and without bubbles or striæ. The fluid to be examined should be covered by another layer of extremely thin glass made on purpose, and not by portions of mica, which are seldom free from cracks, and never perfectly transparent. This thin layer of glass is indispensable in order as much as possible to diminish the thickness of the fluid, to render it perfectly uniform, to hinder evaporation, and prevent the object-glass from being soiled by it. A single drop of fluid suffices for a complete observation, a larger quantity always proving inconvenient. The little glass that covers the liquid must be firmly pressed down, so as to spread it out, arrest the currents that take place in it, and drive out the air bubbles. Although the glasses should seem to touch each other, the spermatozoa move with perfect freedom in the space between them, so long as they preserve their energy, and evaporation has not proceeded too far: should such be the case, however, a drop of tepid water favors and much prolongs their motions. However thin the layer of fluid may be, it is impossible to comprehend its whole thickness at once with a very high power, and it is, therefore, necessary to alter the focus frequently in order to be sure that nothing escapes observation. And this is especially important in examining a drop of fluid obtained from diurnal pollutions, because there are frequently only two or three spermatozoa contained in it. It is also necessary to change the position of the reflector frequently, in order to vary the direction and intensity of the light. The spermatozoa are often exceedingly transparent in cases of disease, and a very bright perpendicular light is by no means the best for showing them. Varying the density of the fluid under examination, either by adding water or by permitting evaporation, is also often useful. The semen contains matters furnished by the seminal vesicles, the prostate, and the urethra, and when the fluid is too thick, these matters hide the animalcules. A drop of water applied to the edge of the covering-glass penetrates underneath it, and the spermatozoa are more isolated, at the same time that their contour is rendered more defined by the diminution in density of the fluid. On the other hand, the refractive power of the spermatozoa differs little from that of the fluid in which they are contained, and their thinnest portions are traversed by the light without affording any distinct images to the eye. In this case there are only seen very small ovoid brilliant globules terminated by a little point. As soon as the water begins to penetrate between the glasses, the rapid motion set up prevents the objects from being clearly distinguished; but as soon as rest has been re-established the tails of the animalcules appear, and their dimensions seem to have increased in consequence of the diminished density of the surrounding fluid: water suffices to produce this result. It is more sensible, however, when a small quantity of alcohol is added; but the forms of the animalcules are, after a time, altered by this agent; and it is, therefore, advisable to use water only when it is intended to keep the preparation.

"Evaporation sometimes produces not less remarkable changes in the seminal fluid. I have frequently in cases of spermatorrhœa failed to perceive anything in the fluid under examination for half an hour, an hour or more; then suddenly an animalcule has made its appearance; then a dozen, and then perhaps a hundred in the space of a few minutes. The following morning, when desiccation has become complete, there are no longer any traces of these animalcules, or, at all events, I have been only able to distinguish their tails, the other parts of them being fixed in the dried-up mucus. The absorption of a drop of water has restored the phenomena observed the night before.

"These phenomena are easily explained; when the refractive power of the spermatozoa is the same as that of the circumambient liquid, the light traverses the whole in the same manner, and the mass appears homogeneous. But evaporation acts more rapidly on the liquid than on the organized bodies contained in it; and when the difference of density alters the refractive power, the forms of the spermatozoa are momentarily defined, because they have become more transparent than the remainder of the fluid. When desiccation is complete, however, the animalcules again disappear, because the refractive powers of mucus and dried animalcules are again equal. The absorption of a small quantity of water reproduces the same phenomena, which may be repeated almost indefinitely, since the matter confined between the two layers of glass undergoes no other appreciable alteration.

"In order to be enabled to discover spermatozoa quickly, in cases of disease, it is necessary that they should be well studied in healthy cases. This may be accomplished in the following manner:—After coitus there always remains a sufficient quantity of seminal fluid in the urethra to serve for precise and complete microscopical examination. This may be obtained by pressing the canal shortly after the act, and receiving the drop of fluid from the orifice of the glans on a plate of glass. In this drop of fluid thousands of animalcules may be seen, agitating themselves like so many tadpoles in a pool of stagnant water, only that the tails of the spermatozoa are relatively longer and thinner, and that the head presents a brilliant point near its insertion. Generally the number of these animalcules prevents them from being easily examined, and it becomes necessary to spread them out by introducing a small quantity of water, and pressing firmly down the thin glass that covers them; they are found most separated on the edges of the fluid. If the water added be of the temperature of the body, their motions become free and lively, and continue so until cooling and evaporation affect them. By avoiding these two causes of disturbance, the motions of the spermatozoa may be kept up during several hours.

"However long a time may have elapsed after coitus, there are always spermatozoa in the urethra, provided they have not been washed away by the passage of urine. Although the point of the glans may be quite dry, and pressure along the whole length of the canal may not produce the least dampness, still on passing urine, living animalcules may be obtained from the first drop which escapes. This may be received on the glass, and is, perhaps, the easiest and most natural mode of obtaining spermatozoa for microscopic examination.

"It is evident that the same experiments may be applied in the case of nocturnal pollutions, as well as in all other seminal discharges, in whatever manner they may occur. But many errors may arise from commencing with cases of disease, for it is during perfect health when the spermatozoa are most active, and their development most complete, and they live longer after coitus than after any other kind of seminal discharge.

"Having thus described the means by which my microscopic observations may be verified, I proceed to show their results.

"*Spermatozoa.*—Out of thirty-three bodies which I have examined for spermatozoa, I only twice found these animalcules in the testicles. In one of these cases the patient died from the effects of a fall, on the day following it; in the other acute gastro-enteritis was the cause of death. The seminal fluid was most abundant, and contained the greatest number of animalcules, as in the former case. The other patients died of chronic diseases, after protracted sufferings. One only among them died on

the second day, of acute peritonitis, but he was seventy-three years of age. In thirty-one of these patients the testicles were soft, pale, and as though withered. On section they presented a grayish aspect, and did not furnish any liquid; the structure was almost dry, and contained a few blood-vessels; the secreting canals were easily separated from one another, and could be spread out under the microscope without breaking. They presented very brilliant granules, all of exactly the same appearance, about the size of the head of a spermatozoon, ten times smaller than corpuscles of blood or mucus, and differing from the latter by the constancy and regularity of their form. These brilliant bodies, which occupied the place of the spermatozoa, are worthy of notice, because they offer considerable analogy to the appearances presented by the semen under certain circumstances.

"In order to observe what is present in the secreting canals of the testicle, it is necessary to spread out a portion of one of them under the microscope, after having examined it dry to allow a drop of water to penetrate between the two glasses, and to follow the changes which take place; then to press down the glass so as to flatten the parietes of the canal, rupture it, and press out a portion of its contents; lastly, these must be examined again when desiccation is complete, for the spermatozoa found in the canals are then best seen.

"In the epididymis I have never found spermatozoa, except in the two cases in which they were also found in the testicles. In all the others I met with these animalcules only in the vas deferens, or seminal vesicles. There were no animalcules at all to be found in the patient who died at the age of seventy-three. It has always seemed to me that the animalcules were less numerous in proportion as the patients had suffered long; and in extreme cases I have generally found them only in the seminal vesicles. The fewer the spermatozoa the more difficult were they of detection, on account of their extreme transparency. In some cases I have only suddenly discovered them after examining for an hour or two, the liquid having previously appeared quite homogeneous. The dimensions were the same as those of the best developed animalcules, but they were pale throughout their whole extent, and more transparent than the surrounding fluid. Complete desiccation often caused them to disappear altogether; but the same phenomena could be reproduced by the absorption of a small quantity of water.

"In cases of phthisis, caries of the vertebræ, white swelling, etc., I have had great difficulty in distinguishing the animalcules, probably because these diseases do not cause death for a long time.

"I have almost always found in the seminal vesicles, especially at the bottom of any depression, a thick, grumous, brilliant matter, varying in its aspect and color, but considerably resembling thick paste, and more or less transparent; with a high power the granules of this matter appear large, irregular, more or less opaque, and without any constant shape. They are evidently the products of the internal membrane of the vesicles, for they are found with similar characters in the accessory vesicles of the hedgehog, rat, etc., which never contain seminal animalcules, and do not communicate directly with the vasa deferentia, which, again, never contain any similar substance. This matter is, therefore, analogous to that secreted by the prostatic follicles, Cowper's glands, etc. Its functions are the same, and for many reasons it merits special attention.

"The secretion of semen diminishes in all serious diseases, and seminal evacuations become very rare, especially toward the last. It is not, therefore, astonishing

that the products of the mucous membrane predominate in such patients over those of the testicles, and that such mucus should become more consistent during its long residence in the depressions of the vesicles. Hence, the difference observable between the semen obtained from the vesicles after death, and that which is passed by a healthy person. Nevertheless, after long-continued continence, more or less large granules are often seen in the semen of a healthy person, and these are perfectly distinct from the fluid part. When the emissions are more frequent, granules of the same kind may be observed, but much smaller. These facts are important when applied to explain several symptoms of diurnal pollutions.

"I have already stated that on causing the patients to make water in a bath, the semen passed may be easily recognized by means of its globules which whirl about in the middle of the cloud formed toward the close of micturition. From what we have just seen, it is evident that these globules come from the internal membrane of the seminal vesicles. They may be wanting in very severe cases, where the semen has no time to acquire consistence; but their presence leaves no doubt as to the existence of diurnal pollutions, because they can only be furnished by the seminal vesicles. On the other hand, I have invariably found spermatozoa in the urine of patients who observed this phenomenon in the bath. The same remarks hold good when applied to the globules which the urine deposits in certain cases of diurnal pollutions, and which have been compared by some to grains of bran, by others to millet seed, pearl barley, etc., according to their size. These globules are perceived as soon as the urine is passed; they are roundish, very soft, and do not give any sensation when squeezed between the finger and thumb; they cannot, therefore, be confounded with urinary salts, which are deposited only when the urine has cooled, have a crystalline form, and give the sensation of a hard body to the finger. The vesical mucus also is only deposited on cooling, and does not furnish brilliant granules. As to pus, its appearance is easily determined. I have found animalcules whenever these globules appeared in the urine; and hence it is that I have pointed them out as certain signs of diurnal pollutions.

"I have also noticed that in some cases the urine, when held against the light, presents in the middle of a flocculent cloud multitudes of quite characteristic *brilliant points*. These are smaller, and consequently lighter, globules than those which in other patients fall to the bottom of the vessel. They are neither observed in the mucus of the bladder nor in the prostatic fluid, which alone present clouds analogous to those of diurnal pollution. Such brilliant points also arise from the seminal vesicles, and their presence is, therefore, an indication that the urine contains semen. This I have often verified with the microscope. I should, however, warn those who wish to repeat my experiments, that it is not in the midst of the flocculent cloud that the zoosperms are to be sought, but at the bottom of the vessel, to which they soon fall on account of their greater specific gravity. The results of all my observations of the dead subjects, therefore, convince me of the influence of serious and long-continued diseases on the functions of the spermatic organs. But it is not only in the morbid state that these experience great variations; remarkable differences may exist between healthy individuals, not only in the quantity of semen secreted in a given time, but also in the number, appearance, and dimensions of the spermatozoa. In this respect I have observed differences amounting to a third, and, in some cases, to half. The comparison is very easily established. When the semen is kept under a thin glass, as I have before described, it is not in danger of undergoing any

changes, and may be always, by the addition of a drop of water, compared with a recent specimen.

"Notwithstanding the facility with which nocturnal pollutions may be recognized, I have submitted the semen collected after them, by individuals in various conditions of health, to microscopic examination. At first, when the evacuations are still rare and the semen preserves its ordinary characteristics, the animalcules do not present any remarkable circumstances in regard to their number, dimensions, etc.; but when the disease has reached a sufficient degree of gravity to affect the rest of the system, the semen becomes more liquid, and the spermatic animalcules less developed and less lively. Their number, however, does not as yet sensibly diminish; indeed, in some cases, it seems increased. As the disorder advances, the erections diminish, the semen becomes more watery, and the animalcules are often a fourth or a third less than natural, and the tail is often distinguished with difficulty under a power of three hundred diameters. At a still later period the animalcules become fewer, and in two individuals, in the last stage of the affection, the semen no longer contained animalcules, although it retained its characteristic smell. Examined with high powers and every proper precaution, I only found, in this semen, brilliant globules, all exactly alike, and about the same size as the head of a spermatozoon.

"The microscopic examinations which I have made of semen passed during efforts at stool give analogous results. When such discharges only take place accidentally, and at long intervals, the semen is thick, whitish, impregnated with a powerful smell, and abundantly furnished with well-developed animalcules. I have sometimes even found a few alive after an hour or two. But when these discharges become so frequent or habitual as to constitute disease, they become less abundant and the semen loses its normal properties. The spermatozoa are generally smaller than in the healthy condition, and always less lively. I have some preparations in which they are only of half the ordinary size, and I have never been able to find a single living animalcule a few minutes after the fluid had been expelled. When the disease has become much aggravated, the spermatozoa become rare, and they are sometimes replaced by ovoid or spherical globules, similar to those of which I have already spoken. In three patients, in an extreme state of disease, I found nothing else, although they passed as much as a dessert-spoonful of semen at each stool. Such cases, however, are exceedingly rare.

"In diurnal pollutions happening during the passage of urine, the following means may be employed to show the presence of spermatozoa:

"The urine should first be filtered in a conical filter, when, on account of their weight, the greater number of the spermatozoa will remain on the lowest part of the paper. By taking this portion and turning it upside down in a watch-glass containing a few drops of water, the animalcules become detached from the paper by degrees, and fall to the bottom of the fluid in the glass. After twenty-four hours' maceration in this position, the paper may be taken away, and the spermatozoa may be readily obtained by using a drop from the bottom of the fluid in the watch-glass for examination. This mode of proceeding is a sure one, but it requires considerable time and trouble for its performance. I have already stated that the urine does not always contain spermatozoa in cases of diurnal pollutions; therefore the urine of the same individual would perhaps require examination on many occasions, before the certainty of their presence could be established, and few medical men in active practice have time to devote to such experiments. I, for one, should have long since given up treating these patients, had I been obliged to repeat in every case such long and tiresome examinations. Ten days or a fortnight are sometimes passed without the appearance of spermatozoa in the urine, and hence all who are accustomed to microscopic researches will admit the indefinite amount of trouble and time required.

"Fortunately, however, there is a more simple method by which such examinations may be conducted. It will be recollected that the semen always escapes either with the last drops of urine, or immediately, or soon afterward. By directing the patient, therefore, to compress the urethra immediately after micturating, and to receive the drop of fluid pressed out on a piece of glass, sufficient animalcules will be obtained from the walls of the urethra for microscopic observation. These being covered with a thin lamella of glass, may be either at once placed under the microscope, or may be allowed to dry, and examined at a future time, a drop of water being previously added. This mode of examination is, therefore, easy for all practitioners who possess a good microscope, after they have accustomed themselves to the inspection of the spermatozoa in their natural state. The changes which I have mentioned as occurring in the semen must be borne in mind, however, and the animalcules must not be expected to appear either so large, so well-defined, or so numerous, as in cases where there is no disease."

TREATMENT OF SPERMATORRHŒA.

In treating spermatorrhœa there are two things necessary to be ascertained: first, the primary exciting cause, and secondly the existing cause, if such there be, that keeps up the disease. Most usually we discover that masturbation has been indulged, or that the patient has been addicted to excess, and it is, of course, necessary that such evil practices be immediately and totally abandoned before any improvement can be hoped for. Next, we must see if there be any skin disease, piles, constipation, worms, gravel, or any other cause that may keep up the irritation, and when this has been removed the actual treatment of the parts themselves may begin. This treatment must consist in the application of those means best calculated to remove the irritability or relaxation existing in the ducts and seminal vesicles, and to give tone to the testes. So long as the ducts and vesicles retain their irritability, or remain open, the semen must necessarily escape, and it becomes therefore absolutely requisite to remove such disability, and restore to them that power of contraction which they possess in a healthy state.

In some recent cases very simple treatment will suffice. If the patient leaves off all bad habits, avoids constipation, attends carefully to his diet, takes no stimulants either in food or drink, and carefully bathes himself in cold water round the parts, night and morning, a decided improvement will often be experienced. He must, however, avoid all excitement of the mind or feelings, never over-fatigue himself, and not lie in bed after he is awake in the morning. These directions are more especially applicable to those incipient cases, common among young men, when the emission takes place at night, usually in consequence of a dream. It will generally be found in such cases that the loss occurs toward morning, and most frequently when the patient is half asleep and half awake, a state which is very apt to produce sexual excitement. Many young men have told me that they never had an involuntary erection except at such times, and that if they ever remained in that half-dreamy condition it was nearly certain to occur. However disagreeable it may be, therefore,

the patient must rise immediately he is awake, unless it be too early, and he feels confident he can go sound to sleep again. Many persons whenever they awake and feel any tendency to erection, always rise and bathe themselves, and then lie down again, and by these means escape the emission. It is particularly important also that late suppers should be avoided, and that no coffee should be drunk and no *tobacco* used. This is very necessary, for many of my patients assure me that a single cigar toward bed-time will insure an emission, in spite of all the precautions they can take.

If all young men were to observe these directions habitually, they would seldom be troubled with involuntary emissions at all, because the parts would be so strengthened, and all irritation so promptly subdued, that it would scarcely ever arise, unless from excessive abuse or masturbation. The remarks which I formerly made as to the importance of regular *occupation*, both for body and mind, are also particularly applicable here, there being no doubt but that idleness very much predisposes to all these evils.

Internal medication is seldom of much benefit, but unfortunately most persons think the contrary, and this great and fatal error is often the means of perpetuating the disease. Men think, when they are afflicted with involuntary emission, that it is only necessary to take certain drugs to be made well again. They accordingly either allow the evil to go on till it becomes incurable before they do anything at all, or else they rely upon the medicine alone, and neglect all other means. The consequence is that they obtain no relief from what they have taken, and find that the time has been uselessly lost during which a cure was possible. I do not hesitate to say that any man, by observing the simple advice already given, will be more benefited without any medical treatment whatever, than he can be by the best he can receive if that advice be neglected. It is true that a little medication is occasionally beneficial, but it is not of a specific character, or adapted to all alike, but must be varied according to circumstances, and in all cases it should be regarded merely as *assisting*, and not as being capable of curing alone. It is more especially when there is gravel, or considerable irritation of the urethra and bladder, that good can be done by medication, and even then it is of a simple character. If there is any heat and burning when the urine is discharged, with a discharge of thin mucus at the beginning of the flow, the following pills will be beneficial:

℞. Balsam of copaiva, two drachms; magnesia, seven grains. To be made into pills of *four grains* each, of which two may be taken three or four times a day.

Or the common capsules of copaiva, or cubebs, may be used.

If the urine is high colored, and deposits a red sediment upon the sides of the vessel, indicating gravel, the following powders will be better:

℞. Dried *bearberry* leaves (*uvæ ursi*), one drachm and a half; bicarbonate of soda, one drachm. Mix them, and divide into *twelve* powders, of which one may be taken three times a day in water.

These powders are also excellent when there is simply irritation of the bladder, causing a frequent desire to urinate. For this particular trouble, it is also advisable to drink but little, and never to use hot fluids of any kind, nor spices, wines, spirits, or coffee. A little gum-arabic is useful, kept in the pocket and swallowed occasionally during the day.

There are few cases in which these means will not, at least, give some relief, even if they do not cure, but *it may not be immediate*. This is a fact that should be borne in mind, so that discouragement should not be felt because the relief is not experienced at once. The disease, it should be remembered, has nearly always existed a long time, and has assumed a chronic form, so that it can only be successfully attacked in a gradual manner, by slowly producing a change in the action of the parts.

Nevertheless, I have known many benefited almost immediately, and very often I hear the remark, that in one week from the time of commencing the treatment, the emissions decreased one half in frequency. To ascertain the extent of the improvement, and as a guide to the physician, every one afflicted in this way should keep a diary, or date the times when the emissions occur, so that it can be seen whether they are really decreasing in frequency or not.

One of the best means for applying cold water, both for the purpose of strengthening the genitals, and also for relieving constipation, is by means of what is termed the *ascending douche;* that is, by a stream or jet directed upward. This must be made to play forcibly on the perineum and against the anus, by the patient sitting over the jet. The effects of this treatment, after a time, are often strikingly beneficial. I have known patients who had previously never passed a night without emissions, remain for two weeks without experiencing anything of the kind; and I have known the most obstinate constipation, in some instances of near three weeks' duration, completely cured by it in less than a month. It is, in fact, one of the most valuable remedies we possess in the treatment of spermatorrhœa, and has cured more than perhaps all other means put together. Those who cannot employ a proper apparatus, may use a large and powerful syringe, bent at right angles, so that the jet can be thrown up against the perineum, scrotum and anus. It should be used morning and night, for about five minutes. The man mentioned in the last article, who had been impotent for nine years, owed his cure to this cold douche. I have often found nothing else necessary, even *in very bad cases*, except proper attention to the diet and regimen.

In case of worms in the rectum, which often keep up spermatorrhœa by their irritation, there are few things that succeed better in dislodging them, and subduing the irritation, than enemas of *cold* water. These seem to paralyze the worms, so that they lose their hold, and are expelled with the fluid as it returns. They also cool and give tone to all the neighboring parts in a very marked manner, and are, in short, valuable remedies in the treatment of spermatorrhœa. In some instances, they will cause erections from the very first, though the person may have previously been almost impotent.

When the loss evidently occurs more from general weakness than from irritation, the plan of treatment must be somewhat varied. *Warm* bathing may then be advised, with a generous diet of meat and wines, and the occasional administration of tonics and bitters. *Galvanism* is also of very great service in many of these cases of debility, applied directly to the parts, or to them and the spine. It will frequently impart a feeling of warmth and vigor from the very first, and restore the natural powers sooner than almost anything else. The patient should, however, be particularly cautioned not to use any of the stimulating medicines, cordials, and tonics, so urgently recommended for this debility. These are mostly composed of *Spanish flies*, or *phosphorus*, and are very hurtful, though they may appear to do good for a time.

Several of the mineral waters are highly useful in spermatorrhœa, especially those that contain iron; and those that contain sulphur are also of service when used as baths.

When there is any considerable nervous irritability, with restlessness, loss of sleep,

or bad dreams, a narcotic may be of service. A few drops of laudanum may be taken at bed-time, or some of the camphor and opium pills, directed in a former article. If the stomach cannot bear opium, it may be given as an enema, either by putting a few drops of laudanum in some starch-water, or by using a decoction of poppy-heads. Some patients even introduce an opium pill, containing one grain, into the rectum at bed-time, and leave it there till morning. This will frequently prevent emission, but is apt to act too strongly on some persons.

McMun's elixir of opium is the best preparation to use, instead of laudanum, or crude opium.

Occasionally setons are of service, placed inside the thighs, or acupuncture with needles, but these must always be directed and applied by the physician.

The position in bed is frequently of some consequence in very irritable persons, and should be attended to. There is no doubt that *lying on the back* is very apt to cause pollution, by the heat it produces in the loins, and sometimes will continue it notwithstanding everything else that can be done. So well aware are some persons of this, that they invent peculiar contrivances to prevent them ever resting on the back, even for a moment. One of my patients used to wear a broad leather belt at night, with spikes on the inside behind, so that if he turned on his back while asleep, these hurt him, and waked him up. Another wore a pointed piece of wood, so adjusted that he could not turn on his back at all, and by these means he avoided the emissions that used to occur almost nightly. Sometimes it is sufficient to merely sleep upon a hard mattress, with a piece of oiled silk or india-rubber cloth under, to keep the parts cool; or, what is still better, a sheet of lead may be tied over the back and loins when retiring. I have known some patients speak very highly of the effects of this metallic shield.

When there is decided irritation of the genital organs, manifested by redness at the end of the penis, burning when making water, and mucous discharge from the urethra, it becomes of the first moment to prescribe a proper diet, consisting chiefly of *milk*. This should be used freely, both as food and drink, either thickened with rice, isinglass, or sago, or even with gum-arabic. The beneficial effects of this diet will soon be evident in the decrease of all the inflammatory symptoms. Very little meat must be used with it, but plenty of *potatoes*, which are not only nutritious, but have also a decidedly good effect on the urine. Some fruits are very excellent, particularly strawberries, and ripe peaches, and so are tomatoes, but any very acid ones are objectionable. If the milk disagrees with the stomach, which it will sometimes do, a few grains of magnesia may be added to it, or two or three spoonfuls of lime-water, which will generally correct all such tendency. The copaiva and magnesia pills may also be used, or the powders of bearberry leaves, as formerly directed. Wines, coffee, spices, and spirits must be rigidly avoided in all such cases, and, in fact, *every kind* of excitement, as far as possible.

Cauterization.—This is a process which usually is resorted to when all other modes of treatment fail, though some physicians practice it from the first. To understand how it operates, the action of caustic, when applied medicinally, must be borne in mind. If we have any diseased surface, such as an open ulcer, or an inflamed mucous membrane, the caustic not only burns off that diseased surface, but by its energetic action, so alters the condition of the parts, that the disease is frequently removed altogether. This is why it is applied to all virulent sores, and to inflamed sore throats, eyelids, and other parts. Now in confirmed cases of spermatorrhœa there is always either a relaxed or an inflamed condition of the ducts, urethra, or vas deferens, and it is evident that if the caustic can be applied to them, in a proper and efficient manner, it will, in all probability, affect them in the same way that it does other parts when similarly diseased. The great difficulty, however, is to find a means to apply it in the situation required. The ducts being placed at the bottom of the urethra, completely out of sight by any means, and with great difficulty ever reached, it becomes a question as to how they are to be operated upon. This has been decided however by M. Lallemand, who has invented an instrument which enables us to apply the caustic to the ejaculatory ducts, with almost as much certainty as to any place on the exterior. This instrument consists of a silver tube, open at the end, and adapted to the size of the passage, down the inside of which passes a kind of piston, furnished at the end with a piece of lunar caustic. When the tube is introduced into the urethra, the caustic is contained inside of it, but when the open end of the tube has reached the ducts, the piston with the caustic on it is pushed out a little way for a moment, and of course burns the surrounding parts: it is then drawn back into the tube and the whole apparatus is immediately abstracted. By these means the ducts, the mouths of the prostatic vessels, and the neck of the bladder are effectually cauterized, without any of the other parts being touched. The performance of this operation is certainly a little difficult, and requires great manual skill, with an intimate knowledge of the structure of the parts. An unskillful person, who could not properly manage the instrument, or not judge correctly of the proper distance to introduce it, might not only fail of doing good, but even do harm. Many practitioners, also, cause great mischief by letting the caustic remain too long, and burning too much, or by acting only on the healthy parts, and leaving the diseased ones untouched. In short, though the operation is frequently of the greatest benefit, when properly performed, and capable of effecting a complete cure in the very worst of cases, it is also exceedingly dangerous when improperly performed, as too many know. Not only may the irritation be made much worse, but the most severe inflammation may follow from it, so as to prevent the discharge of urine, and lead to abscesses and ulcers of the most incurable kind. Even in successful cases, and under the most favorable circumstances, great distress is nearly always experienced, and the pain is not unfrequently very severe. Many persons are much alarmed, and even though greatly benefited, cannot bring their minds to submit a second time to it.

In general, however, one operation is sufficient, and when a repetition is required it should seldom be under six weeks or two months after. I have seen patients in a miserable state who had been cauterized too frequently, and with too short intervals, and in all probability, cauterization has, on the whole, done more evil than good. The discovery of certain new remedies, and improved modes of treatment, enable us now to dispense with it altogether, except in some very rare cases, and it is but very seldom resorted to.

CHAPTER XLVIII.

THE INFLUENCE OF MEDICINES IN PRODUCING AND CURING IMPOTENCE AND SPERMATORRHŒA.

THERE are a few medicinal substances that act in a direct manner upon the genital organs, some beneficially and others hurtfully, but the greater number operate upon them indirectly. This is a subject about which there is great ignorance, as I before stated, and an immense deal of imposition and pretension. It has always been a favorite notion with the public, that there are specific medicines capable of arousing the sexual ardor under almost any circumstances. From this notion has originated all the various cordials, stimulants, and elixirs, that are constantly pressed upon the attention of the impotent and sterile. None of these things are in the slightest degree capable of accomplishing what is promised of them, as well-informed people are aware, but the public generally are deceived and much injured thereby. There is no doubt but that an immense deal of disease and incurable impotence is caused by the use of these preparations, and much good will result from cautioning the public against them. *Very lately* it has been ascertained that certain drugs can be made to have a remarkably beneficial action, in particular cases of loss of power, but each case requires a peculiar dose and mode of administration, which makes it impossible to prescribe for all alike. These agents, however, are probably not known, even by name, to the parties who compound the preparations above referred to, and it is fortunate they are not, for if they were, more mischief would be done than by the things now used.

It is, however, not only the action of those drugs that may be beneficial that we have to study, but also those that may be hurtful, and among them will be found many that few persons have suspected of having any influence on the genital organs at all. *Purgatives*, for instance, are popularly thought to act *only* on the bowels, and not to influence sexual vigor at all, but the fact is, they often exert a very marked influence in that way. It is well known that aloes, gamboge, colocynth, and several other purgatives irritate the bowels very much, and this irritation may be extended to the neighboring parts, particularly near the rectum, and in this way they excite the flow of urine in some persons, by irritating the bladder, as well as operate upon the bowels. Now the spermatic ducts, and prostate gland, lie close to the rectum, and of course are subjected to this irritation as much as the bladder, and are equally liable to become unusually sensitive. I have known many persons, in fact, who always had involuntary emissions when they took purgatives, and who were obliged to be exceedingly careful in consequence when they did so. When there is any tendency to spermatorrhœa, therefore, the possible effect of purgatives must be borne in mind, both by the physician and patient, and in case they are absolutely needed those only must be chosen that are least irritating, particularly to the lower part of the bowels.

Tobacco is an article that exerts a most decided action, in numerous cases, upon the generative organs, though few persons suspect it of doing so. Like opium, and some other narcotics, it often stimulates at first, but afterward greatly weakens the sexual powers, so as to bring on complete impotence in many cases. I am satisfied, from my own observations, that it frequently leads to involuntary emissions, and keeps them up notwithstanding all that can be done for them. Many young men, patients of mine, have remarked that a cigar at bed-time would be certainly followed by emission before morning, and they found it necessary in consequence to abandon its use. It is true that these results are not generally seen except the tobacco is used in great quantity, but there are some persons that are affected by a very small portion, and who therefore never surmise that it has any influence upon them at all. I once saw a young man, a great smoker, who suffered from constant pollution, and who had been perfectly impotent for five years. He had submitted to every kind of treatment, even to cauterization, but only obtained temporary relief, and at last totally despaired of ever being benefited. On hearing his statement, and learning what had been done for him, I was much surprised, because there were no indications of severe disease, nor were the parts themselves in an unhealthy condition, though relaxed, and the testes still secreted perfect semen in considerable quantities. During our conversation he accidentally alluded to his smoking habits, and said he frequently used from two to four dozen cigars a day. I was immediately struck with the similarity of his case to that of a great opium chewer whom I had seen, and I at once concluded that the tobacco was the cause of the mischief. On explaining this to him he could scarcely be brought to think it possible, but eventually he agreed to follow my advice and gradually leave it off. The result even exceeded my expectations, for I was much afraid that some permanent mischief had been done. He began to mend immediately, and though considerable lowness of spirits, weakness, and loss of sleep were experienced at first, yet all these effects ultimately passed off, and he felt better, and was stronger than while using the tobacco. The most marked effect, however, was the checking of the spermatorrhœa. When I first saw him, he passed semen constantly in his urine, and frequently in the night. He had little or no erection, and such nervous palpitation of the heart occurred, whenever any slight sexual feeling was experienced, that he became utterly powerless, and would undoubtedly have been impotent from that cause alone. This all passed off, the involuntary discharge ceased, and his sexual powers returned as strongly as ever. Contrary to my advice, he commenced using the tobacco again, thinking that it would now cease to affect him, but in three days all the old symptoms returned, and he became as impotent as ever. On leaving off his smoking, however, he gradually recovered again, *though with more difficulty than at first*, which made me caution him not to relapse again, for fear the reaction might eventually fail altogether. I have even known married men seriously injured in this way, by merely using tobacco as a domestic indulgence. In one instance a gentleman, engaged in a somewhat harassing business, was induced by a friend to smoke a few cigars at night, *to steady his nerves!* He found, however, that though he could readily stupefy himself, yet his nerves were no *steadier*, particularly in *the morning*, and what was most singular, to him, he lost all sexual power and desire, and become so weak he could scarcely stand. In this dilemma he consulted me, and gave me a full history of his proceedings and experience. On examining his urine, I found, as I expected I should, that the semen escaped with it, and in such quantities that his impotence and weakness