

noteworthy symptom has been such marked photophobia, that she has been confined to a dark room the last six months. On April 19, I removed the diseased, displaced ovaries and made bilateral anterior fixation of the uterus. At the end of a week she declared that she felt better than for months; she was not uncomfortable in a well-lighted room ten days after the operation. In two weeks she could read and write a little. She was discharged May 22, declaring that she felt better than for some years. She uses her eyes almost without discomfort.

The conclusions to be drawn from this paper are obvious: The science and art of medicine has advanced during the present generation with such tremendous strides that it is impossible for any man to be wisely conversant with it in all its subdivision and detail. In the vista of the future many unexplored fields are inviting keener research, with the promise of a fruitfulness to the race, the end of which none may safely prophesy. Already our knowledge is sufficient, if wisely applied, to increase the longevity of the race one-third, divide its suffering and diseases and double its productive capacity.

Specialism in medicine is the natural outcome of modern medical knowledge. Yet we must remember that specialism must be founded on a broad, thorough, scientific knowledge, and this knowledge must be brought into daily application by the specialist, if he becomes the really wise adviser. Other than this, the old contention of the disciples will be repeated in the statement, "I am Paul or I am Apollos," and discussions like the present may end in sad disaster; clad in the panoply of complete armor, throwing down the gauntlet, each to the other, one declaring that the fault is apparent for the shield is golden, while the other as stoutly affirms that it is of silver. When too late, it is discovered that the disaster has occurred through the intensity fraught by partial knowledge.

Most men declare that they are possessors of the rare commodity called common-sense. A brief analysis teaches that it is only special sense in common use, and that all men were intended to be armed with this five-sided shield. Only when used in this way can the special investigator be made of common profit.

AUTOINTOXICATION FROM DEFECTIVE MENSTRUATION.*

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One of the principal purposes of menstruation is ridding the maternal blood of the unused fetal food. It has been known for generations that the fetus must be fed in some way, but until the last decade due allowance has never been made for the methods by which this food is obtained and the routes by which it is gotten rid of when unused.

Jacobi and Stephenson were among the first to observe the increased oxidation by which Nature burns it up. My own original work, so far, has dealt almost exclusively with the mechanics and hydrostatics of this extra wave, but what I now propose to give you is largely chemical.

We all now know that during the child-bearing age the woman eats for two. The healthy woman in the non-impregnated state gets rid of this extra amount of food by menstruation. During the intrauterine life of the child she passed it through the placenta to the child, and re-

ceives back from the child the products of its oxidation, which she in turn passes off through her own eliminative organs. After labor she passes it to the child through the breasts. As soon as the child is weaned, menstruation is re-established. This is common knowledge to you all, and only needs a passing mention; but I repeat it simply to emphasize the fact that every healthy, child-bearing woman has a superabundance of nourishment in her blood which must be disposed of in some way.

Before making a specific application, let us for a few minutes go to comparative pathology. Every one knows that a horse is accustomed to hard work; if this work suddenly ceases and he is allowed to stand in his stall and is fed the usual amount, after three or four days it becomes a very dangerous thing to take him out and work him to the same extent that he had been accustomed to the previous week. Many of you have had your pets, after such treatment, suddenly go down with that acute gout which every veterinary surgeon is constantly treating. You know that it is due to the retention in the horse's blood of the food that he would have burned up had he been kept at work. During his idleness, this food has been more or less stored up in his tissues, but when you take him out and drive him rapidly it is forced out of the muscles, cellular tissue, liver, etc., by the increased heart-beat, into the circulation. During the idle state it has not been elaborated as it should be, and instead of being burned up and disposed of, it has been gradually transformed into a toxic substance. Had the horse been kept at work, while there might have been a small amount of this toxic substance formed, his kidneys, intestines and skin would have disposed of it as rapidly as made; but when his idleness has allowed it to accumulate in the tissues, the sudden increased heart-beat has thrown a dose of it into his circulation which is simply overpowering to his nervous system, and the result is that your horse falls in the street, and, besides a veterinary bill, you have weeks or months of anxious watching as a penalty for your carelessness.

Another illustration, which is known to a few of you who handle fine cattle: Take a high-bred Shorthorn, Jersey or Alderney, of which your milkman is very fond. If he does not understand the laws of parturition in cattle, while the cow is dry before having her calf, he will give her the same amount of food that she has always had, and is liable to call your attention to how fat and sleek she is getting. The labor comes on, the calf is born; and within twenty-four hours your cow is down with a typical attack of puerperal eclampsia. The veterinarians call this puerperal apoplexy; but one case that I watched carefully proved to me that there was no apoplexy about it, as there was no paralysis of any muscles, but in every respect a typical eclamptic attack. The post-mortems in veterinary literature show the same thing. Their management of the case is the same as that of the horse that I have just described; in other words, to stimulate the excretions to their highest point, and to hold off all forms of food except water. All this proves that even in the lower animals, no matter whether pregnant or not, and that even in geldings, a superabundance of nourishment in the blood, to say nothing of undigested nourishment in the intestinal canal, is a very dangerous thing, and when it accumulates in such large quantities that the emunctories can not easily handle it, it at once becomes a violent poison. This is the key with which we can unravel many of the puzzles that have been annoying us for generations.

To begin with pregnancy itself: All child-bearing

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women eat for two. It is a matter of common observation that the healthy pregnant woman eats a great deal more than at any other time. While she is saved the elaboration of part of the food by the fetus, still her excretory organs are called on for double duty. If the fetus does not consume the extra amount that she has put into her blood, she has to dispose of it herself as best she can. In the vast majority of cases the first danger-signal which Nature gives us is trouble with the kidneys, but there are many cases of eclampsia in which the kidneys themselves are perfectly normal. These are exactly like the case of the horse that falls in the street. There has been more food put into the circulation than the mother and child combined can possibly dispose of. In those cases where kidney trouble appears, the kidneys have resented this extra amount of work, and in their weakened condition have allowed the germs to lodge. This most awful disease is very simple and easily understood when we think of it simply as a reproduction of what has occurred to the horse just mentioned.

Why is it an impossibility for some women, no matter how they are fed or how they are taken care of, to have puerperal eclampsia? My answer is that all such people have a fine eliminative apparatus, and that no matter how much work is thrown on them, they are equal to the emergency. But we all know that the class of people called "gouty" have very poor excretory organs, and consequently allow these poisons to accumulate in their bodies, just as the horse does when standing in his stall.

Haig was on the right track in his analysis of the human family, and has proved beyond a doubt that these defective excretory organs are transmitted from father to son. This rule I have used in the analysis of my cases for years, and from the family history of patients, I can always tell you those who are likely to have nervous troubles from either delayed menstruation or the menopause. Time and again I have been struck with the similarity of symptoms presented by a young girl with delayed menstruation and a woman naturally passing through the change of life. In both cases it is the retention in the blood of material which Nature has stored up to feed the fetus, and no matter what prevents this material from being passed off in the natural way, the patient has a greater or less dose of poison.

As to what these poisons are, I can not yet tell you, for there certainly are a great many different ones. Dr. Rachford, of Cincinnati, has demonstrated that the xanthin bodies produce a great many violent symptoms, and that in menstrual epilepsy they are the specific poisons which produce it. It was very interesting to watch the toxic effect, on mice and guinea-pigs, of this poison obtained from the most severe case of menstrual epilepsy I ever treated. The symptoms were identically the same as those in the patient. Dr. Rachford is still working on the subject, and I hope that we will not only find exactly what these poisons are, but that with this knowledge, we may find a quick way of getting rid of them. His work has been confined to the nitrogenous group, and clinically, I think that is principally at fault. In addition to the presence of paraxanthin, I believe there are a number of the other xanthin bodies which have a great deal to do with it. We now know that xanthin has a great deal to do with rheumatism, and I have cured one case of rheumatism by trachelorrhaphy. The patient had had rheumatism ever since the birth of her youngest child, then two years old. Her joints were crippled, and one knee was especially enlarged and tender. Since the accident she had had intervals of five and six weeks between menstruations. I performed

trachelorrhaphy without thinking that it might have any effect on the rheumatism, but, to my great surprise, when she got out of bed, all of her joints were well, and have remained so up to this time, four years after the operation. She was of a markedly gouty diathesis. The injury to the uterus had not only disturbed its time-lock, so that menstruations were delayed and not more than ten a year, when there should have been thirteen, but the inflammation of the organ was so great that menstruation could not be full and free. Not only the thickening of the tissues themselves caused by the invasion of germs, but the chemical action of the ptomains produced by these germs, so changed the blood that the proper amount of elimination was interfered with, thus leaving in the blood many of the nitrogenous bodies which should have been eliminated.

I have had many other cases along the same lines. The repair of an injury or the cure of an inflammation of the pelvis does a great deal to regulate menstruation, and with this regulation comes the relief of headache, migrain, neuralgia, and all the other nervous symptoms. This relief is often assisted by the removal of scar tissue at the time of the operation, but this scar tissue could not cause the general systemic disturbances which most of these patients have. The relief comes gradually in most of these cases, and while each successive menstruation is better and better, still perfect relief does not come for from six months to a year after the operation. This proves to me, in the light of our present knowledge, that the relief is due to the draining of the system of accumulated poisons by perfect menstruation. An ordinary catarrhal endometritis causes many of these systemic symptoms, and, relief does not come immediately after the curetting necessary to cure it, but follows the same rule as the operations I have just mentioned.

I am sure that the majority of nervous symptoms of gynecologic subjects are due to the retained excretions which defective menstruation has failed to eliminate. Another great cause of retention of secretion is the intestinal infection which accompanies nearly all these cases. Given a pelvic lesion which interferes with the menstruation, the reflex wave of the blood-pressure necessary to produce menstruation takes out its force on the intestinal canal, the solar plexus and the other nervous apparatus of the abdomen. This results in a congestion of the whole portal system. Congestion once established, even though it be for only a few days, allows the omnipresent colon bacillus to lodge in the lining membrane of the intestines, both large and small, so that by the time the next menstruation comes on there has been precedent congestion of a part, or the whole of the alimentary tract. The next period is still interfered with by the same lesion, and the blood has not only the ordinary fetal food to get rid of, but also the ptomains which it has taken up from this irritated intestine. The temporary paralysis comes on again, the liver is called on for double duty, and with this vicious circle once established, it is no wonder that by-and-by the liver stops work. This accounts for the indigestion, constipation and general intestinal disturbances that always go with these cases. It also explains why it is that many women who are habitually constipated have a slight diarrhea during the menstrual week. For some reason the uterus has failed to eliminate as it should, and the liver takes up the compensatory work. The older gynecologists found out clinically that these cases did better under free purgation, but now we know the reason for it, and the man who watches the digestive organs carefully will always get the best results.

So far I have been dealing with the nitrogenous compounds, but the starchy foods are also capable of a great deal of mischief. When they are not burned up and converted into carbonic acid and eliminated as they should be, there results the most toxic of their products, oxalate of lime. This substance is troublesome; the symptoms which it produces when left in the circulation are manifold. It is not a trifling symptom, and should always receive due attention from gynecologists.

Nature has one other method of dealing with the starchy foods which has not received its full amount of attention, namely, storing it up in the tissues in the shape of fat. The "hotel anemia" that we are now hearing so much about has as one of its elements this very point of the storing up of fat in the tissues. These lazy, wealthy women, who are not willing to take their share of the troubles of life, and want freedom from care, and all the luxuries without any exertion, either physical or mental, are the ones about whom I speak. Like the goose in preparation for *paté de fois gras*, they are content to do absolutely nothing. In this way not only do their muscles run down, but their hearts become so extremely weak that they are no longer capable of getting up a good menstrual wave. Consequently there is little or no elimination of any kind. They are not only poisoning themselves all the time by the nitrogenous group which we have just been talking about—whence come their neuralgias—but they are not taking exercise enough to burn up the fats. Nature does the best she can under bad circumstances, and stores this up in the form of the obesity which is so commonly seen. This accumulation of flesh is sometimes seen in active women, but they are generally the patients with infantile uteri who have never had a proper menstrual wave, so that the surplus which should have been eliminated by the menstrual wave is left in their tissues in the shape of fat. This also explains the transient fat deposited at the menopause. The hardening endometrium at the age of 45 is incapable of getting rid of all that should be eliminated, and a portion of it is stored up in the tissues; but after Nature has re-adjusted itself and the digestive organs have stopped elaborating the infant's food, this fat is re-absorbed, and the patients are restored to about the same appearance they had before the menopause.

It would be useless before this body to discuss therapeutics. When the main causes of the difficulties have been pointed out, their treatment can be easily indicated. The majority of the bad cases belong to gouty families, and for their management I must refer you to Haig and Dr. Rachford, on the leucomain poisons. Elimination is the key-note of their work. Exercise is only another form of elimination, as it forces a complete oxidation.

In closing let me say, though, that if I have impressed on you the fact that the child-bearing woman always carries a superabundance of food which, if not properly handled, becomes a violent poison in some cases, these few minutes have been well spent.

STUDY OF LEPROSY.—Drs. E. Ehlers, of Copenhagen, and Cahnheim, of Dresden, have completed their study of leprosy in Crete, undertaken at the request of Prince George, of Greece. They find the disease a mild type, with a tendency to recovery, favored by the climate, and not spreading. They personally examined nearly 300 cases and estimate the total number on the island at about 700. The authorities are planning a leprosarium on an island off the coast for rigorous isolation of all cases.

TUBO-OVARIAN ADHESIONS—THEIR REFLEXES.*

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The literature of inflammation of ovaries and Fallopian tubes and the resulting adhesions is copious. Wherever effusion is thrown out, organization of lymph may be expected and the binding of parts together results. The cause is usually complex, and recurring attacks may be anticipated. Each outbreak leaves similar exudates, which develop analagous formations, until the parts may be buried beneath the new-formed tissue. If this process is modified by only one attack of inflammation of moderate intensity, or several recurrences of slight severity, adhesions form of simpler nature, and peristalsis, muscular movements and postural influences will form bands, narrow or broad, between contiguous parts, according to the time elapsing after an attack. Hence pelvic adhesions involving the tubes and ovaries may be divided into two classes, the massive, intensely adherent form, whose removal requires great delicacy and strenuous effort, caused usually by severe chronic suppurative or intense inflammatory tubo-ovarian diseases, and another kind, where structural changes are less manifest, and the diseased organs more easily removed. The first class is readily diagnosed, the latter often requires careful elimination of all other possible causes of disease.

One form always causes a concentration of distress in the pelvis at the original seat of the disease; the other causes vague indefinite local manifestations, and by reflex effects causes insidious, but far-reaching, disturbances at foci removed from the first point at which inflammation was engendered. The first form is ordinarily of gonorrheal origin, the second results with equal certainty from old exanthematic adhesions of the appendages, caused by acute inflammations occurring during adolescence. The former threatens to destroy life suddenly; the latter renders life miserable from puberty to the menopause. Reflex manifestations are most prominently associated with the latter form of tubo-ovarian adhesions, and to this form this paper is especially directed. The literature of tubal and ovarian inflammation of this type is sparse and the diagnosis is difficult.

The pathology of tubo-ovarian adhesions, like that of other pelvic diseases, must follow, and not lead, in our conception of the truth relative to conditions and their direct and indirect sequences. Microscopically, the mucous surfaces of the fimbriae are agglutinated upon themselves in a club-like mass, or, as is more common, the infundibulum of the tube is fastened to the ovary, as the boy's disc of wet leather is attached to the stone he wishes to raise by a string, and in this position the fimbriae adhere, yielding only in places, so that the adhesions become of band or string-like character. As temporary adhesions occur normally at menstrual periods, it requires only slight inflammatory exudate to fasten the parts together inseparably. The rupture of small cysts may induce sufficient inflammation to give this effect, and the gross appearance of the disease under consideration is that of a cystic, cirrhotic ovary, with calcareous, sometimes marble-like concretions, the tubes not swollen, as is usually the case, and the uterus undergoing retrograde metamorphosis, if it be not infantile

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