

Lecture.

LECTURES ON THERAPEUTICS.

III. CARDIAC DEPRESSANTS.¹

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GENTLEMEN:—To-day's lecture I expect to devote to the consideration of the cardiac depressants especially a study of the treatment of what we may call the syncopal state; and the next lecture will be given to the discussion of opium with especial relation to the treatment of the condition of narcosis or respiratory depression.

In thinking over how I should put this great subject in its bold outlines before you, in the course of a single hour, it has seemed to me that probably I had better introduce the discussion by first, giving you very briefly the symptoms which are produced by certain drugs that are employed as cardiac depressants. Hydrocyanic acid is frequently spoken of in the textbooks as a cardiac depressant. It is, however, a drug of very little or no practical value in medicine and the long-continued use of this remedy is one of the strange instances of the perpetuation of what was originally a therapeutic delusion. Hydrocyanic acid, when taken in toxic dose, usually kills in from five to ten minutes. If the patient survive twenty-five or thirty minutes, recovery almost always occurs, and even after a large toxic dose all symptoms will have ordinarily disappeared in one hour or two hours. The preparations of hydrocyanic acid which have been commonly given in the treatment of coughs and other affections, contain so little of the acid that they produce no perceptible symptom. If, when a remedy be given in toxic dose, its effects disappear in one or two hours, how long will the action of that remedy last when it is given in dose so small that it has no perceptible influence at any time? Yet hydrocyanic acid is continually given by practitioners in minute doses every three, four or five hours, and men imagine that they get good results from such use.

There are three drugs, however, which have power as cardiac depressants and which have been enormously employed. These are tartar emetic, aconite and veratrum viride.

When a small dose of tartar emetic is given it produces only some slight general sense of relaxation. If a larger dose be exhibited it causes excessive nausea and vomiting. This vomiting is repeated, is attended with lessening of the frequency and still greater lessening of the force of the pulse, with general muscular relaxation, with free sweating. If a still larger dose be administered, or if antimony in any preparations be taken in toxic quantity, the symptoms are pronounced. There are, first, a slight, burning pain, then nausea, then vomiting, then purging, then muscular relaxation, great fall in the force of the pulse, free general sweating, fall of temperature, the symptoms of collapse, pinched facies and finally cramps—a general picture which resembles that of poisoning by the microbe and ptomaines of cholera.

If, instead of taking tartar emetic, our patient, intent upon suicide, has taken aconite, the phenomena which are produced are different. Usually the first symptom is tingling, the tingling being first felt about

the mouth and lips, the parts with which the aconite has come into immediate contact. This tingling soon spreads over the whole body and is felt especially in the extremities. Now the muscular strength wanes, the pulse decreases in its frequency and loses in its force, the temperature begins to fall and if the dose have been large enough the symptoms of general depression grow more and more marked and by and by there is a condition of profound muscular relaxation with a rapid, feeble, thrready pulse that scarcely can be felt under the fingers, with marked fall of temperature, with irregular breathing, with a voice that is suppressed and whispering from weakness; and so with consciousness preserved, with the functions of respiration and circulation failing and with collapse becoming more and more marked, the man passes down in the valley of the shadow of death, perhaps to come up again into the sunlight, perhaps to rest forever in the darkness.

When we come to a study of the action of veratrum viride, we find the symptoms are somewhat different. If the dose have been small the pulse becomes slow, and with the slowing of the pulse, there is a loss of force. The beat is large and full, reminding you perhaps of the digitalis beat, save in the lack of force and in the compressibility under the fingers. Increase the dose and the pulse force grows less and less. Nausea and vomiting come on, the vomiting less excessive and repeated, and with the vomiting the pulse loses more and more. The muscular strength fails, the reflexes are diminished, and by and by the symptoms of collapse come on and the patient goes down as he did under the influence of aconite, but with this difference: death, under the action of aconite, is very common; death under the action of veratrum viride is very rare. I doubt, myself, whether it be possible for a single dose of veratrum viride to kill a man, the reason being that the vomiting produced by the large doses causes its removal from the stomach before much of it is absorbed. Certainly the strong preparations of veratrum viride have been taken by ounces and men have come up out of the darkness into light again.

I have drawn this brief picture of the symptoms produced by these remedies in order to give you my reasons for selecting between them, and the first thing that I want to do is to throw tartar emetic right out of court. It is of little value as a practical medicine, rather it is of no value according to my thinking, save when only given in small doses in the treatment of acute bronchitis and similar affections and even here I believe it is far exceeded in power as a sedative expectorant by the citrate of potassium; indeed, my experience with the citrate of potassium is, that it is the best sedative expectorant we have, but it must be given in doses of one-half to one ounce a day. The reason why I say tartar emetic should be thrown out of court brings us face to face with an important practical therapeutic problem which you older hearers are fully acquainted with, but which I shall dwell upon for the sake of my younger hearers, namely, the difference between depression and exhaustion. Unless the practitioner have an absolutely clear, fixed idea of the difference between these two states he must forever remain a very bad therapist. Depression is a condition in which the powers of the system or of the part, as the case may be, are kept down by the presence of some force. Exhaustion is the condition in which the power has gone out of the system. De-

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pression is a condition to be reached by stimulation. The hand that presses down must be lifted by the force that draws up. Exhaustion can never be relieved by stimulation, but by food and rest. In exhaustion the stimulant is only valuable in so far as it aids in procuring rest and in taking food. The man in the last stage of exhaustion may have no power to digest the ounce of milk which is necessary for his salvation and the alcohol which is given by stimulating the stomach and the system may enable him to digest that milk. Under such circumstances the stimulant becomes valuable in exhaustion, but except for this purpose it is of no real service. Depression is the condition of a man kept down by some force. I have sometimes put it to my classes: depression is Sampson the strong man, bound with the withes of Delilah, which he breaks under the stimulus of antagonism. Exhaustion is the strong man, Sampson, with his hair cut off by Delilah, so that the power is gone out from him. Now I condemn tartar emetic absolutely as a cardiac depressant, because it produces exhaustion besides depression. It does depress the vital forces, but it purges and vomits and runs out the nutritive fluids of the body to such extent that the man is left, after the depression has passed by, exhausted; power has been taken from him, and the old Rasori treatment of pneumonia, while it was founded on good reasoning, resulted in bad results chiefly because the tartar emetic produced, not simply depression, but also exhaustion.

When we come to the question of aconite, I find myself not prone to use this drug when a very powerful influence is wanted. Aconite is a very useful cardiac depressant in cases of chronic cardiac disease; but in acute disease I myself, when I want to make a strong impression, do not use it. I am a little afraid of aconite because of the dangers which attend its use. Probably no remedy, unless it be opium or arsenic, has produced as many deaths by poisoning as has aconite. Then, again, our knowledge of the action of aconite is comparatively uncertain. We know that aconite depresses the frog's heart, and we know that aconite depresses the heart of a mammal and lowers enormously the arterial pressure, but we do not know positively what is the action of this drug upon the vasomotor system. Aconite paralyzes the peripheral sensory nerves. It is this local action of the drug which makes the tingling about the mouth and lips. It is the influence of the drug carried by the blood to the peripheral nerves that makes the tingling in the extremities. The paralysis of the sensory nerves interferes with our ordinary physiological tests as to the integrity of the vaso-motor centres; but it has been found in the aconitized mammal that when the poles of a battery are placed on the vaso-motor centre in the medulla there is an immediate uprising of the arterial pressure, evidence that the vaso-motor system is not paralyzed. We have not sufficient evidence for positive conclusion; but what evidence we have does not seem to indicate that aconite is a distinct vascular paralyzant.

With veratrum viride I am very familiar, because I have studied it very carefully in the laboratory and sick-room. I shall not discuss in detail the general action of this drug, only its influence upon the circulation. It suffices to say that it is a depressant to the motor spinal cord and the respiratory centre. There are two alkaloids in veratrum viride. Chemists have differed and disputed concerning the identity of these

alkaloids with other alkaloids; but it will serve our present purposes simply to call one jervine and the other veratroidine. When you inject jervine into the circulation of a lower animal, you get slowing of the pulse and fall of the pressure, until finally the pulse-wave gets very small and vapid; and if the dose have been sufficiently large, the pressure falls to zero. The slowing of the pulse is independent of action upon the pneumogastric nerve, for it occurs after section of the nerve; indeed, under the influence of this alkaloid the pneumogastric nerves are not affected at all. I have found also by repeated experiments that some fall of the arterial pressure occurs after section of the spinal cord high up, that is, after separation of the vaso-motor centre in the medulla from the periphery. Experiments upon the frog's heart have also proved that the alkaloid directly depresses the heart-muscle or its contained ganglia; jervine is therefore a cardiac depressant.

On the other hand, I have found that if we apply in the jervinized animals the test which we have for the condition of the vaso-motor centres we find that these centres are paralyzed. There are two tests. If you produce asphyxia the carbonic acid causes vaso-motor spasm everywhere by acting on the medullary centres, and so we have under the influence of asphyxia in the normal animal great rise of the arterial pressure. If you galvanize a sensitive nerve, you will produce a reflex general vascular spasm and a corresponding rise of the arterial pressure. I have found that in the animal under the influence of jervine, at a time when the heart-beats are still large and full, the pressure does not rise under asphyxia or under the galvanization of a sensitive nerve. We know, therefore, that the alkaloid jervine, whilst it depresses the heart directly and lowers pressure in this way, depresses also or paralyzes absolutely the vaso-motor centres in the medulla and lowers pressure in this way. It weakens the heart, but it opens out the blood-paths also. Veratroidine, the second alkaloid, afforded me one of the most curious sights I ever saw in the laboratory. I found, if I injected it directly into the circulation, I got a blood-tracing right down to zero, if the dose had been large enough. If the dose had not been quite large enough, the pressure fell to zero at once and then went thirty per cent. to forty per cent. above the norm. I soon found that this rise was not due to any direct influence of the drug, because when I produced artificial respiration in the curarized animal there was no such effect. In other words, this drug is a powerful respiratory paralyzant, and when injected into the circulation it instantly, if in proper dose, paralyzes the respiratory centres and causes the asphyxia rise of pressure. I then took a dog, maintained artificial respiration, and gave about one-thirtieth of a grain of the alkaloid. The pressure dropped to zero, and stayed there. Then I found that if I injected into the dog, instead of the one-thirtieth, a large dose, the pressure, instead of staying down, instantly jumped up to near the norm; in other words, after having killed the animal with a small dose of veratroidine I was able to bring him to life again by a large dose of the drug. This experiment, I should say, was performed after section of the accelerator nerves. Here is a fact illustrative of a certain truth which underlies homœopathy, that certain drugs act antagonistically in small and large doses; but it is only certain drugs, and not all drugs. Puzzling over this thing, I then thought I would try section of the pneumogas-

tric nerves; and just as the pressure got to zero, I cut the pneumogastrics. Instantly the pressure jumped up. Now the secret was out. The small dose of veratroidine is a tremendous stimulant to the inhibitory apparatus of the heart. The large dose of veratroidine paralyzes the inhibitory apparatus; and so the small dose arrested the heart in diastole, and the large dose set the heart free from excessive inhibition. The large dose acted exactly as did section of the nerve. I may say that I went on and proved experimentally that the nerve under the influence of minute doses was in a condition of hyperexcitability. In all these experiments with veratroidine the animal was kept alive by artificial respiration; for in all of these doses the veratroidine naturally kills at once by paralyzing the respiration.

When we come to look at *veratrum viride* as a whole, we find that the jervine dominates the action of the drug. Veratroidine is only present in exceedingly minute amount, jervine in large proportion; and hence the action of *veratrum viride* is the action of jervine. It is a powerful cardiac depressant, acting upon the cardiac muscle or its contained ganglia; but it is also a powerful depressant of the vaso-motor centres in the spinal cord.

Now, with these remarks, let us pass on to the consideration of the application of the use of these drugs to practical medicine; and first, in regard to their employment in chronic cardiac disease, I shall say very little about it. We simply know that aconite and *veratrum viride* are useful remedies in the treatment of cardiac hypertrophy, not simply absolute hypertrophy, but relative hypertrophy, hypertrophy that has gone beyond the compensatory point. I want, however, to call your attention more minutely to the use of *veratrum viride* in the treatment of acute diseases. It is to me a little strange that, as you go from the North to the South of the United States, the uses of *veratrum viride* becomes more and more common. In some of our Southern States it has been used as a panacea for everything, and I have found it given very freely in typhoid fever. Under these circumstances *veratrum viride* becomes a warm friend of the undertaker; it is the jackal that goes ahead to show that the lion of death is coming. Of course, a powerful cardiac depressant given to a man who is in the death-struggle with depression and exhaustion adds to the load which the man must carry, and will often turn the scale. It is, however, entirely different in diseases in which the general systemic reaction is very high; and especially is it different in the treatment of pneumonia. When we approach this subject, the first thing that we must do as therapists is to rid our minds in a measure of our pathology, that is, I mean we must view the pathological facts from an entirely different standpoint from that from which the pathologist views them. He calls all of certain cases, pneumonia. He tells us that pneumonia is the outcome of a poison of the system by a coccus; but we, as clinicians, know that the map of the death statistics of the United States is black with pneumonia out in Dakota where the air is most pure and it is comparatively free from pneumonia in Philadelphia and the Southern cities where the air is bad, and every ranchman knows that when he faces a northern blizzard he takes his life in his hands and that he is liable to die from pneumonia. Are we to believe that there are great depots of frozen cocci up in the far North, which with the remains of the masto-

don have outlasted the centuries to be carrying death over the Dakota highlands? Now, gentlemen, I don't say that there is not a coccus in pneumonia any more than I say that there is not a tubercle bacillus in the production of phthisis, but this I do say, that under the teachings of pathological laboratories the profession is in my opinion in danger of being swept away from the clinical aspects of disease. The cocci and the tubercle bacillus are like the poor,—in that we have them with us always. The tubercle bacillus fills our street cars, it haunts not only the hospital ward, but the salon and the parlor, and the important thing for us is to have the vitality or the power to resist the bacillus. In my opinion, the bacillus is often like the vulture of the desert in that it sees a waning of the forces of life and settles upon a man or woman that has not the power to live. It is not by treating the bacillus but by treating the human individual that we are going to do good in these diseases. We are told that the great Atlantic Ocean swept over the land of Southern England and that Mrs. Partington undertook to sweep it out with her broom. Now, Mrs. Partington was good with the broom, but no match for the Atlantic Ocean. We may be good with the broom of hygiene, but no match for the tubercle bacillus, and we can only hope to fight it successfully by treating the man. And so, also, is it in pneumonia.

There are pneumonias which are one thing, and there are pneumonias which therapeutically are another thing. Pneumonias therapeutically may have no more relation with one another than a pneumonia has with a dysentery, and are no more to be treated as the same disease though we label them with the same name. When I speak to you about the treatment of pneumonias, I do not mean the treatment of senile pneumonias nor of asthenic pneumonias; I mean the treatment of frank, sthenic, hard pneumonia, that comes upon a man as with the bound of a lion. I say here that I am certain, that when our forefathers bled these cases, they saved lives that now we lose. I am out of date perhaps. I am behind the times in one way, and I am ahead of the times in another way. The pendulum is beginning to swing a little towards venesection; but the thought I want to leave with you is that by means of this drug (*veratrum viride*) we can get all the good that comes from venesection without the dangers of venesection. You bleed a man, you depress him, lower the immediate activity of the vital forces, but you also take away power; and by and by, when the fight comes, that man is exhausted. Venesection has the dangers that surround tartar emetic. Remember that the abdominal vessels in a man will after death contain all the blood in his body and not be full. We forget very often that it is the abdominal vessels that dominate the circulation. Some of you must have seen in the operation of ovariectomy a woman dying, blanched, upon the table, revived by a dash of hot water into the abdomen. The woman revives out of her syncope because hot water contracts the abdominal vessels. When we give a man *veratrum viride* we dilate his abdominal vessels; we bleed the man into his own belly. By the action of this drug we get the influence of a venesection; but instead of withdrawing the blood entirely from the body, we put it in a reservoir whence we can pour it back when the proper time comes.

I told you at one of my previous lectures that I would take this opportunity to speak to you in regard

to the use of cardiac stimulants in pneumonia: and here again I am speaking of the pneumonia of the asthenic type. Certainly, a cardiac stimulant in the asthenic type everybody agrees must be used; but I want to call attention to the way in which death is brought about in pneumonia. There is high temperature, which weakens the heart. There is also a portion of the lung stopped up by exudation. What does that mean? Suppose we represent by this straight tube the lumen or calibre of all the vessels of the lung. When we put exudation into the lung we compress the tube and reduce the calibre of the vessels one-fourth, one-third, one-half, as the case may be, according to the amount of the exudation; and what do we have? A right heart weakened by heat and by the exhaustion of effort and depressed by the poisons of pneumonia finds itself in the presence of an ever-growing obstruction; and so the right heart pushes and shoves to get the blood through the narrowed vessels, and is more and more strained, until at last the right heart goes into that condition which I spoke of as occurring in chronic heart disease — over-nervous stimulation, irritability, failure of diastole, failure of systole. Give that man digitalis, and it puts its strong hand on the inhibitory nerves of the heart, and says, "Be still"; and the heart grows quiet, and diastole lengthens. It puts its hand on systole, and drives the blood through the narrow vessels. Under these circumstances digitalis, increasing the power of the right heart, may save the life of the patient.

There are one or two remedies which I want to speak of here, in passing, which are useful as an aid to digitalis; and let me say that the man who gives his pneumonia case at this time expectorants is the man who has a compact with death against the patient. They simply take away the little digestive power that is left to the man. Strychnine is of service, and cocaine and respiratory stimulants; but I want to call attention to the use of musk, an old remedy, but invaluable in the treatment of all kinds of sudden crises in fevers and pneumonias. It was long ago pointed out by Trousseau as a sheet-anchor in the treatment of alcoholic pneumonia. I have seen digitalis and musk and respiratory stimulants carry an old man of seventy-three or four who had not been drunk but once in twenty years (and that was all the time) right through an attack of pneumonia to the haven of renewed perpetual inebriety.

And now, gentlemen, in conclusion, I want to call your attention in a little detail to the treatment of poisoning by the cardiac depressants. I do this because the treatment is really the treatment of the syncopal state, and affords me an opportunity to discuss that before you. But before taking this up, a word in regard to the use of antidotes. Tannic-acid is valuable as an antidote against the three cardiac sedatives, and must be given.

We find when we come to look at the symptoms of the syncopal state for the purpose of therapeutics, that long experience has shown us that the position of the patient is a matter of the most vital importance; and, if you will read the histories of death from aconite, you will find it frequently stated that the patient was raised up and fell dead. We all know that the horizontal position is the proper position for a man or woman in the condition of syncope. I myself, however, until I made a series of experiments in the Uni-

versity laboratory some years ago, was entirely at fault in my reading of the reasons of this. I was taught and adopted the teaching of my elders that we keep the man in a horizontal position in order to keep the blood in the head so that the vital centres in the head might be nourished. When I came to make a series of experiments in an animal profoundly depressed and in a condition of syncope, I was very much astonished to find that the blood-vessels of the body act in unison as a simple tube and that the arterial pressure was the outcome of hydrostatic law. If I raised the animal above his hind legs, the arterial pressure in the femoral artery went up; in the carotid it became nothing. If I turned the beast round about, the carotid pressure went up, the leg pressure down. The explanation of the effect of position is easy to see. Bear in mind what I told you about the abdominal circulation. Raise the man up, and the whole of the circulating blood settles in the relaxed, toneless abdominal vessels, and there is no contracting power to drive the blood, to fill up the right side of the heart; and the man dies at once the death of cardiac failure, because the right side of the heart is empty, the left ventricle has no blood to force out, and there is no blood in the coronary artery, and the apparatus stops. The opposite to this takes place when you treat syncope by position. You turn the man upside down when he is dying under the influence of chloroform, and frequently you will start the heart, simply because the blood has rushed into the right side of the heart, has distended it, and by the pressure has stimulated the heart if, perchance, there be any power in it to respond.

And now a word in regard to the temperature of the patients, a very important thing that is often lost sight of in the treatment of collapse. The human organism is made to work upon a certain plane or level of animal heat; and when we depart from that, whether we go up or down, we get evil. In these conditions of syncope there is often pronounced fall of temperature; and why? Because there is excessive loss from the surface. The interior portion of the body is normally kept warm by the outer half-cooled coil around. When there is vaso-motor paralysis, the blood rushes to the surface, the heat is dissipated, and so the whole temperature falls. This loss of heat depresses the respiration and depresses the heart; and it is absolutely essential in the first place under these circumstances of syncope when the temperature falls to maintain it, maintain it not by little hot bottles somewhere within a half-mile of the patient's bed, but by measures that do maintain the heat. Put the man in the hot bath or on the ordinary water-bed heated. Fill the rubber mattress half-full of hot water, and the weight of the patient causes him to sink down in the bed and the water rises up around him. Protect him from burning by blankets.

Now, let us consider the use of drugs. Here I want to speak in regard to a very important general law that I cannot remember to have seen formulated, namely, that because a drug is in an apparently antagonistic class from another drug, it is no reason that it is really antagonistic. We have got to study the drugs more closely as individuals before we can say they are really antagonists of one another and are physiologically opposed to one another. This seems a very small thing; and yet a lack of the knowledge of it is responsible for a large proportion of the

deaths attributed to ether. I remember reading not long ago an account of a death in Cincinnati in which a woman had syncope under the influence of ether, and during the next five to seven hours the doctors poured into her several pints of brandy, and wondered that she died. Alcohol and ether are practically the same remedy, scarcely different chemically, acting precisely alike. The first influence of ether is to stimulate, the second to depress the heart. The first act of alcohol is to stimulate the heart, the second to depress it; and now when they had this heart failing to beat under the influence of too much ether, they poured in alcohol, and took away the chance which nature had of eliminating the ether and getting the heart out of the slough. I know nothing more dangerous and absurd in the history of therapeutics except the custom of some surgeons of giving hypodermic injections of ether to get the man out of ether-poisoning. Can it make any difference to the heart whether the ether is taken up from the lung or the leg? When it gets in the blood to the heart it is ether and nothing more; and to suppose you are going to raise the man out of ether-paralysis by injecting the ether under the skin is as absurd as to suppose the best treatment is to pour ether on a sponge and push its inhalation still further. I have found in animals that when you have cardiac depression from ether or chloroform the moment you give alcohol in sufficient quantity to have any perceptible influence you get lowering of blood-pressure; and I have found that if you will exhibit alcohol before giving ether or chloroform it requires much less of the anæsthetic to produce the systemic influence. Alcohol and ether are really similar agents, and the use of one against the other adds always to the danger. Ammonia, much used, is of very little value, no value at all except you can give it intravenously. Remember the local effects of ammonia dominate everything. A man poisoned with ammonia dies from the local effects. I remember years ago the first case of cardiac failure I had I gave ammonia very freely under the old teaching. It was lucky for me that the patient did not come out of the cardiac failure, because she mayhap would have died of an acute gastritis, produced by my ammonia.

Nitrite of amyl is a drug which has been strongly commended in these cases, but it is a very dangerous drug. It may be used, but must be used with great caution. The first effect of the nitrite of amyl is undoubtedly to stimulate the heart; but in any dose nitrite of amyl depresses the vascular system, and if vascular depression is the danger, you increase that danger, and if you give a little beyond the amount that is necessary, you get intense cardiac depression. Therefore, in cases of syncope if you use nitrite of amyl, use it with very great care. I made a series of experiments upon animals with syncopal condition from chloroform and from ether, and I never was able to get any evidence of beneficial effect whatever from the nitrite of amyl, yet there is some clinical evidence for saying it is a drug which may be tried carefully.

Strophanthus is a remedy which will probably prove useful in these cases. I, myself, have had no experience with its use in sudden acute syncopal collapse. It may be given, however, hypodermically with a well-assured certainty that it will make a great deal of local irritation; but remember when you have a man upon the borders of death, you are justified in making ulcerations.

The one cardiac drug which in my experience has been found efficacious in these cases is digitalis. It unfortunately acts slowly, but it acts usually with sufficient quickness for our purposes if it be given hypodermically.

And now, in conclusion, one word in regard to the use of alcohol in these cases, especially its use in veratrum viride poisoning. Remember that whenever you give alcohol for a very sudden effect in intense depression it must be given in the most concentrated form. A gentleman said to me yesterday, "How much alcohol is in a bottle of English brown stout?" I said, "It is about as much as in three ounces of whiskey." He said, "A bottle is nothing for me, but three ounces of whiskey would make me drunk." Why is this? The answer is, that the brown stout lies in the abdomen and yields up its alcohol slowly, while the whiskey rushes into the blood. If he had taken his whiskey in a pint or two of water, it would not make him drunk, because it would be eliminated in part before it was all absorbed. I have seen life apparently saved in some of these cases of poisoning by remembering the fact I have spoken of, by giving the whiskey pure (raw, strong spirit), by the teaspoonful.

Original Articles.

EARLY DIAGNOSIS AND PROMPT TREATMENT OF OBSTETRIC SEPTICÆMIA.¹

BY EDWARD REYNOLDS, M.D.

ASERIS and antiseptis, as applied to obstetrics, vary from the same principles as applied to surgery, in several particulars; and notably in the facts, that, in obstetric work, the technique is much easier and that it is of much greater importance to the general practitioner, who commonly avoids surgery, but is forced to do obstetrics.

The revolution which has been effected in the practice of midwifery, though, as yet, less fully developed, is rapidly becoming as great as that which has changed the face of surgery. The disease which not long ago, received in this city the title of "child-bed fever, a private pestilence," has to-day, in the practice of reasonably careful men, become an infrequent cause of actual mortality; but, that the profession is still far too little impressed with the importance and ease of its prevention, is to be seen in the fact that while its major grades have become comparatively infrequent, its minor forms, of locally limited septic infection and of slight constitutional toxæmia, are still, in almost the same degree as formerly, among the most prolific causes of the chronic ill-health of women. The profession in general is still sadly oblivious of the fact, that their failure to recognize early and treat promptly, the not seriously dangerous grades of obstetric sepsis, is still one of the important sources of preventable chronic disease.

We who are especially interested in midwifery, are still not infrequently confronted by the statement that too much is made of obstetric sepsis, and that it really is extremely infrequent outside of great institutions, as instanced by the fact that Dr. So-and-so, in many years of active practice, has never seen a case, or has seen but one or two cases, of puerperal fever. We

¹ Read before the Boston Society for Medical Improvement, February 27, 1893.