patients might safely do. It will be also necessary to supply the greatest amount of nutritive material to the brain, to repair the undoubtedly existing nutritive lesion. In some cases I have given protagon with good results, and in others the acid phosphates, with free phosphoric acid, in the form devised by Dr. William Pepper, of Philadelphia. It has seemed to me to supply nerve force and to restore enfeebled digestion very excellently in dipsomania. I have also used a preparation of cod-liver oil with the wheat phosphates with good results. We must quiet all abnormal nervous excitability, and keep our patients calm and tranquil. Attention should be paid to the excretory functions of the skin, kidneys and bowels. If there is headache and drowsiness, such diuretics as the liq. ammon. acet., with spt. æth. nitr., are indicated. The ext. of cannabis indica has also proved itself, in my hands, a valuable adjunct, in doses of $\frac{1}{4}$ gr. of the solid extract. Free exposure, without fatigue, to the fresh air, cannot be too strongly insisted upon. One of the most valuable remedial agents is phosphorus, which I prescribe to be administered in cod-liver oil, in doses of from $\frac{1}{100}$ to $\frac{1}{2}$ gr. after meals. The cod-liver oil is one of the best nutritive remedies, as fat must be applied to the nutrition of the nervous system, if this is to be maintained in its organic integrity. The general effects of phosphorus are those of a stimulant, but it possesses a special power over the exhausted nervous system. It is, perhaps, evanescent in its effects, but is never followed by a stage of depression which is noticeable. It should never be ordered on an empty stomach. I have used the phosphorized elixir of calisaya bark with strychnia in many cases of dipsomania with good results. As I have previously remarked, I regard strychnia as a very valuable nerve tonic in dipsomania, as it seems to me to antagonize the effects of alcohol upon the system. Quinine is also very valuable. I have also obtained excellent results from the use of phosphide of zinc, gr. $\frac{1}{100}$, in combination with the ext. of nux vomica, in $\frac{1}{4}$ gr. doses.² When there is persistent insomnia, I am accustomed to rely upon the use of prolonged warm baths, given at bedtime, conjoined, when necessary, with the use of the monobromide of camphor, in doses of 4 grs. I always use the imported preparation (Dr. Clin's capsules). This admirable therapeutic agent is one of the most valuable remedies we possess in treating hysterical mania. It should be given in 4-gr. doses, t. i. d., being careful to order the imported article, which comes from Paris. The chloro-phosphide of arsenic (Routh's formula) is a very valuable therapeutic remedy to antagonize the condition of brain-wasting which often threatens our patient suffering from the nervous prostration induced by dipsomania. It should be given in 5-minim doses, after meals, and gradually decreased till, at the end of six weeks, the patient is taking but 1 minim thrice daily, which he can continue for one week more, and then drop entirely. I come finally to speak of the remedial agent which, in my opinion, far surpasses all others in its permanent effects, and which is comparatively little used. I refer to the judicious use of the constant and induced currents of electricity. The essential difference in the action exerted upon the nervous system by the use of electricity and that produced by drugs very often prescribed, is as fol-

lows: Many of the remedies commonly employed in the treatment of nervous diseases and in dipsomania, for the purpose of restoring lost nerve force, are *nerve stimulants*, and not nerve tonics in the proper sense of the term.

Electricity is a remedial agent which furnishes us with the means of modifying the nutritive condition of parts deeply situated, and of modifying the circulation to a greater extent, I think, than by any known agent. By the judicious employment of the constant and induced currents, we have it in our power to hasten the process of nerve growth and nerve repair, and thereby indirectly hasten the acquisition of nerve power. The use of electricity does not, I think, act by contributing anything directly to the growth or repair of nerve tissue. Its action, it would seem most probable, is to stimulate and quicken those processes on which the material and functional integrity of the nervous system depends. The action of electricity is always followed, in my practice, by an increase of strength and nerve force, and the results gained are gradual and permanent; while the use of nerve stimulants has always seemed to me to primarily excite the nerve activities proper, and *not* the nutritive processes upon which the acquisition of power depends. The deceptive results obtained from the use of nerve stimulants, depend upon the excitation of nerve activities and the resultant expenditure of nerve power, which is followed by a period of exhaustion, varying in degree and duration.

128 Park Place, near Prospect Park, February 8, 1892.

APPENDICITIS.

Read before the Kings County Medical Association, January 12, 1892.

BY W. H. BIGGAM, M.D.,

OF BROOKLYN, N. Y.

So many different terms have been applied to the pathological condition, known and described by more modern writers as appendicitis, that one is apt to have a rather confused idea of the subject.

My remarks will be confined to a brief description of the pathology, diagnosis and treatment of inflammation of the vermiform appendix, and the tissues surrounding and adjacent to that organ under the comprehensive term of appendicitis, which, it seems to me, as fully and accurately expresses the origin of the lesion, and the pathological condition, as does the term salpingitis in referring to inflammation of the Fallopian tubes, but where, as a result of the original lesion, you might have peritonitis, cellulitis, and ovaritis.

So, in appendicitis, you might have following the original lesion, typhlitis or inflammation of the walls of the cæcum; peri-typhlitis, or inflammation of the peritoneum covering the cæcum, or paratyphlitis, inflammation of the peritoneum *behind* the cæcum, all of which almost invariably have their origin in the appendix; and that ulceration and perforation of that organ has been the cause of perityphlitic or circumcæcal abscesses, has been proved by the result of autopsies in the majority of cases.

The late Dr. Henry B. Sands, almost to the time of his death, maintained that where there was a circumscribed collection of pus, the inflammation and suppuration were outside of the peritoneum, and that operation should be deferred ten or twelve days until the abscess had reached a situation where it could be

² Oxide of zinc in 2-gr. doses ter die in alcoholic insanity is extremely valuable, inducing healthy molecular action in the brain.

opened by a simple incision without invading the peritoneal cavity. In the *New York Medical Journal* of February, 1888, he published an elaborate article maintaining his position.

The question as to whether abscesses were intra or extra-peritoneal, was much debated, but there is now no reason for disagreement on this point. Bull and others have demonstrated that the cæcum and appendix are always invested by peritoneum, and to his painstaking labor, with that of Lange, McBurney, Weir, Stimson and Hartley are we indebted for the correction of this erroneous idea.

The cause of appendicitis is commonly supposed to be due to the presence of foreign bodies: fecal concretions, grape seeds, etc.; but many operations for disease of the appendix have been performed where no foreign body has been found. I can recall two cases that have occurred in my own practice, where no cause could be assigned, except great physical exertion in a cold rain.

If exposure can produce idiopathic peritonitis, why not appendicitis. This would seem a logical sequence in those cases where a catarrhal condition of the cæcum was already present.

A catarrhal inflammation of the mucous lining of the cæcum extending to the appendix, and due to the exceedingly common American malady, constipation, is ascribed by Lange, Gerster and the German school, particularly, to be more frequently the cause of appendicitis, than all others combined.

The diagnosis of this disease is usually not difficult if seen at the beginning, but if the inflammation has extended, and the belly has become tympanitic, it often is exceedingly so. Temperature range is not always to be relied upon; you may have a general septic peritonitis with a subnormal temperature. McBurney says that it is absurd to depend upon the temperature range in these cases, as in any way indicative of the severity of the disease.

Too much importance has been attached to the so-called McBurney point.

Dr. VanderVeer, in a discussion before the State Medical Society at Albany, last year, said there existed no longer any excuse for a physician in full practice who pleaded ignorance of the McBurney point.

The McBurney point, a name given by Dr. Lewis A. Stimson, is, as you all know, a point of greatest tenderness, supposed to be situated two inches to the left of the right anterior superior spinous process, on a line drawn from that point to the umbilicus.

You may find the point of tenderness above, below, to the right or the left of this; as I discovered in a case to which I was called November 18.

In this case the so-called McBurney point was *above* the anterior superior spinous process at the lower margin of the ribs, and as there is another point that I wish to bring out in connection with this case, I will here give a brief history of it:

The patient, G. B., aged 38, was taken sick on the night of November 17 with chills, vomiting and excruciating pains in right iliac region paroxysmal in character.

I saw him on the morning of the 18th and found him lying on his back with the right thigh flexed on the pelvis. His pulse was 88; temperature 100.5. Complained of great pain in right side, which was very tender on pressure; point of greatest tenderness being where I above mentioned. There was slight

tumefaction. His temperature steadily rose until on the evening of the 19th it reached 101.4. The pain and tenderness meanwhile increasing. On the morning of the 20th his temperature had suddenly descended to 98.3, where it remained. The pain had gone and the tenderness and tumefaction as rapidly subsided.

I am unable to account for the speedy amelioration of all the symptoms in this case, except that there was a collection of pus in the appendix which found its way into the bowel and so passed off.

Beginning typhoid fever has been taken for appendicitis, likewise an impaction of feces; a case of which I saw in consultation in the country during the latter part of August last. The patient had been confined to bed five days, with warm poultices to the abdomen, and had been given small doses of opium at regular intervals to relieve the pain.

An ounce of sulphate of magnesia, followed by copious irrigation of the lower bowel, relieved the impaction and cured the appendicitis. But, as the attending physician afterward wrote me, the passage he had astonished the neighborhood.

Exploratory punctures as a means of diagnosis ought *never* to be resorted to. They increase the danger of septic infection, and if the abscess is circumscribed and deeply seated, it is very likely to escape detection.

Of course, if, after exploratory puncture, pus is detected, operation need no longer be deferred; but failure to detect pus ought not to deter one from operating if other good and sufficient reasons present themselves.

This recalls a case in point which I saw in consultation three years ago. The patient was an old lady of 60, who had been having symptoms of appendicitis for ten days. There was a mildly septic condition with some prostration, but no peritonitis. I thought I detected deep fluctuation, and advised operation; but the third physician who was called in consultation advised against it, because after several exploratory punctures he failed to detect pus. I had the pleasure of making an autopsy at the end of a week, and found an extra-peritoneal abscess, that might easily have been reached without invading the peritoneal cavity.

The question of *when* to operate is the most difficult to solve, that presents itself in connection with the disease. Weir forms his opinion as to the necessity of operating by the reaction of the patient to small doses of morphine; that in the majority of cases operation is indicated if large doses of morphine are required to relieve the pain.

McBurney says it is not difficult to determine the existence of the disease, but what is to be the future progress of it is very much so, and he is guided, not so much by the number of days or hours the disease has run, but by the character and extent of the inflammation. He favors early operation, not later than the third day, if possible, and on this point at the present time there seems to be a consensus of opinion.

The symptoms of appendicitis at the onset are, in the majority of cases, quite regular. Usually ushered in with a succession of slight chills, followed by elevation of temperature, varying from 99° to 102°.

The bowels may be regular, but there is usually constipation, with an antecedent history of the same. Vomiting frequently precedes the attack. The phy-

sician is called in to relieve the pain, which is a constant accompaniment of beginning appendicitis, and is referred to the lower abdominal region in general, but is greater on the right side. There is tenderness on pressure, generally tumefaction; pulse weak and irritable, running from 100 to 120. Countenance has a characteristic expression of pain, and the patient usually lies on his back with the right leg flexed.

On the affected side there will be a rigidity of the abdominal muscles. This symptom McBurney regards as constant and of much value.

The medicinal treatment of appendicitis can be dismissed in a few words, but before doing so I feel that I cannot too strongly deprecate the giving of opiates in sufficient quantities to quiet the pain. It lulls both the physician and patient into a sense of false security, and ends by putting the patient *eternally* to rest. Such an incident happened to myself not very many years ago, but when I knew less of the disease.

As I then supposed, the first indication to be fulfilled was to relieve the pain, which I accordingly did with full doses of morphia hypodermatically. The case ended in speedy death on the second day, with all the symptoms of rapid fulminant septic peritonitis. Since then I have become convinced that cases which require heroic doses of morphia to relieve the pain require, instead, surgical interference.

There is no objection to small doses of phenacetine, four grains every three or four hours, combined with a quarter of a grain of codeine.

This, with salines in the beginning, dry or moist, warm applications, rest in bed, and liquid nourishment, constitute the medicinal treatment.

With the technique of operative treatment I trust you are all familiar. Those who are interested in that branch of the subject I would refer to an important article by Dr. McBurney, in the *New York Medical Journal* of December, 1889.

An attempt has been made to give you but the barest kind of an epitome of this interesting disease, which is becoming more frequent in proportion as it is better understood and diagnosed by the general practitioner, to which class these rather desultory remarks are particularly addressed.

SOCIETY PROCEEDINGS.

American Electro-Therapeutic Association.

First Annual Meeting of the American Electro-therapeutic Association, held in Philadelphia, September 24, 25 and 26, 1891.

(Continued from page 236.)

Thomas W. Poole, M.D., read a paper entitled

SOME SUGGESTIONS AS TO THE MODE OF ACTION OF THE GALVANIC CURRENT IN GYNECOLOGICAL PRACTICE.

The idea generally entertained regarding the use of electricity for medical purposes, is rather of a complex character, combining a blending of stimulative alterative and sedative effects. If this be true it is worth investigating.

Apart from its caustic and electrolytic effects, it is generally believed to exert a trophic or dynamic influence over the tissues through which it passes; but these are too subtle, if they exist, to admit of being traced, at present, with any hope of success. I shall therefore confine myself to consideration as to how the more noticeable vascular effects are produced by the galvanic current.

These are sometimes well seen in the employment of a current of from 50 to 100 milliampères, in cases of chronic inflammatory conditions of the uterus and its appendages, in which pains, tenderness and tumefaction may be readily increased to a notable extent, causing an aggravation of all the symptoms. Even in the absence of any pelvic disease, where the galvanic current is applied to the spine in the treatment of affections of that organ it is not uncommon to find the menses are hastened.

In view of these facts, it must be admitted that the galvanic current, in so far at least as its effects on the female pelvic viscera are concerned, appears to be an excitant, and in some way produces increased hyperæmia and other effects, which at first sight suggest a resemblance to the increased vascularity of the first stage of the inflammatory process;—a resemblance more apparent than real.

How does the galvanic current produce the apparent excitation of vascular action? And again, how does this phase of its character accord with its well earned reputation as a soother of pain and a sedative to excited nerve action?

In view of the well known mechanism by means of vaso-motor centres in the medulla oblongata, spinal cord and elsewhere, for regulating the calibre of the arteries and with this the outflow of blood from them into the veins, the question may be asked, does this general mechanism apply also to the pelvic viscera, or are there special modifications of that mechanism for the control of blood supply to the generative organs in the male and female? This inquiry becomes important, if the uterus and its appendages are to be regarded as erectile organs (Kuss. Phys., p. 492), and if electrization of the genital centre in the lumbar spinal cord or of certain nerves leading from it, produces dilatation of the pelvic arteries, as Dr. Brunton asserts. (Pharmacol., p. 386.)

Such a mode of action would certainly afford a simple and easy explanation of the increased vascularity under consideration: but it would be an irregular and exceptional mode of action, at variance with what occurs in the system generally, in which, under the influence of the electric current we are taught the vaso-motor centres are excited and the arteries correspondingly made to contract.

If we admit the control by these rival claimants, general and local, of pelvic blood supply, we shall have the anomaly of our galvanic current (one pole being in the arteries and the other on the spine), dilating the uterine arteries through the influence of the spinal genital centre, and at the same time the vaso-motor centres in the spine and sympathetic ganglia contracting the same arteries, as they do elsewhere in the body.

Probably there is no danger of such a complication arising, for it is elsewhere stated that Budge, the discoverer of the genito-spinal ganglion referred to, found that when this portion of the spine was faradized there arose energetic contractions of the muscular tissues in the pelvis. Now it is well known that the faradic current, by the rapid vibrations it occasions, determines an increased supply of blood to the part; and this may be the explanation of the observation in question.

Such, no doubt, is the mode of action of the faradic current in cases of uterine relaxation and anæmia, under which the weak or relaxed fibres are exercised and strengthened, the languid circulation quickened, and local nutrition improved; but this does not apply to the employment of the galvanic current in the class of cases under consideration.

Another observation of physiological experimentation must not be lost sight of. It is asserted that "when a sensory nerve is irritated (faradized) the action of the vaso-motor is suspended in the part supplied by the nerve, and in those which immediately adjoin it, so that their vessels become dilated, while at the same time contraction of the