheer exhaustion. It all comes from one property possessed by the onion, and that is a form of opium.—*Winnipeg Lancet*.

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Editorial.

THE WAR IN SOUTH AFRICA.

It is safe to say that we know vastly more about South Africa than we did three months ago. Aside from the general interest which we take from our British loyalty in the war now raging there, we have the special reason of being an active participant in it. For the first time in our history we have sent Canadian troops to assist the Mother Country. Their progress has been eagerly watched, and day by day the papers are searched to see if they have had their "baptism of fire." Active hostilities, we know too well, mean death to some and wounds to others. But there is as a rule in all wars an enormous death rate due to sickness, most of it being caused by malaria. It is therefore, a matter of interest to know the character of the climate where the war is now raging. The climate of South Africa is, according to all writers, one of the healthiest in the world. So far the engagements which have been fought have resulted in the loss of a large number of lives, and rendered thousands non-effective from wounds. The general health of the troops has, upon the whole, been excellent, though at the time of writing we see reports of deaths due to enteric fever. Still, upon the whole, it would seem as if the present war might be largely free from that enormous death rate which so commonly has accompanied large armies in the field. This, if it turns out to be the case, may be attributed to the extremely healthy climate

but also, we believe, to the great advance that has during the last twenty years been made in sanitary science.

As large numbers of the troops were immuned from enteric fever before leaving Britain and on the voyage out to the Cape, it will be an interesting fact to learn, as undoubtedly we will, how far the hypodermic injection of the anti-toxin has been successful. The configuration of South Africa plays an important part in making it a healthy country. It strongly resembles a series of steps. The Coast plateau is six hundred feet above sea level, the Southern Karoo is twelve hundred feet, the Central Karoo twenty-five hundred feet, and the Northern Karoo four thousand feet. That portion which borders on the coast is the least healthy for Europeans. In Cape Colony rain generally falls in the early winter. The first three months of the year are the hottest, but almost rainless. On the East Coast, where Durban is situated; rain generally falls in the summer. This is said to be the rule in the interior, where the winters are said to be clear and dry, with slight frost at nights. There is a great contrast between the climate of the Southern Karoo and the Coast plateau. In the former it is dry, with considerable variations in temperature. The mean maximum range of the thermometer is 87 F. in January and 36 F. in July. The Northern Karoo stretches to the Orange River, and has an extremely dry climate, the rain fall in some parts being only two weeks, and the general average about ten inches. "The Transvaal is an elevated plateau with a very healthy climate. Pretoria is at an elevation of forty-five hundred feet, and Johannesburg of five thousand feet above sea level. In spite of this elevation the summer heat in these places is very great, and dust storms are frequent."

As an evidence of its antagonism to epidemic disease, it is said to be one of the few portions of the world which never has had an invasion of cholera or yellow fever. It would seem, therefore, as if the present war might be free from epidemic enteric fever, dysentery and diarrhœa, which are truly called the scourge of armies. We need hardly point out how valuable this is to our forces, for it will largely confine the non-effectives to those who have unfortunately been wounded. Such a healthy climate will facilitate much to their recovery.

THE VEIL A CAUSE OF A RED NOSE.

Rosenbach, in the *Berliner Klinische* for October 9, 1899, states that abnormal redness of the nose is often due to wearing a veil in winter. The knowledge of this fact may prove useful to physicians when consulted for this disfigurement of the features, often a sore blemish where all else is beautiful. He says the discoloration is most pronounced at those points where the veil presses most on the nose. It is partly due to the mechanical action of the sharp and rough texture upon a sensitive skin, and to the watery vapor that collects within its meshes and prevents evaporation. Blood is thus driven from the tip of the nose to adjacent parts, whose blood-vessels in consequence become enlarged and conspicuous. This is aggravated if the veil is kept on when passing from a cold to a warm atmosphere. The alterations tend to become permanent the longer the veil is worn without airing. Sometimes the cheeks are similarly affected. The treatment consists in, of course, discarding the offending covering, and, for a time, sharp winds and great cold. If this is impossible, avoid going rapidly from a cold to a warm atmosphere. Gentle massage should be practised, and applications of a thin layer of lanolin, vaseline or cold cream. This should be followed by the dusting of the part with talc or starch powder. When the use of a veil is necessary, it should not extend below the nasal orifices, so as to permit the escape of watery vapor. It also should be light in texture and worn as loosely as possible.

INTERNATIONAL CONGRESS OF MEDICINE.

The thirteenth meeting of this Congress will be held in Paris, August 2 to 9, 1900. The French Executive Committee have issued a circular to the profession in Canada through their Secretary, Dr. J. T. Loranger, of Montreal, giving the terms of membership and the names and addresses of the secretaries of sections. Any physician may be admitted to membership on the payment of five dollars, which must be remitted to Dr. Loranger or Dr. Starr, Toronto, when a membership card will be sent them. It is advised

that members when remitting should state the special section to which they desire to belong. Communications (title) should be sent to the secretary of the particular section to which it belongs before the 1st of May, 1900. The list of these is too long for us to publish, but the name of the one desired may be obtained from Dr. Loranger, Montreal.

Every inhabitant of Montreal must have been struck with the number of foggy days which we experienced last autumn and early winter. The fog was unusually dense, and on several occasions might be admitted to have been not by any means a bad sample of a London fog. It was yellow in color and very dense—obscuring objects at a distance of a few feet. Such a condition of the atmosphere might, with activity on the part of the Civic authorities, be greatly ameliorated. Fogs cannot be done away with, but it is admitted that their character may be improved—they may be made white—and not allowed to become yellow and black. This can be done by the City compelling every factory to consume its own smoke. Montreal has become a great manufacturing centre, and has almost always a heavy cloud of smoke hanging over it. When in the city the atmosphere may seem clear, but cross to St. Lamberts, and view it from there, and one will see the dirty atmosphere we are compelled to inhale. This is a matter of very considerable sanitary importance. Fogs of any kind are serious to those liable to bronchial complaints, but, when the fog is mixed with millions of particles of coal dust, their seriousness is very greatly enhanced.

The New York *Post-Graduate* says it will be a bad day for medical science when the skeptic ceases to exist. We are called upon to believe so many things and to accept them at once that many are commencing to hesitate before accepting everything as Gospel that is proclaimed by microscopists and bacteriologists. It is still thought by many, in spite of all that has been written, that it is at least doubtful if the origin of disease is to be found only in the initial activity of germs. This state of matters bacteriological

has been brought about by the statements of Dr. George Wilson, of Edinburgh, in his address on "State Medicine" at the last meeting of the British Medical Association held at Portsmouth. In fact, he has raised a hornet's nest about his ears by some of his statements on bacteriology. In his address he stated that "bacteriologists are not sure of their tuberculous bacillus, and it is a moot question whether the bacillus which is found in milk, and which is labelled as the tubercle bacillus, is not cow dung bacillus. A distinguished bacteriologist has admitted it. I venture to reiterate it." Of course, Dr. Wilson's competency in this special matter is called in question, but, true to his national instinct, he does not seem loathe to take up the gauntlet which has been thrown down to him. Incidentally, Dr. Wilson calls attention of bacteriologists to the fact that, in his opinion, Jenner's great discovery of the preventative power of vaccination has really no proper analogy with many of the serum treatments to which it is sometimes said to bear a real analogy. This question is one of intense interest to the profession, and the fight will be watched with eagerness by both contending parties.

Book Reviews.

A Treatise on Surgery. By American Authors. Edited by Roswell Park, M.D., Professor of Surgery in the University of Buffalo, N.Y. New condensed edition in one royal octavo volume of 1262 pages with 625 engravings and 37 full-page plates in colours and monochrome. Cloth, \$6 net; leather \$7 net. Lea Brothers & Co., Philadelphia and New York.

This is a condensed edition of the two-volume form published in 1896, and the author has taken advantage of this opportunity to revise the work to date, making it a thoroughly modern text book reflecting the methods of teaching developed by large experience.

The great demand for the work in its two-volume form which greeted its first appearance in 1896 warranted the belief that a somewhat condensed edition in a single volume, and at a correspondingly lower price, would add to its popularity. It is no small task to gather a comprehensive and authoritative expression of modern surgical knowledge. The labor of condensing this large and exhaustive work has been splendidly performed, for with great discrimination the editor has culled the essential facts without in-

the least endangering the value of the book by rendering it too concise.

That two editions of a work should be simultaneously extant is a novelty worthy of comment. Practitioners and many students desiring the fuller information in the two-volume edition will naturally prefer it, but the condensed edition maintains the convenient division into general and special surgery, and thus preserves the conformity of the work with the surgical courses rapidly becoming universal, and it will answer the needs of students as well as of those who desire a comprehensive and practical single-volume work on the subject. The reduction in price is proportionately much greater than the reduction in matter, and is an advantage which purchasers will appreciate, and one which has only been rendered possible by the exceedingly wide sale already achieved.

The illustrations are excellent and well selected. We predict new popularity for an already very popular book. R. C.

Bacteriology in Medicine and Surgery. A practical manual for physicians, health officers and students, by William H. Park, M.D., Associate Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, New York. In one 12mo. volume of 688 pages, with 87 illustrations in black and colors, and two full-page colored plates. *Just ready.* Cloth, \$3 net.

There was a time when every physician was held to be possessed of the whole body of medical knowledge. He knew in part, he pretended in part, and the rest was imputed to him. Not every physician can be a bacteriologist, nor is it desirable that he should, but he must know the science if he cannot practise the art. He must know the drift of the teaching and have a knowledge of the work that has been done and is being done in the laboratories, and its application to his business of preventing sickness and healing his patients. This book by Dr. Park teaches just these things. It contains in regular order all that a physician or health officer or student need know, and it has in addition a certain literary quality which gives interest to the reading and a sense of clearness which prevents the statements being either loose or inexact. The book is in no way a compilation, and one has the feeling that the writer by much labour has a just appreciation of the difficulties of the various processes so pleasantly described. To go over in review all the chapters would be to cover the whole field of bacteriology, and such cognate subjects as "Immunity," "Infection," "Disinfection" and the various relations of bacteria to disease.

The book is not large; it is cheap; it is easy to read; it conveys a correct impression, and is satisfying to all ordinary wants.

In the next edition "Symmetrically sealed" will not appear. There will be a reconciliation of the statement at page 104, what animal parasites have to do with syphilis and the description of Lustgarten's bacillus at page 311, and words like "autopsied" will not be employed. A. McP.

A Laboratory Manual of Physiological Chemistry. By Elbert W. Rockwood, B.S., M.D., Professor of Chemistry and Toxicology in the University of Iowa. Illustrated with one Colored Plate and Three Plates of Microscopic Preparations. $5\frac{3}{8} \times 7\frac{3}{4}$ inches. Pages viii.—204. Extra Cloth, \$1.00, net. The F. A. Davis Co., Publishers, 1914-16 Cherry St., Philadelphia.

The want of a trustworthy and reliable manual of Physiological Chemistry has long been felt by the average student. There are few text books of Physiological Chemistry that are adapted to his needs.

Dr. Rockwood's volume should fairly realize the student's expectations, for it is thoroughly practical.

The author has succeeded in bringing together, within a small compass, the essential facts of medical chemistry. These facts are embodied in three hundred and forty experiments. A great deal of space is devoted to the methods of analysing the various secretions and excretions of the body. The practical exercises have been selected with great care and judgment, those on the examination of the gastric contents being especially valuable and up to date.

Clearly, the author has done his best to impart accurate information through the student's own observation.

We refrain from pointing out some trivial errors, lest we should seem to disparage a carefully written book, which we trust will meet with the approval of all teachers of physiology, who consider the laboratory method of instruction superior to the didactic. A. B.

Notes on the Modern Treatment of Fractures. By John B. Roberts, A.M., M.D., Professor of Surgery, Philadelphia Polyclinic. Publishers, D. Appleton & Co., New York.

This excellent little volume is made up of a series of essays issued at various times by the author, subject to some alterations to bring them into accord with his present views. We fully agree with Professor Roberts that in no part of surgery is there more need for practical common sense methods, untrammelled by ancient therapeutic dogmas, than in the ever varying conditions in fractures. Many false doctrines in the treatment of fractures are exposed, and valuable suggestion made to facilitate diagnosis as the use of the open incision or the Röntgen rays. The importance of positive methods of maintaining apposition of the fragments, as by wire nails, wire suture and tenotomy, with substitution of a plastic plaster of paris splint for an ill-fitting manufactured wood or metal splint, is certainly to be heartily endorsed.

As a whole, the work is one showing much observation with original research and independent thought, which makes it very valuable to the practitioner, although hardly complete enough to satisfy students. Many useful hints are given to simplify the adaptation of splints and splinting, while emphasis is placed on the value of securing opportunity for frequent massage of the muscles of a fractured limb and of the useless applications of lotions.

G. F.

Thorington, Refraction and how to Refract. Including sections on Optics, Retinoscopy, the Fitting of Spectacles and Eye-Glasses, etc. By James Thorington, A.M., M.D., Adjunct Professor of Ophthalmology in the Philadelphia Polyclinic and College for Graduates in Medicine; Assistant Surgeon at Wills' Eye Hospital; Associate Member of the American Ophthalmological Society; Fellow of the College of Physicians of Philadelphia; Member of the American Medical Association; Ophthalmologist to the Elwyn and the Vineland Training Schools for Feeble-minded Children; Resident Physician and Surgeon Panama Railroad Co., at Colon (Aspinwall), Isthmus of Panama, 1882-1889, etc. Two hundred illustrations, thirteen of which are colored. Octavo, 301 pp., \$1.50 net, cloth. P. Blakiston's Son & Co., 1012 Walnut street, Philadelphia, Pa.

In this excellent book on refraction Dr. Thorington gives, in an interesting and essentially practical manner, all that is necessary to enable the student of ophthalmology to obtain a firm grasp of this intricate branch of the science.

While the work is not voluminous, it is remarkably clear and complete, and, though intended for beginners, contains much information that is useful to older ophthalmologists.

It is especially of value to students in that the writer teaches dogmatically the known facts pertaining to the estimation and correction of errors of refraction, and does not wander off into long discussions on disputed points.

Dr. Thorington is to be congratulated on having set forth so clearly and systematically what is known about refraction at the present time.

G. H. M.

Hygiene of Transmissible Diseases. By A. C. Abbott, M.D. W. B. Saunders, Pub., Philadelphia. Price \$2.00.

This is a most comprehensive hand book, strictly adhering to the title; it is not a general treatise upon hygiene, but treats of a special part of the subject—transmissible diseases.

The plates, especially the photogravures of the different specific organisms, are very good. The work is very concise, yet sufficiently descriptive. There is no overcrowding; everything is readable and to the point.

The subject of Quarantine is treated in a very terse and clear manner.

An up-to-date description of all the transmissible diseases is to be found within its 300 pages, as well as the very best and most practical means of prevention.

It is a book which will commend itself to student and practitioner alike as being concise, yet supplying all important information sought after in a work of this sort.

A. J. R.

Physiology, A Manual for Students and Practitioners. By Howard D. Collins, M.D., Assistant to the Attending Surgeon of the Roosevelt Hospital; Assistant Demonstrator of Anatomy, College of Physicians and Surgeons (Columbia University), New York, and Wm. H. Rockwell, jun., M.D., Assistant Demonstrator of Anatomy, College of Physicians and Surgeons (Columbia University) New York; Member of Association of American Anatomists. Series edited by Bern B. Gallaudet, M.D., Demonstrator of Anatomy and Instructor in Surgery, College of Physicians and Surgeons, Columbia University, New York; Visiting Surgeon, Bellevue Hospital, New York.

This volume is intended to meet the needs of medical students who, in the short time allotted to the study of physiology, are expected to assimilate only the main facts of the science.

As an elementary text-book it will be found useful. Its style is clear, and the information it imparts is more reliable than that contained in the many cram books on physiology, which are so popular among students. Unfortunately, the work is not free from inaccuracies. Thus we are told that the change from fibrinogen to fibrin, under the action of fibrin-ferment, does not take place unless paraglobulin be present. Now, it is well known from the researches of Hammersten and others, that paraglobulin neither helps nor hinders coagulation.

On reading the volume through, we have found some ambiguous statements which no doubt will be amended in a future edition.

A. B.

Musser's Medical Diagnosis.—A Practical Treatise on Medical Diagnosis. For the use of Students and Practitioners. By John H. Musser, M.D., Professor of Clinical Medicine, University of Pennsylvania, Philadelphia. New (3d) edition thoroughly revised. Octavo, 1082 pages, with 253 engravings and 48 full-page colored plates. Cloth, \$6.00, net; leather, \$7.00, net.

To critically examine a work of over one thousand pages inside of two or three weeks is an impossibility by one largely engaged in general practice, and this is the position we find ourselves with regard to Musser's Diagnosis. We have, however, examined more of it than we thought possible when we began, so fascinated did we become. We read chapter after chapter, till well on in the early morning, and then felt reluctant to close its pages. This examination enables us to say that we regard it as one of the best works on Medical Diagnosis yet published. It is a complete practical guide to the modern science and art of diagnosis. To those members of the profession who have for even a few years been out of touch with modern clinical work, as conducted at our large city Hospitals, such a work as Musser's Medical Diagnosis is an eye-opener. It demands a place on the book-shelf of every one who desires to be a good diagnostician.

F. W. C.

The Surgical Diseases of the Genito-Urinary Tract, Venereal and Sexual Diseases.—A Text-book for Students and Practitioners. By G. Frank Lydston, M. D., Professor of the Surgical Diseases of the Genito-Urinary Organs and Syphilology in the Medical Department of the State University of Illinois; Professor of Criminal Anthropology in the Kent College of Law; Surgeon in-Chief of the Genito-Urinary Department of the West-Side Dispensary. Fellow of the Chicago Academy of Medicine; Fellow of the American Academy of Political and Social Science; Delegate from the United States to the International Congress for the Prevention of Syphilis and the Venereal Diseases, held at Brussels, Belgium, September 5, 1899, etc. Illustrated with 233 Engravings, $6\frac{1}{2} \times 9\frac{3}{4}$ inches. Pages xvi-1024. Extra Cloth, \$5.00 net. Sheep or Half-russia, \$5.75 net. The F. A. Davis Co., Publishers, 1914-16 Cherry Street, Philadelphia.

The publication of Dr. Lydston's book will in all probability be received with more than ordinary interest, for the reason that the writings of the distinguished author have always been read with great appreciation by those of the Medical and Surgical profession who have made Genito-Urinary and Venereal Diseases their special study. This being the case, we agree with the author when he states in the preface that the issuance of the work at this time "hardly requires either apology or explanation." The writer is so frank in his style that the volume makes exceedingly pleasant reading without in the least wearying the peruser. From a passage in the very brief preface we would infer that the author, in treating of the various subjects embraced in the volume, had not always confined himself to the "beaten pathway" followed by his predecessors, as he says: "I have embraced the opportunity herein afforded me for airing a few heresies of my own." Every topic of importance that has any connection with the subject is given as much space as its importance warrants. The first chapter deals with "Genito-Urinary and Sexual Hygiene" and the second with "Urinalysis in its Surgical Relations," and the chapter on "Gonorrhœa (in the male) occupies 47 pages. The important subject of stricture is very ably dealt with, and takes up 93 pages. Space will not allow of our referring to other chapters which are equally interesting and valuable. To those of the profession who know Dr. Lydston as a practical surgeon and writer, it is unnecessary to commend the work. His name is a sufficient guarantee to the profession. The print and binding are up to the usual standard of the publishers, while the numerous illustrations are admirably executed. The general index, which is elaborate and comprehensive, is placed at the end of the book. The work is admirably adapted to the uses of the general practitioner, and we can strongly recommend it to the profession.

A Text-Book of Materia Medica, Therapeutics and Pharmacology. By George Frank Butler, Ph.G., M.D., Professor of Materia Medica and Clinical Medicine in the College of Physicians and Surgeons, University of Illinois. J. A. Carveth & Co., Toronto, Canadian Agents. Cloth, \$4.00; sheep or half morocco, \$5.00, net. Third Edition, thoroughly revised.

The rapid changes which have taken place within the last few years in the Armamentaria of the medical profession requires frequent revision of works of this class. When this work first made its appearance three years ago, its arrangement was made on a new basis. It embodied the synthetic classification of drugs based upon therapeutic affinities, believed by the author to be the most philosophical and rational, as well as that best calculated to engage the interest of those to whom the study of the subject is wont to offer no little perplexity. This arrangement would seem to have been well received, for within a very limited time two editions have been exhausted. We are not surprised at this—for, having examined the work very carefully, it commends itself to our judgment as being an excellent Text-Book for the class room, and equally good as a standard volume for the book-shelf of the practising physician. We find the pharmacological section very complete, exceptionally lucid. Much of the rubbish with which the drug market is flooded is, we are glad to say, not noticed, and only such of them as have proved of unquestionable value are to be found within its pages. "Untoward Action" and "Poisoning" are treated under separate heads. By the former it is intended to record the effect of medicinal doses in developing certain symptoms dependent more or less upon idiosyncrasy, but not necessarily assuming the aggravated form incident to toxic doses. Comparing the first with the present edition, we find that an immense amount of labor has been expended upon it, with the result of placing the work in every way up to date and well deserving of the support of the profession.

F. W. C.

PUBLISHERS DEPARTMENT.

We learn with pleasure that Messrs. Wm. R. Warner & Co. have received a silver medal and diploma, the highest award at the late National Exposition, held in Philadelphia. It will also no doubt prove very gratifying to their many patrons to know they are prescribing remedies of such recognized therapeutic superiority.