is best for its needs, subsists entirely upon fats and oils. The South Sea Islander, with as little design, turns to succulent vegetables and fruits. The exigencies of life, thus supplied by nature in opposite zones are combined in our varying climate, and we should be guided into an intelligent application of what is best suited to our requirement. The system is capable of oxydizing just so much food, and when we overcharge it with heavy eating in spring, giving it more fuel than is necessary to keep the furnace heated to 98.6 degrees, the body's temperature, we find it overtaxed and the blood charged with effete matter, constituting spring fever. Thus we may appreciate the wisdom of the Catholic church in establishing its period of abstinence in the early spring.

PUERPERAL ECLAMPSIA, WITH REPORT OF A CASE AND TREATMENT.

BY NORMAN W. BELLROSE, M.D.

EATON, COLO.

I doubt very much if there is a disease of pregnancy in regard to which there is a greater diversity of opinion as to its etiology and pathology than puerperal eclampsia. Do we know its cause? Yes, I think we do.

Braun tells us that the kidneys are responsible, and is an advocate of the nephritic origin. Playfair, on the other hand, does not consider the albuminuric theory as clearly proven. Lever, in 1843, pointed out the connection between albuminuria and eclampsia, and that the two conditions occupied the relative position of cause and effect.

Further investigations, however, lead one to believe that the kidneys are not wholly responsible. In twenty-eight cases of eclampsia reported by Schauta, three were found to have normal kidneys. Ahlfeld found in seventeen cases two in which the kidneys were normal.

Vinay, after making thorough microscopic examination, states that in a large number of cases the disease can hardly be attributed to renal lesion. Rivere, Auvard and others declare eclampsia to be a form of auto-intoxication. I believe that the theory of toxemia, not one but several different poisons, is generally upheld. I am a firm believer in the toxemia theory of Rivere and Auvard; but, nevertheless, I can not but believe that the kidneys play an important part in the toxemia of eclampsia.

Bouchard has said that man is constantly menaced by poisoning. He labors each instant for his own destruction, making incessant attempts at suicide; nevertheless this intoxication is not realized, for the organism has multiple resources to escape it.

It is not necessary for me to tell you that in pregnancy the composition of the blood is profoundly altered, and that the quantity is somewhat increased. Why is this? Because the quantity of blood before pregnancy is inadequate to meet the condition of pregnancy. We know the pregnant woman has to provide nutriment to breathe, to maintain blood circulation, to secrete and excrete for two individuals, herself and her fetus. All this means that extensive changes in the general system must occur. In order to carry on this extra work properly, certain viscera of the circulatory apparatus become somewhat modified in size and in function. I might mention the heart, the hypertrophy of which is a wise provision of nature to meet the increasing demands of the blood

supply in the advancing months of pregnancy. Other organs are likewise increased in size, namely, the liver, spleen and kidneys. The lungs and skin also become more active. Why is this change? My answer is, nature has an increased amount of work to do, and such being the case, she endeavors to increase the working capacity of her organs accordingly. It is my belief that in eclamptic cases the kidneys (possibly the liver, lungs and skin) fail to accomodate themselves to the extra work that the pregnant state requires of them. You are aware that the kidneys excrete largely from the solid constituents of the blood, and that many of the inorganic salts of the urine are elaborated in the kidneys. Toxic substances in the blood, whether generated within the body or derived from without, are in a great measure eliminated by the urinary organs. In pregnancy the need of this elimination is necessarily greatly increased or should be. If the kidneys fail to do this extra amount of work, accumulation is produced and intoxication results. At first this is hardly noticeable; but as pregnancy advances and the amount of toxic matter to be eliminated is increased in the blood, the greater is the effect of the poisons on the great nerve centers, and as a result, other symptoms develop that are characteristic of eclampsia.

Some writers state that eclampsia is the result of albuminuria, which is caused by intra-abdominal pressure, thereby interfering with the renal circulation. If this be true, why is it that a non-pregnant woman can have her abdomen as greatly distended by an ovarian tumor as from plural pregnancy at term, and yet not suffer from either? Statistics tell us that one in three hundred women who bear children suffer from eclampsia, and that about twenty-five per cent. of them die. I can say that I have had two cases out of a record of two hundred and fifty pregnancies. I take pleasure in making report of one of them. I can say, however, that both of my cases made a good recovery.

Mrs. A., primipara, 23 years of age, pregnant about 265 days. She enjoyed fairly good health up to within about fifteen days of full term, having had only light attacks of headache from time to time, with some stomach symptoms. On April 16, 1893, she first noticed that her feet were somewhat swollen. On April 18, about 3 P.M., she was taken with a severe headache, which grew gradually worse until about 8 P.M. At this time it was almost impossible to endure. Not suspecting anything serious, both she and her husband thought it would "wear off" after getting some sleep. She failed in doing so, and at 10 P.M. the pain in the head was no better. I was called about 11 P.M.; arrived fifteen minutes later. I found my patient in a very restless condition; the pulse was tense and about ninety-five to one hundred beats per minute; some nausea and vomiting. The quantity of urine voided during the preceding twenty-four hours was thought to have been about two and one-half pints. About one-half hour after my arrival she had a severe convulsion (epileptic in character), which lasted about five minutes. It was followed by more or less stupor. She would answer all questions rationally but slowly. I at once gave a five grain powder of phenacetin combined with one-eighth grain of morphia sulphate, which relieved the head and nervous symptoms for a short time. Her family physician, Dr. J. Hawes, of Greeley, Colorado, was then sent for; he being out of town, Dr. Wallace was

called. He arrived about 2:30 A.M. on the 19th. There was no question about diagnosis. Fluid extract of *veratrum viride* was given hypodermically, every two hours, beginning with two-drop doses, and was gradually increased one drop at a time until ten drops were given. Dr. Wallace remained until 3:30 A.M., and at Mr. A's request I took charge of the case. At 4 A.M. she had a second convulsion which was of longer duration and more severe in character. The face became more congested. She then went into a profound coma, and did not recover consciousness until about 10 P.M. After the second attack I immediately began giving hydrate of chloral and potassium bromid, of each thirty grains, in four ounces of warm water, per rectum, and repeated every three hours. The convulsions continued in spite of treatment, and by 11:45 A.M. April 19 she had had seventeen. Eight o'clock next morning I decided that the best thing to do was to empty the uterus, and the sooner the better for the safety of the mother and the child. Dr. Wallace was again sent for; he not having arrived at 10 o'clock, I proceeded to prepare the patient and myself for the operation, which was conducted under strictly antiseptic conditions. Squibb's chloroform was administered, more for the purpose of controlling the convulsions than pain, as the patient seemed to be insensible to pain. A soft rubber catheter was then passed into the bladder and about a pint of dark colored urine was obtained which contained about one-fourth in volume of albumin. Dr. Wallace had not arrived at 10:30, so I decided to operate at once with what assistance the nurse could render. The manipulations necessary in dilating the os excited uterine contraction and by the time I had sufficiently dilated it to admit the hand, the child's head had descended and version was impossible. Forceps were applied, and at 11:45 I succeeded in delivering a nine-pound boy. Life was extinct, however. I labored with it for some time, but without success. The placenta was removed by Credé's method with very little difficulty. Post-partum hemorrhage was very slight.

The *veratrum viride* was then continued in nine-drop doses hypodermically every two hours, as was also the hydrate of chloral and potassium bromid every three hours. Rectal enemas of peptonized milk were given every four hours. I also used dry cupping and sinapisms over the kidneys. As soon as the patient could swallow, a thirty-grain powder of compound jalap powder was given in a little water to open up the bowels, and a saline laxative given daily to keep up a free action. After consciousness was restored the hydrate of chloral and potassium bromid were discontinued, and potassium acetate with infusion of digitalis was given instead to keep up a free action of the kidneys. The usual diet and tonics were then given. Up to 6:30 P.M. April 19, she had had twenty-seven convulsions, making seventeen before the operation and ten thereafter. The albumin disappeared from the urine in about ten days. Diplopia was complained of from the fourth to the seventh day. My patient sat up in bed on the tenth day, and on the fourteenth day was dressed. She made a good recovery.

Wilson, Hammond and others, tell us that the eclampsia of pregnancy is caused by the presence of an excess of urea in the blood. How can this be, when Bouchard tells us that to kill a man, it would require the quantity of urea which he makes in sixteen days? Clinical observation is therefore here

in accordance with experimentation in denying to urea the power of producing the intoxication called uremic.

It seems to me that if the nephritic origin of eclampsia is correct as many writers claim, the kidneys would not have cleared up as quickly in this case. I do not think that the nephritic symptoms were in proportion to the gravity of the eclamptic manifestations. In closing I wish to state that I think it is a mistake not to induce premature delivery when the child is viable in eclamptic cases that do not respond to treatment after a fair trial. I firmly believe that in Mrs. A's case the child's life might have been saved if delivered after the third or fourth convulsion.

Since reading the above paper before the Colorado State Medical Society I have again attended Mrs. A. in confinement. The following is a brief history of the case: April 22, 1896, Mr. A. informed me that his wife was again pregnant, and thought "she was about five months along." He was greatly alarmed about her condition, fearing that she would again suffer as in her former pregnancy. I consoled him with the assurance that if the bowels and kidneys were kept active, that I did not think there was much danger of her suffering as before. I requested him to bring me a four oz., bottle full of her urine about every two weeks for examination. The first sample was examined on May 22. The examination revealed the following condition: Sp. gr. 1020, reaction faintly acid, albumin none, average amount voided in twenty-four hours at this time was about fifty ozs. Bowels acting from one to three times a day. She had at times a sense of fullness in the head, but it was never severe. Appetite good, obtaining from six to eight hours sleep in every twenty-four. Her condition remained pretty much as above stated, until about July 1, at which time she had some swelling of her feet, but it never interfered with her wearing her shoes. She also had some headache at times. Appetite was still good. Sleeping quite well; bowels and kidneys still active, some days passing as much as sixty ozs., of urine in the twenty-four hours. July 15 urine slightly turbid, sp. gr. 1015, reaction acid, amount forty-five ozs. She had slight diarrhea, and some nervous symptoms. Drank a great deal of water, so special attention was given to diet. Mr. A. did not bring any more urine for examination. It was not convenient for him as he lived 7 miles in the country; further he did not think it necessary as his wife was "getting on so well." On August 31 I was called to attend her in confinement. She was about four hours in labor, some adhesion of placental membrane, otherwise the labor was normal in every respect. Child, female, weight, eight and one-half pounds, well nourished and active. One-half hour before delivery, urine was voided, later examined and found free from albumin. Pulse, five minutes before birth of child's head, 98, full, soft and regular; ten minutes after completion of labor, 88, character the same. On my return visit (3rd day) she told me that she felt strong enough to sit up, but was instructed not to do so before the ninth day, at the earliest. She is now enjoying the best of health.

The above case demonstrates very clearly to me the fact that a woman once having suffered from an attack of puerperal eclampsia, and who recovers without any permanent injury to the kidneys, will not necessarily suffer from a second attack, if she again becomes pregnant. I do believe, however, that when the kidneys are permanently injured (whether the injury be great

or little) that she would be predisposed to trouble of this kind and that the danger of a second attack would be great. I have been unable to find anything in the text-books that I possess (and they are some of the best) bearing upon this subject. About one year after Mrs. A.'s first illness her husband consulted me, wishing to know what the chances were for his wife to again suffer from convulsions, if she should again become pregnant. I told him that the chances were *very* great, and that a second attack might prove fatal, but it seems that I was mistaken.

The above case is convincing to me that puerperal eclampsia is not caused primarily by a diseased condition of the kidneys, but as before stated, I believe the poisons, or toxic substances, whatever they may be, accumulate in the bloody, and if not eliminated through the natural channels, will produce inflammation of the kidneys, hence the origin of albuminuria. In some cases the great nerve center first becomes affected, causing the convulsion, the kidneys being only secondarily impaired; but if the toxins are eliminated through the natural channels the kidneys and nerve centers remain unimpaired. I believe it is the duty of every physician engaged to attend a case of confinement, two or three months in advance of the expected time (as they sometimes are), should in every case of swelling of the feet, especially if accompanied with some headache and stomach symptoms, give special attention to the kidneys and bowels, and in bad cases the skin and diet. By so doing, much or all of the "toxins" that accumulate to excess in the blood, could be largely eliminated, thereby preventing a possible attack of puerperal eclampsia.

A RATIONAL TREATMENT OF DIPHTHERIA WITH OR WITHOUT ANTITOXIN.

BY EMERSON M. SUTTON, M.D.

PEORIA, ILL.

Recognizing the doubts of all treatments, I submit four cases taken from my case book which were true diphtheria occurring in an epidemic, and which show a positive result:

Case 1.—July 18, 1891. Patient, a female, aged 15. Two brothers had just died of diphtheria when she contracted sore throat and fever with constitutional symptoms. The membrane formed over the posterior fauces, extended anteriorly and to the sides of the throat. Treatment, spray 2 per cent. cocain sol. very carefully and small amount, followed by second spray of Condy's fluid. Ordered to be repeated each hour till all soreness was relieved. Internal treatment, zinc sulpho carb. 1 gr. each hour. Quinia and iron tonic every three hours. Food every fourth hour, taken after spraying. Result, second day membrane disappearing from anterior pillars and only patches left on sides. No fever. Good appetite. Third day, no patches remaining, inflammation subsiding. Fourth day, throat not the least sore. Fifth day, discharged recovered.

Case 2.—July 11, first symptoms developed in boy aged 6. Membrane formed on sides and back of throat. Constitutional symptoms profound on the 13th, when first seen. Treatment: Cocain spray three times a day (at each visit). Permang. potash sol. spray each hour; gargle of solution every fifteen minutes or one-half hour. Internally iron and quinin. Pepsin cordial after food, which was always following cocain spray. July 14, throat not so sore; membrane disintegrating; general condition good. July 15, membrane only in patches. July 18, discharged well.

Case 3.—October 28. Boy aged 8 sent home from school with fever and sore throat, treated by family physician for tonsillitis. October 29, no better under sprays, antipyretics, etc. October 30 and 31, patches coalesced, forming membrane, constitutional symptoms became alarming. Treatment inaugurated for diphtheria October 31, spray 2 per cent. cocain sol. followed by Condy's fluid. Spray every two hours. Internally, milk every three or four hours; 5 drops each, digitalis and nux

vomica tinctures in spirits of mindererus at same intervals as food. November 1, constitutional symptoms less profound, membrane disintegrating. Additional treatment, 1 gr. mild chlorid followed in six hours by magnesia. November 2, much better. Nov. 3 and 4, membrane disappeared, sleep undisturbed after 8 o'clock evening spray. November 5, eats, feels well. Tonic given of quinia and ferrum. November 6, discharged well.

Case 4.—B. N. aged 11, December 3 contracted diphtheria from association. Constitutional symptoms severe, great prostration, membrane extensive, extending to anterior nares. Treatment: Carbolic acid gr. 1, cocain 2 per cent. sol. 3ii, use spray cautiously every two hours, gargle every fifteen minutes with Condy's fluid. Internally, tonic, calisaya. December 4, soreness disappeared, membrane disintegrating, less inflammation. December 5, patches only remaining. December 6, patches disappeared. December 7, discharged well.

Not going farther into the pathology than to state that either preceding membrane formation an intense hyperemia may exist and form a local affection at first, the disease becoming constitutional as well at a later period, or the constitutional may precede the local symptoms, but at the point of infection passive hyperemia first takes place and exudate follows. A treatment that will relieve this hyperemia will prevent the exudate and subsequent systemic poisoning. Such a remedy is a 1 or 2 per cent. cocain solution acting on the capillaries, used in the form of spray. I first tried this in 1891, after noticing the continuance and even increase of the primary congestion following the use of the usual spray, especially observed after hydrogen peroxid, and I found that the immediate relief from the soreness was so manifest that it required no coaxing to gain consent for repeated treatments. The patient could take nourishment at once following the spray, which is itself a great desideratum, and recovery has taken place rapidly in every case, more of which I have to report. A word as to spraying. In some cases it was necessary, at first, to have the patient inhale the spray, as the deeper parts of the throat were affected, and in none of the cases were untoward effects observed.

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TUBERCULIN IN OBSCURE MANIFESTATIONS OF TUBERCULOSIS.

BY W. H. WEAVER, M.D.

CHICAGO, ILL.

If the earliest symptoms and signs of consumption were as easily definable and as pathognomonic of the disease as those manifested in the later stages, it might be easily diagnosed in its incipency. But, unfortunately, this has not been the fact. In a great many cases the onset is sudden or occurs during the progress of a severe cold or bronchial catarrh, or following in the wake of some other acute disease. Frequently, however, it is ushered in by symptoms which point to no particular form of disease, and it is this class of cases that is the most puzzling until we find pronounced symptoms pointing to lung infection. There are often certain symptoms of a general constitutional impairment, insufficient in themselves to render a diagnosis possible, but which do point to a definite disease if properly studied. There are many cases occurring in active practice in which a positive method of diagnosis would be of the greatest advantage. It is often easy to find out what a disease is not, but to tell what it is, is quite another matter.

The patient calls upon his medical adviser frequently, with the consciousness that there is some-