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THE CANADA LANCET

VOL. XXXIV. TORONTO, NOVEMBER, 1900. No. 3.

ORIGINAL ARTICLES.

SOME REMARKS ON FORCEPS DELIVERY WITH SPECIAL REFERENCE TO OCCIPITO-POSTERIOR CASES.

By L. BENTLEY, M.B., TORONTO.

While examining the recent instruments for obstetric purposes a short time since, a suggestion came to my mind that some of the inventors of these instruments should also invent a convenient engine of two or three horse power to use them; for they seemed to me most formidable, and capable of exerting a force far beyond the muscular strength of an ordinary man. When I commenced obstetric work, I provided myself with a "Roberton" long forceps, and have found this quite sufficient for any delivery I have ever met and now think that they are quite powerful enough to deliver any fœtus that should be delivered with forceps. As for the "axis-traction" forceps, one would think that a short experience with forceps would be all that is necessary to instruct one of the correct axis in which to make traction, and also of the slightest tendency of an inclination of the fœtal head to rotate which could then be slightly favored with the ordinary forceps, which would be inconvenient with the axis forceps.

In the application of forceps we are told to apply them in this way and that, different authorities having different methods; but to my mind they are mostly theoretical, and some are not at all times practical. In my experience the result has been satisfactory when the forceps were applied in any manner so long as they passed over the head easily and locked easily.

One author advises that we be sure the membranes have retracted or there will be danger of separating the placenta. In such a case the instrument will not go over the head properly. I once had an experience with such a case. After trying for an hour or more, in a fruitless attempt to apply the forceps, I made a careful examination and detected a small tuft of hair which had passed through a small opening in the membranes, which were tightly stretched over the head, the liquor amnii having escaped. I immediately tore open the membrane and had no further difficulty in applying the forceps. Again, we are so often told of the

danger of forceps slipping, particularly in occipito-posterior cases and in applying forceps at the pelvic brim. If the forceps are applied well over the head and traction made in the right direction they will not slip,—at least, they have never done so with me. Some years ago while delivering a patient I had this forcibly brought to my notice. The patient, a large, stout women, had been in labour for several hours, with liquor amnii long drained away and the head still at the brim. I applied the forceps with the patient in the dorsal position in bed. The head was so far up that I had the nurse separate the labia so that I could lock the forceps within the vagina. The forceps slipped, and did so a number of times. I took time to think the matter out, when I saw that I was simply applying the forceps and pulling them off over the rounded occiput. I then had the patient laid across the bed, with her feet on two chairs and buttocks brought to the edge of the bed. I applied the forceps and made traction in the direction of the inlet, which I could not do while the patient was lying in bed in the usual position. Delivery was quickly effected, but with the child's scalp scratched in several places. I have never since had the forceps slip or cut a child's scalp.

Fortunately, there is not now so much prejudice against forceps as formerly. When properly used the danger is almost nil, and the benefits are great. There is beyond doubt less danger of harm with forceps in suitable cases than the continuous use of chloroform. I have for years made it a rule not to give chloroform, if possible to avoid it, until the os is in a condition that forceps could be applied. So, as soon as I conclude to give chloroform, I get the forceps ready, viz.: I make them aseptic; then plunge them into a jug of boiling water, and leave them there till wanted.

In counting back my last hundred cases, I find I have delivered thirty-five of them with forceps, and I would have delivered a number more except for the prejudice of the patients themselves. The danger from septic trouble from forceps must be very slight. I have had but two cases of septic trouble in my twenty year's practice, and in one of these I did not use forceps. The other case I had good reason to attribute to auto-infection.

Regarding occipito-posterior positions; Grandan and Jarman, in their work on Obstetric Surgery, page 85, say: "It is the general opinion among obstetricians that few abnormalities produce a more difficult condition to terminate successfully than those cases where the occiput has rotated posteriorly and is wedged in the hollow of the sacrum." T. Griswold Comstock, M. D., Ph. D., Master in Obstetrics, Vienna, in the "Medical Summary" for April, 1900, in speaking of occipito-posterior positions, says: "An accoucheur may have practised a score of years and never met with such a case; but when such an abnormal confinement falls to him, before his patient is safely delivered he will realize the tediousness and danger of the delivery." Also, in speaking of cases which fail to correct the position spontaneously, he says; "Then the practitioner has a serious problem, and before it has been solved by a safe delivery for both mother and child he will have gained an experience that he will never forget through his whole after life."

Regarding the early diagnosis of occipito-posterior positions I have but little to say. I have seldom made the diagnosis before rupture of the membranes. Afterwards, it seems useless to attempt to alter the position, except by the slight means we have to imitate the natural course of rotation of the occiput forward. This, to my mind, can be better done with the ordinary forceps than in any other method. One accustomed to the use of forceps will recognize the slightest effort of nature to rectify the position, which he can at least encourage. This he cannot safely do with the traction form of instrument. As rotation occurs after the head is well down in the pelvis, there can be no objection to applying the instruments in the superior strait. In applying the forceps, each blade should be allowed to fit itself to the head (which, in my experience, I have found to be at the sides of the pelvis) and over one or other brow and cheek and the opposite portion of the skull. If the blades are passed well over the head and they lock easily, and traction is made in the direction of the pelvic axis without undue efforts either to flexion or to extension, there will be no slipping. I have frequently removed the forceps after bringing the head well down on the perineum to give the occiput a chance to rotate, and found the head—except in one instance—recede instantly to the hollow of the sacrum, where it would remain until again brought down with the forceps. In this one instance rotation commenced before the forceps were removed, and was completed before it was possible to remove them ; but they were unlocked and allowed to go as they would, and no harm was done.

The chief danger to the mother when delivery occurs is of course the danger of rupture of the perineum. To prevent laceration, one author says : " Flex the chin strongly on the sternum " ; another says : " Extend the forehead." One goes so far as to recommend apylying the forceps with the pelvic curve looking backward, so as to have more force for the purpose of flexion. To my mind, we are too apt to follow great leaders without consideration. No one knows better than the operator himself what ought to be done. He should have no time to think what this or that author says. He is himself the power, and it should be " what does he say ?" With his head cool, common sense will teach him far more than any book. I once asked a dentist, whom I knew to be an expert in extracting teeth, if he had any particular method in extracting any particular tooth. He answered to the effect that he did not know how he was going to extract a tooth till he had on the forceps. He then let it come the way it seemed to come easiest. The same method is applicable in the case in question. If traction be made in the pelvic axis, the forehead will sometimes seem to tend to come first. If so, favor it. Or, mayhap, the occiput may seem to have a tendency to come first. If so, favor it. The method I use to prevent rupture is to first bring the head well down on the perineum, then grasp the forcep handles with the left hand, and with the right hand reach across the perineum with thumb on one side and the fingers on the other, and press with the whole strength of my hand towards the median line. The perineum should be wiped dry, as also should the hand. In doing this the strain is greatly relieved on the median line and transferred to the outer portion of the perineum.

Some authors now recommend the operation of "Episiotomy," namely: cutting on either side some distance from the mediam line, and stitching after. The above method will, I think, suffice without the cutting, and the principle is the same.

In five years I have delivered ten infants with face to the pubis, two of them primipara; successful in every case except the loss of one child, which I attributed to incompetency of the would-be nurse. The mother was a delicate primipara, and I had absolutely no help from the nurse. In a subsequent case with a trained nurse, we resuscitated the child in about half an hour. Previous to the five years mentioned I had a number of occipito-posterior cases, but as I have no full notes I do not mention them further than to say that I have never ruptured a perinum to any considerable extent. I have had a few superficial tears, which required one stitch; and I have put in as many as two stitches, never more. I attribute my success to: (1) Treating each case on its own merits; (2) relaxing the central portion of the perineum at the expense of the outer sides; (3) keeping perfectly cool and being in no hurry. As to the infants, most cases have required artificial respiration and other usual means to resuscitate them.

Since writing the above I have had another delivery with face to the pubis. In this case I had a chance to study carefully all the conditions. On the first examination I found the occiput, already in the hollow of the sacrum, pointing very slightly to the left sacroiliac synchondrosis. The forceps were applied at once, and the head brought down slowly to the perineum. The progress of the face was arrested when the anterior fontanelle reached the pubic arch; then the occiput showed a tendency to pass over the perineum. To favor this the handles of the forceps were gently carried forward until they pointed directly upwards (the woman in the dorsal position), when the occiput swept over the perineum with as much ease as is usual with the face in a like position. Under the conditions named, the occiput was delivered by flexion of the chin on the sternum; and having only the sub-occipito bregmatic diameter to pass, namely—3.25 inches, while if the forehead had reached the pubes, the occipito-frontal diameter would have had to pass (if the occiput was delivered first) a diameter of 4.50 inches. Ordinarily, in my experience, the actual delivery has occurred so quickly that it would be difficult to say positively how delivery was accomplished. It seems to me that with caution all occipito-posterior cases might be delivered in the described manner and delivered easily. Prof. Comstock says he saw two cases, in consultation, where it was impossible to start the occiput from the hollow of the sacrum. In my cases they have all required a sharp pull, but when the head reaches the perineum there is but little force required. In the case just described, the occipito-frontal diameter of the fœtal head was nearly six inches, which is abnormally long, and the sub-occipito-bregmatic diameter was three and one-half inches.

A CASE OF HYDATID DISEASE.

EDMUND G. H. WEIR, M.D., C.M.,
House Surgeon Toronto General Hospital.

William G—, æt 54, was admitted to the Toronto General Hospital on September, 29th, 1899, in a semi-comatose condition. He was a native of Canada, a clerk by trade, and of domestic habits. He had never travelled outside of Ontario, his life having been spent mainly in Toronto and the neighboring country towns. He presented the symptoms of chronic parenchymatous nephritis. He lingered until October 6th, when he died with marked indications of pulmonary oedema.

Autopsy by Dr. H. B. Anderson showed as follows:—Male; middle aged; nutrition fair; the usual post-mortem staining on the dependent parts; marked oedema of the hands, legs and feet; general pallor with marked yellowness of the skin.

Peritoneal cavity contained a large quantity of clear serous fluid.

Stomach. The mucous coat markedly injected, a good deal of pigmentation, submucous hemorrhages, especially at the cardiac end.

Duodenum presented distinct ulceration. One irregular ulcer $1\frac{3}{4}''$ in length and $\frac{1}{2}''$ in breadth extending along the long axis of the duodenum. Another irregular ulcer about $\frac{1}{2}''$ by $\frac{1}{4}''$ opposite the former. These were of a deep black color, having smooth and slightly raised margins, also two small dark erosions situated one inch lower down having smooth margins presenting very little thickening.

Left kidney. Somewhat enlarged, capsule non-adherent, surface smooth, cortex thickened and very pale, vessels injected, one small cyst at upper end of the kidney.

Right kidney. Considerable oedema within the capsule; otherwise the condition is similar to that in the left.

Liver. Weight three pounds. Upon the anterior surface of the middle of the right lobe is a very distinct nodule of irregular outline about 2″ by $\frac{3}{4}''$ in size. This, on examination, proving to be a hydatid cyst. The cyst contained a clear fluid in which floated several small bladders like cysts. It was lined by a distinct white layer, smooth upon its inner surface. Beneath this was a light yellowish layer of gelatinous material. In one part was a secondary white layer beneath the one described. The outer wall of the large cyst consists of three distinct layers, the inner one covered with the smooth gelatinous material mentioned above, the middle layer smooth and adherent to the external coat which consists of condensed liver substance. The glands about the liver were not enlarged.

Lungs. Marked oedema was present in the dependent parts.

Oesophagus, perfectly free and in all respects normal.

Heart, slight exudation into pericardial cavity, no pericardial adhesions, heart muscle pale and brownish in color, slight atheroma of

aorta at its origin, valves normal, right side and aorta contained post-mortem clots.

Mesenteric glands, some apparently enlarged but little, others having attained the size of a bean and upon section showing small nodules.

Microscopic examination demonstrated clearly the characteristic structure of the cyst wall as described by Leuckart, and scolices and hooklets were found in large numbers in the fluid which presented all the characteristics, both chemical and physical, of hydatid fluid.

The extreme rarity of the affection in this part of Canada is sufficient apology for the publication of the notes of the case. Osler, after a thorough examination of the medical journals, transactions of societies, etc., and of the museums, was able, in 1882, to record only nine cases that had occurred in Canada. A careful perusal of the numbers of the Index Medicus warrants me in stating that no others have been published since that date In an inspection of 800 bodies during his professorship at McGill College, only three instances were met with. Osler's cases are as follows:—

Case 1. Single cyst of liver; tramp: dissection subject in McGill College, 1877; died of pneumonia.

Case 2. Cysts in liver, spleen, stomach, omentum, mesentery and pelvis; Italian; resident of Montreal for four years; died after six months illness in 1880.

Case 3. Obsolete cyst in liver; Englishwoman æt 40; died of pneumonia.

Case 4. Cyst in liver; no history; specimen with those of 1, 2 and 3 in McGill College museum.

Case 5. Cyst in liver; Icelandic emigrant; patient of Dr. Buchan; female; cured by a single aspiration; scolices found in the fluid.

Case. 6. Cysts in liver and pelvis; female; patient of Sheard and Fulton; of Toronto two cysts in liver, (one the size of a man's head) one of which had ruptured into the hepatic flexure of the colon so that daughter cysts were passed per rectum during life. A third was attached to the walls of the pelvis; death from septic infection from the intestine; specimen in the museum of Trinity Medical College, Toronto

Case 7. Cyst of liver; young Englishwoman; patient of Cameron, Toronto.

Case 8. Obsolete cyst of liver; Englishman; inmate of Kingston Insane Asylum for 17 years.

Case 9. Suppurating cyst of liver bursting into lung; cyst in spleen; Englishman; æt 29; resident of Canada for five years.

In Manitoba, however, it is common among the Icelanders. Dr. Phillips of Toronto, during his term as Medical Health Officer of Winnipeg, met with as many as fifty cases of the disease, the notes of most of which have been published by Ferguson of Chicago.

The disease is wide spread; no part of the world is exempt. It is said to occur more frequently in Iceland than in any other part of the world. According to the report of Schleissner and Thorstensen it is the most frequent of all diseases of Iceland; out of 2,600 cases of illness

mentioned in the medical reports of the island 328, 12½ per cent. being affected with hydatids of the liver, and they estimate that 1-7th of the population of Iceland suffer from hydatid cyst. Krabbe, however, declares that these figures are too high and that only 2 or 2½ per cent. of the population can be proved to suffer from the disease, and Finsen, after 9 years experience, states that out of 7,539 cases only 280 (3⅔ per cent.) suffered from the disease.

In Australia the disease is also common, especially in the swampy district situated in the South Eastern part of South Australia and the contiguous western portion of Victoria. The returns, extending over a number of years, of the Mount Gambier Hospital, situate in this district, show 1 hydatid case for every 65 admitted for all complaints (Sterling and Verco in Allbutt's System).

In Europe the disease is not uncommon.

Strangely enough while in London hydatids are frequently found in Edinburgh the disease is exceedingly rare (Fagge). In Germany the disease is common, especially in the central and northern parts (Leuckart).

It also occurs, but probably with less frequency, in France, Italy, Austria, Russia and other European countries.

It occurs also in Egypt and Algeria.

In British India it is, according to the late Dr. Thomas, not of common occurrence, but, on the other hand, Hirsch claims that it happens somewhat frequently, and Cleghorn states that a certain proportion of the endemic hepatic abscesses of that country are referable to it.

In China it is extremely rare for out of 40,000 cases seen by Dr. Cantlie of Hong Kong, only one was of that nature and that was in a European.

Historical References. The disease was apparently not unknown to the ancients for reference is made, in the works of Hippocrates, Aretaeus, Galen and others, to large cysts in the liver containing water and in some instances, numerous vesicles. For instance, in Hippocrates is found this passage "when the liver is filled with water and bursts into the omentum in this case the belly is filled with water and the patient dies." And Aretaeus speaks of a form of dropsy in which "small and numerous bladders full of fluid are found floating in a copious fluid."

In the works of the physicians of the 16th and 17th century are found descriptions of the so-called hydatids, which give a correct and full statement of the external characters of the condition without, however, any recognition of their animal nature. By them the hydatid growths were supposed to be enlargements of the lymphatic vessels while the mode of origin was variously explained. In 1684 the animal nature of bladder worms seems to have suggested itself to Redi and shortly afterwards Hartmann and Tyson reached similar conclusions. In 1767 the parasitic nature of hydatid was first shown when Pallas recognized in them independent organisms allied to the bladder worm. This author having paid great attention to the constitution of the cysticercus had arrived at the conclusion that all bladder worms were forms of tapeworm, hence that hydatid was a form of tapeworm. He also observed the ehinococcus heads, without however, recognizing their nature.

In 1782 the observations of Pallas were confirmed by Pastor Göze, who also indicated the existence of the germinal membrane lining the vesicles and determined that the scolices were the heads of embryonic taenia and possessed suckers and hook apparatus; and this was applied not only to the ehinococcus of cattle and also to that of man.

Subsequent observers and among them Laennec disputed the existence of the head in the human ehinococcus, though aware of its presence in hydatids of the lower animals and maintained that they were acephalocysts representing a special animal organism which stood in the lowest rank of animal life and in a certain sense filled up the gap between the inanimate serous cysts and the ordinary bladder worms.

In 1801 Rudolphi introduced the term echinococcus (literally hedgehog-berry), applying it to the scolices he having noted the hooklets in their interior.

In 1821 Bremser described the disease as it occurs in man, and proved the correctness of Gözes statement "that the ehinococcus of man had heads as well as the so-called E. veterinorum.

Bright was one of the earliest English physicians to observe them; he gave a drawing of them in the Guy's Hospital Reports for 1837.

In 1845 the first definite suggestion as to the nature of bladder worms was propounded, and even then the idea was not that they constituted a regular stage in the development of tapeworm, but rather that they were tapeworms that had "strayed" into a wrong animal and had consequently become dropsical and degenerated. Our exact and systematic knowledge of the subject may be said to date from the feeding experiments of Küchenmeister in 1851. He fed the cysticercus pisiformis of the rabbit to dogs and succeeded in rearing in their intestines the Taenia serrata; he also gave the cysticercus fasciolaris of the mouse and rat to cats and found that it became developed into the taenia crassicollis.

In the following year Von Siebold successfully reared the T. echinococcus in the intestine of a dog to which he had administered ehinococcus cysts of the domestic animals, proving that the hydatid is the larval stage of the T. ehinococcus which infests the alimentary tract of the dog.

This experiment was repeated by Kuchenmeister, Leuckart, Haubner and Nettleship.

Similar experiments with the human echinococcus by Kuchenmeister and Zenker failed, but Naunyn and Krabbe, and more recently Thomas of South Australia, have achieved successful results.

In 1853 the first experiments of the converse kind were performed by Kuchenmeister; proglottides of the taenia coenurus of the dog were given to lambs and sheep with the result that they became affected with "staggers" and bladder worms (Coenuri) were found in their brains.

Leuckart and Haubner, shortly afterwards, carried out similar experiments with the ova of T. echinococcus upon pigs with most eminently successful results, the livers being found studded with hydatid bladders in various stages of development. Up to this time the exact relationship of the echinococcus to the parent tapeworm and the manner in which it invades the human body had remained hypothetical

In 1855 Virchow demonstrated the true nature of the so-called

multi locular Echinococcus, which up to this time had been regarded as an alvcolar colloid cancer.

Others whose labors have aided much in the elucidation of the subject are Huxley, Cobbold, Livois, Wagener, Rasmussen, Davaine and Busk.

The credit of introducing the radical treatment belongs to Lindemann, who in 1871 performed the first operation of this kind.

THE BORDERLAND OF MENTAL DISEASE, FROM A PRACTITIONERS STANDPOINT.

Ernest Hall, Victoria, B.C.

It is not the purpose of the writer to enter upon the discussion of any abstract psychological problem, nor to attempt to introduce to the reader the various theories, with reference to the nature of mind, but to stimulate thought and interest in a phase of this subject, that can be divested of much of the obscurity that has heretofore prevented us from obtaining even a working knowledge of it. The limits of medical knowledge have not yet been reached, the vista is ever widening, the psychic must also be included in our study if we would know the whole man.

We are more than can be seen upon the dissecting table, and the student whose sight fails to penetrate beyond the corpus, remains in ignorance of the greater and more interesting fields for investigation. Our medical education has been too materialistic. Psychic phenomena have been considered a field for the specialist alone to deal with. The general practitioner too often ridicules the physical results of strong suggestion and decides the development of abnormal mentality as the limits of his jurisdiction, while the faith cure crank draws a crowd and gathers the shekels. Generally stated the quack fattens upon our omissions more than upon our errors. Extreme hydropathists compelled us to recognize in water greater therapeutic powers than heretofore our authorities had admitted. Electric cranks showed what marvellous results could be had by such measures as they practiced, while to-day Zionites and half a hundred other sects are forcing upon us the results of psychic forces that cannot longer be overlooked by the thoughtful investigator. The field is wide, and as we live let us learn and ever remember that the true physician must be alert to catch rays of information from all sources, and especially should he endeavor to lend a hand in bridging the apparently immeasurable gap that exists between the physical and the psychical.

Possibly the study of a few cases of borderland mentality may not be without interest. Cases whose mental grasp at times became so feeble as to practically lose control of the organism, and who would again rally only to realize that awful truth of failing mentality. What can be more dreadful to a sensitive nature than that Damoclean thought ever over, "I'm losing my mind." Yet this is no fancy picture, but too often a sad reality and one that has come near to many of those who are not far removed by natural ties.

With the system saturated with typhoid or pneumo-toxine, we are not surprised at the wanderings and delirium, but when pulse and temperature fail to indicate abnormal conditions should we without investigation give these cases into the care of the State hospitals? Our duty is to consider the advent of mental abnormality but the call to a more careful examination and deeper investigation in order that the organic flaw may be detected and if possible removed.

In order to direct attention in a more practical manner to the points under consideration, I give briefly the history of three successive cases who have recently come under my observation and treatment. The mental history of these cases agree in exhibiting characteristics that have marked the pre insane stage of by far the majority of the cases that I have seen. History and examinations show well marked local disease, the removal of which gave a corresponding gain in the mental condition.

The intensity of irritations from diseased areas, and the reflexes from arcs which have a diseased segment, and which are necessarily abnormal, are sufficient in themselves to disturb the sympathetic system, and cause nutritional changes, but when in its course the reflex arc includes the great basal ganglia, whose function is to originate the psychic reflex, that also will be abnormal and manifest itself in abnormal mentality.

As soon as the irritations are removed and the system given its natural play will the psychic also be readjusted, and the failure of the latter indicates our failure to detect and remove the physical disease. We must not forget to consider the force of habit, nor the influence of a strong will in inhibiting abnormal psychic reflex. As we can to a limited extent inhibit physical reflex, we may, to a certain extent, inhibit psychic reflex. A determined effort against the entrance of abnormal concepts may prevent the unbalancing of the mental equilibrium and the advent of dementia, but if the physical disease be severe and centrally located, the strongest case cannot but succumb to the intensity of irritation. In a given case the definition of the mental aberration will vary directly with the intensity of the irritation from diseased tissues and inversely as to degree that the individual has developed subjective or self-control. In other words of insanity is the psychic expression of the sum of the physical abnormality.

Now, in conclusion, what is our duty to our female patients who under the burden of life duties, too often in surroundings far from congenial, and oppressed by sorrow, harrassed by the customs of society, and irritated by disease, too often the unconscious victims of septic infection, whose reflexes refuse to submit to subjective guidance and become temporarily dominant? These reasonably look to us for relief. Are we to follow in the footsteps of those who would advocate stone walls and iron bars as therapeutic measures tending towards the recuperation of jaded nerves and exhausted vitality? In the name of humanity too long outraged by such thoughtless and cruel treatment, let us consider these unfortunates, but pleading more eloquently for our assistance.

Case 87.—Mrs.———, aged 27, two children, for fifteen years suffered from pain in the right side worse the week following menstruations. At

times pain was excruciating, worse than child birth. Received local treatment for periods covering several years, which would relieve her somewhat.

Mental symptoms.—For two years suffered from intermittent melancholia expressed himself as feeling blue, and being unable to overcome periods of despondency, objected to being left alone, and was very nervous.

Physical examination.—Heart, lungs, and digestive organs normal, no evidence of assymetry or degeneration. Local examinations should salpingitic adhesions and an enlarged, tender, and prolapsed ovary.

Right ovary cystic with adhesions removed with its tube, left ovary smaller.

Convalescence normal.—Mental condition normal.

Case 78.—Mrs. ———, aged 33—, three children, excellent heredity. For several years complained of pelvic inconveniences, and had been under physican's care almost continually during the last three years.

Mental condition.—Loss of memory and mental confusion, became unable to attend to domestic duties, would forget what work she should have done, and at times stop in the midst of a piece of work and be unable to complete it. Melancholia at times had a clear realization of her failing powers.

Physical examination.—No indication of disease other than that of the pelvis. Perineum slightly ruptured, retroversion and enlarged ovary.

Operation July 26th.—Right ovary cystic, was removed with its tube, left ovary adherent and cystic, was removed ; resected varicocele of the utero-ovarian plexus necessitated the ligation of the veins in several places.

Convalescence normal.

Mental condition very much improved.

Case 79.—Mrs. ———, aged 38, no mental disease in family, mother of seven children. Suffered from pelvic trouble twelve years ago, had uterine polypus removed. Suffered from severe headache for five years. Was very excitable during menstruation. Received brutal treatment from a dissipated husband, and gave a fairly clear history of gonorrhoeal salpingitis. After husband's death she married again. Six months ago the patient began to be suspicious of her present husband, believed that he carried poison beneath his finger nails, which he proposed to administer to her. She began destroying furniture, was taken to Slitticum asylum, Washington, where she remained for six weeks. Four months after this she came under my observation, her husband was in the hospital and she was living in two rooms in the rear of a tenement home, ill and half starved. A pelvic examination showed retrovision with adhesions, with masses in the culdesac. Her mind was clouded, would answer questions slowly and with a great tendency to wander from the subject. Also declared she saw objects in her husband's hand.

Operation (Aug. 15).—Dense leathery adhesions. It was with great difficulty that the parts were enucleated. Large right pyosalpinx removed with left disorganized tube and part of left ovary.

Post operative history.—normal. While in the hospital she complained of a negress in the same ward, whom she said was influencing

her, also objected to a small mirror upon a table opposite, but her mind became decidedly clearer, and is steadily improving.

REMARKS.—None of these patients gave any history of hereditary taint. None gave indications of degeneration, stigmata, nor presented any physical abnormality other than pelvic disease They all gave a definite history of suffering from local disease and all were improved physically by radical treatment. Concurrently with the restoration of physical vigor, the mental powers took on normal action, and two households have already been given the realization for which they had almost despaired in hoping. It is unnecessary for the writers to state the almost unavoidable conclusion that must exist in the mind of the unprejudiced reader as to the relationship of cause and effect as shown in these cases. The early history of many now considered hopelessly insane is not like the histories here given, and might not the application of similar treatment prove at least in a small proportion of cases beneficial? In view of the ever increasing number of these unfortunates who are clamoring at the gates of our state hospitals, is it not time that the profession at large begin to consider the problem of the treatment of borderland insanity.

SOME PHYSICAL AND MENTAL CONDITIONS IN THE DEGENERATE.

By DR. SAMUEL BELL, Detroit,

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Those of us who have given some study to the psychical as well as physical defects, have been profoundly impressed upon close inspection and study of the class of individuals found more especially in our asylums. It scarcely needs a trained observer to note the very decided anomaly of countenances as seen going through the wards. In the degenerative and neurotic types, the peculiar abnormal mental traits will usually be found associated with anomalies of bodily structure, known as stigmata. Physical and mental stigmata, either one or both conditions, do not conclusively in themselves, indicate mental disorder; but, when present and observed, do add additional proof and accumulative evidence in doubtful cases and are of clinical importance as regards diagnosis and prognosis, and assist in illuminating many cases coming under the notice of the general practitioner as well as the specialist. Some of the more important psychic stigmata of degeneration have been observed as follows: 1st. Precocity, or retarded evolution of intellect. 2nd. Extreme changeableness and irritability. 3rd. Exaggerated consciousness and a fanatical religious zeal or great moral depravity. 4th. Intense egotism with no regard for the feeling of others. 5th. Extravagant and cranky motives and desires. 6th. One-sided talents, disproportionate development of mental faculties, loss of inhibition of the higher forms of ideas, emotions and actions, with a general lack of the harmonious co-ordination of the intellectual, emotional and volitional elements of mind. Some of the chief physical abnormalities may be observed as follows: Cranial and facial deviation; recession

of lower jaw; very large or small mouth and thick lips; ears too large or too small, too long, short or wide, too high or low, too far back or in front, too close to the head or what is commonly known as lop-ears; anamolies of the buccal cavity; absence of second dentition; widely separated or mis-placed teeth; palate too short, flat, broad, high or narrow, or ridged in the middle, or dome shaped or cleft palate; abnormalities of the reproductive organs.

The above stigmata, occurring singly are of no special significance, but when a number of them occur in the same individual, while they may not afford positive proof, they certainly furnish accumulative evidence of a marked degenerative taint; especially is this the case when accompanied with psychic stigmata. It is difficult in the present state of scientific investigation to place the proper value upon information such as we possess along this line. Like many other of the novel, imperfect, scientific data, too great credulity has followed. They are undoubtedly of value in tracing individual origin from a degenerative source, but in order to furnish conclusive evidence, structural anomaly should have attained such a degree as to impair the normal function or part. It is a fact that individuals of active mind and great talents, often have stigmata with assymetrical heads and faces; while, on the other hand imbeciles, idiots, criminals, lunatics and other neurotic individuals occasionally present a singular symmetry in structure of cranium; however, this latter class is not numerous enough to more than prove the exception to the rule. Dr. Clapham reports some unexpected conclusions from the measurements of several thousands of insane heads, which he found larger than among sane individuals of corresponding place in life and doing a certain amount of brain work. Including all classes of the insane, together with idiots, the average size of head was smaller than among the sane, and as regards the relation of diameters, the type was in general that of Broca's sub-brachycephalic chronic mania had the highest, and idiocy the lowest, average skull value, and epilepsy ranked next to chronic mania in regard to size. As to the shape of the head, the special insane type was considered that having the largest diameter in the anterior third of the circumferential outline, though the majority have the largest diameter in the middle third, just posterior to the median transverse line; females had more symmetrical heads than males, and imbeciles had the most symmetrical heads of all the classes of the insane. The majority had the left side of head larger than the right side and the right half of skull was generally pushed forward in advance of left half. Sepilli also reports a volumetric increase of the insane over the sane cranium, both in males and females. Lombroso in comparing the skull of the criminal woman with that of the normal, states that the former approximates more nearly that of the criminal male than that of the normal female, in the peculiarities of the lower jaw and bones of the occipital region. The data of criminal anthropology are not entirely applicable to all who commit crimes; they are to be confined to a certain number who may be called congenital, incorrigible and habitual criminals. But, apart from these, there is a class of occasional criminals, who do not exhibit, or who exhibit in slighter degrees, the anatomical, physiological and psychological charac-

teristics which constitute the type described by Lombroso as "the criminal man." Macdonald states in regard to the criminal brain that he does not find anything strictly peculiar to criminals. Its sutures are more or less incomplete and there are some other not very marked characteristics. The same author believes that the criminal is mentally inferior, this being due to arrest of development in childhood. Morel, Macdonald, Nordan, Maudsley, Kellogg and others who have made a psycho anthropological study of the degenerates do not attach so much importance to physical abnormalities as Lombroso, for instance. Physical signs degeneracy indicate nothing further than a tendency to psychical degeneration. It is scarcely a pardonable error, to consider every man with these characteristics as a predestined criminal, as some of the Italian school would do.

To the student of psychology this is an interesting subject. The line of differentiation between the criminal and the insane is very difficult and obscure. ,I recall two cases which came under my care while in charge of the U.P.H for the Insane, which were degenerates. The first was a young man, physically well developed, with a fair amount of intelligence, but possessed with a low form of cunning which developed into homocidal acts. "His hand against every man and every man's hand against him." The second case was also that of a young man, arrested for indecent exposure. He had some of the characteristic physical stigmata. The low, heavy lower jaw, the small ear set further back in the head than normal, high palatal arch and sluggish intellect. In neither case were the mental characteristics so well defined that, strictly speaking, they could be placed in any of the regular classifications of insanity, yet neither one was safe to remain at large and will, in all probability, remain a continual expense to the taxpayers of the State. The former case was transferred to Ionia Asylum for Criminal Insane, where he remains in the same enigmatical condition to officials, there being no improvement. In both of these cases the psychical stigmata were more pronounced than the physical.

In the Hamberger case which has become celebrated in Detroit, exorcising the courts, lawyers and medical experts, the crime committed being one of the most revolting in the criminal history of Michigan, physical examination for the stigmatic degeneratonis was not very fruitful in results. The principal characteristics were the high palatal arch and inferior occipital development; these, with some not very prominent facial defects, were the only somatic stigmatic observed by the writer. This variety of mental defect occurs more frequently than has heretofore been observed. Investigations by scientists have stimulated thought and observation among the general profession, and even among the more enlightened laity. An individual commits some act which is in violation of the law, without delusion or incoherence, but the act may be an insane one and the physician is called upon to determine; and here medical experience comes into collision with legal tradition and popular prejudice. The common opinion is, that a person who is insane must give evidence of his disease by delusions, or raving, or great extravagance of conduct, and if there is no marked exhibition of the kind, he cannot be insane While the lawyer can see and appreciate the symptoms which indicate

crime, he does not appreciate the symptoms which mark mental disease, and he is apt to think that the physician who does perceive them and recognize their serious meaning is simply manufacturing evidence of insanity, or that he is propounding theories in order to exhibit his own cleverness, or, perhaps, that he has been so biased by the nature of his studies that he will detect insanity wherever he earnestly looks for it. But as the eminent Maudsley has aptly stated, "Facts remain and assert themselves when ridicule has spent itself in scorn of medical theories." It is a fact that there do exist cases of insanity, in which the intellectual derangement is scarcely, if at all, apparent, and that some of the most dangerous forms of the disease are of this type; most dangerous, in that the insanity displays itself only in acts.

SELECTED ARTICLES

THE NATURE OF IMMUNITY.

Pre-eminent among recent discoveries are those relating to the nature of immunity. In no other province of medicine have the results of purely scientific investigations had such practical importance. Sero-diagnosis and sero-therapeutics mark the beginning of a new era, and a step towards perfection in preventive therapeutics. The discovery by Jenner of a method for rendering human beings immune to small-pox, the discovery by Pasteur some 80 years later of a method of producing artificial immunity in animals, are the foundation stones of the edifice which has been erected within the brief period of one decade by the indefatigable labours of a host of investigators, and which Ehrlich has crowned by formulating a general principle applying to the whole. Our present conceptions of immunity may be said to have been initiated by the demonstration by Behring, Pfeiffer, and others, of the formation in the living body in the presence of toxins or of bacteria, of certain substances—"*Anti-korper*"—which exert a specific antagonistic action against the particular toxin or bacterium which gave rise to their development. The presence of these antagonistic substances in the sera of human beings suffering from infective diseases, and in the sera of highly immunised animals, is recognizable only by the properties—anti-toxic, anti-bacterial, lysogenic, agglutinative, etc.—which they confer. Their formation is the result of a reactive process, and they are apparently without exception definitely specific: thus the serum of an animal which has been treated with repeated injections of some toxin becomes anti-toxic in that it contains a substance antagonistic to that particular toxin and to no other; similarly with bacteria the anti-bacterial substances formed, lysogenic or agglutinative, are antagonistic only to the particular bacterium employed. It might thus appear that each toxin and each bacterium was a problem in itself, but this does not preclude the possibility of one fundamental process underlying the formation of all such antagonistic substances.

In considering the genesis of these substances take first the anti-toxins. There is little doubt that anti-toxin acts chemically, rendering the toxin innocuous by forming with it a loose chemical compound; the reaction, however, is not a true chemical combination since the substances apparently do not unite in definite proportions. According to Ehrlich a molecule of toxin is composed of two distinct atom groups, the one unsatisfied—the haptophore group—is constant, stable and capable of combining in constant proportions with anti-toxin, the other—the toxophore group—is unstable and readily deteriorates, and on it the injurious effect of the toxin depends. Now the haptophore group, although harmless in itself, appears to be a very essential constituent of the toxin molecule.

By its combining powers it can bring the toxin into intimate relation with the cell protoplasm and so allow the toxophore group to exert its damaging effect. It acts the part of an anchor, fixing the toxin to the tissue cells. If this anchor is destroyed, if the unsatisfied atom group is satisfied and its combining powers are abolished, the toxin is harmless. In this way anti-toxin renders toxin inert, the combined toxin and anti-toxin circulating harmlessly in the tissue fluids.

As regards the formation of anti-toxin. Ehrlich's hypothesis is based upon his conceptions of the mode of action of toxins and of the molecular structure of the cell protoplasm. He considers that the living protoplasmic molecule consists of two distinct parts, a central atom group (*Leistungskern*) comparable to the benzene ring, and certain lateral atom groups or side chains (*Seitenketten*) which, having unsatisfied affinities, can fix other unsatisfied atom groups, and so bring them into relation with the central group which conducts the work proper of the cell protoplasm. By means of such side chains the protoplasmic molecule is able to fix atom groups derived from foodstuffs, and so ensure its own continued existence. In a similar way toxins are brought into intimate relation with the cell protoplasm, the haptophore groups uniting with such of the side chains as have corresponding affinities. Side chains satisfied by combining with toxins are obviously useless as far as the cell economy is concerned, and so it follows that when as a result of repeated doses of toxin more and more side chains become satisfied, new ones are regenerated, and those serving to fix the toxin molecules are cast off and circulate free in the tissue fluids. This regeneration of side chains, however, in accordance with what Weigert considers to be a general law, takes place in excess of those cast off combined with toxin, and in consequence more are formed than satisfy the requirements of the protoplasmic molecule, many of these are also cast off and circulate free in the tissue fluids. They still have the same affinity for toxin and thus constitute anti-toxin. Anti-toxin is therefore the side chains of the cell protoplasm regenerated in excess and, therefore, set free. As Behring puts it, "the same substance, which when situated in the cell is the necessary condition of poisoning, becomes the basis of cure when it passes into the blood." A difficulty in explaining the origin of anti-toxins is their number and variety, each toxin having its corresponding anti-toxin. But if, as Ehrlich contends, the action of a toxin depends upon its affinity for certain atoms of the protoplasmic molecule, there must be as many varieties of atom groups as there are toxins, and therefore the complicated constitution of the protoplasmic molecule must afford the basis for the formation of a corresponding number of anti-toxins.

Passing to the question of anti-bacterial substances, the problem becomes somewhat more complex. It has been shown by various observers that the serum of an animal immunised by successive injections of some bacterium, *e.g.*, that of typhoid or cholera, contains substances which in some cases produce disintegration (lysogenesis) of the particular bacterium either *in vitro* or *in vivo*, or else cause the bacteria to run together into clumps (agglutination). Analogous phenomena have been observed in the case of red blood corpuscles and other cells. Thus the

serum of an animal which normally possesses neither hæmolytic nor agglutinative powers may, by repeated injections of the blood of some other animal, acquire those powers over that particular blood. In such cases the action of the serum depends, not on the presence of a single substance corresponding to antitoxin, but on two. If such a serum be heated to 58° C., it loses its specific disintegrating powers, but immediately regains them on the addition of a small quantity of serum from a normal animal; if, however, such normal serum be previously heated to 58° C., it has no effect whatever. It would thus appear that the process of lysogenesis depends upon the presence in normal serum of some enzyme-like substance destroyed at 58° C., together with another substance specially developed in the process of immunisation, and analogous to the anti-toxins, which has been termed by Ehrlich the immune body. It has further been shown, in the case of hæmolytic serum, that the immune body combines with the red blood corpuscles. A hæmolytic serum was heated to 58° C., and then allowed to act on red blood corpuscles for some time at a suitable temperature. On centrifugalising the mixture it was found that the immune body was no longer in the serum, but in the red corpuscles. In the case of agglutination this power is retained by the serum when heated to 58° C., and it has been suggested that the agglutinin and the immune body of Ehrlich are the same substance. If we now compare the effects of repeated injections of toxin and bacteria, we have in each case the formation in excess of a substance which is specific, in that it has special combining affinities for the substance (toxin or bacterial protoplasm) used in the injections. Its mode of action, however, is different in the two cases: whilst anti-toxins effect their curative powers by combining directly with the toxins, the anti-bacterial substances or immune bodies act through a ferment-like substance present in normal serum, which, by their combining powers, they are able to fix. At present the problem of the anti-bacterial substances is only incompletely worked out, but the results obtained with hæmolytic sera leave little doubt that corresponding facts will be established with regard to bacteriolysis, and that the whole phenomenon of lysogenesis will be found to be a general law.

Such briefly are the outlines of Ehrlich's side-chain theory of immunity. Although many points still require confirmation and further investigation, it is none the less a most valuable working hypothesis. It affords at once an explanation of the difference between active and passive immunity, *i.e.*, between the immunity produced by repeated injections, either of toxin or bacterium, and that produced by the injection of serum containing anti-bodies already formed. The former, depending upon the acquirement of the habit of excessive side-chain formation, and being a regenerative power, in accordance with a well-recognized biological law, is naturally of much greater duration than the latter, in which the quantity of anti-bodies injected is definite, and in which regeneration takes no part whatever. Further, as already indicated, it offers a feasible explanation of the formation of a variety of anti-bodies possessing specific relationship to the corresponding substances injected.—*Medical and Surgical Review of Reviews.*

SUPERHEATED DRY AIR IN THE TREATMENT OF RHEUMATIC AND ALLIED AFFECTIONS.

By THOMAS E. SATTERTHWAITE, M.D.
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Hot-air baths have been in use from a very early period, but during the past ten years great advances have been made both in their efficiency and sphere of usefulness.

For example, in the Turkish bath, which is the old Roman hot-air bath modernized, the air of the hot room that the patient breathes is laden with the vapor of his own perspiration. With a view to overcoming this objectionable feature various schemes have been resorted to. One of the most familiar and popular is the hot-air box or cabinet, an appliance that has been and is now extensively used under various designs. The patient, as is well known, sits on a support in a rectangular box, which is then closed about him, so that only his head and neck project, or perhaps there is an additional opening for the hand, so that he can wipe off the perspiration from his face. The air in the box is heated by the alcohol lamp or some other artificial means. Copious perspiration is usually superinduced.

But while the hot box obviates the disadvantages of breathing hot vapor, the temperature of the air in the box cannot be raised to a very high point for fear that the skin will be blistered. In fact, the limit of safety is put at about 150 degrees F. In the Turkish bath the limit is 170 degrees F., and for the reason just given.

This disadvantage is overcome by the new dry-air machines, such as the Sprague and Betz, Tellerman and perhaps others, in which the air is readily heated to 250 degrees F. and upwards so as to be born safely by the patient. It is not a question of how much heat these machines can generate. There is no difficulty in heating the air to 400, 500 or 600 degrees F., but there is a limit to the tolerance of the heat by the skin, depending somewhat on the extent of bodily surface exposed. As a rule the heat employed varies from 250 degrees F. to 350 degrees F., according as the whole of the body or only a part is heated. But a temperature of 400 degrees F. is about the limit that should be considered desirable in any case.

The central idea in all the newer machines is to superheat the air, and at the same time keep the exposed surface of the body dry, and the method employed is practically the same in all the machines. Each of them embraces the notion of a metal chamber, varying in size and shape, but in general cylindrical, or semi-cylindrical, the concave portion of the cylinder being turned towards the part to be heated, while air-tight sleeves or curtains attached to the edges of the cylinder are drawn snugly about the part to be heated, so that the superheated air is able to pass freely over and around it. And yet the hot air is not permitted to

impinge directly on the part, because the steam from the perspiring skin would scald the skin. This is prevented by the interposition of some absorbant material which soaks up the perspiration as fast as it forms. Turkish toweling is the material usually used, and as a further protection from the hot metal the chamber is lined with asbestos or other non-conducting material.

It is not clear when this new method was first introduced, but the Tellerman machine was certainly put in operation in London on May 30th, 1893. Since then it has been used extensively in English and French hospitals, and somewhat in the United States and Canada. It was shown in this city at a meeting of the Practitioners' Society, on December 4th, 1896, by V. P. Gibney. Some of the published results of treatment, as they have come to us, are briefly as follows:

Sibley, of the Northwest Hospital in London, has reported (*Lancet*, August 29th, 1896) success by the method in acute and chronic gout. Déjerine, of the Salpetrièrè, and Chrétien, assistant at Dalmont's Clinic, in Paris, have confirmed these statements (*La Presse Medicale*, December 26th, 1896).

Landouzy, of Paris, also has authorized the statement that he found the hot dry-air treatment produced better results in acute gout, chronic rheumatism and sciatica, than the old external remedies alone, or in conjunction with drugs (Tellerman Treatment, p. 145).

Finally, in a paper read before the British Medical Association in Montreal, September 1st, 1897, James Stewart reported that after considerable experience in cases classed as rheumatoid arthritis, he found superheated dry air the best means of treating them, and that it could be safely applied in cases of weak heart, valvular and renal diseases.

In our own country Dr. George L. Kessler, of Brooklyn, who has practiced this treatment very extensively, and is therefore well qualified to judge, has noted the following effects:

1. A contraction and then a dilation of the superficial blood vessels. 2. The pulse increases in strength and in rapidity of from ten to twenty-five beats per minute. 3. The bodily temperature rises from one to six degrees Fahrenheit. There is a profuse acid perspiration. Almost immediate relief from pain. General sense of comfort. Stimulation of nerves and lymphatics. Increase in respiratory movements from two to six per minute; but nervousness and twitching if the patient is exposed too long to the heat. After a number of treatments he has found, as secondary results, increased excretion of uric acid, softening and absorption of uratic and other deposits, reduction and sometimes relief of albuminuria in kidney and cardiac diseases; some loss of weight; improvement in some chronic skin diseases; temporary soreness and nervousness in gouty and rheumatic patients during absorption of the deposits; debility if the baths were not prolonged.

I have had little personal experience in the use of superheated dry air, but my colleague, Dr. Barclay, has used it in thirty-two cases in conjunction with massage and passive motion, and has furnished me with the following table from his practice showing this result:

Acute rheumatism.....	2	Cures, 2	
Subacute "	1	.....	Improved, 1
Chronic "	6	Cures, 3	Improved, 3
Gonorrhœal "	1	.....	Improved, 1
Muscular "	9	Cures, 8	Improved, 1
Rheumatism in old fracture.	2	Cures, 1	Improved, 1
Rheumatic spondylitis	2	.....	Improved, 2
Acute gout	1	Cures, 1	
Sprains	3	Cures, 2	Improved, 1
Inflammation after wounds.	1	.. .	Improved, 1
Old fract of patella	1	.....	Improved, 1
Sciatica	1	.....	Improved, 1
Inflammation after dislocation of shoulder.....	1	Cure, 1	
Occupation neurosis (Stoker's cramp)	1	Cure, 1	
	Cases, 32	Cures, 19	Improved, 13

It will be noticed that of the twenty-four cases of gout and rheumatism there were fifteen cures, but that in all some benefit was noticed. I am disposed to think, and Dr. Barclay joins me in it, that the next series of cases treated will show still better results; for, as this method becomes better known, patients will give it a more earnest and thorough trial.

In applying heat locally, as in treating the cases just mentioned, a temperature of 350 to 360 degrees F. is well borne. In my own case I found that hot air at a temperature of 360 degrees F. was not unpleasant when applied to the elbow joint, and that it could be borne without discomfort for fifty minutes. Of course, when the temperature reaches these high points, care must be taken to avoid scalding the skin, but with reasonable care there should really be no danger. When the body machine is used it is not practicable to generate so high a degree of heat, and I fancy 280 or 290 degrees F. is about the limit. In this machine the temperature of the body will rise from two to four degrees as a rule: on the other hand, when heat is applied locally the bodily temperature will rarely rise more than two degrees. The pulse may or may not become more frequent, but it is not uncommon to have it rise twenty to thirty points, especially in women or at the first application. The respiratory movements are usually increased in frequency. In the body machine there is copious sweating from the entire surface of the body.

My personal experience may be interesting. I entered the body machine at 4.10 one afternoon, two physicians being in attendance. My temperature, 98 degrees F.; my pulse 100. The air in the chamber registered 160 degrees F. At 4.45 the thermometer registered 276 degrees F. My bodily temperature, $100\frac{3}{5}$ degrees. Fifty minutes later my bodily temperature had fallen to $98\frac{3}{5}$ degrees. I was in the bath thirty-five minutes. Pulse on leaving the bath was 110. Prespiration was copious from the entire surface of the body. There was at no time any sense of positive discomfort, but the cool drinks given at intervals, and the appli-

cation of cool water, and, later, of ice to the forehead, were decidedly agreeable. General massage and passive movements followed. I resumed my usual work in one hour and forty-five minutes after beginning the treatment, feeling no unpleasant reaction during the remainder of the day, but rather a sense of exhilaration which lasted until bedtime, and, in fact, I thought, well into the next day. The high rate of my pulse before entering the machine was perhaps owing to my haste in preparation for it as my time was limited; my normal pulse is 74.

And now for a description of the machines. In the Sprague system there is one for the body, one for the leg and arm, and a local. The construction of the Sprague machines varies, but in principal they are practically the same. Each consists of three metal cylinders, separated by spaces of varying width. The cylinders are open at each end. The outer cylinder is of copper, lined with asbestos, to prevent heat radiation; the middle cylinder is of steel, and hollow; the inner cylinder is of brass, with holes to allow the air heated by the hot steel to be showered over the patient. The second space is connected with three tubes within the smokestack to allow the superheated air to escape. At the lower part of the cylinders are numerous tubes between the gas jets to suck up the fresh air and replace the moist hot air escaping through the stacks. In this way there is constant circulation. The heat is supplied by Bunsen burners, the flames of which impinge against a plate half an inch below the lower part of the steel cylinder, so heating it. The edges of the steel cylinders and the two intervening spaces are covered with wood backed with asbestos, and on these rims of wood are hooks to which cotton drilling is fastened to close the ends of the apparatus, and include as much of the body as may be desired. The brass cylinder which lines the inner chamber is covered by ribs of cork. The patient lies upon a mat of fibrous magnesia, superimposed upon a layer of asbestos. At either end of the cylinder, and level with the bottom, are extensions for the head and lower extremities. All the cylinders are mounted on metal legs. All parts of the machine that the patient could touch are made of poor heat conductors, namely, wood, cork, fibrous magnesia or cotton drilling, while the asbestos accumulates and distributes the heat. In the treatment chamber are inserted high temperature thermometers, which do not, of course, come in contact with the metal.

The Betz machine in common use consists of a metal cylinder lined with asbestos, opened at one end only. The open end is fitted with a cloth attachment to encircle the part that is to be treated; the air is heated by gas, gasoline or alcohol. A high temperature thermometer is fitted into it so as to indicate the heat of the treatment chamber. The part to be treated is wrapped in four to six thicknesses of blanket, or, better, Turkish towelling, so as to absorb the moisture the instant it exudes from the surface of the skin. This moisture is turned into vapor by the hot air, and fills the cylinder. To prevent saturation of this air it is allowed to escape at intervals through a stop-cock. At the same time fresh air is allowed to enter from below. The stop-cock is removed about every ten minutes during the treatment. If the air at any time becomes saturated, the patient will immediately feel a sudden access of

heat, and then the vapor may be let out; or slight pressure on the towelling at the point of pain will relieve it, and the treatment may proceed without further interruption. It is an important point to wrap the part evenly with the absorbent towelling or blanket, otherwise perspiration lodging between skin and the absorbent towelling may get superheated and cause a blister. In the local Betz apparatus the temperature is held at about 350 degrees Fahrenheit for one hour* The advantage of the Betz apparatuses is that they are comparatively light, and are portable, so that they can be used at the bedside of the patient.

In the earlier reports, such as those I have noted, little has been said of the use of drugs in association with the hot-air treatment, but I am persuaded that those best qualified to judge† do not think it well to exclude internal medication. In fact, inasmuch as this method improves the circulation, gives better tone to the excretory organs, and stimulates the lymphatics, it is apparent that the physical action of appropriate drugs will be greatly promoted; and for the same reason I believe that the deposits in gout and rheumatism will be favorably influenced. That they can be actually absorbed in some cases I also believe.

The idea is prevalent in some quarters that hot dry air is depressing and should not be applied in cases of chronic heart disease, arterial sclerosis, neurasthenia, and anæmia. As a matter of fact, however, it appears from recorded experiences that patients with cardiac or arterial diseases *may* not be injured if the treatment is carefully applied; that is, if it is begun with slowly rising temperature, or with a single limb, then two limbs, and finally the body. Of course, if untoward symptoms occur in a case associated with chronic heart disease, the treatment will necessarily be suspended. But I have heard of no mishaps, which indicate that this treatment is contra-indicated. Of course, it is presupposed that this treatment is always to be under the direction and supervision of a physician.

It is apart from the purpose of this paper to enter into a discussion of rheumatism and allied diseases. But I have felt that it is important that the attention of the profession be called to the subject of superheated dry air as a therapeutic agent, believing that it has a wide field of usefulness, more especially in chronic, articular, and muscular rheumatism, where we all know internal medication alone is apt to give unsatisfactory results.

* The Betz Co. also manufactures body machines.

† See Skinner, *New York Medical Journal*, October 8, 1899.

LEUCORRHEA: ITS CAUSES AND TREATMENT.

By JOHN COOKE HIRST, M.D.,
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There is perhaps no single condition so distressing to the patient or so exasperating to her medical attendant as leucorrhea. Except in a few instances, such as specific and septic infections, leucorrhea is almost always secondary.

Speaking broadly, the discharge can have its origin in one of three places: (1) the vagina, (2) the cervix, and (3) the endometrium of the body of the uterus.

The discharges vary greatly in character, depending upon their point of origin.

Vaginal leucorrhea is, always excepting gonorrheal discharge, thin and serous, rarely thick, and still more rarely streaked with blood.

Cervical leucorrhea is extremely thick, very abundant and rarely streaked with blood.

Corporeal leucorrhea is thinner, often offensive and excoriating in character, and quite commonly streaked with blood. I have seen patients whose thighs have been excoriated on the inner surface for a distance of four to six inches on either side, as a result of such a discharge.

Leucorrhea is very common in women whose general health and vitality have been lowered for any reason. It would seem that almost any local or general condition slightly out of the normal sets up a leucorrhea. It would be useless to attempt to give a list of the causes, but as an instance of an unusual etiology I may mention that I have seen a stubborn leucorrhea in a girl of twenty-four, which was traced both by her medical attendant and myself to ungratified sexual excitement.

When a patient presents herself complaining of leucorrhea, the first thing to do is to determine the cause, if possible. Any local treatment would be worse than useless, unless the source of the trouble be removed at the same time.

Vaginal leucorrhea it has been my custom to treat by the use of tonics for the general health, astringent douches of alum and zinc sulphate, and the occasional use of a solution of silver nitrate, gr. x-xx to f ℥ j. I apply this latter by inserting a cylindrical speculum, filling it full of the solution, and then slowly withdrawing the instrument, thus making sure that the solution reaches every part of the vaginal wall. This is more satisfactory than the use of a swab. This treatment, combined with douches of corrosive sublimate, 1:4000, is the one I use in gonorrhea, and it has given me perfect results.

Cervical leucorrhea, always excluding a gonorrheal infection, is usually due to a catarrhal inflammation of the cervical endometrium, usually secondary to some other condition. The discharge here is very thick and copious, necessitating the wearing of a napkin. It is often

accompanied by erosion of the cervix. This erosion, when not due to laceration, is produced by swelling and prolapse of the cervical endometrium, and then desquamation of the squamous epithelium underneath the prolapsed mucous membrane. It has been my experience that when such an endometritis exists it usually involves the coporeal endometrium as well, so that we can often cure the condition entirely, or at least form a much better foundation for satisfactory after-treatment, by a thorough curettement. My non-operative treatment consists in *hot* astringent douches, painting the vaginal vault with Churchill's tincture of iodine, and the use of boroglyceride tampons three times a week, the whole combined with a general tonic treatment. I always prescribe tonics for these patients on general principles. They are generally indicated, and can at the worst do no harm. The only precaution taken is not to prescribe iron in cases where there is a tendency to uterine hemorrhage.

When this treatment has not the desired effect I begin using protargol bougies by the method I shall presently describe.

Leucorrhea from the uterine body is nearly always associated with an endometritis. It is a peculiarity of the uterine mucosa that when it becomes inflamed it hypertrophies so that from a normal thickness of one millimeter we may get endometrium of four or five times that thickness. Acute endometritis in this locality is nearly always septic from a labor or miscarriage. The treatment should be curettement to remove the hypertrophied masses; then tonic treatment with intra-uterine medication of one of the new silver salts in the form of bougies.—*Therapeutic Gazette.*

RECENT VIEWS ON THE EFFECTS OF ALCOHOL.

The conclusion reached by Professor Atwater, says the *Medical Record*, as a result of experiments conducted by him last year to determine the effects of alcohol on the human system, that the substance taken in small quantities and under certain conditions is a food, has given rise to much and bitter discussion. The garbled accounts given in the newspapers of Dr. Atwater's findings are chiefly responsible for this state of affairs. Many of these journals proclaimed that the professor had proved alcohol as a beverage to be harmless, whereas, in fact, he went no further than to declare that it is oxidized in the same manner as any other food materials, and is transformed into heat and muscular energy. The experiments were not sufficiently prolonged to demonstrate what the effects might be upon the human organism of the habitual use of alcohol, nor was any attempt made to show that such use would be anything but harmful.

Another pronouncement on the same question has been recently made by the well-known Viennese clinician, Prof. Max Kassowitz, who asserts that the dogma concerning the nourishing and strengthening character of alcohol is one of the fatal errors of science. He holds the view that the majority of physicians take up an inconsistent position with regard to the use of alcohol, for the reason that, while they are well aware of its dangerous and poisonous qualities, they nevertheless contribute to making permanent the false ideas concerning the value and effects of

alcohol which are so generally disseminated. Kassowitz explains these inconsistencies on the ground that the teaching which considers alcohol a food because it is burned in the organism, has held its ground in spite of many diregarded newer investigations which have shown its indefensibility. He is therefore of the opinion that the assumption ascribing food properties to alcohol based on simple theoretical consideration is a grave scientific error, the removal of which is the most important preliminary condition to an effectual battle against alcoholism.

Dr. Hermann Blocher, of Basle, Switzerland, in an article in the *Internationale Monatsschrift für die Bekampfung der Trinksitten* for April, comments very favorably upon Professor Kassowitz's utterances, and discusses the matter from the standpoint of physiological experiment. He refers to the investigations of Miura, which indicate that alcohol belongs to the same group of substances as glycerin, lactic acid, butyric acid, and so forth, which are indeed burned in the animal body, but which nevertheless are not fit, even to the smallest extent, to take the place of necessary food in the preservation of the body. Miura found that the addition of alcohol to the food before its being taken not only causes no diminuation of the nitrogen output, and does not prevent the loss of body material (as is the case with the addition of sugar or fat), but that, on the contrary, the nitrogen output following this addition of alcohol may become yet greater than it had been without this addition.

Professor Atwater did not pretend in his experiments to prove the innocuousness of alcohol as a beverage, and it was due to the newspapers that such a belief was disseminated. Whether alcohol in small amounts and used with discretion is harmful has yet to be clearly proved.—*The Dietetic and Hygienic Gazette.*

THE ROLE OF THE LIVER IN THE PRODUCTION OF ECLAMPSIA.*

By W. A. NEWMAN DORLAND, A.M., M.D.,
Philadelphia, Pa.

My object in presenting this short paper is to bring more prominently to your attention one of the recent suggestions in obstetrics and to elicit the views of the members of the Section on the subject. There has developed during the past few months a strong reaction against the old-established theory of attributing all cases of puerperal eclampsia to a renal inadequacy pure and uncomplicated, as manifested by an albuminuria of varying degrees of intensity. The tendency to-day is rather to ascribe the convulsive seizures and the albuminuria to one and the same cause—namely, the presence in the blood of a certain toxin, or it may be certain toxins, of unknown constitution and undetermined origin. The great constancy of hepatic lesions, necrotic and hemorrhagic, that have been noted in autopsies upon eclamptic women, and the accompanying urinary

* Read before the Section on Gynecology, College of Physicians of Philadelphia, May 17, 1900.

changes indicative of imperfect katabolism, have inclined the concensus of opinion toward the view of auto-intoxication in eclampsia, with the greatest interest centring in the liver as the probable laboratory whence the poison or poisons are engendered. The direct proof of this doctrine is still wanting, but numerous arguments in its favor are furnished by the clinic and by pathologic anatomy and experimental medicine As Bouffe de Saint-Blaise has indicated, the bodily organism is, in a general way, constantly prone to these forms of autointoxication. All food contains toxic material, and in addition to these foreign poisons there are those that originate in the economy, as the bile and other poisonous organic liquids which tend to the production of a toxicosis. Against this danger the organism must constantly fight. It has, in fact, two sets of organs for its defence—namely, the metabolic organs, those whose function it is to arrest and transform the toxic principles, (intestines, spleen, lymphatic glands, suprarenal capsules, thyroid glands, and liver), and the eliminating organs (the intestines, skin, lungs, and kidneys). The liver, therefore, it will be noted is called upon to assume a triple rôle: to collect certain toxic principles in order to turn them gradually into the blood or to excrete them with the bile; to transform other foreign poisons in a similar manner; and through the antiseptic properties of the bile, to moderate the intensity of intestinal fermentation. . . . .

Naturally a lessened toxicity of the urine must mean an increased toxicity of the blood. Given a free escape of the nitrogenous elements in the urine, and the liability to eclampsia diminishes in direct proportion. The percentage of urea is an index of the amount of waste successfully excreted, and if this percentage is high there is probably not a great accumulation of poisons in the blood. It becomes evident, then, that it is not so much the amount of albumin that is present in the urine of a given patient that will act as the index to her liability to eclampsia, as the daily quantity of urine excreted and the relative proportion of solids contained in this total amount. The fulgurant cases of eclampsia usually show not even a trace of albumin, but a diminished excretion of the urinary solids.—*Amer. Gyn. & Obs. Journal.*

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(161) ARTIFICIAL FOODS.

Professor A. Jacobi (New York), read a communication on this subject in the Section of Therapeutics at the recent International Congress of Medicine. He said: The results of the analyses of human milk are contradictory; no two are alike. Alterations in different periods of lactation which are asserted by some are denied by others; those caused by menstruation, sickness or ingesta are either well understood or dimly appreciated but rarely measurable. The nature of its proteid, whether uniform or compound, is not sufficiently known. Whether there is an essential quality that is beyond the domain of chemistry is not known. That is why so many and so different ironclad rules have been established for the selection of substitutes, and why the uncertainty has rendered experimentation with commercial substitutes, by chemists and

even by respectable clinicians, so common. If human milk were a uniform body, the demand for an exactly equivalent substitute would be justified. Nature, however, is more liberal in allowing latitude than a chemist. Heat both improves and injures milk. When milk is exposed to 68° to 70°C., ten or fifteen minutes' heat destroys the bacterium coli and bacillus lactis aërogenes; after long exposure it kills pathogenic germs; at 80°C. it coagulates albumen and changes the taste and odour of the milk. Even at 70°C. it changes casein so as to impair its value for dairy purposes. In boiling, a part of the albumen is deposited, the lecithin is destroyed, the fat altered both chemically and physically. Serious changes appear to take place, through long boiling, both in casein and nuclein. High temperatures continued for hours are required to destroy some of the long-lived spores; their injuriousness, however, is not entirely clear. Boiled, pasteurised, or sterilised cow's milk is never woman's milk; it is not a curative agent; it presents, however, the great advantage of destroying fermenting and pathogenous germs; that is why it is indispensable in large cities and during the prevalence of certain epidemics, and wherever fresh and unpolluted milk is not accessible. When employed as exclusive infant food, cow's milk, watered or not, is liable to cause constipation, or diarrhœa, rickets and scurvy. To preserve its antibacterial effect, heat should be followed by immediate and rapid cooling, but not freezing. Ample dilution of the artificial food of the infant, and particularly of the newly-born, is required because of the heterogeneous composition of cow's milk; even those who are as usual put to an incompetent breast require water to combat loss of weight and the tendency to nephritis and to nephrolithiasis, the former of which is still more frequent than the latter—indeed, very frequent. A large amount of liquid does not interfere with the motility of the stomach and does not cause dilatation—first, because the normal infant is no glutton, and secondly, because absorption begins at once. Easy and equal digestibility of the casein in woman's and in cow's milk is either asserted or denied by good observers. When cereal decoctions are mixed with cow's milk, its casein is claimed and proved to precipitate in fine tufts. On the other hand, cereals are said to have no such effect any more than water. Water, however, is recommended by the same authors as addition to cow's milk. This contradiction is met by those who recommend dextrinised flours for the dilution of cow's milk. The digestibility of a certain amount of amylum, such as is contained in cereals, has been erroneously and persistently denied, when it had long been proved both by experience and by experiments to exist. Cereal decoctions are the proper diluents for the surplus casein of cow's milk. Milk sugar is partly absorbed in the stomach, partly in the intestine, partly changed into lactic acid It is required for digestion, and is an antiseptic. Not enough of it, however, can be given to have the latter effect to the same degree that is exerted by flours. Besides, milk peptones disappear with acid fermentation. That is why milk sugar should not be given in large quantities, but other carbohydrates in its stead. Cane sugar should take its place particularly, as for the purposes of digestion there is milk sugar enough in cow's milk that forms part of every artificial food, and because

there is a ferment in the intestine of the young which inverts cane sugar and renders it absorbable. Besides, every other carbohydrate has the same power to protect albumen against putrefaction. Fat is added to cow's milk for the alleged purpose of increasing its nutritive property (by preventing the loss of the fat and albumen of the tissues), and by loosening and separating the minute particles of casein. It should be remembered, however, that even human milk contains often so much fat as to cause "fat diarrhœa;" that the normal infant fæces eliminate unchanged fat in goodly quantity; that, moreover, the fat globules of cow's milk are larger, less numerous, and less obsorbable than those of woman's milk; that the two fats are not equal chemically; and that the urine is liable, after feeding with cow's milk fat, to contain ammonium and the gut toxins. The mineral constituents of cow's and human milk are different. The addition of chloride of sodium to artificial foods is required both for physiological and chemical reasons. Home-made artificial foods are preferable to the proprietary foods of the market, for many reasons. The separation of the component parts of cow's milk by mechanical means, and the recomposition of the same, is a procedure of doubtful value. Experience of the physician and of the well directed public is equivalent at least to laboratory and library theories based on facts that are *sub judice.—British Medical Journal.*

RECTAL ALIMENTATION.

For how long a period rectal alimentation should be administered depends upon the condition necessitating it. In ulcers and irritating affections of the stomach rectal alimentation will be administered alone without any additional nourishment through the mouth for a period varying from one to two weeks, when the natural mode of nutrition will be cautiously resumed. In cases in which there is an organic obstacle within the œsophagus or at the pylorus preventing the passage of food into the intestine, rectal feeding must be carried on as long as the impediment exists (in operative cases until a few days after the operation has been performed—in inoperable cases indefinitely). Here, whenever possible, besides the enemas, small quantities of liquid foods may be given also by way of the mouth

Shortly after the operations on the œsophagus, stomach, and small intestines, rectal alimentation must be administered for a period varying from four days to a week or ten days.

Before administering the feeding enema, a cleansing injection, consisting of a quart of water and a teaspoonful of salt, should be given early in the morning, in order to thoroughly evacuate the bowel. One hour later the first rectal alimentation may be administered. The feeding enema is best injected by means of a fountain or Davidson syringe or a plain, hard-rubber piston-syringe, and a soft-rubber rectal tube which is introduced into the anus five to seven inches. The injection should be administered slowly, without much force. After the withdrawal of the tube from the rectum the patient is told to lie quietly and to endeavor to

retain the enema. The quantity of the feeding enema may be from 5 to 10 ounces. Three to five such enemas may be given daily.

The following substances may be used as feeding enemas:—

(*a*) The different kinds of peptones and propeptones in the market (Rudisch's or Kemmerich's peptone, somatose, sanose), of which about 2 or 3 ounces, dissolved in 6 to 8 ounces of water, are injected. The different beef-juices (Valentine's beef-juice, bovinine, Mosquera's beef-jelly, etc.) may also be dissolved in water and injected in corresponding quantities.

(*b*) The milk-and-egg enemas: 6 to 7 ounces of milk, 1 to 2 raw eggs well beaten up in it, 1 teaspoonful of powdered sugar, and $\frac{1}{3}$ of a teaspoonful of common table salt. Pancreatin (one tube of Fairchild's pancreatin) may be added to such an enema, which will facilitate its assimilation.

(*c*) Meat-pancreas enema: Leube employs enemas consisting of well chopped meat (5 ounces), fresh pancreas (2 ounces), 1 ounce of fat (butter); all these ingredients thoroughly mixed with about 6 ounces of water.

Instead of always using one and the same nourishing enema the above compositions may be alternately administered.

In conjunction with these food-enemas, injections of water into the bowel are made in order to increase the amount of fluid in the system. These injections of water for absorption are of great importance. Usuallly saline solutions are employed, in quantities varying from a pint to a quart, which may be given twice a day. Max Einhorn (Post-graduate, July, 1900).—*Monthly Cyclopaedia.*

FEMALE SPERMATOZOIC IMMUNITY.

There is something startling in the suggested possibilities involved in recent experiments by Metschnikoff regarding a serum method of securing immunization against spermatozoa. And yet, if we look upon the individual cells of an animal as essentially independent units, and upon bacteria as animal in character, the span from bacterial immunity to physiological celular immunity becomes quite short, and the analogy between the two seems natural and close. Skutsch ("Fortschritte der Medicin," May, 1900,) says, reviewing an article by Moxter, "Deutsch Med. Woch.," 1900: "Since it has been found possible to immunize the lower animals by the use of a specific serum, not only against bacteria, but also against physiological elements, *e.g.*, white corpuscles, milk cells, erythrocytes, ciliated epithelia, etc., the question has arisen, What is the normal relation of the organism to the spermatozoa, and is the relationship changed when spermatozoa have been taken into the body by resorption?

"According to Metschinikoff, sheep spermatozoza in normal salt solution, injected into the peritoneal cavity of a guinea pig, lose their mobility very much more quickly if the guinea pig has been previously subjected to a hypodermic injection of sheep spermatozoa. The sperm cells are not dissolved, and hence we have to do, not with a spermatolytic

but with a spermatocidal process. The blood of the injected animal is not the functionating agent. Spermatozoa brought into contact with the serum of normal animals and with that of animals treated with sheep serum lose their mobility in each instance in from two to six minutes. On the contrary, when the serum of animals, treated as described, is injected into the peritoneal cavity of normal animals, a stronger spermatocidal effect is observed than when the serum of normal animals is used. Experiments upon animals have shown that the immunizing serum seems to have no special effect upon other cells, except that it has a strong hemolytic action upon the blood corpuscles of the sheep.

"The antagonistic agent contained in the immunizing secretion has not only a destructive action upon the spermatazoa, but also a specific hemolytic action. Its affinity for the spermatozoa is greater than for the blood corpuscles, for when spermatozoa and blood corpuscles are added to the serum, the latter are not affected at all. Its affinity, however, for the spermatozoa of animals other than the sheep is comparatively very slight.

"In addition to the properties already named the serum has the specific property of causing the agglutination of the spermatozoa of the sheep."

It is not clear from the above whether Metschnikoff, in stating that "the immunizing serum" seems to have its peculiar effect upon the sheep only, refers to sheep serum or that of other animals.

It is quite plausible that the spermatocidal effect might apply only to animals of the same species, while its failure, when crossed to different species, would not offer an apriori invalidization. But it certainly would not appear plausible that this immunization takes place only in sheep, and not in other animals treated with a similar serum obtained from their own class. It is a long way from what has been accomplished to the determination of the thousand and one questions intermediate between this and that of final immunity of the ovum against spermatozoic influence.

The work already performed is, nevertheless, of profound interest, and much further light does not seem difficult to obtain.—*Obstetrics.*

CAUSES OF AMENORRHOEA.

Dunning mentions tuberculosis and Bright's disease as among the common causes of amenorrhœa, and says that the prevalent idea that amenorrhœa causes tuberculosis is most fallacious. He discusses the general and local causes, since he believes that any efficient treatment of amenorrhœa must be based upon the correct knowledge of the lesion producing the disease. He emphasizes the fact that active efforts by the administration of powerful emmenagogues are harmful, especially in cases of Bright's disease and tuberculosis; for such a course is liable to result in congestion of the pelvic organs and the development of new and distressing symptoms, and all efforts to restore the function will be unavailing unless one can arrest and overcome the ravages of these diseases.

Amenorrhœa following acute and debilitating diseases need not, as a rule, occasion the serious apprehension of physician and patient. Here the chief end should be to restore the health of the patient after the intensity of the attack had passed. In anæmic, overgrown girls, or in chloratic cases, food rich in blood-making properties should be directed and a high state of activity of the digestive and assimilative functions maintained, and the bowels, skin and kidneys should be kept in an active and normal condition. With the disappearance of anæmia and the oncoming of good health, the menstrual function is, as a rule, established. If it is not, mild emmenagogues are often beneficial. Potassium permanganate in one and two-grain doses is quite efficient.—*Philadelphia Medical Journal.*

POST-PARTUM HAEMORRHAGE.

Upon this important subject E. Stanmore Bishop, F. R. C. S., of Manchester, Eng., contributes an excellent paper to the Medical Brief. His methods are, in short, elevation of the foot of the bed and compression of the abdominal aorta. We extract the following passages:—

"Blood is being poured out from a multitude of small vessels, arteries and veins, deep down inside a hollow viscus. But all these vessels are merely branches of two great trunks—the vena cava and the aorta. They come from no other source. There is no other source possible. In ordinary cases of bleeding, what are our infallible means, and our only means of its arrest? If blood is coming from veins, elevation of the part of the body containing those veins until it is on a much higher level than the heart. All venous bleeding is immediately stopped by this manœuvre. Do we not always trust to this in the hæmorrhage from a burst varicose vein, and do we ever find it fail? That here there are more veins than one makes not a particle of difference. Elevate the foot of the bed. Elevate it high. Do not merely put a brick under each leg. That is not elevation which is to do any good, it is mere perfunctory compliance with the letter of the advice. Elevate the foot of the bed until the uterus is six or eight inches above the heart; so best will you deal with the *venous* outflow.

"And the aorta is reached with consummate ease in these cases. The abdominal wall is unusually supple. It has been stretched for months by the steadily enlarging uterus. It has not yet recovered, and will not for many days recover its tone. It yields easily to pressure from without, and the hand readily finds the vessel, and can easily isolate, and compress it *alone* against the left side of the prominent spinal bodies."

This pressure gives absolute command of arterial bleeding from the uterus.

"No man who has not personally tried this plan can have any idea of the increased force in the aortic beat as felt by the compressing hand, after even a quarter of an hour's control."—The Medical Bulletin.

PERFORATION IN TYPHOID FEVER FROM AN OPERATIVE STANDPOINT.

G. G. Davis (*American Journal of Surgery and Gynecology*, September, 1900) says the subject of operating for perforations in typhoid fever is still so recent that additional experiments and data are desirable to enable us to formulate rules of procedure. Leucocytosis is a confirmatory sign. Hemorrhage is accompanied with a sudden fall of temperature, but not by a sudden increase of abdominal symptoms. Dulness in the right iliac region is not to be expected in cases of perforation. Localized impairment of resonance may be due to free abdominal fluid; change of position causes it to disappear. Localized pain and dulness may be due to a plastic peritonitis around the site of perforation. This may be observed perhaps in one case in ten, possibly one in five. It is impossible to recognize that a perforation is about to occur. It is not necessary to operate before a perforation occurs, but it is necessary to operate before collapse is marked. Typhoid fever patients when not in total collapse bear operation much better than was formerly expected. Patients operated on in marked collapse are liable to die on the table. I know of some such cases. Washing out the abdominal cavity with hot normal salt solution even if no perforation is present, seems to improve the condition of the patient at the time of operation, and to favorably influence the subsequent course of the disease. Operate as soon as the diagnosis of perforation is made. It is less dangerous for the patient to run the risk of having an operation done during the first period of depression than to wait and run the risk of having collapse preclude all operative measures. In operating incise as for appendicitis, and not in the median or semi lunar line.—*The Medical Age.*

SOCIETY REPORTS.

TORONTO CLINICAL SOCIETY.

The first regular meeting of the Toronto Clinical Society was held in St. George's Hall, Elm Street, on Wednesday evening, October 3rd, Dr. W. H. B. Aikins, the President, occupying the chair.

President's Annual Address.

After thanking the Fellows for the honor conferred on him in his election to the presidency, he referred to the honor brought to the Clinical Society and to Mr. Cameron who had lately received the honorary distinction of F.R.C.S., thus making three members of the Society who now held that proud distinction. Reference was also made to Dr. G. S. Ryerson's work in South Africa. Dr. Ryerson by his devotion to the Red Cross organization, had brought great credit to the Clinical Society as well as to the whole profession in the Dominion of Canada, and had advanced the profession of Canada in the eyes of the world. The conclusion of the introductory remarks of the president was a plea for the better consideration of mental or suggestive therapeutics, which, although connected with a great deal of foolishness in the past, was now being considered on a more scientific basis. He thought it should receive the same recognition as other agents, as it was of value in diagnosis as well as in treatment. The very fact of the physician visiting a patient every morning, even although no medicine was being given, was an important item in the way of recovery of the patient.

The Medical Side of the South African War.

Dr. G. Stirling Ryerson gave an interesting address on the above subject, This side of the war had not been written on to the same extent as the surgical side; and although his business in South Africa was not medical in its character, he was still able to acquire a certain amount of information which might be of general interest to the profession. Up to July 25th, no less than 31,305 have been treated in the base hospitals with 362 deaths; and it is not far from the truth to say that 100,000 men have passed through the hospitals from disease alone This emphasizes the fact that the physician is required more than the surgeon in war; 4,867 officers and men have died of disease up to the 25th of July; 3,463 were killed in action or died of their wounds. The statistics of this war compare most favorably with those of other wars, as for instance in the Crimean war 4,602 were killed, while 17,580 died of disease. Others were quoted, which Dr. Ryerson said made a favorable showing for the present war. Referring to the condition of the camps at Modder River,

the soil in that district is of an exceedingly light character, easily pulverized, and this mixed with excreta was wafted into the men's tents and into their mouths, etc. Their meat was literally black with flies and covered with dust. The water was muddy and drawn from the Modder River, probably infected by the Boers higher up, resulting in an outbreak of enteric fever. The camps contained from two hundred to three hundred men, in the ordinary position, close together, with nine or ten men in a tent. More than that there is the fact of urination and defecation after dark. The men will not take the trouble to go one hnndred or even fifty yards to the latrine, but urinate and defecate in the neighborhood of the tent. This is wafted into the dust and thus becomes mixed with the food. He spoke of the circular dust storms, nothing being able to keep the dust out. This was the way in which infection was carried, and then the men were exhausted after long marches. They had had little food of imperfect character, and had been living on one or two biscuits a day. They were thoroughly used up and in a position to acquire any disease that might be going. Regarding the disease itself it seemed to present the ordinary appearance, no special characteristics to be observed. The blood test was used in many cases. Regarding the question of immunity after inoculation, or by the hypodermic injection of serum, very careful accounts have been kept in the hospitals of those inoculated and those who were not; and while statistics have not yet been published, where they were inoculated once or twice, especially twice, they avoided the disease or had it mildly. Dr. Ryerson mentioned the case of an officer who had been inoculated twice who contracted the disease but recovered. The opinion is that inoculation is preventive. With improved serum we may be able yet to prevent this great scourge of armies. In addition there is endemic enteric, especially in Bloemfontein, therefore there are local causes also. The treatment of typhoid was practically the treatment which is adopted in Toronto and everywhere else. Disinfection of the bowel either by means of listerine or boric acid, taken internally, or enemata were considered in many cases to be remarkably successful. Another form of treatment was that of starvation. They were starved for seven or eight days. He considered that in some cases it might be dangerous, because a number of the men were exhausted when brought in. Nothing whatever to eat for seven days was their treatment, nothing at all except water, and all of that they could drink. The medical officer in charge of these cases, and under whose supervision this plan of treatment was carried out informed Dr. Ryerson that he had fewer deaths than in any other hospital in Bloemfontein. Dysentery: this was another very prevalent disease, and you hear of a great many men affected with this disease when they merely had ordinary diarrhea. The number of them was comparatively few. The treatment of dysentery out there usually employed was pretty thorough purging by means of castor oil, followed by Dover's powder, and in many cases it was found to work extremely well. Syringing, etc, did not work so satisfactorily. Sulphate of magnesia in drachm doses, frequently repeated, was successful—one in an hour or one in two hours. These two forms of treatment were the most satisfactory of anything used there. The tenesmus, etc., was always

causing a great deal of annoyance. This was chiefly treated by free enemata and some form of narcotic. Another special form of fever, which is endemic out there, was a form of fever resembling Malta fever. Dr. Ryerson believes this to be really a form of malaria, because it was ushered in with a chill followed by high temperature—a rising temperature at night and a falling temperature in the morning, attended sometimes with diarrhea, afterwards attended by pain in all parts of the body and followed by intense prostration. It seems to demoralize the red blood corpuscles. The patient is as white as a ghost when he comes through it. The pallor is intense, and the prostration great which follows it. Another form of fever and that is continued fever, in which there is a very slight rise at night and fall in the temperature in the morning, and which lasts usually three weeks, and forms a very large proportion of the cases going to hospital with fever. No case has ever been followed by death, and it is not followed by that intense anemia of veldt fever. Referring to the medical orderlies in time of war Dr. Ryerson stated that there was no duty which was so disgusting, and at the same time so trying and tiresome as that performed by these men. Dealing with the cases of enteric fever, for instance, when a man has seventeen or eighteen motions a day, and an orderly has twelve to twenty men to attend to, the duty is very trying indeed, but Dr. Ryerson believes that these men performed their duty well. The treatment of the surgical case, as compared with the enteric, is simply fun for the orderly. With the modern bullet wound there is very little dressing required; but, of course, when there is destruction of the bone there is more to be done. The conduct of these orderlies has been of the most noble character. Answering an inquiry of Dr. A. A. Small, Dr. Ryerson stated that pneumonia was not common during the early period of the epidemic; but later, on when the wet weather set in, pneumonia became a very constant accompaniment. Then, ten or twelve men would be carried out during the course of the day as a result of that complication.

Dr. Peters asked regarding Miss Kingsley's report in the *British Medical Journal* as to whether there were any cases of typhus fever. Dr. Ryerson said that was a mistake; there was no typhus. He referred to the absence of small-pox. With an enormous army of 200,000 men, nothing proves more definitely and more emphatically the importance and power of vaccination when there never was a single case of small-pox in the entire army. There was small-pox among the blacks, but not a single case among the white soldiers.

Dr. Parsons requested further information regarding inoculation.

Dr. Ryerson—Inoculation was not compulsory, and so far as he was aware no Canadians had been inoculated. The serum was supplied by the Imperial Government authorities. The symptoms are practically those of typhoid: severe pain in the abdomen; temperature runs up to 102° or 103°; morning fall and evening rise, accompanied by prostration, furred tongue, loss of appetite, and general malaise. This condition lasted about a week. Some suffer more than others. There were no undesirable results that he heard; no mortality.

Dr. H. B. Anderson asked whether there were any epidemics among

horses, and referred to the cause of as many as five thousand horses being lost in one week.

Dr. Ryerson—Rinderpest has disappeared, and there was no foot or mouth disease. The animals died simply from exhaustion, or want of food.

Retro-Pharyngeal Abscess with Exhibition of Patient.

Dr. G, Silverthorn presented the patient and described the case. It occurred in a child who in July last was less than a year old. The child was born on July 18th 1899, and had always been healthy and was of healthy parents. On May 17th, 1900, the child had measles, contracted from other children in the house, with a well-developed rash. In June—on the 2nd, 3rd and 4th—two weeks later, the child had a series of convulsions, five or six on the first day, about two on the two succeeding days. Dr. Silverthorn did not see the child in any of the convulsions, but arrived shortly after one or two; then the child was exhausted and the history of convulsions was marked. When examined by the doctor at this time there was a small lump on the right side of the neck below the ear, which appeared to be an enlarged gland. About a week later, on June 9th, the child had a boil on the right heel, which opened spontaneously and healed up. From June 2nd, the time when he had the first convulsion, until July 3rd, this lump below the ear on the neck gradually enlarged in size, and about the middle of June some softening was first noticed, and this condition—*i.e.*, the softening—got gradually worse. Towards the end of the month the child seemed feverish and restless. The last two weeks in June the child held its head quite stiff-like, and it even held its head up with its hand. About June 23rd there was some difficulty of breathing noticed, more especially at night. This dyspnea increased towards the end of the month, and towards the 3rd of July the child could not sleep except in snatches No difficulty was noticed in nursing until July 3rd, but the difficulty seemed more in respiration than in swallowing. Inspiration and expiration were both noisy and laboring. The lump in the neck was now of considerable size and appeared to be solid, and had no distinct sense of fluctuation On July 3rd Dr. Silverthorn considered the child was in a dangerous condition. He was afraid to examine the throat, as the abscess, if it was an abscess, might be ruptured, and in a child of that age, and with an abscess of that size it might prove fatal. Next day the parents consented to an operation and the child was removed to the hospital, and examined first of all without anesthesia. It was then given an anesthetic, as examination was not found practicable without it. One could feel perfectly well the bulging in the back of the pharynx. It was decided to make an incision through the side of the neck over the most prominent part of the tumor, and it was done in that situation. In making the incision we went through the fibres of the sterno-mastoid, and dissecting down with a blunt instrument pus came out in very large quantities, and you could pass artery forceps from one side almost through to the other side. The child remained in the hospital for one week, and by the end of July the wound was healed up,

Dr. A. H. Garratt, in discussing the case, stated that Dr. Silverthorn had accounted symptom for symptom almost similarly to a case occurring in his own practice. Hereditary syphilis, however, was in his child very well marked. His child is now two years of age and in a fairly good state of health.

Dr. Silverthorn stated that his child was not syphylitic; there were several other children in the family, and all were perfectly healthy.

Dr. George Peters related a similar case following scarlet fever. He agreed with Dr. Silverthorn that this case was glandular in origin and not osseous. You will hardly get carious disease of the spine that would undergo spontaneous recovery, and that points to the fact that the disease has not its origin in tubercular bone. The glands of the child may be enlarged on either side, and it may be due simply to a degree of ill-health in the child. These enlarged glands are not always tubercular. For pharyngeal abscess operation should be done as soon as the condition is diagnosed, and it should be done from the outside, and it is not always easy to strike the pus. It should be attacked through the planes of the neck in front of the sterno-mastoid, and dissecting very carefully between the vessels, trachea and thyroid gland. The external wound has to be pretty large. If the condition is not due to carious bone he thinks the prognosis good.

DISPLACEMENT OF THE LIVER, WITH EXHIBITION OF PATIENT.

Dr. H. B. Anderson presented this patient and recited the history of the case. It occurred in a young man of twenty-five years of age, who for some ten years had been the subject of repeated attacks of asthma. The family and personal history were good, although the patient was always delicate. During the summer of 1890 he worked on a farm and got very thin. He became troubled with catarrh in the nose and throat, and some wheezing. About the first of the following July he returned to the farm. In the fall of that year he got very fat, weighing 155 pounds. Catarrh became worse, with coughing fits at night, but no wheezing. During that winter he had an attack of pneumonia and pleurisy, followed by genuine attacks of spasmodic asthma. Polypi were removed from the nose, which relieved the catarrhal condition to a considerable extent. He had a second attack of right-sided pleurisy about Christmas, 1893, which lasted about three weeks. In May, 1894, a doctor told him that his liver was enlarged. He went to the North-West Territories in June, 1894. His asthma continued, and towards the end of the summer the attacks were more frequent and severe. He then began to suffer from indigestion. His bowels were irregular and mucus appeared in the stools. A doctor in the North-West examined him and told him his liver was displaced downwards. The patient took the Salisbury treatment for the digestive trouble with the result that his asthma improved to a considerable extent. His indigestion also got better. In November, 1895, he had another attack of right sided pleurisy, and he returned to Toronto in January, 1896. The asthmatic attacks returned that spring, and at this time the patient came under Dr. Anderson's care. The attacks were always preceded and accompanied by severe indigestion. Dr. Anderson examined him and

found the liver was very much displaced downward, appearing as a prominent tumor extending as low as the umbilicus. By manipulation the liver was returned to its proper position, and from the month of July of that year he was pretty free from the asthmatic attacks, and in a much more satisfactory condition than he had been before. He continued in this way pretty fairly well until this last July (1900) when he was again taken with very severe attacks of intense dyspnea. He went to Muskoka, but he became worse, and returned to Toronto about the first of August, when Dr. Anderson was called to see him again. At this time he complained of feeling a pressure in the epigastric region; a feeling of weight, of more or less tenderness, and he wanted to sit down all the time. He felt more relieved when he was sitting down, but had a peculiar feeling as if his food did not enter the stomach properly. There was no vomiting, and his bowels at this time were fairly regular. There was bloating after meals along with a flabby tongue, and he was now in a very miserable condition. On examining him this time the liver formed a very prominent tumor, the upper margin being above the free margin of the ribs, and the lower extending below the umbilicus. One could palpate the lower margin quite definitely. There was a tympanitic note over the normal liver region. It was quite visible to the naked eye; the patient could notice it himself. Attempted to replace it by postural methods, but was unable to do so. There seemed to be much retraction of the ribs on account of the difficulty of breathing, and on account of the dyspnea, that the attempt to replace it proved futile. The patient was put to bed on a low diet and he immediately began to improve. He also had an antispasmodic mixture. He continued fairly well, when he was taken a week ago with an attack of diarrhea, with a slight return of the asthma at this time. The liver, from the time Dr. Anderson saw him in August, did not return completely to its proper position, although it raised up considerably. It is higher now than it was in August, but it is still very much displaced. As to this condition of hepaptosis, it is said to be due to stretching of the ligatments of the liver, and may be congenital or acquired. The most able article on the subject is that written by the late Dr. Graham, where he describes seventy cases, an article delivered before the association of American physicians. The cases are mostly found in women, and particularly in those who have been through several pregnancies. Other causes are collections of fluid in the pleural cavities, subphrenic abscess, etc. Right sided pleurisy may be of some importance in this case, as he had it three times. This condition is usually accompanied with displacement of other organs as in Glenard's disease or gastroptosis. The right kidney seems also to be lower than its normal position. Another cause of the trouble is spinal deformity. In some cases there are no symptoms except those of Glenard's disease. The patient complains of more or less weight or uneasiness in the epigastric region. This is the only case Dr. Anderson has seen associated with definite asthmatic attacks, and he thinks that here the displacement of the liver either acting as a reflex cause, or bringing about the digestive disturbances, may have had to do with bringing about the asthma. In the treatment of the case, rest seems to have had a very beneficial effect

in relieving his symptoms. He would like to have the opinion of the Fellows in regard to an operation, although it does not seem that much could be done, and besides that, there is the displacement of the other organs with which the condition is associated. Something may be done with abdominal support. The interesting point in this case is that it is associated with definite attacks of spasmodic asthma.

Bullet Wound, with Specimens.

Dr. G. Silverthorn presented these very interesting specimens. The course of the bullet is one of special interest. He first exhibited a portion of the anterior wall of the left thorax. On the left side, commencing one and five-eighth inches outside the nipple line, and on a line with the nipple itself, was the external wound, or wound of entrance, three-eighths inch wide. On following this wound backward the bullet was found to have punctured the fifth rib; had fractured it and torn up a portion of the upper edge of the fifth rib two and three-quarter inches from its junction with its cartilage. It then passed through the pleura and through the anterior angle of the upper lobe of the lung, and then through the pericardium, then along the left border of the heart, which is grooved up, and passed on backwards, tunnelling the fat in the auriclo-ventricular groove, then passing out again from the pericardium and backwards through the anterior portion of the lower lobe, and still backwards into the aorta, and just through the aorta opposite the ninth dorsal vertebra, with immence amount of hemorrhage in the posterior mediastium; but the bullet could not be found in any place. It could not be found apparently where it was lost, and an examination of the arteries was made, and the bullet was found in the left femoral artery, just below where the profunda femoris is given off. The bullet was a quarter of an inch in diameter, and in impinging the posterior wall of the aorta had perforated that wall, supported behind by the vertebral column, had fallen back into the blood stream, and either through the force of gravity or the force of the blood current, or both combined, had been swept on to the position in which it was ultimately located. The specimen of the artery was shown with the bullet *in situ*. The bullet was slightly deformed, probably from its force in striking against the rib.

George Elliott,
Recording Secretary

MISCELLANEOUS.

Cough Sedative, Antispasmodic and Analgesic.

In epidemic bronchitis and all the various allied laryngal affections, codeine is a most valuable remedy for relief from the harassing cough and pain, and when combined with antikamnia the analgesic effects are harmlessly emphasized. This combination is best administered in antikamnia and codeine tablets. No more favorable combination could be had in the cough of phthisis and chronic bronchitis. This is abundantly attested by clinical data which shows the combination to be the best succedaneum for opium.

Another advantage of codeine over morphine, one of special value in bronchial catarrh, is that the patients not only cough less, but also expectorate more easily than after morphine. The cough-dispelling power of codeine is such as to make it indispensable in phthisical patients, and a point of great importance in these cases is that it does not impair the appetite or digestion, and can therefore be used uninterruptedly for months. GEO. BROWN, A.M., M.D., Specialist Eye, Ear, Nose, Throat and Lungs, Atlanta, Ga.

The Clinical Significance of Oxaluria.

Robert F. Williams, in the *Maryland Medical Journal*, states that there is a paucity of literature upon this subject in recent text books. He quotes Beneke as stating that oxaluria has its toxic cause in impeded metamorphosis in that stage of oxidation which changes oxalic acid into carbolic acid; that the chief source of oxalic acid is in the nitrogenous food; that retardation of their metamorphosis may be caused by such conditions as the following: Excess of nitrogenous food, excess of starches and sugars, conditions diminishing oxidation by interfering with the proper function of respiration and circulation, depressed nervous conditions.

The author claims to have found two other sources than the derangement of metabolism according to Beneke, namely, the ingestion of calcium oxalate in the food, and its production by certain bacteria in the intestines. He devises the theory that calcium oxalate is changed into an alkaline solution and exists in the intestines in the form of crystals; therefore it must be absorbed in the intestines in the crystalline state, and circulate in the blood as such. Eliminated by the kidneys, it acts as a mechanical irritant which leads to the production of albumin and casts. The symptoms of an acute oxaluria, he says, closely resemble those of beginning nephritis. If the condition is not checked, it leads to chronic changes in the parenchyma of the organ, leading to the production of a chronic Bright's disease.—*Ex. New Eng. Med. Monthly.*

BALDNESS. Dr. Whitla, in the *Therapeutic Review*, says that one of the best combinations in the treatment of baldness consists of :

R. Pilocarp hydrochloratis ..... gr. v.
Otto rosæ ..... m. viii.
Ol. rosmarini ..... dr. iv.
Linimenti cantharidis ..... dr. iv.
Glycerini pru-ur ..... oz. i.
Ol. amygdalæ dulcis ..... oz. ii.
Spir. camphoræ ..... oz. iii.

M. Sig. To be rubbed well into the scalp night and morning. —*Texas Medical News.*

PULMONARY TUBERCULOSIS. In an article on "The Treatment of Consumption," in the *International Med. Mag.*, Dr. W. Blair Stewart, of Atlantic City, N.J., says : "The basis of my treatment rests on a formula, which is frequently modified as follows :

R. Guaiacol carbonatis ..... gr. xv.
Strychnin sulphatis ..... gr. i.
Resin capsici ..... gr. iii.
Ammonii chloridi ..... gr. xxx.
Quinin bisulphatis ..... gr. xxx.

M. ft. capsule No. 30. Sig.—One every four hours."—*Med. and Surg. Bull.*

PILLS FOR GOUTY MIGRAINE. Dr. H. Bommier recommends this pill :

R. Quinine valeriante ..... gr. 30.
Ext. colchicum ..... gr. 9.
Ext. digitalis ..... gr. 6.
Powd. aconite leaves ..... gr. 3.

M. Divide into twenty pills. One to be taken an hour before dinner, for five days in the week, with a glass of lithia water.—*Ex.*

STYES. The following prescriptions are given by Ohlemann in "Ocular Therapeutics :"

Hydrargyri chloridi corrisivi ..... 3-20 gr.
Vaselini ..... 7 drs. and 42 grs.

Misce et fiat in unguentum. Signa.—Ointment for eyelids.

Sulphur sublimati ..... 46 grs.
Ammonii chloridi ..... 15 grs.
Aqua rosa ..... 1 fl. oz. and 5 fl. drs.
Spiritus camphora ..... 1½ fl. drs.

Misce et fiat in collyrim. Signa.—For local use on eyelids.

Hydrargyri oxidi flavi ..... 1½ grs.
Lanolin ..... 1½ ozs.
Glycerin ..... q. s.

Misce et fiat unguentum. Signa.—Eye ointment.—*Exchange*

The Canada Lancet

A MONTHLY JOURNAL OF MEDICAL AND SURGICAL SCIENCE, CRITICISM AND NEWS.

The Oldest Medical Journal in the Dominion: Established 1867.

Published on the 15th of each Month.

Editor:—H. B. ANDERSON, M.D.

All Communications in reference to the Literary part of the Journal, articles for publication, etc., address The Editor, 241 Wellesley Street, Toronto. Correspondence in reference to Advertising, Subscriptions, Publishers Department, etc., address Dr. G. P. Sylvester, Business Manager.

Make Cheques and Drafts payable to the Business Manager.

EDITORIAL.

ANALYSIS OF THE URINE FOR THE DIAGNOSIS OF CHRONIC INTERSTITIAL NEPHRITIS.

That this important disease is frequently overlooked owing to imperfect routine methods of uranalysis must be apparent to those who have given the matter much consideration. In acute or sub-acute Bright's disease the clinical picture is so distinctive and the condition of the urine so characteristic that the diagnosis is a simple matter. The abundance of albumen and the presence of casts in a specimen of urine taken at haphazard make even the crudest tests and the most superficial examination sufficient to discover the disease. A simple qualitative examination is therefore all that is usually necessary in these cases, though it certainly does not furnish the information necessary to estimate either the severity or the progress of the disease that might be obtained by more thorough methods. In interstitial nephritis, however, we have a very different condition to deal with. Here we have one of the most

stealthy and insidious of diseases, frequently remaining latent for years until the malady is far advanced. The patient may appear robust and in excellent health with no symptoms sufficiently serious to alarm him until an attack of apoplexy, or uræmic coma or convulsions supervenes. The physician then apprises him or his friends that an advanced stage of chronic Bright's disease is present and the end not far distant, the time having passed when therapeutic measures are of much avail. It is well known how frequently the disease is found *post mortem*, with even the most marked pathological changes in the kidneys and vascular system where its presence was quite unsuspected during life. Selecting, as it so often does, persons in the higher grades of society, the overworked, overfed and worried man in business or professional life, its recognition is a matter of especial importance. A life at high tension with insufficient exercise and rest is generally recognized as a very important factor in the causation of the disease. This is particularly important from the point of view of life insurance, as the persons in this country able to carry the largest risks are the very ones most subject to the malady; yet it is notorious that the routine methods of urinary analysis required by insurance companies are entirely insufficient for its detection, as they ignore the most elementary and essential points of a proper examination. For the diagnosis of chronic Bright's disease a quantitative analysis of the total amount of urine excreted per diem is absolutely essential if mistakes are to be avoided. The characteristic features of the urine are well known. From the beginning it is increased in quantity, light in color, transparent, low in specific gravity and tends to become more so as the disease advances, deficient in urea and phosphates, albumen in small amount is intermittently present and hyaline and granular casts are found on microscopic examination. The night urine particularly is increased, often approaching, and at times exceeding, the amount passed during the day. The deficiency in phosphates is a very important feature upon which much stress has recently been laid, many authorities looking upon this as a more constant and significant sign than the presence of albumen.

For a satisfactory examination it is therefore necessary that the total urine voided in the twenty-four hours be collected and a specimen of the mixed urine be submitted for examination. In this way all the facts for an opinion, so far as uranalysis is concerned, may be arrived at. The total quantity is known, the amount of the various constituents may be estimated, and the trace of albumen that is intermittently present and yet is so important an indication of the condition, is much less likely to escape recognition. In this disease the more delicate tests for albumen are advisable as the smallest trace is of diagnostic signifi-

cance. The phosphates are readily estimated by the simple centrifugal method described by Purdy, and the centrifuge is also very useful—in fact almost a necessity, in obtaining the sediment for microscopic examination.

If the simple expedient of submitting for examination the total quantity of urine passed per diem was resorted to in routine practice we do not hesitate to say that many failures to diagnose chronic interstitial nephritis would be avoided.

EDITORIAL NOTES.

Trinity Medical Banquet.

The twenty-third annual banquet of the faculty and students of Trinity Medical College will be held at the Temple Café on Thursday, November 15th.

Normal Saline Solution in Shock.

In the *American Practitioner & News* for Oct., Ed. Smith, M.D., contributes an article on the use of normal saline solution, in surgical operations for the avoidance of shock, the distressing effects of thirst and for its stimulating effects. Transfusion has been used successfully in septic conditions, in puerperal eclampsia and in fact all cases where the usual so called heart stimulants have formerly been used the normal saline solution being found to be much more effectual and infinitely safer. He describes in detail each method for its employment and gives as contra indications, atheroma, arteriosclerosis, cardiac degenerations, bad valvular disease and recent cerebral apoplexy.—T. C.

Death of George Chessel.

A familiar figure around the Toronto General Hospital for the past twenty years has been removed by the death, from chronic Bright's disease, of George Chessel. Old students at the Hospital will remember him better as Charlie, the porter in the morgue. Dr. O'Reilly, superintendent of the Hospital, many members of the Hospital staff and a large number of the employees, paid their last respects to an old and faithful servant by attending the funeral.

Hay Fever.

In the October number of the *Laryngoscope*, Dr. Scott Bishops contributes an interesting article upon this topic, wnich is timely at this season, and in which he discusses the use of nitro-muriatic acid and the eliminative treatment

Nitro-muriatic acid may be prescribed in doses of three to five drops of the freshly prepared concentrated acid after meals, and sometimes at night. This is diluted in half a tumbler of water. After taking this dose the mouth may be rinsed with water and another tumbler drunk.

This treatment has the effect of precipitating the uric acid from the blood and storing it in the more alkaline tissues, such as the liver, spleen, cartilages, joints and fibrous tissues, out of which it becomes dissolved into the blood during the hours of inactivity. This treatment should therefore only be given for temporary relief, only during the attack, and should give way to the eliminative treatment after the attack subsides, or else it will only defeat the ends of treatment. A uranalysis should be made in all cases of hay fever, to determine any excess of uric acid as compared with urea, the relative proportion in health being as one to thirty-three. The eliminative treatment aims at throwing the uric acid out of the system, principally through the kidneys.

The patient should then avoid meat and sweets as much as possible, and take 20 to 30 grains of lithia a day with a generous amount of water. The lithia may be taken morning and evening and after meals also. Sufferers from hay fever are apt to be over-feeders in animal diet.

Meals of meat should be rare, not over twice per week. With regard to water, it is important that an abundance be taken every day—as nearly a gallon as is possible. This disolves the uric acid out of the alkaline tissues, and in a largly diluted condition carries it out of the body through the kidneys, skin and bowels. GIBB WISHART.

The American Electro-Therapeutic Association.

The tenth annual meeting of the American Electro-Therapeutic Association was held in the Academy of Medicine in New York City on September 25, 26 and 27, 1900. Dr. Walter H. White of Boston, Mass., proved an ideal president, and Dr. Robert Newman as chairman of the committee on arrangements, had made ample provision for the comfort and entertainment of the visitors. The members were welcomed to New York by Acting Mayor Hon. Randolph Guggenheimer and by Dr. Louis F. Bishop, secretary of the Academy. Dr. Charles R. Dickson, of Toronto, responded to the address of welcome on behalf of the association. A large number of papers were read, and the discussion was at all times very general; the attendance was most satisfactory, and the meeting altogether proved to be one of unusual interest.

The report of the committee on Electrodes was presented by the chairman, Dr. C. R. Dickson of Toronto, and its recommendations adopted.

There were two special discussions arranged for. "Electricity in Gynecology, and the Present Reluctance of Gynecologists to use Electricity"; under which the following papers were presented before the general discussion: "The General Office Work of a Gynecologist," by Dr. H. F. Morse, of Melrose, Mass.; "The Morton Wave Current," by Dr. W. B. Snow, of Atlantic, Ga.; "Nervous Disorders Peculiar to Women," by Dr. G. B. Mas-

sey, of Philadelphia, Pa.; "Use of the Continuous Current and Electrolysis," by Dr. R. Newman, of New York; "Spark Gap Currents, viz.: Franklinic Interrupted, Static Induced, and Wave Currents," by Dr. W. J. Morton, of New York. A second special discussion was on "Electricity in Tuberculosis and Present Modes of Treatment," considered as follows: "Etiology of Tuberculosis; its Course and Termination," by Dr. S. A. Knopf, of New York; "The Modern Treatment of Pulmonary Tuberculosis," by Dr. M. J. Brooks, of Stamford, Conn.; "Electric Light as a Therapeutic Agent, by Dr. C. O. Files, of Portland, Me.; "Electric Light; its Physiological Action and Therapeutic Value in Tuberculosis of the Throat and Lungs," by Dr. W. Freudenthal, of New York; "Report on the Practical Value of Grotte's Method and of Others who Advertise Cures," by Dr. E. LeFevre, of New York. A committee was appointed to investigate the method of Mr. Grotte, consisting of Drs. Newman, Morton and Heuel, of New York.

Other papers read were "Electro-Therapeutic Sins," by Rev. Newman Lawrence, M.I E E, of Stapleton, Staten Island; "Some New Appliances for X-Ray Work," by Mr. E. W. Caldwell, E.E., of New York; "Plea for a Better Application of Electricity in Disease," by Dr. J. G. Davis, of New York; "Combined Electrization, or Galvano-Faradization," by Dr. A. D. Rockwell, of New York; "Gleanings in the Field of Electro-Therapeutics," by Dr. C. O. Files, of Portland, Me.. "Illustrations of the Value of the Cataphoric Method in Cancer," by Dr. G. B. Massey, of Philadelphia, Pa.; "The Causes of Some Cases of Neurasthenia, and Their Treatment," by F. B. Bishop, of Washington, D. C.; "X-Ray Photography," by Dr. E. R. Corson, Savannah, Ga.; "Electricity in Brain Failures," by Dr. D. R. Brower, of Chicago, Ill.; "Electro-Therapy of Insanity," by Dr. A. T. Livingston, of Jamestown, N. Y.

A lecture on "Methods of Generating and Transforming Electric Currents for Therapeutic Uses," by Mr. C. T. Child, E.E., Technical Editor of "*The Electrical Review*, New York, was delivered by Dr. C. R. Dickson, in the absence of Mr. Childs through illness.

The following officers were elected for 1901: president, Dr. Ernest Wende, of Buffalo, N. Y.; first vice-president, Dr. F. H. Morse, of Melrose, Mass.; second vice-president, Dr. D. R. Brower, of Chicago, Ill.; treasurer, Dr. R. J. Nunn, of Savannah, Ga.; secretary, Dr. G. E. Bill, of Harrisburg, Pa.; to replace retiring members of the executive council, Dr. F. B Bishop of Washington, D. C., Dr. W. H. White, of Boston, Mass. The association will meet in Buffalo, N. Y., in September, 1901, on a date to be fixed; arrangements are already being made for the next meeting.

PERSONAL.

Dr. W. H. Taylor (Trinity '97) has opened an office in Port Dover.

Dr. H. L. Barber (Trinity, '92) of Emsdale, is opening an office at Burk's Falls.

Dr. J. T. Duncan of Bloor street, Toronto, has returned from a visit to California.

Dr. L. G. Parker, Sherbourne street, Toronto, has returned after a four months' vacation in Europe.

Dr. A. S. Tilley, of Bowmanville, who was operated on for an acute attack of appendicitis in the Toronto General Hospital, is progressing very satisfactorily.

Dr. Andrew Haig (Queens, '91) who has been practising in Campbellford, has been appointed Superintendent of the Kingston General Hospital in place of Dr. Jas. Third, resigned.

Dr. C. M. Stewart (Trinity '98), late house surgeon at the Toronto General Hospital, has passed the final examinations of the Conjoint Board, London, and has been admitted an M.R.C.S. and L.R.C.P.

We are glad to note that Dr. Joe Jordan (Tor. '00) was among the members of C Company, R.C.R., who returned to Toronto last week, none the worse for his wound and subsequent illness.

Dr. Donald McGillivray, lately of the resident medical staff, Toronto General Hospital, has recently passed the examinations of the Conjoint Board, London, and been admitted M.R.C.S. and L.R.C.P.

Dr. Donald J. Armour, F.R.C.S., M.R.C.P., a past resident assistant in the Toronto General Hospital, and for some years Demonstrator of Anatomy in University College, London, has been appointed to the anatomical staff of the Medical Faculty of the University of Chicago, under Dr. Lewellys F. Barker.

Dr. H. G. Barrie (Trinity '98), Y.M.C.A. representative with the Royal Canadian Regiment, won for himself an enviable reputation among the men for his work in South Africa. Before landing at Halifax the members of the regiment aboard the Idaho presented him with a purse of $500 as a practical expression of their appreciation.

We are pleased to announce to our readers the addition of two new members to our editorial staff in the persons of Hadley Williams, M.D., F.R.C.S., of the Western University Medical Faculty, London, and J. Coplin Stinson, one of the best known surgeons of San Francisco. We feel sure that our obtaining the services of two men so well and favorably known to the Canadian profession will add greatly to the editorial strength of THE LANCET.

Dr. F. H. Brennan (Trinity, '85) formerly of Peterborough, Ontario, has been paying a visit to his native town. Dr. Brennan went to Johannesberg five years ago, where he had worked up a good practice before he was forced to flee the city on the outbreak of the war. He secured a place in the Army medical service. The doctor was offered the Conservative nomination in East Peterborough for the recent elections, but owing to his decision to return to South Africa, he could not accept.

Among our countrymen who have been distinguishing themselves in the field of medical literature we are pleased to see the name of Dr. Wolfred Nelson, of New York. Dr. Nelson has contributed the article on Yellow Fever in the Twentieth Century Practice of Medicine—a most interesting and instructive account of the disease. Dr. Nelson graduated at McGill and Bishops' College in 1872. That he has not forgotten the land of his nativity is shown by the fact that he is now president of the Canadian Society of New York, among the members of which are over a score of Canadian medical graduates resident in the metropolis.

OBITUARY.

We regret to note the death on October 11th of the wife of Dr. Wm. Glaister, of Wellesley, Ontario. The deceased was a daughter of the late Dr. Morton, of the same place.

DR. R. H. WHITE.

We regret to note the death of Dr. R. H. White, who graduated at Trinity University in 1891. Dr. White was born in Milbrook, Ontario, and after graduation in medicine took up practice in New York, where he was appointed physician of the New York Throat, Nose and Lung Hospital, and had established a large practice in his special line of work.

DR. WM. FREEMAN AND DR. ALLAN C. SLOANE.

The medical profession of Ontario has lost two well-known members in the death of Dr. Wm. Freeman, of Toronto, and Dr. Allan Cary Sloane, of Annan.

Dr. Freeman practiced with marked success for many years in Georgetown. He retired from active work a few years ago and came to spend his remaining days in Toronto, where he died September 25th, at the ripe age of 70 years.

Dr. Sloane, who was 60 years of age, was forced to give up about a year ago after an attack of apoplexy, and went to live in Owen Sound. He had a second attack and died in a few days on August 23rd. His son, Dr. J. G. M. Sloane, is now in practice at Lion's Head, Grey Co.

ALEXANDER K. STURGEON.

The Town of Petrolia recently lost one of its most popular citizens and the profession an honored member in the death, from pulmonary haemorrhage, of Alexander K. Sturgeon at the age of 38 years.

Dr. Sturgeon was born at Florence, Ontario, and after a successful academic career, graduated at Trinity University in 1884. After spending a year in post-graduate work in Europe, he practiced successively in

Hagersville and Welland, removing to Petrolia in 1899, where he met with much success. In 1893 he was married to Elizabeth Isabel, daughter of W. K. Gibson, Esq., of Petrolia. Dr. Sturgeon held important local appointments, being Coroner for the County of Lambton and Medical Health Officer for Petrolia. He was also a prominent Mason. His kindly manner and unostentatious worth had gained for him the affection and esteem of the community in which he lived.

DUKE W. KESTER.

Another prominent member of the Ontario profession has passed away in the death, on October 21st, of Dr. D. W. Kester, of Ingersoll. Dr. Kester was a student of Trinity Medical College and graduated at Trinity University, after which he began practice at Mount Elgin. His ability, devotion to his profession and genuine worth soon gained for him the confidence of the community and a large practice. Owing to failing health he was unable to stand the strain of his large practice and consequently some four years ago he removed to Ingersoll, where he confined himself chiefly to office work.

About a month ago he developed typhoid fever, during convalescence from which pneumonia supervened, death resulting in a few days. The deceased, who was 46 years of age, leaves a widow and one son. Dr. Kester was a member of the Masonic fraternity.

The deceased was held in the highest esteem by his professional brethren, Doctors Williams, Neff, McKay, Caufield, and Rogers, and Mr. J. B. Coleridge, acting as pall bearers at his funeral.

VINCENT D. SULLIVAN.

Although in poor health for over a year the news of the death of Dr. Vincent Sullivan at Los Vegas, Texas, on Nov. 4th will come as a shock to his many friends in the medical profession. Dr. Sullivan was a graduate in Arts and Medicine of Queen's University, where he took the M.D.C.M. degree in 1892. He then spent some three years in post graduate work, principally in London where he passed the examinations for the M.R.C.S. and L.R.C.P. He returned to Kingston and was appointed to the Anatomical department of Queen's University Medical Faculty, in which position his excellent work and genial personal qualities made him extremely popular with his students. Developing pulmonary tuberculosis he was forced to resign his position and seek to regain his health. He went to Saranac Lake during the past winter where he improved considerably, returning home in the spring. He soon became worse, however, and afterwards went to Gravenhurst and latterly to Los Vegas, but all to no avail. Dr. Sullivan will be much missed. His kindly disposition, sparkling humour, genuine goodfellowship, and above all his real worth, gained for him hosts of friends wherever he went, who will learn with deepest regret of his early death. In the death of 'Vinney' Sullivan the profession has lost a good man—one whom it was a pleasure to know. His father, the Hon. Dr. Sullivan and his family will have the sincerest sympathy of all in the hour of their bereavement.

BOOK REVIEWS.

Practical Analysis and Urinary Diagnosis by Charles Purdy, L.L D., M. D., F.R.C.S. (Kingston), Professor of Clinical Medicine, Chicago Post Graduate School, &c., &c. Fifth Edition, Revised and Enlarged. F. A. Davis & Co., Philadelphia.

The fifth edition of this excellent work has just appeared, fully revised and brought up to date.

The normal composition of the urine is first taken up, and the different theories as to the mechanism of secretion are dealt with; also the changes normal urine undergoes on standing.

The author then takes up abnormal urine, dealing fully with the albumens, albumoses carbohydrates, etc., their recognition and clinical significance. A particularly valuable part of the work is that dealing with centrifugal analysis for the quantitative estimation of albumen, phosphates, chlorides, etc. The author is to be congratulated on having furnished the profession with a simple, rapid and accurate method for the quantitative analysis of these substances.

Part II. is devoted to urinary diagnosis and should be a very valuable help to the clinician. The work concludes with a chapter dealing with the examination of the urine for life insurance, with rules for the guidance of examiners.

T.C.

ENCYCLOPEDIA MEDICA.

Under the general editorship of Chalmers Watson, M.B., M.R.C.P.E. Vol. 1. Abdomen to Bone. Published by William Green & Sons, Edinburgh, 1899. Agents in Canada, Carveth and Co., Toronto.

This volume contains articles from the pens of T. Lauder Brunton upon "Angina Pectoris"; Byron Bramwell upon "Aphasia"; Dundas Grant upon "Auditory Nerve and Labyrinth," and from a well known Canadian surgeon, F. J. Shepherd, upon "Appendix Vermiformis," as well as from over thirty other authorities of note.

Where there are so many distinguished writers, it is not necessary to say anything with regard to the quality of the text. The work when completed is intended to represent the results and conclusions of medical investigation in the 19th century, and the names of the editor in chief and of the publisher are guarantees that this will be performed thoroughly.

The volume before us has, however, several points in the method of arrangement which are an improvement upon anything we have seen so far. The contents of each article are indexed at its head, and the list of literature bearing upon the subject forms a fitting conclusion. By this method much time will be saved to the reader. The volume is also of a convenient size—well bound and better printed—and the subjects are treated briefly and yet interestingly and exhaustively.

GIBB WISHART.

A TREATISE ON FRACTURES AND DISLOCATIONS,

For Practitioners and Students By Lewis A. Stimson, B.A., M.D., Professor of Surgery in Cornell University Medical College, New York. New (3d) Edition. In one octavo volume of 842 pages, with 336 engravings and 32 full-page plates. Cloth, $5.00, net. Leather, $6.00 net. Just ready. Lea Brothers & Co., Philadelphia and New York.

The fact that the last edition of this book published in 1899, was completely exhausted in about a year, speaks for its popularity. As a book of reference, to the surgeon it is of immense value. Formerly published in two volumes it has been condensed into one of 842 pages by the rigid exclusions of everything unpractical. There are numerous revisions and additions in the present edition—one of the most important of which is the article on traumatic haematomyelia. Fracture and dislocation of the vertebrae are discussed in a thoroughly practical way. For the specialist the splendid bibliography added to the work, will be most useful.

G. A. B.

BALLINGER & WIPPERN ON THE EYE, EAR, NOSE AND THROAT.

A Pocket Text-Book of Diseases of the Eye, Ear, Nose and Throat, for Students and Practitioners. By William L. Ballinger, M.D., Assistant Professor of Otology, Rhinology and Laryngology in the College of Physicians and Surgeons, Chicago, etc., and A. G. Wippern, M.D., Professor of Ophthalmology and Otology in the Chicago Eye, Ear, Nose and Throat College. In one handsome 12mo. volume of 525 pages, with 150 engravings and 6 full-page colored plates. Cloth, $2.00, net; flexible red leather, $2.50, net. Lea Brothers & Co., Publishers, Philadelphia and New York.

The arrangement of this volume is excellent. By the use of small capitals to indicate "subject" words, the reader is enabled at a glance to catch the point he is in search of, and the usefulness of the text is thereby enhanced.

The clearness of type and the judicious selection of illustrations are also to be commended.

We have read a number of the articles with pleasure, and must especially note those upon "The Retinoscope," "The Mastoid Operation," and "Post-nasal Adenoids." While we do not agree with the author's view that "nasal stenosis is the most important cause of adenoids," or that it forms a factor at all, we have not elsewhere seen so clear a statement of the physiologic results of the presence of these growths.

No superfluous words are used, and yet without undue condensation, the reader is enabled to comprehend the subject clearly. This is a most important merit in a work that treats of so many topics in so few pages, and will recommend it to student and practitioner alike.

GIBB WISHART.

MEDICAL DISEASES OF INFANCY AND CHILDHOOD.

By Dawson Williams, M.D., London, Eng. Lea Bros. & Co., Philadelphia.

This last addition to the many new works on pediatrics is presented in very attractive form—the print and paper being extremely good—whilst the reading matter is quite up to date. The work will especially commend itself to students, not being full enough in etiology and pathology to be reckoned a reference handbook for practitioners, except in the subject matter of foods, baths, and prescriptions where a deal of time has been expended in thoughtful study of these necessary points.

The article on blood dyscrasia is extremely well written being condensed and at the same time lucid—whilst the plates illustrating the various types of corpuscles, as indeed all the illustrations, are beautifully finished. The price of the work, which contains 538 pages and 52 illustrations, is moderate $3.50, placing it within the reach of all. A. B.

A MANUAL OF THE DISEASES OF THE EYE,

For students and general pratictioners with 243 original illustrations including 12 colored figures, by Charles H. May, M.D., New York.

We think the author has succeeded in accomplishing what he endeavored to do, that is he has produced a concise, practical, and systematic manual, and although so small it can be carried in the pocket, it is explicit and comprehensive enough to be well suited for the use of the student or general practitioner. C. T.

PUBLISHERS' DEPARTMENT.

ANAEMIA, AND ITS RATIONAL TREATMENT.

By W. E. Holland, M.D., Chicago, Ills. Consultant, Mary Thompson Hospital, Assistant Gynecologist, Illinois Medical College.

From the standpoint of our present knowledge, there is no contesting the fact that in all forms of anaemia, iron, alone, or in combination with other recognized remedies, stands without a peer. The results accruing from its use, however, are in direct ratio to the assimilability of the preparation used.

The condition of the digestive organs during the administration of iron, and the consequent lack of power to utilize the remedy as ordinarily prepared, have presented a very discouraging prospect for the patient and disappointment to the physician, who finds that nearly all the chalybeate compounds can be tolerated but a short time—much shorter than is necessary for the accomplishment of the desired result, producing almost invariably loss of appetite, irritability of the stomach, obstinate constipation, headache, etc.

With an experience of some time in hospital as well as private practice, during which I have been fortunately or unfortunately blessed with

an unusual number of complicated and apparently uncomplicated cases of anaemia, I have had the inclination and quite ample opportunity to test the various ferruginous simples and compounds as to their relative merits, and of all used preparations those of the solution of pepto-manganate of iron, for their acceptability, unirritating properties and relative efficacy, held deservedly undisputed sway and preference, until the preparation "Hemaboloids" was brought to my notice. Skeptical and slow to depart from well tried though not entirely satisfactory paths, I at last did experiment in a case that had resisted not only my efforts but those of a number of recognized therapeutists, and obtained unusually satisfactory results.

No irritation of the stomach,no anorexia no constipation,no headache, but, on the contrary, increase of appetite, regularity of the bowels, increase in bodily weight and red blood count.

The following is a record of the most obstinate case treated, which may be regarded as a fair specimen result obtained in upwards of twenty-five cases.

This case was of particular interest since the patient presented an exceedingly unfavorable tubercular history, her mother being affected at the time and two sisters having died of the malady.

Treated with Hemaboloids ℥½ after meals and at bed-time.

1st	week,	weight	157,	Hem.	57%	R. B. C.	2,900,000	W. B. C.	8,500
2d	"	"	158,	"	60%	"	3,200,000	"	8,000
3d	"	"	160,	"	65%	"	3,800,000	"	8,000
4th	"	"	163,	"	73%	"	4,000,000	"	7,000
5th	"	"	162,	"	78%	"	4,300,000	"	6,500

Various preparations have from time to time been lauded for their effect upon the blood and the blood-making organs, and many of the old tried and new remedies have virtues of varying degree, and I have had a reasonable measure of success with all of them, but from the almost uniformly gratifying results from the use of the remedy just cited, it certainly has in my hands and from my experience been the remedy "par excellence" and well worthy of a trial in all those obstinate forms of blood impoverishment which resist other recognized treatment.

In closing let me further remark that in the treatment of these cases the necessity and benefit of carefully selected, concentrated diet, regularity of feeding, fresh air, salt baths and, last but not least, keeping the intestinal tract in an aseptic condition, must not be lost sight of.

THE MEDICAL TIMES.

BLOOD CURE OF CHRONIC GASTRIC CATARRH.

By T. J. Biggs, M. D., Stamford, Conn.

Sam. A—, age 34, English, admitted June 2nd, 1900. Diagnosis Chronic Gastric Catarrh. The case was sent to me by Dr. R—, he having given up all hope of doing anything for it himself. Prior to be treated by Dr. R —, the case had been in St. Luke's Hospital for six months, but there received little or no benefit.

The general symptoms presenting were: Loss of Appetite; disagreeable gnawing, and at times, fullness in the stomach; tenderness at the epigastrium, slightly influenced by eating; almost constant prominence of the epigastrium from distension by decomposing gases. The patient has occasional attacks of nausea and vomiting, occurring most frequently on arising, consisting of gray macus raised after great retching; constant thirst; often great burning at the pit of the stomach; bowels constipated; urine highly colored. There was a constant feeling of mantal depression, and sleeplessness, with occasional attacks of vertigo. The patient also had a follicular pharyngitis of an aggravated type. He was very thin, muscles relaxed, and the skin dry. On entering the hospital he was so weak that he had to be carried from the ambulance on a litter.

His secretions were regulated and he was put on an absolute bovinine diet, half a teaspoonful every hour in lime water and peptonized milk. Once in 24 hours he was rubbed thoroughly with olive oil. The follicular pharyngitis was first treated by cleansing the surface with bovinine-Thiersh, followed by spraying the bovinine pure, this being employed every three hours.

On the 10th, the patient felt stronger, was sleeping well, and was not so depressed mentally, burning in the pit of the stomach greatly reduced, no vomiting, but still present nausea and constant thirst. The bovinine was now increased to a tablespoonful every two hours, and the treatment of the pharyngitis reduced to twice in 24 hours.

On the 20th, the patient was up and about, feeling much stronger, having gained five pounds in weight. The constant thirst had disappeared as well as the nausea. He also craved some general diet. He was, however, perfectly nourished and did not complain of being hungry, only thought he would like to try and eat something. This was not as yet allowed.

On the 22nd, however, his condition still being on the gain, he was allowed a little rare beef well chopped up, and a piece of toast. This he ate with relish, and retained it without any discomfort. Treatment continued.

On the 23rd, the follicular pharyngitis had entirely disappeared. He was allowed some rare chopped beef, a little rice and toast.

On the 25th he took a long walk and on returning, said he felt splendidly.

On the 28th, he was discharged, cured, with the advice to continue the bovinine and to report for examination at the end of a week.

The action of the bovinine on this class of cases is as in all others. First, it gives the alimentary tracts absolute rest, and at the same time supplies perfect nutrition, containing as it does every element in the proper proportion to sustain the human organism.