

A
PRACTICAL TREATISE
ON THE
Disorders of the Sexual Organs of Men

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PREFACE TO THE SECOND EDITION.

THE generous reception given "The Sexual Disorders of Men" by the medical profession has not only been exceedingly gratifying to the author, but has encouraged the presentation of a second and enlarged edition. The original text has been revised and many new facts incorporated. The present volume includes all anomalies, injuries and non-venereal diseases of the genital organs of men, with the latest general and special treatment.

Many thanks are due Dr. Howard L. Coles for able assistance in proof reading, etc.

BUKK G. CARLETON.

75 West 50th St., New York, January 1, 1900.

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PREFACE TO THE FIRST EDITION.

THE physical and mental manifestations of the sexual disorders of men have long been an unfailing source of profit to unscrupulous practitioners and charlatans, who, with their literature and advice, have often caused untold misery and almost irreparable damage.

This class of ailments being so frequent and intractable the author believes that a more complete understanding of them with their manifold complications and reflexes will lead to a better appreciation of their gravity. With this view in mind, this little volume is presented to the medical profession.

In no variety of illness is careful prescribing so essential as in disorders of the generative organs. In order to more fully cover this important feature in the treatment the last thirty-four pages of this manual are devoted to the symptomatology and adaptability of the drugs found useful in sexual infirmities. The symptomatic and clinical hints of the remedies briefly mentioned in each chapter for special conditions will be found under Chapter XXIII.

The cause of the failure of the well-chosen remedy to give satisfactory results is often due to the neglect in considering the congenital and pathological conditions present, which require hygienic or surgical treatment before the selected remedy will remove the morbid phenomena.

The author is indebted to Doctor R. du Jardin for valued assistance in revising proof.

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INTRODUCTION.

A careful examination and analytical study of a large number of patients suffering from the various diseases of the prostate, prostatic urethra, seminal vesicles, ampullations of Henel, testes, spermatic cords and the penis, with the numerous associated reflex symptoms which disappear as recovery progresses, cannot but strengthen the opinion that the great majority of the so-called functional ills of the sexual organs of man and their accompanying neuroses are generally nerve reflexes from a local disease of these parts. If these lesions are recognized and properly treated, many, if not all, of the disorders of sexual function can be relieved and a normal and moral sexual life re-established.

The nervous reflexes and manifestations associated with sexual disorders have been considered in the past to be diseases *per se* or arising *de novo*, it being almost the unanimous opinion that the cause in general was a diseased condition of the brain, aggravated possibly by environment or communications received through the special senses of sight, hearing, smell and touch. The true causes were, however, often allowed to pass without attention or treatment, and untold thousands of individuals with bright minds permitted to degenerate or become total wrecks.

It must not be inferred that the author is of the opinion that all mental and moral depravities or physical and financial failures are due to lesions of the sexual organs; but he is, however, distinctly of the opinion that a large percentage of these conditions arise primarily from morbid impulses which originate in irritation or local disease of these parts.

Comparatively recent exhaustive researches give new light to the anatomy, physiology and diseases of the seminal

vesicles, the ampullations of the vas deferens and the testes. Heretofore, the seminal vesicles have been considered only as receptacles or storehouses for the surplus spermatozoa produced between the ejaculatory acts. While it was known that the mucous membrane lining them secreted a fluid, this was thought to be only a lubricant. They were commonly believed to be unimportant, and thus their true functions and clinical importance as presented in disease were overlooked for want of careful physiological consideration.

While agreeing mainly with Fuller in the new anatomy and physiology of the seminal vesicles and the clinical symptoms presented when they are diseased, the author does not think he has given the ampullations, the prostate, the prostatic urethra, the testes and the penis proper credit for their shares in the various complex sexual acts or in their relation to the functional derangements of the male sexual organs and the varied reflex neuroses.

The principal causes of derangement of function of the male sexual apparatus are excessive or perverted sexual acts, habitual sensual indulgence and unchaste thoughts, anterior and posterior urethral inflammations of simple or bacterial origin with their results, and excessive or ill-advised instrumentation or treatment; tubercular involvement of the prostate or seminal vesicles, which is usually of hæmatogenic origin, though it may be the result of extension from associated parts; malformations and benign or malignant growths of the sexual organs; disease or injury to the central brain mass or the nervous system; general disease, with consequent local effects.

In all animals where there is continued irritation of the sexual organs from local congestion or disease, the habit of onanism will probably be found to exist. When the abundant sympathetic nerve supply of the prostate, seminal vesicles and ampullations, and the intimate association of the three with the rectum, anus, penis, urethra, bladder, testes, etc., together with the blood supply and its return circulation, are considered, it is self-evident that all abnormal conditions, irritations or diseases of these parts will cause active or passive

hyperæmia of the generative organs. If this hyperæmia is long continued, it causes structural changes in the epithelial and sub-epithelial tissues of the verumontanum and the adjacent floor of the prostatic urethra; congestion, thickening and hyperæmia of the walls of the seminal vesicles, ampullations and ejaculatory ducts with subsequent irritation of the sympathetic nerves and their chain of little brains, not only in the hollow of the sacrum but elsewhere, which, by reflex action upon the cerebral cortex, produce sensual thoughts and acts. When this complex net-work of nerves is unbalanced by disease, is it any wonder that man, the grandest example of God's handiwork, is transformed into a degenerate? Can a man be expected to develop into a perfect being if his sympathetic nervous system is being constantly irritated? The physician must go deeper than the surface or superficial history in the treatment of these diseases and strike at the cause. This he can only do as he grows more thorough and practical, and, in treating these cases, gives more attention to the histories and more study to the reflexes presented. Until this is done the profession will be, in great measure, accountable for the many human wrecks produced by these conditions, not only those who find their way as paretics to the insane asylum but the great host of unsuccessful men without aim or thought in life and deficient in moral courage, as well as those in the less marked cases classed as eccentric.

Frequently diseases of the seminal vesicles, the ampullations, the verumontanum, the prostatic urethra or the ejaculatory ducts, presenting as symptoms nervousness, indecision, mental and physical irritability, want of firmness and self-confidence, lack of confidence in the judgment of others, suspiciousness, with moral, physical and financial failure, are treated as neurasthenias or general mental and physical decadences, the local sexual disease being neglected or treated only for the individual symptoms of impotence, priapism, satyriasis, diurnal and nocturnal pollutions, spermatorrhœa, etc., without actual knowledge of the cause of the reflexes which appear in the various parts of the body.

In the author's opinion, if the conditions which cause unnatural hyperæmia of the sexual organs can be eradicated, disease of the prostate, the ampullations and the seminal vesicles will be of infrequent occurrence, and, consequently, impotence, spermatorrhœa, etc., will be proportionately rare; there will then be no need for lectures to young men on the dangers of masturbation and other unnatural sexual acts, for if men are physically normal, association will not succeed in debasing them.

The sexual impulse as correctly sent through the nerve centers by the special sense to the cerebral cortex and the medulla oblongata, and reflected to the genito-spinal or ganglion of Budge, opposite the fourth lumbar vertebra, and the nervi-eregetes of Eckhard, included in the first three sacral nerves, and those of Eckhard and Goltz, midway between the brain and genital organs, with their general distribution, would be as nature intended it to be, and perverts cease to exist. The reason why, in many instances, treatment of this class of ills has failed in the past is that the local diseases or abnormalities of the genital organs were not recognized.

Disorders of the Sexual Organs of Men.

CHAPTER I.

PHYSIOLOGICAL CONSIDERATION.

The quantity of semen discharged at each complete ejaculation varies from a few drops to eight or nine drachms, the latter being the amount in the celebrated case reported by Ultzmann. In young men the quantity is usually about two drachms, in the middle-aged from a drachm to a drachm and a half, and in old men a drachm or less. Its quality depends somewhat upon the age of the individual together with his various congenital or acquired defects. Spermatic fluid is of heterogeneous character, opaline or whitish in color, viscid and stringy in consistency, alkaline in reaction, and possesses a peculiar strong odor resembling sawed bone. It is ropy immediately after ejaculation, but soon becomes gelatinous and in the course of five or ten minutes quite thin in consistency. When placed in a tube it separates into two layers of about equal depth, the lower being white, opaque and composed of the cellular elements, the upper turbid, translucent and containing only a few cells and some detritus. The spermatic fluid is the product of the testes, the vas deferens and its ampullations, the seminal vesicles, the prostate, Cowper's and the peri-urethral glands. Mieocher says: "The spermatic fluid is composed of 82 to 90 per cent. water and the remainder of serum albumin, alkali albuminate, hemi-albuminose,

nuclein, lecithin, guanin, hypoxanthin, protomin, fat, cholesterin, inorganic salts, phosphoric and muriatic acids in combination with inorganic salts and inorganic bases. Microscopically the spermiatic fluid presents spermatozoa, seminal bodies, fine seminal granules, epithelial cells from the genital tract, and phosphate crystals, usually of lime and magnesia."

The spermiatic fluid is sometimes red, dark red, brown or brownish-yellow in color from the admixture of blood. When yellowish it usually contains pus. The consistency of the spermiatic fluid depends on the relative proportion of its seminal and prostatic component parts, the fluidity depending upon the quantity of prostatic fluid present.

Dr. Lecco (*Therapeutische Monatshefte*, October, 1897,) gives the following sensitive microscopic test for spermiatic fluid: A drop of semen diluted with sterile water being introduced between a microscopic slide and a cover glass and a drop of a saturated solution of iodine in iodide of potassium allowed to flow under the latter, a number of remarkably beautiful crystals, characteristic of spermiatic fluid, will form; they are rhomboidal, often appearing in the form of crosses, and present a brownish color. This reaction was, at the same time, independently discovered by Florence. Lecco claims that even after the lapse of several years spots of spermiatic fluid are easily recognized by dissolving them with a little water and testing as above.

Spermatogenesis.—The testes, by a process called spermatogenesis, produce the leaping points of life known as spermatozoa. Taylor describes this process as follows: "Upon the endothelial basement membrane of the convoluted seminiferous tubules the nucleated parietal cells are seated, the outermost layer of which is composed of sustentacular cells, which are not concerned in producing spermiatic elements. Inside and on the foregoing layer are the spermatogenetic cells, of which the outer ones are the

longer or mother cells and the inner ones the smaller or daughter cells. From the nuclei of the latter cells the spermatoblasts are developed, and from these structures the spermatozoa are directly formed. They are closely packed together, side by side, in a finely granular semi-gelatinous substance. They gradually become elongated and then bean-shaped, and finally are elaborated into fully developed spermatozoa."

The spermatozoa formed in the convoluted portion of the seminiferous tubules escape by the straight tubes, enter the vasa efferentia of the epididymis, and passing through the various and tortuous canals enter the vas deferens, from which by their own vibration, assisted by the action of the ciliated columnar epithelium lining the vas deferens, the rythmical action of the circular muscular fibres in its walls and the pump-like action of the ampullations of Henel, they pass onward toward their destination.

Living spermatozoa can be demonstrated for forty-eight hours in normal semen sheltered from light and cold. Water impedes their movements and causes their tails to curl up. Concentrated solutions of salt, sugar, albumen and urea revive them. Animal secretions of an alkaline reaction are favorable to their vitality, while acid secretions, such as the urine, acid mucus, etc., inhibit their action. Cold completely arrests their movements as do solutions of the metallic salts and acids. The spermatozoa in the semen of young and middle-aged men are large and active, but, as age advances, they become relatively less abundant and lively, frequently disappearing entirely by the sixtieth year, though undoubtedly many men continue to be virile even to the ninetieth year or more. All things being equal, the spermatozoa are proportionately less numerous in the spermatie fluid of those who indulge in sexual intercourse at frequent intervals. The number of spermatozoa discharged at each ejaculation

varies. Lode estimates the number to be about four hundred and twenty-five million, while Guelloit places the average at about four hundred and twelve million five hundred thousand.

A spermatozoa is composed of a head and tail and resembles in general contour a tadpole, the upper and lower surfaces of the head being flat and of oval outline, the sides wedge or spear-shaped. If the spermatozoa be the product of one advanced in years or of one suffering from depressed vitality, from disease, etc., the head will be thin and small, but if the product of a young and vigorous man the head may be of remarkable size. Ultzmann says, "They may be hydrocephalic and sometimes double-headed, these anomalies being found among those of normal appearance." In this fact may possibly be found the solution of twin pregnancy. The length of the tail varies; it should be ten times the length of the head; all other things being relatively equal, those produced by young men are the longest, the length diminishing as age advances or disease impairs the system. Occasionally they have two tails. Active movement of the tail should exist for at least twelve hours after ejaculation. If the spermatozoa are dead when discharged the tails will be curled up; if alive, they will be outstretched or slightly curved at the end.

In the semen of young and middle-aged men there is a varying number of seminal bodies or cells, which are about four times the size of a white blood corpuscle, present a granular appearance, and under high power give evidence of a fibrous structure. Generally they contain one or many nuclei. In men past fifty, the semen contains seminal granules, which have a yellowish cast and fatty appearance. These granules and cells are a bi-product produced in the breaking up of the protoplasm of the daughter cells during the formation of the spermatozoa.

Vesicular and Ampullar Fluid.—This is secreted by

the tubular glands situated in the mucous membrane lining the seminal vesicles and the ampullations, and serves not only to separate the spermatozoa and give them proper individuality, but also, between the periods of ejaculation, to protect, preserve and nourish them. In this connection the careful and extensive investigations of Huntington must be taken into consideration. He is of the opinion that the spermatozoa never reach the seminal vesicles and are never stored or nourished in these receptacles, except possibly in disease, and that those who have found spermatozoa in the seminal vesicles, when conducting investigations along this line, have been deceived by some accidental condition or through want of technique. If Huntington's investigations are correct, the function of the seminal vesicles is the secretion of a special mucus, which is poured forth in abundance during sexual congress, and by its volume and force carries any and all spermatozoa expelled from the ampullations of Henel into the corresponding ejaculatory duct with it in its onward course; however, as all agree that the gross and histological structure of the walls and the glandular secretions of the seminal vesicles and the ampullations of Henel are identical, and because of their close anatomical association, disputed points, from a clinical point of view, become unimportant. The vesicular and ampullar fluid is gelatinous, viscid, without special odor, of a grey or greyish-blue cast, of high specific gravity, and alkaline reaction. Microscopically it is composed of large oval or irregular masses of mucus, granular phosphates, leucocytes and epithelial cells, a varying number of spermatozoa, and sometimes small masses of a yellow color, composed of mucus, phosphates and occasional calcareous concretions.

Prostatic Fluid.—The prostate has the power of secreting its special fluid in abundance, but possesses no receptacle for the storage of its surplus product. In health the

secretion is very small, except during the period of functional activity, when it is poured out in large quantities. It is a thin, alkaline mucus fluid with the fragrant odor peculiar to the seminal fluid. Microscopically, prostatic fluid contains cylindrical cells and granular phosphates; in disease these may be very abundant.

Peri-Urethral Fluid.—Littre's follicles, the crypts of Morgagni and Cowper's glands contribute to the spermatic fluid, their secretion being discharged into the urethra anterior to the triangular ligament. Its particular function is to keep the mucous surfaces of the urethra alkaline, to neutralize the effects of the acid urine, to lubricate the urethra during sexual congress and to facilitate the onward passage of the ejaculated seminal fluid. The secretion furnished by Cowper's glands, at the proper period in the act of ejaculation, mixes with the thick seminal fluid from the deeper tissues and increases its fluidity. During sexual excitement, the secretion of the glands anterior to the triangular ligament is frequently so abundant that the peri-urethral fluid appears as a drop or even as a profuse discharge at the meatus. In long-continued sexual excitement without gratification, the secretion from these glands may be quite abundant, constituting a *urethrorrhœa ex libidine*. The peri-urethral fluid is alkaline in reaction, clear, viscid, and looks like the albuminous portion of a fresh egg.

Erection, Ejaculation, Etc.—The nerve centres governing erection, the secretion of semen, the action of the vas deferens and the seminal vesicles are situated in the lumbar region of the spinal cord. The prostate has a remarkably rich supply of nerves, which is connected with the nerves of the seminal vesicles and bladder by the plexus vesicalis. In the nerve trunks passing between the sphincter urethræ and the circular muscular fibres of that portion of the cortical layer of the prostate extending along the urethra are

numerous ganglion cells, and in the cortical layer of the prostate itself are ganglia and pacinian corpuscles.

According to Kolliker and Kohlrausch, erections are brought about in the following manner: "Under the influence of the *nervi erigenetes* the organic muscular fibres of the cavernous tissue become relaxed, and the interspaces thereby enlarged and made ready for the reception of a large amount of blood. There is still a second factor of great importance—the prevention of the backflow of the blood out of the *corpora cavernosa*. This damming of the backflow is probably accomplished by the following muscular apparatus: Along the *pars subpupica urethræ* lies the *musculus bulbo-cavernosus* which begins behind in a tendon from which also the *musculi transversi perinæi* and the *sphincter ani externus* take their origin. The muscular fibres are arranged on either side like the plumes of a pen, and project above like the prongs of a fork. The ends of this muscle merge into a thin aponeurosis which is continuous on the *dorsum* of the penis and the tendons of the *musculi ischio-cavernosi* (Linhart). When this muscular apparatus contracts, the penis in the region of the symphysis is constricted, and the return of blood prevented; at the same time also (probably through the influence of the *musculi ischio-cavernosi*) the penis is raised, *i. e.*, erected."

When this constriction of the penis by muscular action against the symphysis is not complete, the erection is feeble, incomplete, or of too short duration. It is well known that voluptuaries, in order to strengthen this muscular action, place about the root of the penis a constricting ring of rubber or other material.

This mechanism of erection is essentially under the influence of the nervous system. According to Eckhard, erections can be excited in dogs by electrical irritation of the brain as well as of the cord, and, indeed, we find in

men also that libidinous thoughts as well as certain diseases of the central nervous system have erections as a result. Peripheral excitation of the genital apparatus also causes erection. It is commonly found that erections occur more easily and last longer when the bladder is full than when it is empty. It is well known that the dorsal position at night or the pressure of a full bladder on the returning blood vessels is sufficient to excite powerful erections, and that inflammatory conditions, as prostatitis, inflammation of the seminal vesicles, etc., serve to produce constant and even very painful priapism. And, finally, it is well known that peripheral irritation applied to the glans penis, the skin of the penis and the testicles causes erection.

The primary erogenous areas are the glans penis, foreskin and testicles. Secondary or artificial erogenous areas may pathologically exist in almost any locality in certain individuals, *e. g.*, in places in proximity to the genital organs and breasts, or in the anus, many individuals having certain areas—ears, lips, wrists, hands, feet, legs, etc.—the manipulations of which at the hands of the opposite sex may excite lustful feelings quite independently of evil intention.

In the act of copulation, the physiological part taken by the male is as follows: The erection of the penis being consummated either by an impulse generated in the cerebral cortex and conveyed to the sexual organs through the nerve trunks, by tactile influences, or a combination of both, intromission accomplished and the act commenced, the friction of the glans penis upon the vaginal walls produces certain motor and reflex impulses, which in turn causes increased functional activity of the testes, while at the same time the cremaster muscle draws them upwards and retains them at the abdominal ring. During this period testicular fluid is poured out of the *coni vasculosi* into the *vas deferens* where the strong circular muscular

coat of this canal by a rythmical action conveys it to the ampullations of Henel. The prostatic gland becomes active, and secretes an abundance of fluid, which is poured into the prostatic urethra. This fluid is prevented from flowing back into the bladder by the sphincter vesicæ or forward into the urethra by the cut-off muscle of the membranous urethra and the rigid penis, which is over-distended with blood.

As the act progresses the prostatic fluid, with the overflow from the seminal vesicles and ampullations, accumulates in this closed canal, and in so doing presses upon the hyperæmic erectile tissue composing the verumontanum. The fluid continues to accumulate in the prostatic urethra until the point of irritative tolerance of the montanum masculinum is reached, which induces a contraction of the muscular fibres of the prostate and produces an ejaculation. The muscular fibres of the prostate passing backward and upward become continuous with those forming the muscular coat of the seminal vesicles, and the outer or connective tissue layers of the two organs pass over and join intimately with each other; therefore, a contraction of the prostate draws upon the main cavity of the seminal vesicles, and assists in their complete collapse with discharge of the retained spermatozoa and the protecting vesicular fluid into the prostatic urethra, where it mixes with that of the prostate and is propelled onward. During this period the urethral follicles located along the anterior urethra secrete a small amount of clear, viscid, alkaline fluid, which lubricates the canal. When the ejaculated spermatic fluid reaches the bulbous portion of the urethra the perineal muscles, by contraction, propel it onward and, at the same time, press out the fluid in Cowper's glands and mix it with that from the deeper parts. When there is an obstruction in the anterior portion of the urethra, the seminal fluid may be discharged

backward into the bladder and a misemission results. If the obstruction is not removed it may cause sterility.

When, in the consummation of an emission, the seminal vesicles contract the central cavity only is emptied; the little chambers or sacs situated upon the sides of the vesicles being connected by short canals which enter the central cavity at an acute angle directed from above downward and forward are completely closed to exit or entrance during the contraction of the vesicular walls. The opening of the ampulla of Henel or clubbed end of the vas deferens is also closed and its exit barred by the same act and for the same reasons. The contraction of the vesicular walls is followed by their relaxation, through which a partial vacuum in the main cavity of the vesicle is produced and the fluid in the distended sacs is drawn by suction into it. At the same time the muscular coats of the ampulla contract and force its contents into the seminal vesicles. Hence, in the second copulation, a profuse seminal discharge containing all of the component elements and about equal to the first is ejaculated. If a third act is at once indulged in, the discharge will be largely if not entirely composed of prostatic fluid, and the generative apparatus will be correspondingly congested and impaired.

The lower expanded end of the vas deferens, called the ampulla of Henel, does not communicate directly with the ejaculatory duct, but opens into the seminal vesicle, and while its mucous membrane secretes a fluid that lubricates and to a certain extent preserves the spermatozoa, its principal duty is to act as a pump to assist the spermatozoa in their transit from the testicle to the seminal vesicles. When the ampulla becomes filled, its muscular walls contract and force its contents into the seminal vesicles, and the vacuum formed, as the muscular walls relax, facilitates, by suction-like action, the onward progress of the spermatozoa, the communication between

the clubbed end of the vas deferens and the seminal vesicles being so arranged that, although the fluid can be forced into the seminal vesicles, the acute angle of the opening prevents a return flow. According to the physiology and anatomy taught by Huntington and Taylor, the ampullæ open into the ejaculatory ducts. Taylor says: "With the advent of the erotic impression and consequent erection there is increased functional testicular activity, semen being discharged from the coni vasculosi of the epididymis into the vasa deferens. By strong and rythmical muscular action it is thence carried upward to the ampullations of Henel, causing their over-distension, and the point of tolerance being reached at the verumontanum, the ampullations contract simultaneously with the seminal vesicles and expel their contents into the ejaculatory duct where the abundant fluid is sweeping onward."

CHAPTER II.

SEXUAL INSTINCT.

Until puberty, the normal boy, *i. e.*, one free from all congenital or acquired lesions of the sexual apparatus and whose mental powers are fully developed, is free from all sexual thoughts and impressions. The sexual organs are undeveloped, the penis diminutive, the foreskin long, usually covering the glans, the testes small and but slightly sensitive to pressure. As puberty advances these organs enlarge and become active, the voice changes, growing deep and bass in character, falling a full octave in register, the thyroid cartilage becomes larger, longer and more prominent. These changes take place more or less slowly, beginning at puberty, full maturity not being reached until about the twenty-fifth year. During this time hair appears on the face and pubes, the frame becomes vigorous and strong, and the body assumes a manly type. The child, previously apparently sexless, develops masculine qualities, with a general evolvment of manly traits and character, pugnacity and aggressiveness being prominent. If by accident or design the boy is castrated before puberty, another picture presents itself, *i. e.*, a morally and physically weak cowardly youth lacking in all the finer feelings of humanity with a willingness to afflict by direction the most severe and unnatural punishments to others. The adult eunuch is taller than the average man but has less physical power. His chest is narrow, his hips broad with a tendency to being knock-kneed. His voice is shrill and falsetto and about an octave above the male register. His face is characteristic, the skin being dark, thin and wrinkled, giving

the impression of premature age. The face and pubes are almost devoid of hair; the penis undeveloped and shrunk-en. Emasculation engenders a diminished virile force, both mental and physical, with slothfulness and indifference.

The normal sexual instinct is pure, but when improperly stimulated, as by constant local irritation of the organs or by deflection from a diseased brain, it becomes debased and sensual, destroying all that is good and true in the afflicted individual. The properly directed use of the sexual qualities has been greatly overlooked and misunderstood, the transgressions of the parent often being displayed in their offspring.

Westermarck says: "The normal sexual instinct is the motive power which engenders not only love of home, virtue and desire for association with the opposite sex, but it causes the highest desires and the loftiest ambitions, and gives impulse to the successful attainment of goals desired. When rightly directed, it brings out all which is good, lofty and noble, making them respected and leaders among their associates. When this impulse is misdirected, either by mental direction or some irritation in sexual sphere, the opposite may be expected; and only a strong, well-directed mind and the greatest of will power can prevent the almost inevitable catastrophe. The misdirected energy makes cowards of its victim, turns success into failures loss of aggressiveness in business, etc., and transmits to a future generation hereditary taints necessary for the development of perverts of all kinds, as well as immorality, insanity, criminality, etc. Besides producing in the victim many unnatural sexual acts and habits, which can only occur with an unbalanced organization, reduces the instinct of true manhood to a condition far below brute life."

At puberty certain emotional disturbances are to be expected. It is often a question whether pubescent insanity is due to a hyperacute condition with masturbation as a

symptom, or whether the insanity is caused by the masturbation. It is probable, however, that the original cause is a weakened constitution derived from a starved family tree quickened by unnatural acts due to local irritation.

The impressibility of the period of puberty must be recognized, lust and excitement frequently producing marked and lasting impressions. The teacher or parent who fails to realize that children have sexual natures which incite if they do not produce sexual impressions makes a sad error, and by neglect causes irreparable damage. Allowing a boy to find his sexual nature unaided or through the instruction of some ignorant or vicious party is a cruel and unnecessary omission in his teaching, and onanism and many injurious effects are sure to follow. Unscientific and harmful advice or conclusions may cause a life of unhappiness and despair.

The usual custom of sending boys to school, out into the world, or even to college without proper instruction, knowledge and warnings of the use and abuse of the sexual organs is injudicious and unwise, this neglect often making a degenerate of what was intended by nature for one of the grandest of men. Knowledge of the sexual life, its power, and results if abused, engenders respect for others, a proper consideration of virtue, a firm self-control over improper impulses and desires and a power to create and hold a dignified and respected position in the community. It also makes a pure marriage possible and guarantees that the children of such a marriage shall enter life free from physical or mental retrogression caused by the parent's acts. If this instruction could be properly imparted marriages would in many instances be purer and not, as is often the case, be made to gratify some base desire without higher motives or instincts. Impurity leads only to degeneration with mental and physical failure.

A man's health does not in any way depend upon the

gratification of his sexual desires. In fact, a proper curbing of these powers, with reserve of the seminal fluid, has a markedly invigorating influence on bodily and mental development, *i. e.*, all that is good and grand in the individual. Those who pander to lust lose manly ambitions and attributes, as well as mental and athletic successes. Excessive indulgence often causes degeneration.

Until within a very recent period all deviation from a normal standard of sexual power, as well as all perversions, were considered to be of nervous origin. Perversions are undoubtedly largely due to hereditary mental deflections, while the deviations from the normal standard of the sexual qualities are to a large extent due to congenital or acquired defects in the genital apparatus.

Complete development and physiological activity of the generative apparatus with associated perfection of the powers of which a man is possessed are not generally reached until his twenty-fifth year. Marriages made previous to this period may result in weakly off-spring.

CHAPTER III.

PREVENTION OF SEXUAL DISORDERS.

Prevention must begin at birth and continue during life by proper attention, not only to the morals with protection from improper association, but to careful, scientific and hygienic attention to the genital organs. Too much care cannot be given to the removal of congenital or acquired defects, however slight, for if Nature's laws are violated her penalties will always be exacted.

It is the duty of every physician attending the birth of a male child to carefully examine the genito-urinary organs, to strip back the prepuce, thoroughly expose the glans, the corona and sulcus behind it, and break up adhesions; if smegma is found behind the glans it should be removed and measures taken to keep the parts clean. At the same time unnecessary handling must be avoided. When the prepuce is abnormally long, becomes so after stripping, or the preputial opening is narrow, the child should be properly circumcised. The meatus urinarius should receive attention, and if there is evidence of over-coarctation of the mucous membrane at this point sufficient to obstruct the urinary stream it should be properly incised to prevent irritation of the parts which may lead to self-handling, orgasms, nervous derangements, and especially, early prostatic hyperæmia. Later in life if abnormal sexual impulses develop, the urethra should be carefully examined for congenital or acquired stricture and other defect or disease. Congenital strictures are usually located at the meatus or in the pendulous portion of the urethra. In many cases of disorders of sexual function, even when of

slight degree, relief is only obtained after a corrective internal urethrotomy.

A normal condition cannot be established until all abnormalities have been removed. Abnormal conditions are the essential factors in the causation of masturbation and many sexual disorders. When bad habits have been practiced and, owing to proper advice or from fear of the results, are discontinued, unless, at the same time, the irritating cause is removed, the mind will continue to dwell upon lascivious desires the chronic congestion of the sexual organs will be kept up, which later in life will produce imperfect sexual power, etc. The promiscuous association of sexes is to be avoided. The intense strain, testicular, prostatic and vesicular of the unsatisfied desire, etc., which attend the close association frequently allowed the young and unmarried, and practiced by the so-called sexual triflers, is often the cause of future sexual derangements, ill-health and unhappiness. This occurs while the person, in blissful ignorance, believes that no harm has been done as no commandments have been broken. The too frequent advice given to young or old unmarried men that for their health they should practice prostitution is to be condemned; they might as well be advised to practice self-pollution or indulge constantly in sensual thoughts. The excessive cohabitation indulged in by many married and in many cases by unmarried men is a very fruitful source of future weakness. Whenever the sexual act is repeated more than twice within a few hours, the strain upon the seminal vesicles and the prostate produces congestion if nothing more; and, if frequently repeated, serious local disease may result. It may be added, that the perverted sexual habits of married men, who for some reason do not desire the greatest of God's gifts—the family—are still more harmful. Conjugal onanism, the use of a cundrum, and the practice advocated by the founder

of the Oneida Community have practically the same effect. A chaste mind and body are only perfectly consistent with health.

Beale says: "It cannot be too emphatically stated that the strictest continence and purity are in harmony with physiological, physical and moral laws, and that the yielding to the desires, the passions and inclinations cannot be justified on physiological, physical or moral grounds.

"Some ignoble and profane doctors can be found, if one search for them, who will advise men to fornicate, and in times past some instructors have been known to tell medical students that it would be well for them to acquire gonorrhœa in order to know how to treat it. But one cannot justify himself by getting the sanction of a man who, bearing the honorable title of doctor unjustly, prescribes antidotes which are poisonous."

Reputable physicians and physiologists all unite in advocating a chaste and continent life, simply for the sake of one's health, independently of all other considerations.

Gowers, makes the following excellent remarks in his lectures on syphilis and the nervous system: "One method, and one alone, is possible, is sure, and that one is open to all. It is the prevention and safety that can be secured by unbroken chastity. Is this potentially becoming greater? As we look back through the long centuries we see the sensual more dominant in the past, growing less as the race slowly rises. But, as we look at the present, we can trace small ground for hope that this process will have any appreciable influence unless or until there is some change in men more potent and effective than the slow 'love upward working out the beast' of moral evolution. But that which will not perhaps be for the mass may yet be for the individual. And, in ending, I must ask a question and give a warning that I would fain have left unasked, unsaid. But I cannot, I dare not

pass them by. Do we do all we can—and our profession gives us power that no other has—do we do all we can to promote that perfect chastity which alone can save from this, and from that which is worse? The opinions that on pseudo-psychological grounds suggest or permit unchastity are absolutely false. Trace them to their ultimate basis and they are groundless. They rest only on sensory illusions, one of the many illustrations of a maxim which I have often to enforce on various sufferers: 'There are no liars like our own sensations.' Rather, I should say, they rest on misinterpretations, always biased, and often deliberate. With all the force that any knowledge I possess can give, and with any authority I may have, I assert as the result of long observation and consideration of facts of every kind, that no man was ever yet in the slightest degree or way the better for incontinence; that for it every man must be worse morally, and that most are worse physically, and in no small number the result is, and ever will be, utter physical shipwreck on one of the many rocks, sharp, jagged-edged, or one of the many banks of festering slime that are about his course, and which no care can possibly avoid. And I am sure further that no man was ever yet anything but the better for perfect continence. My warning is: let us beware lest we give even a silent sanction to that against which I am sure, on even the lowest grounds that we can take, we should resolutely set our face and raise our voice."

Acton says: "One argument in favor of incontinence deserves special notice, as it purports to be founded on physiology. I have been consulted by persons who feared, or professed to fear, that if the organs were not regularly exercised they would become atrophied, or that in some way impotence might be the result of chastity. This is the assigned reason for committing fornication. There exists no greater error than this, or one more opposed to

physiological truth. In the first place, I may state that I have, after many years' experience, never seen a single instance of atrophy of the generative organs from this cause. I have, it is true, met with the complaint, but in what class of cases does it occur? It arises in all instances from the exactly opposite cause, early abuse; the organs become worn out and hence arises atrophy. Physiologically considered, it is not a fact that the power of secreting semen is annihilated in well-formed adults leading a healthy life and yet remaining continent. I have daily evidence that the function goes on in the organ always from puberty to old age. Semen is secreted sometimes slowly, sometimes quickly, but very frequently only under the influence of the will. I have already referred to the fact—which I shall hereafter treat of in more detail—that when the seminal vessels are full emission at night is not infrequent. This natural relief will suffice to show that the testes are fully equal to their work when called upon. No continent man need be deterred by this apocryphal fear of atrophy of the testes from living a chaste life. It is a device of the unchaste a lame excuse for their own incontinence not founded on any physiological law. The testes will take care that their action is not interfered with.

“If a young man wished to undergo the acutest sexual suffering he could adopt no more certain method than to propose to be incontinent, with the avowed intention of becoming continent again when he had sown his wild oats. The agony of breaking off a habit which so rapidly entwines itself with every fibre of the human frame is such that it would not be too much to say to any youth commencing a career of vice: ‘You are going a road on which you will never turn back. However much you may wish it, the struggle will be too much for you. You had better stop now. It is your last chance.’”

Scott says: “The sufferings of the continent man, though

constantly requiring fortitude, do not compare with those of the incontinent. If a man has been properly brought up, protected from evil practices and not early debased by sensuality, his habits become fixed, and he prizes his health and vitality too much to put them in jeopardy. Love is a necessity of man's nature as he is constituted and a pure attachment for a woman whom he hopes some day to make his wife is most desirable.

"The intensity of the longing for sexual gratification is readily given as an excuse for satisfying that craving; but outside of marriage, wilful compliance with these desires stifles the primitive, fundamental purpose of nature, which has designedly conferred upon every healthy individual of either sex a lavish, bounteous and almost superabundant endowment of sexual longing, the object of which is to render certain the perpetuation of the species. Throughout all nature this is seen as a passion, and no apology need be offered for saying that chaste men and women experience this sexual passing in fuller force than the unchaste, but not as sensuality."

Schrenck-Notzing says: "In the course of my own professional experience, I can truthfully say that I have never met instance in which disease of any kind was present as the result of a pure or continent life. On the other hand, I have seen the most horrible results from the unlawful and unprofessional advice sometimes given by physicians to young men, suggesting unchastity as being essential for the relief of some physical weakness, though I have never met with a single case in which the slightest benefit had been derived from following such advice. My observations with reference to the character of those who give professional advice of this sort have long ago led me to the belief, that, as a rule, only those who have themselves been impure to such an extent that they were bereft of their ability to judge properly of the influence of a pure and

continent life are capable of giving such unwise and immoral advice."

Scott says: "Masturbation is so well understood to be destructive of every quality of moral and physical manhood and beauty that its devotee never thinks of acknowledging his defilement, rarely even to his physician. In that it is a crime against self, it is not so far-reaching in its consequence to society unless the individual marries. It produces its own train of personal neuroses, diseases and degenerations, injuring the character, perverting the instincts, ruining the nervous system, and, by striking at the very foundation whence love comes, it unfits the victim for the high functions of a husband and father. It is a 'furious taskmaster,' universally berated; practiced only in secret, it affords a ready opportunity for frequent gratification. All the world despises a masturbator, as he does himself.

"Fornication is a perversion, for it ignores the fundamental consequences of the procreative act—namely, the welfare of offspring. Besides the great risk of initiating a new life, or of acquiring execrable preferences and strange plies or inclinations, it necessarily affects two persons, and thus becomes an act of vital importance to society. To the unenlightened there is a strong fascination about the strange woman who knows how by her dexterous encouragements and wily arts to inflame a man's passion by look, gesture, apparel; but the moth fluttering round the exposed electric arc-light is hardly more in danger than he who ventures to cohabit with a woman who is loose with her favors. Adultery, single or double, partakes of all the foul abominations, and fornication, besides profaning the covenant of marriage, bringing a ruin of distress and disease into the households, and being a civil injury punishable by fine or imprisonment."

If abnormal irritations cause lust, the condition must be removed and not pandered to. If there is a urethritis, the

patient should not be dismissed until the urine is free from epithelial and other shreds. When stricture, congenial or acquired is present, it should receive proper treatment, and if there is stone in the bladder it should be removed. If the saddle on the wheel be improperly constructed or adjusted and it cannot be changed riding should be discontinued. If the urine is over-acid, alkaline or irritating, it should have attention, etc.

CHAPTER IV.

DISEASES OF THE PREPUCE AND GLANS PENIS.

BALANO-POSTHITIS.

Balanitis, being an inflammation of the surface of the glans penis and posthitis an inflammation of the mucous lining of the prepuce, and as one cannot continue for any length of time without producing the other, they are considered together. The disease in itself is not contagious unless it is of venereal origin.

Etiology.—The predisposing causes include a long, tight, redundant, or very short prepuce, a short frenum, unclean habits, a gouty or strumous diathesis, as well as diabetes, diphtheria, variola, scarlatina, rubella and other contagious diseases. The exciting causes are traumatism, masturbation, sexual excesses, irritating chemical applications, the abnormal accumulation of smegma from the glands of Tyson, contact with menstrual, leucorrhœal, lochial, gonorrhœal and other irritating discharges. It occurs also as a complication of herpes, vegetations, chancroid, chancre, etc.

Clinical History.—Balano-posthitis may be acute or chronic. It often recurs. The symptoms of the acute variety vary from a slight, itchy, uneasy feeling of the glans, some redness or slight abrasion of the parts and a yellowish or greenish-yellow discharge, to one in which the discharge is profuse, greenish, purulent and offensive, the mucous membrane presenting a swollen and cedematous condition of a dark bluish-red or mottled cast, with irregular erosions of the epithelium, especially in the region of



the corona. Crusting of the exfoliated area often takes place; ulcers may develop under the crusts and give the appearance of chancroids.

As the urine passes over the parts there is burning and biting in proportion to the degree of inflammation. Balano-posthitis frequently has an associated inflammatory phimosis.

The circinate erosive form is characterized by its configuration, resembling a ring-worm. This condition may involve the entire balano-preputial surface as it extends in circles, or segments of circles. The invaded area may become eroded or ulcerated. This variety is infectious, often resists all treatment, and is supposed to be caused by a micro-organism.

The diphtheritic variety may develop as a complication of wounds of the prepuce or during the course of one of the infectious diseases, when, in addition to the general symptoms of an ordinary balano-posthitis, the mucous membrane will be covered with a thick, dirty yellow, adherent membrane, which, if removed, produces slight bleeding.

Venereal balano-posthitis is produced by direct irritation from the decomposing discharge and the presence of the bacteria of suppuration. It may appear as a part of the erythematous or papular rash of syphilis, or the primary lesion known as infecting or syphilitic balano-posthitis, accompanied with marked infiltration of the deeper tissues, the foreskin presenting a thick, cold, purple appearance.

The diabetic variety is so-called because it is sometimes one of the most distressing and early symptoms of diabetes.

Vegetations, hypertrophies, gangrene, lymphadenitis, etc., are especially liable to occur as complications in those whose systems are greatly deteriorated, or where the original lesion was improperly treated by caustics or

irritants, as well as through neglect of proper toilet of the parts.

Chronic balano-posthitis produces a varying degree of itching and heat of the end of the penis, which may become quite distressing, often causing frequent and painful erections. It is recurrent in character, dependent on diet and habits, and is especially prevalent in middle and advanced age.

The mucous membrane of the preputial sac becomes inflamed, thickened, sometimes red, eroded, and covered with a little pus; it may be bluish, white or pale, thickened and parchment-like, causing a narrowing of the preputial opening and, occasionally, slight fissuring. The mucous membrane may become excoriated and the condition terminate in malignancy. The induration, as it advances, often produces by pressure upon the glans, marked diminution in its size. The thickening may involve the entire sac or be limited to special areas.

Diagnosis.—When the preputial sac can be exposed, differential diagnosis is generally easy. Herpetic eruptions commence as vesicles, which soon break down and leave round erosions. Chancroids have distinct ulcerations, early inflammatory infiltration of the neighboring tissues with bubonic complications. Chancre is recognized by its hard circumscribed induration, glandular involvement and the development of secondary lesions. The chronic variety is easily recognized by its clinical history. When exposure of the parts is impossible, the history of the case and the microscopic character of the discharge should be all sufficient.

Prognosis.—Where the condition is local and the parts allow of perfect cleanliness and antisepsis, recovery will be rapid, but if due to other disorders its duration will depend in a great measure upon the original cause. In

chronic cases circumcision may be the only means of relief.

Treatment.—Cleanliness is of the greatest importance; without it recovery cannot ensue. Alkalies, soaps, salves, etc., irritate and must be avoided. The parts should be bathed every two to six hours with one of the following solutions: Carbolic acid, 1 to 400; Hydrarg. bichloride, 1 to 3,000; a saturated solution of Boric acid; succus Calendula, or Ernesty's aqueous Hydrastis, ten drops to the ounce of hot water. When pus is present these applications should be preceded by a douche of hydrogen peroxide. If the parts can be exposed they should be dried, without rubbing, with absorbent cotton; if not, some solution best adapted for its cleansing and antiseptic properties must be injected with a broad-nozzled syringe into the balano-preputial cavity. The inflamed surfaces should be dusted with Subnitrate of bismuth, powdered Alum, Tannin, Aristol, Nosophene, etc., or separated by a thin layer of absorbent cotton moistened with red wash or a solution of liquor plumbi subacetatis.

In many cases where erosions are present a solution of Silver nitrate, 1 to 2000, acts very kindly; sometimes a ten to sixty grain to the ounce solution is required. Lime water and aromatic wine are often beneficial. In the diphtheritic variety, in addition to perfect asepsis, a local application of tincture of Iodine and in obstinate chronic cases, in connection with the above local treatment, Zinc chloride, one-half to two grains to the ounce of water, is often very efficacious. If inflammatory phimosis is present, frequent and prolonged immersion of the affected parts in hot water, made slightly aseptic, will be necessary.

The remedies most frequently indicated are Aconite, Cannabis sat., Coccus cacti, Lycopodium, Mercurius, Nitric acid, etc. *Rhus, Cinnabar,*

PAPILLOMATA.

Venereal warts are vascular papillary epithelial outgrowths.

Etiology.—Uncleanliness with moisture is a common cause, especially in those having a long, tight, redundant prepuce. They frequently complicate balanitis, herpes and venereal lesions. In some individuals a special idiosyncrasy seem, to exist. They have not been proven to be contagious.

Clinical History.—Papillomata are most frequently located in the fossa behind the glans penis, but may appear on the glans, the prepuce, in the urethra, on the scrotum, around the anus; in fact, on any part of the external genitals. Occasionally they attain a large size and may prevent intercourse. When located on the mucous surfaces they are moist from continued maceration, present a red, purple, pink or dirty gray color and are often bathed in a fetid, purulent discharge. On the integument, they are dry, hard and of a red or dirty brown color. They may be broad and flat, long, narrow, arrow-shaped, arranged like a cock's comb, or be pedunculated, single or multiple, the form assumed depending largely upon the pressure exerted by the surrounding parts.

Diagnosis.—Benign papillomata occur generally between the fifteenth and twenty-fifth year. After forty-five vegetations are usually the primary manifestations of cancer and ulcerate rapidly, the ulcerative process being accompanied by a dense infiltration of the neighboring tissues and the involvement of the inguinal glands. In all doubtful cases a microscopic examination should not be neglected. The history should differentiate simple papillomata from syphilitic condylomata.

Prognosis.—With proper surgical care recovery is generally rapid and complete. *If not → cancer.*

x Syphilitic hard, burning feel
Anast. soft.

Treatment.—Immediate and entire removal should be advised, as papillomata frequently develop into malignant growths. In some cases cleanliness alone cures. Immersion in a hot antiseptic solution for some hours, followed by the application of a drying powder, often gives satisfactory results, equal parts of Calomel and Salicylic acid being especially efficacious. The vegetations may be painted with a saturated solution of Salicylic acid and Collodion, or a solution of Bichloride of mercury, thirty grains to the ounce of Collodion; their action is slow but free from pain. The parts in the meantime must be kept dry by dusting with some antiseptic and astringent powder, such as Subnitrate of bismuth, Tannin, Aristol or Dermatol.

If the papillomata are broad, flat and numerous, especially if located on the scrotum, the best treatment is the application of Calomel and the use of moderate pressure, under which they soon disappear.

The pedunculated variety should be removed with curved scissors and the base cauterized with Nitric or Carbolic acid, or ligated with a silk ligature. The broad growths can be painted with a 5 or 10 per cent. solution of Cocaine and with a sharp bistoury shaved off even with the surrounding tissues, re-anæsthetized, and cauterized with Pyrozone, 25 per cent., or Nitric or Carbolic acid, the surrounding tissues being protected from the cauterizing agent by vaseline. Cauterization may be repeated every third day until the growth is destroyed. After the vegetations turn white the surplus acid must be absorbed with cotton or blotting paper. If pain continues after the application of Nitric acid a drop of Carbolic acid will relieve it. The area cauterized should be dressed with Zinc or Boric acid ointment, or with Iodoform, Aristol, Calomel or Zinc oxide.

In some cases the actual cautery may be required; in

others the base may be entirely excised, the healthy edges united by catgut sutures and the parts dressed with usual surgical care. If large vessels are severed their ligation may be necessary.

Remedies.—Cinnabaris, Lycopodium, Magnesium, Merc. corr., Merc. sol., Nitric acid, Phosphoric acid, Sabina, Staphisagra, Sulphur, Thuja occ., etc.

PREPUTIAL CALCULI.

Children with long prepuces and congenital phimoses are liable to this condition. They are produced by deposits of the salts of the urine in or around the corona, forming calculi varying in size from a millet seed to a small hen's egg. Calculi may exist for years as hard tumors beneath the prepuce without any attending annoyance, but in time a purulent discharge may result from their presence. When the history is questionable, if the prepuce is long and tight, a differential diagnosis from gonorrhœa is sometimes difficult without a microscopical examination of the discharge. Sounding with the probe will very likely clear up the diagnosis, unless the stone has become inclosed by an adhesive balanoposthitis.

Treatment.—Removal of the calculi or circumcision.

VARICES OF THE PREPUCE.

This condition is easily recognized by the unusual size of the veins. It may be congenital or acquired. As a rule it gives no special discomfort, but if large may require removal by circumcision, ligation or electrolysis.

Remedies.—Hamamelis, Lachesis, etc.

HERPES PROGENITALIS.

This local disease may result from excessive venery, a depraved condition of the system, unclean habits, pro-

longed nervous strain, great anxiety, rheumatism, or gout; in fact, by all the causes of balano-posthitis.

Clinical History.—The disease tends to recur on the slightest provocation. When herpetic lesions appear on the integument of the penis or scrotum they differ in no way from similar lesions on other parts of the body, but on the mucous membrane of the penis their course is somewhat different. Here they are recognized by the development of a single vesicle or a group of vesicles on reddened and inflamed bases accompanied by slight burning and itching. On the mucous membrane, the vesicles become softened by prolonged maceration, break down and leave superficial ulcerated surfaces, which correspond in form to the original vesicles. The floor of the ulcer is at first rose-red in color, somewhat uneven, with sharp-cut edges. When the vesicles are numerous the ulcerations may fuse together. The ulcerations are surrounded by well-marked hyperæmic or red areolæ, which shade off into the surrounding tissues. Unless the lesions have been irritated no inflammatory induration will be present, but if they have been it may be impossible to distinguish them from chancroids; there may even be an associated lymphadinitis. Herpes progenitalis is frequently preceded or accompanied by intense burning, neuralgic pains, which may be local or extend into the surrounding parts. The disease, with more or less balanitis or posthitis, lasts from four to fourteen days, and if not properly treated may produce phimosis, or the abrasions may proliferate into vegetations. If the lesion develops in the urethra a discharge is invariably present.

Diagnosis.—This is very easy if seen early before the vesicles rupture, with an accompanying history of sudden development after any of the exciting causes mentioned. If the vesicles have ruptured, one or more circular, moist, red, superficial ulcerated surfaces will be presented, which

are not indurated unless located in the meatus. They exude a moisture on pressure. Herpes heals rapidly under proper treatment. Chancroids, chancre and mucous patches must be differentiated by proper methods. It is always better in doubtful cases to wait a few days to see if induration appears, especially if the early history is not clear. It is also advisable to be on the lookout to differentiate herpes from multiple or herpetiform chancre.

Treatment.—Cleanliness is the first essential in this as in all other conditions affecting the prepuce and glans. After washing with a weak antiseptic solution and drying without rubbing, as advised in balano-posthitis, the vesicles and abrasions should be painted with a 10 per cent. solution of Nitrate of silver and dusted with Subnitrate of bismuth and Zinc oleate, equal parts; Calomel, Aristol, Merc. sol. H. ix., etc. When neuralgic pains are severe, the ulcerated surface may require an application of Carbolic acid, 1 to 60, a spray of 4 per cent. solution of Cocaine, or the galvanic current, with appropriate administration of Antikamnia, Phenacetin, Antipyrine or Morphia. In the recurrent form, when the disease is due to a long, tight or redundant foreskin, circumcision is often the only means of relief.

The preventive treatment consists in cold douches to the lumbar region for thirty seconds, twice a week, extra local cleanliness, with a daily application to the parts of hot Alum water, or Ernesty's aqueous Hydrastis, one part to five of warm water, and dusting with Stearate of zinc and Acetanilid or Calendulated talcum. The local application of a little Alcohol containing 1 per cent. of Menthol or a 25 per cent. aqueous solution of Carbolic acid, on the first indication of the vesicles frequently inhibits their development..

Arsenicum alb., Croton tig., Mercurius, Phosphoric acid, Thuja occ. and Veratrum alb., when given according to

their indications, not only hasten recovery but tend to prevent a return of the disease.

SCLERODERMA OF THE MEATUS.

The cause of this condition is unknown. The mucous membrane of the meatus and the urethra as far as the fossa navicularis with much of the sub-mucous tissue becomes transformed into sclerotic or cartilaginous tissue which presents a glistening white surface with a distinct and hard outline. As the lesion develops the meatus contracts, causing difficulty in urination, the act often being attended with pain. In a case of the author's, a boy twelve years of age presented a meatus so contracted that a small probe was with difficulty introduced. In some cases the parts become cracked and fissured. The disease may involve the prepuce.

Treatment.—Meatotomy.

PHIMOSIS.

This ancient term implies a narrowing of the preputial opening, preventing complete exposure of the glans. The orifice may be so contracted that a probe can be introduced only with difficulty.

Etiology.—Phimosis may be congenital or acquired, acute or chronic. Males are usually born with a phimotic or elongated prepuce, but if the foreskin can be retracted so as to expose the glans, unless retained smegma or adhesions of the balano-preputial surfaces cause unlooked-for symptoms, there need be no anxiety. The preputial orifice enlarges rapidly as the child advances toward puberty, allowing the glans at this time to be readily exposed.

Clinical History.—When the preputial opening is not as large as the urethra, as indicated by the ballooning of the prepuce at each urination, an immediate operation is indicated. If neglected, the mechanical irritation from over-distension during micturition, with the urine which

remains in the balano-preputial cavity after the act, will in time set up a balano-posthitis. If the preputial opening becomes red and inflamed, causing the child to pull the parts or retain the urine for a long time simply because it hurts him to urinate, circumcision or the stretching of the prepuce will be necessary. This treatment also applies to cases where the meatus becomes red and puffy, the lips everted and irritated with numerous reflex symptoms, such as spinal disorders, spastic palsies, simulated hip joint disease, convulsions and muscular inco-ordination, eneuresis, etc., or where the condition causes warty growths, fissures, retention of smegma, or the prepuce becomes adherent. In adults, a tight prepuce may require surgical relief to prevent the serious results that herpes, retained smegma, etc., may produce. Phimosis is generally congenital, though it may be acquired directly from cicatricial contraction, following chancres, herpes, or indirectly from inflammation of the integument, the resulting new-formed connective tissue forming an inelastic but contracting ring about the glans penis, which tightly presses upon and grasps it, as it were, when an attempt to retract the foreskin is made.

Treatment.—In childhood surgical interference is frequently necessary. In some cases it is best to circumcise, but in many stripping the prepuce back and dilating it under proper antiseptic precautions will suffice. The preputial opening should stretch sufficiently to allow the foreskin to be easily retracted behind the glans.

Stripping the glans should be executed under perfect asepsis. The penis should be grasped between the thumb and forefinger of the left hand and the prepuce pushed back by those of the right. If the preputial orifice is narrow, the point of a pair of small dressing forceps can be introduced and opened carefully, but only to a moderate degree, and the stripping repeated until successfully ac-

complished. If adhesions between the glans and the inner surface of the prepuce exist they must be carefully broken up with a flat probe. The stripping must be continued until the fossa back of the glans is completely exposed and the accumulated smegma removed. The exposed parts should be cleansed with an antiseptic solution and dressed with Boric acid or Calendula salve and the foreskin immediately returned over the glans; otherwise the parts may rapidly swell and paraphimosis result. Dressing must be repeated daily until the balano-preputial membranes are entirely healed. In this operation the foreskin is left in its natural condition to protect the numerous nerve filaments having their terminal fibres on the glans penis. Excepting in phimotic conditions in the adult and in cases resulting from contracting tissue and thickened new growths, or from venereal requirements, the stripping operation is very satisfactory.

Circumcision.—General anæsthesia is usually advisable when a child is to be operated, Chloroform being used up to the eighth year; after this period Ether is to be preferred unless contraindicated. Locally, Cocaine under strict aseptic conditions may be employed. Perfect asepsis and antisepsis in all steps of the operation must be observed. One of the older methods of circumcision is as follows: A probe is passed into the preputial opening and swept around in order to break up adhesions. While the parts are in a state of repose the integument of the prepuce is marked with an aniline pencil about a quarter of an inch in front of the curve of the corona. The foreskin is brought forward and grasped obliquely at the mark and in front of the glans with the circumcision forceps, care being taken not to include the preputial orifice and the redundant tissues, and removed with curved, flat scissors. After the external or skin layer is removed the mucous membrane

is slit down to the corona and trimmed to its edge, the frenum being avoided. The remaining adhesions should then be broken up. Hot water or torsion will usually control the hemorrhage; if not, the bleeding points can be inclosed in the horsehair sutures used to approximate the mucous and cutaneous surfaces. In very young children sutures are not necessary as the parts heal in about forty-eight hours. In adults a large number will sometimes be required. The tied ends should not be cut too short, about an inch being allowed to remain to prevent irritation which results from the short sharp ends sticking into the tissues, frequently causing swelling and possibly œdema during the first few days.

The first two sutures should be placed one on either side of the frenum so as to include the frenal arteries, the third in the dorsal median line and all tied tightly cutting into the skin. The remainder, as many as are necessary, should be placed between these and tied loosely. The sutures usually cut themselves out and come away with the scab about the fifth day. If they remain they can be removed on the fifth to the seventh days. The operation is completed by placing a strip of iodoform gauze around the line of suture and holding it in place by iodoform collodion. The line of union can be encircled by narrow strips of absorbent lint, which must be saturated frequently while in situ with a Hydrarg. bichloride solution 1 to 4,000, a solution of one teaspoonful each of Carbolic acid and Glycerine to a pint of warm water, or a solution of Ernesty's aqueous Hydrastis or of succus Calendula, a teaspoonful to the quart of warm water, and continued until the scab and stitches are removed, when the parts must be dressed with a Boric acid, Zinc oxide or Carbolic acid ointment. When operating young children, Dr. John L. Moffat's circumcision shield will be very useful, as it not only protects the parts but prevents displacement of the dressings. Sometimes marked

oedema follows the operation and requires the application of an ice-bag.

The Metropolitan Hospital operation, which was discussed by the author in a paper presented at the New York Homœopathic State Society, 1898, has been found very satisfactory for adults:

Before the patient is taken to the operating room the mons veneris and adjacent parts are shaved and cleansed thoroughly with green soap and hot water. In the operating room the washing is repeated, and followed by copious irrigation with Bichloride, 1-3000, especial attention being paid to the preputial sac and the immediate field of operation, and, finally, the urethra is douched with a warm saturated solution of Boric acid. The penis is passed through a small opening in the center of a dry, sterile towel, or sterilized towels are laid about the penis; the abdomen and thighs are also covered. A sterile No. 15 French elastic rubber catheter is tied around the root of the penis to inhibit the return circulation. By means of a sterilized hypodermic syringe, twenty to twenty-five drops of a sterilized 4 per cent. Cocaine solution are injected into the subcutaneous connective tissue in front of the encircling catheter, and by extending the injection in a line completely around the penis a bleb-like ring is formed. This method of infiltration prevents the deformities occasionally occurring when the Cocaine is injected in the vicinity of the line of the proposed incision.

When anæsthesia of the distal portion of the penis is complete (usually in five minutes), the point of union of the integument and mucous membrane at the junction of the frenum and the raphæ is firmly seized in a pair of artery clips, the corresponding dorsal point being fixed in a similar manner. An assistant raises the two clips upward and separates them slightly, thus putting the foreskin on the stretch. The glans being pushed back by pressing

upon the foreskin with the forefinger and thumb of the left hand, the prepuce is transfixed in the center with a straight, double-edged bistoury, the blade being introduced parallel to the broad surface of the glans and at right angles to the long axis of the penis. The incision is carried obliquely forward and downward, care being taken to avoid injury to the glans and to leave sufficient length to the frenum. With a pair of curved scissors the remainder of the preputial skin is removed, by cutting upward and backward on a line corresponding with the corona glandis. The mucous membrane is cut away, a quarter to a third of an inch only being allowed to remain, and finally the subcutaneous and sub-mucous connective tissues are trimmed away to prevent subsequent induration and thickening along the line of union, which is liable to occur and require months for absorption or possibly give rise to later reflex symptoms.

After the parts are treated by the dry or wet aseptic method, the catheter encircling the penis is released, but not entirely removed, as it may be necessary to use it in regulating the entrance of the Cocaine into the general circulation. Bleeding points being properly secured, either by cat-gut ligatures, torsion or hot water and the parts carefully approximated by interrupted black silk or a continuous cat-gut suture, the line of union is dusted with Aristol or Glutol, and then encircled with two thicknesses of Iodoform gauze, five to six inches long and about one inch wide, the ends overlapping on the dorsum of the penis. Over this is placed a piece of Borated gauze cut in the shape of a Maltese cross with a small slit in the centre of sufficient size to allow about two-thirds of the glans to pass through so as not to obstruct the flow of the urine from the meatus urinarius. Over this is laid a piece of gutta percha tissue of the same shape, with corresponding slit, and the dressing completed by a roller bandage.

The exposed part of the glans penis is dusted with Stearate of zinc and covered with a piece of sterile gauze. If for any reason there is oozing, the bandage is applied quite snugly for several hours, then reapplied without disturbing the special dressing. If proper care is given to keeping the dressing from becoming soiled, by holding it well back during micturition, and to the removal of the final drop of urine with a pledget of absorbent cotton, it remains clean, and does not require renewal until the sixth or seventh day, when the sutures are removed, the parts dusted with antiseptic powder and lightly bandaged with Borated gauze. If the glans is especially sensitive, it must be protected for a few weeks by a piece of Boric acid gauze held in place by a loose elastic band.

If the patient is very nervous or just recovering from an alcoholic debauch, Cocaine is used with extreme care and only allowed to pass slowly into the general circulation. If Cocaine symptoms appear, the catheter surrounding the penis is reapplied for a few moments. If cocaineism becomes prominent, drop doses of the tincture of Aconite are given every fifteen minutes until the symptoms subside, and possibly a hypodermic of a one-hundredth of a grain of Nitro-glycerine to antidote the effects of the drug. An ounce of whiskey or two or three drops of Volasem are always administered at the beginning of the operation and the Cocaine rarely produces any systemic effects. If the Cocaine is properly sterilized, its anæsthetic value is not impaired and no local destruction of tissue follows, provided thorough asepsis in its hypodermic use is observed.

This makes each case an entity, and short frenæ are avoided. The line of incision is made in conformity with the contour of the glans and secondary phimosis is avoided. If sufficient mucous membrane is not removed, it is liable to fold back into the preputial space and cause much irrita-

tion and annoyance. One-quarter of an inch is sufficient for proper introduction of sutures, though this may vary somewhat with the conditions which have necessitated the operation. Interrupted black silk sutures give the most satisfactory results. All bleeding points in the cellular tissues must be properly secured before the wound is closed.

INFLAMMATORY PHIMOSIS

Is generally transitory, the prepuce being swollen, red and tumefied, often causing marked narrowing of the preputial opening. It is usually secondary to some other disease, such as balanitis, herpes, chancre, etc.

Treatment.—The swelling may be rapidly reduced by slightly aseptic hot fomentations solution, with hot baths, rest in bed, and the penis carried well up against the hypogastrium and retained there until the inflammation subsides, together with injections into the preputial cavity, with a flat-nozzled syringe, of some cooling or antiseptic solution, such as dilute lead water, etc. Should the inflammation continue and chancroid be suspected or the circulation be interfered with, lateral incision of the walls of the preputial sac for treatment or diagnostic purposes may be required. Incision can be performed under either Ether or Cocaine anæsthesia. The technique of this procedure is as follows: After the parts have been made aseptic and the preputial sac irrigated with Thiersch's solution or with Bichloride, 1 to 3000, the flat blade of a Taylor phimosis scissor should be introduced through the side of the preputial sac until its blunt blade rests in the coronary sulcus in the median lateral line. The scissors are then closed, care being observed that the thickened foreskin does not slide from between the blades and require a second incision to complete the division. This operation is repeated on the opposite side of the foreskin, dividing it into an upper and lower flap, which, when turned back, reveal the

entire glans, corona and the frenal fossa. Bleeding is often free, but ligation of the vessels is rarely necessary. After irrigation with a hot antiseptic solution, a few layers of Iodoform gauze should be placed between the flaps and the glans and held in place with a moderately tight bandage. This dressing must be removed within twelve hours, the parts irrigated, dusted with Iodoform or Aristol and dressed as before. The dressings should be reapplied daily, or whenever they become wet in urinating. The wound heals rapidly, but an upper and lower hard œdematous mass will remain which will require a plastic circumcision to give the parts a presentable appearance. Infection of the wound rarely occurs.

PARAPHIMOSIS.

This applies to that condition where a tight prepuce has been drawn over the glans and cannot be replaced. Paraphimosis, if not relieved, will in a short time lead to the most serious results.

Etiology.—It is usually caused by the inflammation accompanying herpes, chancre, balano-posthitis, etc., or improper manipulation of the parts.

Clinical History.—The diagnosis is easy. The glans penis presents a congested, purple or even gangrenous aspect. Behind the corona rises a tense, œdematous, shining collar, back of which is a deep sulcus, most marked above, possibly ulcerated. In this collar lies the stricture. Back of the sulcus is another band of œdematous tissue. When a paraphimosis is once seen the picture will never be forgotten.

Treatment.—When the œdema is excessive, small punctures may be made in the œdematous collar, the oozing of the exudate and reduction of size facilitating the replacement of the parts. If of recent origin, the parts may be anointed with some antiseptic oil, the penis grasped be-

hind the swelling between the first and second fingers of each hand on their respective sides and the thumbs placed on the glans. Then, while the thumbs press the glans back the fingers draw the oedematous parts forward and the paraphimosis may be reduced. If this treatment is not successful the glans may be wrapped in an elastic band and compressed so that it can be slipped through the constricted collar with the handle of an instrument. Should all manipulations fail the constricting band must be cut, it being always remembered that it is the *second* band that is to be cut. This is easily and painlessly done under local Cocaine anæsthesia, the incision being carried in the median line down through the tissues until all the stricture bands are divided. The length of the incision should be double the estimated length of the prepuce. When the band is completely divided the wound will assume a diamond shape. After being douched thoroughly the parts should be dusted with Aristol and dressed. Recovery is generally rapid and satisfactory.

When reduction is easily effected the parts should be dressed with a solution of Hypericum, Opium and Lead water, or a solution of Carbolic acid and Glycerine, equal parts, one teaspoonful to a pint of warm water, and Arnica, Apis, Mercurius or Calendula given internally as required.

CHAPTER V.

ANOMALIES, INJURIES AND DISEASES OF THE URETHRA.

MALFORMATIONS OF THE URETHRA.

The urethra may be absent, imperforate, strictured, sacculated, obliterated, or deficient in its floor or roof.

Absence of the Urethra, with consequent urinary retention and dilatation of the bladder, ureters and the pelves of the kidneys, generally causes foetal death and requires immediate perineal or suprapubic incision leading to a subsequent fistula.

Imperforate Urethra or Atresia may cause foetal death or result in a fistula with spontaneous relief. The atresia may be located in any portion of the canal though it is more often met with at the meatus. The obstruction may be merely a thin membrane, easily perforated, or one or more inches of the urethra may be converted into a fibrous cord.

Diagnosis.—This depends upon the inability of the child to urinate, the impossibility of introducing an instrument into the bladder, with distension of the latter, filling to a varying degree the pelvic and abdominal cavities, and the associated colicky pains.

Treatment.—When the atresia is located near the meatus, it can be perforated with a trocar and canula, a small sound probe, or a tenotome. When deeper, attempts should be made to pass a small sound through it and into the urethra beyond. If this is impossible, an external urethrotomy will be indicated. It may be necessary to open the bladder by a suprapubic cystotomy and retro-catheterize

the urethra, when the required surgical methods will relieve the urinary retention.

Congenital Strictures are of more frequent occurrence than is generally conceded. They cause dribbling of urine, frequent micturition, urinary retention, dilatation of the bladder, colicky pains, prostatic hyperæmia and hypertrophy, or may be the reason of a prolonged gonorrhœal urethritis, etc.

Treatment.—Urethrotomy followed by dilatation.

Valvular Folds of the Urethra sometimes occur and cause many symptoms of stricture and obstruction. Their diagnosis may depend on urethroscopic examination. They should be divided through the urethroscope with a proper urethral knife.

Urethral Pouches are due more to a lack of proper development of the spongy tissue around the canal than to urinary obstruction. These pouches become dilated at each micturition, often becoming quite large and can only be completely emptied by manipulation. They should be laid open by two semi-circular incisions and the mucous membrane and skin separately sutured.

Urethral Diverticulæ may attain considerable size and length and require division with the author's urethral scissors.

The urethra may be double, though as a rule only one canal leads to the bladder, the other terminating in a blind pouch beneath the pubes or it may open into the rectum, anus or the bowels.

Hypospadias is a condition of congenital non-development of the floor of the urethra, and happens once in about every 1,500 males. It may be balanitic, penile or scrotoperineal. The balanitic type is the most common, and presents a small groove below the glans, the walls and sides of which are formed by the upper wall of the fossa navicularis, the mucous membrane of the urethra being

continuous with the adjacent integument and glans. The urethral orifice is often greatly contracted. There is an accompanying deficiency in the under part of the prepuce, the upper portion overlapping the glans like a hood. The penile variety presents a moist slit-like opening on the under surface of the penis opening into the floor of the urethra. Beyond it there may be a dense band corresponding to the corpus spongiosum. The penis is generally deficient in size, though it may in other respects be fairly well developed. In the scroto-perineal form, the penis is always undeveloped, the scrotum cleft, and the urethra opens into the perineum. The testicles may be undeveloped or undescended. If they have descended they occupy their own separate sides of the scrotum. The balanitic form does not cause much inconvenience in erection, diminish sexual power or inhibit fecundation. In the penile variety erection is imperfect, the power of impregnation very uncertain and the act of micturition greatly inconvenienced. In the scroto-perineal form, a sitting posture must be assumed to urinate; erections and sexual power are imperfect if not absent. Erythema of the scrotum is often present.

Treatment.—The balanitic variety requires surgical treatment for cosmetic effect only. The penile gives good results from operation, but the scroto-perineal, from a surgical view, is difficult and troublesome; operation often results in failure, the best success being obtained about puberty. A number of plastic operations, as the individual case requires, may be necessary to complete the canal and restore the organ.

Epispadias is a condition in which a portion or the whole of the roof of the urethra is absent and is often associated with exstrophy of the bladder. The deficiency may be confined to the glans and a part of the penile portion, or extend along the entire length of the canal. The symptoms depend upon the degree of deficiency. Some patients

can urinate voluntarily with a misdirected stream; others are annoyed by frequent micturition or with incontinence. There may be continued dribbling. Urinary control is often lost excepting when lying on the back. Sexual acts are generally difficult or impossible.

Treatment.—Plastic surgery is sometimes very successful, though failure is the rule.

WOUNDS OF THE URETHRA.

Wounds of the urethra may be surgical or accidental, incised, punctured, or lacerated.

Incised wounds when longitudinal to the urethra heal readily and rarely cause stricture. If the urethra is healthy, the urine sterile and the wound made from without, as in external urethrotomy, the mucous membrane can be brought together by buried catgut sutures which do not puncture the epithelial layer, and the integument with silk or silkwormgut. When the urine is not aseptic or the urethra is diseased, continuous perineal drainage must be kept up for two to four days and the wound allowed to close by granulation.

Transverse incision of the urethra is always followed by profuse hæmorrhage. When the canal is completely severed, the posterior end always retracts and is often found only with the greatest difficulty. The divided canal should always be properly sutured, as there is less tendency to contraction even where union is only partial. Continuous urethral drainage will be required for three to six days, and must be followed by the systematic use of the full-sized sound. A retro-catheterization after a superpubic cystotomy may be necessary.

Punctured Wounds, if of moderate degree and the urine sterile, require only antiseptic lotions to the penis such as Lead water and Alcohol, saturated solutions of Boric acid, etc. When the urethra is diseased or the urine septic

Urotropin or Boric acid should be given internally, and the urethra douched after each urination with a solution of Nitrate of silver, 1 to 5,000, or Bichloride, 1 to 10,000. When the wound is from within, as when a false passage in introducing a sound or other instrument is made, the same line of treatment may be followed, unless evidence of sup-puration occurs, when incision and drainage will be required.

Lacerated Wounds should be made aseptic, continuous drainage instituted and allowed to close by granulation. The systematic use of the sound must not be forgotten; it may often be necessary to continue its use throughout life.

RUPTURE OF THE URETHRA.

Etiology.—The urethra may be ruptured at any point, though it happens most frequently in the bulbous and membranous portions. Rupture of the pendulous urethra may be due to a kick or blow, to the penis being shut in by the drawers of a cabinet, or to forcible bending of the organ when erected, either in coitus or in attempts to straighten it when curved by inflammatory exudation. It is said to have occurred from strong erection when the corpus spongiosum was involved in an inflammatory ex-udate. In the bulbous or membranous regions it is usually due to violence of some kind applied to the perineum, such as a kick from a boot, or falling astride some resisting object.

Clinical History varies to a considerable degree with the location of the injury. There is generally discharge of blood from the urethra, impeded urination, retention often occurring, with extravasation of blood into and attendant swelling of the neighboring tissues. When the rupture is situated in the penile portion of the urethra, the symptoms will vary from momentary pain, slight swelling at the seat of injury and a little bloody discharge from the meatus, to intense pain, pronounced swelling and profuse hæmorrhage.

In rupture of the perineal portion, the symptoms, both immediate and secondary, will vary greatly. Pain may be slight, urination but little deranged, hæmorrhage unimportant, and the local swelling and effusion of blood into the perineum and penis moderate, all symptoms disappearing in a few days. In many cases, however, even when the immediate symptoms are unimportant, the condition induces urinary infiltration with its long train of serious sequelæ. In the majority of cases hæmorrhage is profuse, though sometimes intermittent, and the urine is voided with much pain and difficulty, retention is frequent and catheterization impossible. Infiltration of blood and urine into the perineal tissues rapidly takes place and may extend to the penis, scrotum, or even over the thighs and abdomen, and in a short time the swollen tissues give crepitation on manipulation. In many cases urinary infiltration, infection, suppuration and gangrene rapidly follow.

If the membranous urethra is the seat of rupture the blood and urine, by infiltration, spread about the prostate and the neck of the bladder, causing pelvic cellulitis, peritonitis, etc. Rupture of the urethra is always followed by a corresponding degree of traumatic stricture.

Treatment.—Where the symptoms are slight and there is no retention of urine, rest, cold applications and urethral antiseptics will give satisfactory results, though attention to possible urinary infiltration must not be neglected. Where hæmorrhage, retention or infiltration of urine is present, immediate external urethrotomy or perineal section should be performed, attempts at catheterization being generally unsuccessful and frequently the cause of a fatal termination. Continuous drainage through the perineum is important. Where the catheter is used the urethra should be flushed before and after each instrumentation with a hot solution of Nitrate of silver, 1 to 2000, or a 4 per cent. solution of Boric acid. In all cases it is advisable to suture

the torn ends of the urethra; if union does not take place retraction is prevented and consequently the highest degree of traumatic stricture is avoided. When the urine is aseptic and the wound healthy, the ragged parts should be trimmed off, a soft rubber catheter passed into the bladder, and the ends of the urethra approximated around the catheter with sterilized catgut, some of the peri-urethral tissues being taken in, and the whole wound closed with continuous catgut sutures and dressed aseptically. Continuous catheterization must be maintained for four to six days during which period the urethra should be flushed twice daily with a hot Boric acid solution. About the seventh day a full-sized sound must be introduced and re-introduced every three or four days for many months; sometimes it may be required throughout life.

FOREIGN BODIES IN THE URETHRA.

Etiology.—The greatest variety of extraneous bodies have been introduced into and found in the urethra; accidentally, when instruments have broken off during instrumentation, or intentionally when introduced by the foolish, curious or the insane. The list is a long one and includes pieces of wood, slate pencils, hair pins, whips, seeds, peapods, feathers, twigs of trees, catheters, etc. Renal calculi have also been found in the canal.

If, immediately after a foreign body is introduced into the urethra, the urine is voided there is a fair chance that, if it is smooth, it will be expelled. The tendency of all smooth bodies, however, is to travel backward into the bladder, this occurring in fully 30 per cent. of the cases. Foreign bodies may be arrested in the navicular, bulbous, or prostatic portion of the urethra, be caught in the open mouths of a urethral duct, or even pierce the wall of the canal. The time occupied by a body in passing back into the bladder varies with its size and contour.

Clinical History varies. In many cases the cause of the symptoms is concealed by the patient. Foreign bodies in the urethra generally cause pain, which shoots into the perineum, down the thighs or over the abdomen; micturition is greatly impeded, the calls becoming more frequent and unsatisfactory. Sexual erethism may be annoying. In a day or two these symptoms are followed by a sero-sanguinous or purulent discharge from the urethra. The penis becomes swollen, oedematous and painful, the inflammation rapidly spreads to the neighboring parts, and unless the foreign body is removed an abscess may form and urinary fistula with septicæmia, etc., result, or the inflammation may subside and the foreign body gradually become encrusted with the salts of the urine forms the nucleus of a urethral calculus.

Treatment.—When the foreign body is of moderate size and smooth, if the urethra is over-distended, during the act of micturition, it may be expelled in the onward rush of urine. If this method is unsuccessful and the body cannot be grasped easily with a pair of forceps or a long probe, the end of which has been bent to an acute angle, it must be cut down upon and removed to avoid needless laceration of the parts, torture and anguish of the patient, and the more probable accidental dislodgment of the substance backward into the bladder. The incision should be made along the axis of the urethra, and, after the removal of the obstruction, the wound must be accurately sutured with buried catgut internally, the external parts being united with silk, and continuous urethral bladder drainage maintained for about four days.

Urethral Calculi may form in the canal, or become lodged while in exit from the bladder in the urinary stream and remain for a variable length of time. Calculi which develop in the urethra are composed largely of the phosphate of lime, crystals of which first find lodgment in

some of the urethral ducts or in a break in the continuity of the floor of the canal left after an external urethrotomy. Cases have been reported where the urethra has been coated with a mortar-like substance, a condition similar to that found in incrustation of the bladder. The calculi which are lodged in the urethra are stratified, nucleated and composed largely of uric acid. They generally lodge in the prostatic, the bulbous or the navicular regions. Small, thin vesical calculi may pass directly through the canal, abrading it in a degree dependent upon their size and contour. When they are arrested they may by deposit become of large size and ulcerate through to the surface or work into the tissues beneath and become encapsulated or the cause of urinary extravasation or abscess. They can generally be located by palpation. The urinary stream is often impeded or stopped. The clinical history of previous renal colic will greatly assist in the diagnosis.

Treatment.—Urethrotomy and removal of the calculus.

URETHRAL GROWTHS.

Urethral Papillomata cause few clinical symptoms. They may be suspected when symptoms of urethral stricture are present and the introduction of a full-sized sound is followed by slight bleeding. The diagnosis generally depends upon urethroscopic examination. When they develop in the fossa navicularis they can be seen on separating the lips of the meatus. When they protrude from the meatus they grow rapidly.

Mucous Polypi are sometimes found in the urethra. They may be sessile or pedunculated, generally small in size and may cause slight urethral hæmorrhage, urinary obstruction and some discomfort. They can be removed through the urethroscope with the Gruenfield snare or forceps, curetted off or cauterized with Nitrate of silver.

Urethral Cysts sometimes occur and can be diagnosed

through the urethroscope; if large and connected with Cowper's glands, by palpation or the aspirator. The symptoms of obstruction vary with the size of the cyst.

Urethral Carcinomata, unless due to extension from the prostate, the bladder or the penis, are extremely rare. Primary carcinoma generally develops in old scar tissue of gonorrhœal origin in the bulbous region of those advanced in years. A hard nodular mass forms at the seat of the lesion, the surrounding tissues become infiltrated, the introduction of a sound is followed by bleeding, urination becomes difficult and painful and may be preceded or followed by a discharge of blood. After a time the malignant mass breaks down and an abscess with sinuses opening into the surrounding tissues, which may also take on an epithelial type, results. The inguinal glands are involved early and the patient becomes cachectic and emaciated.

Treatment.—External urethrotomy and bladder drainage may give relief.

URETHRAL FISTULÆ.

Urethral fistulæ may be penile, perineal, connected with Cowper's glands, the rectum or open on the surface of the abdomen.

Urethro-Penile Fistulæ from urinary abscesses are very uncommon; they are generally the results of peri-urethral abscesses of gonorrhœal origin, or of deep ulcerations of chancroids or epithelioma. They may also be of traumatic origin or congenital.

Clinical History.—The amount of leakage varies and depends on the size of the opening and its valve-like structure. A variable amount of urine may project from the opening during micturition and flows down the penis or scrotum, macerating the skin and often causes much irritation. A little pus may also be discharged.

Treatment.—When small, the application of the thermocautery, a small wire being used, may be successful, though it is generally more satisfactory to freshen the surfaces of the sinuses and close by pin or other suture. Continuous urethral or perineal drainage will be necessary for six or eight days.

Urethro-Scrotal and Perineal Fistulæ are generally the sequelæ of urinary extravasations and abscesses caused by strictures of the urethra; they may result from traumatism, accidental or surgical, from abscesses of the prostate or of Cowper's glands, which on opening discharged both into the urethra and upon the external surface.

Clinical History.—The urethral opening is usually single; the cutaneous openings are numerous and may be upon the perineum, thighs, abdomen and back. They are tortuous, branched and irregular, and if old may feel like cords, or be coated internally with calcareous deposits. Fistulæ have a history of previous traumatism or urinary abscess of the scrotum or perineum. More or less urine is discharged at each micturition, which keep the parts moist and causes erythema, excoriations, etc. A probe passed through the sinus can generally be made to touch a sound introduced into the urethra. In doubtful cases, the injection of a solution of methylene-blue into the urethra and its later appearance at the mouths of the fistula will confirm the diagnosis.

Treatment.—External urethrotomy, curettement, cauterization or removal of the fistulous tract, removal of foreign bodies and diseased tissues, asepsis of the parts, continuous drainage and surgical dressing as required. In recent cases the fistula can sometimes be closed by introducing a catheter so that the eye will approximate the internal opening and douching twice daily with a warm solution of Nitrate of silver, 1 to 1,000.

Urethro-Rectal Fistulæ are usually the results of peri-

prostatic abscesses, or of cancerous or tuberculous ulcerations. They may be of traumatic origin.

Clinical History.—The urethral opening is usually in the prostatic region at one side of the verumontanum; occasionally it is located in the membranous urethra. Between this opening and the rectum, just above the sphincter ani, a pouch or sac may occupy the prostatic or peri-prostatic region. It may communicate through another fistula with the perineum, side of the thigh, etc. The urethral opening is situated at a higher level than the rectal, consequently urine is discharged more readily into the rectum than fæces into the bladder. In some cases the rectum is tolerant of the urine and it is discharged with the fæces without being noticed, though in many cases it irritates and causes frequent and painful stools. Seminal fluid may also be discharged in this manner. If fæces or flatus is discharged per urethra the diagnosis is established. In obscure cases, the bladder may be over-distended with a methylene-blue solution; its discharge per rectum is diagnostic.

Treatment is often very unsatisfactory. Continuous urethral, perineal or superpubic drainage of the bladder, with frequent flushing of the rectum, has sometimes been successful.

Urethro-Abdominal Fistulæ may be the results of accidental or surgical traumatism or of rupture of the urethra behind a stricture, which allows the urine to find its way behind the triangular ligament into the pelvic cellular tissues, where, if it does not cause immediate death from suppuration, it may burrow to any part of the abdominal wall and open. The external opening may be on the side, the back or the front of the abdomen as high as the umbilicus, in the groin above Poupart's ligament, on the thighs, etc. The constant discharge of urine from these fistulous openings, the condition of the parts and the uriniferous odor always present makes the unhappy vic-

tim a disgust to himself and to others. Unless surgical relief is given, death from exhaustion, etc., slowly but surely results.

Treatment.—Proper urinary drainage and such attention to the fistula as seems surgically adapted to the case.

Urethro-Cowper's Fistula.—In a case of the author's, the fistula was caused by an overlooked abscess of Cowper's gland, which followed a long bicycle ride. For one year the accompanying urethral discharge from the deep fistula was treated for gonorrhœa. Removal of the diseased gland and fistulous tract resulted in an immediate cure.

URETHRITIS.

See volume on venereal diseases.

CHAPTER VI.

INJURIES AND DISEASES OF THE PENIS.

FRACTURE OF THE PENIS.

Fracture has been produced by violence during coitus; by a blow—as formerly advised in chordee—or by suddenly turning upon the erect penis in bed, etc. Pain and distension of the organ with extravasated blood constitute the early symptoms. If immediate attention is not given, the effused blood may, by pressure from without, cause temporary occlusion of the urethra. If fracture is complete, the separated parts give a distinct fremitus when the ends are rubbed together, and the evidence of a sulcus will appear when the organ is extended. Fractures of the cavernous bodies generally unite, and are followed by perfect return of power in the organ, though in other cases, with the same treatment, the distal end of the organ may always remain ununited and flaccid.

Treatment for partial fracture is enforced recumbent position, catheterization, cooling applications and lotions. In the more severe cases free incision of the distended parts may be necessary, with continued use of the catheter; later steel sounds and possibly a urethrotomy.

FIBROID SCLEROSIS OF THE PENIS.

It is fortunately not common; it causes impotence in proportion to its degree of development. The disease has been described by the older genito-urinary surgeons as a chronic circumscribed inflammation of the corpora cavernosa. Its etiology is unknown. It has been thought to be of a gouty

nature, a concomitant of diabetes, etc. It frequently appears in the strong and vigorous, and has developed as the apparent consequence of injury to the penis. Men of about forty are the usual victims, although those younger in years are sometimes attacked. Its pathology resembles that of keloidem, a fibrous network of scar-like tissue in which are imbedded a few blood vessels with islets of embryonic cells and evidence of fibrous transformation.

The lesion is usually situated on the dorsal side of the corpora cavernosa and consists of thin plates of firm, hard, fibrous tissue, one or two lines in thickness, placed like a saddle, these saddle-like plates generally being firmly connected in the median line. The process often extends downward into the trabeculæ of the corpora. There may be two or more of these saddles along the dorsum of the penis, one above the other. The plates may be connected in the median line by a soft elastic layer, be placed laterally, and are occasionally found in the corpus spongiosum. Fibroid sclerosis of the penis develops very slowly, extending antero-posteriorly more rapidly than laterally; sometimes the growth remains stationary for a considerable period. When the penis is relaxed the sclerotic plate is usually painless, though it may be a little sensitive when the organ is erect. The lesion generally appears as a small ovoid plate, the first symptom noticed being a tendency of the penis to curve upwards or sideways during erection, and any attempt to straighten the erected organ produces pain. In some cases this special symptom of pain precedes for a long time any physical evidence of local sclerosis. As the new tissue develops the erections are proportionately curtailed. Sometimes the penis in erection is turned or twisted almost to a right angle. When the trabeculæ become involved, that portion of the penis beyond the diseased part will not become congested or distended

when erection is desired, but remains soft and flexible and partially, if not completely, prevents intromission.

Usually under any and all forms of treatment these cases grow gradually worse, though the symptomatic drug may so render the system immune that the growth may cease to increase. *Lappa alba* has been administered with very gratifying results.

OSSIFICATION OF THE PENIS.

This is a disease of advancing years. It is of rare occurrence and consists in a pathological deposit of bone in the corpora cavernosa and the septum pectiniforme; the change proceeds very slowly. Clinically, the first symptom is curvature of the penis during erection with pain during coitus. As the deposit increases the organ becomes more distorted, painful during erection and sensitive at all times. Surgical treatment gives the only relief.

SYPHILIS OF THE PENIS.

Frequently in the tertiary and less often in the secondary period, the penis is invaded by a localized infiltration or gummatous deposit producing impotence. Frequently the deposit is confined to the corpora cavernosa, where it forms a sharply defined nodule, or to the corpus spongiosum, where it may completely encircle the urethra and cause curvature, etc. Under anti-syphilitic treatment, absorption may occur and the parts return to their normal usefulness. If neglected, the syphilitic gumma will soften and degenerate into an abscess terminating in loss of tissue with distortion of the penis, etc.

MALIGNANT GROWTHS OF THE PENIS.

Three varieties are presented: The medullary, occurring early in life; the epithelioma, appearing generally between forty and seventy, and the sarcoma, which are quite rare, and may develop at any period of life.



Etiology.—This is obscure. It has been thought by some observers that intercourse with a female suffering from cancer was the exciting cause. Local irritation, accumulation of smegma, a long, tight, adherent or redundant foreskin have apparently been exciting causes. Cancer of the penis may follow an injury. It has developed from scar tissue, but usually it originates in a seemingly innocent vegetation or from a neglected chronic balanoposthitis. The growths generally commence on the prepuce or glans.

Clinical History.—The penis is the seventh location of selection of malignant tumors, being the primary lesion in about 6 per cent. of all cancerous growths occurring in the male. They develop most frequently between the ages of fifty and sixty, often between forty and fifty, and in the earlier and later years are of much less frequent occurrence.

Medullary Cancers develop about the age of puberty, traumatism of some form being usually the exciting cause. They grow rapidly, soon become painful and lobulated, and give the sensation of a cyst on palpation. Their growth is a sub-acute inflammatory process. The inguinal glands are early involved.

Epithelioma seldom occur before the fortieth year, happening most frequently between the fiftieth and sixtieth years. Epithelioma of the glans or prepuce begins as a small, flat, warty growth or ulcerated surface with an indurated base. There is a tendency to the formation of a dark crust or scab over this surface which, on being removed, leaves a granular ulceration from which exudes a fetid, ichorous fluid; there are accompanying burning and lancinating pains. Hæmorrhages occur and often are very troublesome. Priapism is not infrequent. Epithelioma may develop in a superficial inflammatory form, depending somewhat on the original cause. In time the inguinal glands become swollen, indurated and painful.

When the tumor develops slowly, the inguinal glands are involved at a late period, and cachexia may be absent, the general health remaining good. But when the disease progresses rapidly the glands are involved early and cachexia, loss of strength, flesh, etc., are early manifestations. The ulceration advances rapidly, the growth becomes excoriated, the invaded tissues present an irregular surface and have a hard base with everted edges, and with sinuses leading off into the surrounding tissues, which soon become involved and destroyed. The surrounding skin is infiltrated, nodular, oedematous and purplish in color. When ulceration has commenced the diagnosis can be easily made, but in all suspicious cases it must be verified by the microscope.

An epithelioma, when of the superficial variety, usually originates in balanoposthitis, herpetiform conditions, fissures, irritation of chronic ulceration, or in some other chronic lesion of the end of the penis, the hard and dense induration forming a nucleus from which springs a mass of indurated tissue, or a fleshy mass bathed in a purulent discharge. Cancerous growths cause much deformity. Cases have been reported where the tumors have attained the size of large apples.

Sarcoma are usually secondary, though they may be of primary origin. They commence generally in the corpora cavernosa, and may develop at any period of life. They usually recur after removal.

Prognosis.—If malignant growths of the penis are seen early, recognized and removed, a large percentage will be permanently cured. If the growth has a history of a number of years, is large in size, especially if there is general systemic involvement, the prognosis is unfavorable, though the immediate results and the relief expected from the operation will be governed greatly by the degree and character of the lymphatic involvement. A return of the

disease may be expected in at least 25 per cent. of all cases operated.

Treatment.—Excision of the parts as soon as a microscopic examination confirms the diagnosis of cancer in order to prevent the fearful ravages which are sure to follow. Marked relief has sometimes followed the exhibition of Arsenicum, Conium, Thuja, etc.

AMPUTATION OF THE PENIS.

Malignant growths often necessitate amputation. It is performed as follows: After the parts are properly prepared for operation, the integument is brought slightly forward on the body of the penis, and one or two straight acu-puncture pins are passed through the corpora cavernosa at a point well back towards the peno-scrotal junction; they prevent retraction of the stump after division and facilitate securing the vessels. A narrow elastic band or soft rubber catheter is wound tightly around the penis behind the pins and secured with a clip to prevent loss of blood during the operation. The skin is divided at the selected point for amputation, care being taken not to injure the corpus spongiosum. The corpus spongiosum is dissected forward, separated from the corpora cavernosa, and divided one-half to three-quarters of an inch anterior to the point where the corpora cavernosa are to be divided, this being on a line parallel with the divided skin. The rubber ligature is released and the vessels secured with catgut. It is always well to have a cautery ready for use in case of necessity. After the bleeding has been controlled, the sheaths of the corpora cavernosa are stitched together along the median line to stop oozing of blood and prevent subsequent infiltration of urine, etc. The projecting three-fourths of an inch of the corpus spongiosum is divided along the floor of the urethra back to the stump, turned back and stitched to the skin. A catheter is intro-

duced into the bladder, the parts dusted with Aristol, dressed aseptically, the dressings being held in place by a T-bandage or a cross of the perineum. Continuous bladder drainage is maintained for from four to six days.

Amputation by the galvanic ecraseur has proved very unsuccessful; healing is generally slow and hemorrhages frequent.

EXTIRPATION OF THE PENIS

is often required when a malignant disease is not seen until a large part of the organ has been destroyed. The patient is placed in the lithotomy position, a full-sized sound is introduced into the urethra as far as the triangular ligament, and the scrotum divided along the whole length of its raphé down to the corpus spongiosum, which must be carefully separated from the surrounding tissues as far back as the triangular ligament. The sound is withdrawn and the urethra cut across and carefully separated. An incision is made around the root of the penis and carried back to the central incision below on each side, the suspensory ligament divided and the crura of the corpora cavernosa separated from their bony attachments with the periosteal gouge or scissors. The urethra is brought out, slit up vertically, and stitched to the lower angle of the scrotal or perineal wound. Many surgeons prefer to complete the operation with emasculation, as the testicles often become swollen and remain painful for a long time and frequently give rise to future malignant epididymo-orchitis. The inguinal, femoral and all other glands if diseased should be thoroughly removed. The after treatment calls for frequent renewal of the dressings and often continuous catheterization for a week or two.

CHAPTER VII.

VESICULAR AND AMPULLAR ANOMALIES AND INJURIES.

MALFORMATION OF THE SEMINAL VESICLES AND AMPULLÆ.

Anomalies sometimes occur, but they are usually associated with malformations of the other genito-urinary organs. One or both vesicles may be absent, they may be fused together, or they may join and empty into a closed sac. They have been known to empty into the ureter, and to unite and form a common duct, which passed along the penis parallel to the urethra and opened at the glans penis, apparently producing a double urethra.

Injuries of the Seminal Vesicles and Ampullæ are of rare occurrence, owing to their being deep-seated and having a strong bony protection. When they are injured the accompanying destruction of tissue is usually of such magnitude that the individual injury escapes notice.

Treatment.—This should be conducted on general surgical lines.

Remedies.—Aconite, Arnica mont., etc.

CHAPTER VIII.

DISEASES OF THE SEMINAL VESICLES AND AMPULLATIONS OF HENEL.

ACUTE SEMINAL VESICULITIS AND AMPULLITIS.

Etiology.—The most common predisposing cause is acute urethritis, which may be either bacterial, toxic, traumatic, chemical or specific. It is most frequently produced by the extension backwards of an acute or, possibly, a chronic gonorrhœal urethritis. In acute urethritis the continued ingestion of fluids containing alcohol, the indulgence in excessive muscular exercise, bicycling, long railroad, carriage or horseback rides, standing, walking, and, especially, the various forms of sexual acts—coitus, masturbation, or sexual excitement of any kind—may precipitate the advent of this disease. In those predisposed, instrumentation or local treatment of the prostatic urethra may occasion it, even when conducted with the utmost care and for justifiable reasons. Rectal examination or massage of the seminal visicles when diseased is not free from danger, and surgical operations or traumatism in their vicinity may also create it. The acute tubercular variety may be caused by hæmatogenic infection, or by extension from neighboring organs, etc.

Pathology.—One or both vesicles may be simultaneously involved. The disease is dependent upon germ invasion, either by extension from neighboring parts or from systemic involvement. The most extensive pathological changes are found in those cases originating from an acute or latent gonorrhœa, the tubercular being usually moderate in intensity. The walls of the seminal vesicles present the

usual evidences of inflammation, though, in many cases, the exudation extends into the surrounding peri-vesicular tissue. It may even involve the neighboring peritoneum and produce a localized pelvic or general peritonitis. The sac is often distended and filled with purulent matter, which may possibly contain gonococci or tubercular bacilli. The mucous membrane lining the vesicle presents a simple congested appearance, or, if the purulent matter in the sac is considerable in amount, it may be inflamed and ulcerated. The sac may rupture and discharge into the bladder, the rectum, or both, and produce a vesico-rectal fistula, or into the peritoneum, and cause a general or localized purulent peritonitis. When the prostate is involved, it is sometimes extremely difficult to decide whether the original lesion commenced in the seminal vesicles, ampullæ or in the prostate, or whether they were all infected simultaneously. In abscesses in the male pelvis, with pyæmia and death, it may be impossible to differentiate those originating in these organs from those arising in the peri-vesicular tissues.

Clinical History.—There are all grades of severity, from a case so transitory and unimportant that it passes unnoticed to one in which the symptoms are distressing and serious. The disease may develop gradually, but often, after some of its well-known exciting causes, the advent is abrupt. In the gonorrhœal variety it is generally associated with epididymitis, epididymo-orchitis, deferentitis or an acute prostatitis. Pain referred to the sacrum or the supra-pubic region of the affected side is common; it may be burning, lancinating or excruciating in character and extend upward and backward to the kidney, down the spermatic cord to the testicle, or down the thighs into the perineum and rectum. During the paroxysm, the testicles are frequently drawn up by contraction of the cremaster muscle. The corresponding supra-pubic region is tender to manipula-

tion and palpation may cause severe pain; sometimes when the inflammation is intense and the exudation extensive the inflamed mass can be distinguished by deep palpation over this region. The inflamed vesicle or ampulla can usually be distinguished by rectal examination, the diseased tissues being frequently extremely sensitive to the touch. The amount of tumefaction varies with the degree of inflammation. If the disease is confined to one side, the seminal vesicle or ampulla may feel like a small sausage extending up and beyond the reach of the finger; only about one-half or two-thirds of the seminal vesicle, however, can be digitally reached and examined through the rectum. When the peri-vesicular tissue is involved the cysto-rectal space will be thickened, tumefied and very sensitive. The swollen mass may feel doughy or even give some degree of fluctuation. If pressure is applied by the tip of the finger some of the fluid contents will be discharged into the urethra; this discharge may be quite profuse, a drachm and sometimes more being expelled. When the pressure is removed the tumor will not fully round out. The prostate is usually swollen and sensitive, especially over the median line along the situation of the inflamed ejaculatory duct. The pain and uneasiness in the seminal vesicle or ampulla is increased by over-distension of the rectum by fecal matter or gas, and their removal is followed by relief. In many cases the inflamed vesicle or ampulla and surrounding tissues press upon the rectum and produce a continuous desire to evacuate the bowels. If this desire for stool is encouraged, the straining, etc., will greatly augment the sufferings of the patient.

In the early stage, persistent erections with nocturnal emissions are frequent, the ejaculated fluid being usually mixed with pus; occasionally, with a little blood. As the inflammatory condition becomes more pronounced, the carnal desire grows less distressing, but emissions are

usually accompanied by pain, which often continues for hours. Micturition is increased in frequency and is accompanied by pain referred to the neck of the bladder or the fossa navicularis. It may extend along the whole length of the urethra. The urine is occasionally retained, or discharged in a small stream with great difficulty, owing to prostatic or muscular spasm, or an associated acute prostatitis. The urine at first is generally clear and free from shreds, pus, etc. When, however, the acute seminal vesiculitis or ampullitis develops as a sequela of an acute urethritis, the urethral discharge, as in epididymitis, ceases; but, as the pain, fever, etc., disappear and the organ regains the ability to discharge itself, the urine becomes cloudy and the urethral discharge returns. The degree of fever, with its thirst, general erethism, restlessness, headache, vomiting, etc., varies with the intensity of the local disease. In one of the author's cases the temperature for two days remained at 105° Fahr. This, however, is uncommon, it usually ranging from 100° to 103° Fahr. The fever, pain, etc., ordinarily subside by the fourteenth day. In the acute tubercular variety the range of temperature is lower and the pathological lesion generally bilateral.

Diagnosis.—In the more severe cases, the patient, when in bed, assumes a characteristic position, reclining on the back with the thigh of the corresponding side drawn up to relieve the pressure of the abdominal muscles. Acute seminal vesiculitis must be differentiated from acute posterior urethritis, acute prostatitis, urethro-cystitis, pyelitis, renal colic, acute appendicitis, acute proctitis, etc. It may be associated with these conditions, as well as with epididymitis and deferentitis. As an associated lesion it is frequently overlooked, but if a rectal examination is made the condition of the seminal vesicles and ampullations will give physical evidence of their association in the diseased condition.

Prognosis.—When seen early, even in the most severe

form, a favorable prognosis can be given, providing the patient will go to bed and avoid over-exertion. The disease, with its fever and pain from over-distension of the vesicles, may advance for two weeks before resolution commences; the fever and pain will then cease and the vesicles will discharge their surplus fluid, and any antecedent urethral discharge will be re-established.

Treatment.—Rest in bed is of the utmost importance; if neglected the course of the disease will be proportionately more painful and protracted. During the first two weeks in the severe cases, it is especially important that the patient should remain in bed, keeping on the back with the head low, and, in some cases, it is even well to have the extremities slightly elevated.

In all cases, whether the testicles are involved in the diseased condition or not, the scrotum must be properly suspended to relieve tension on the vas deferens. This may be accomplished by a broad piece of surgeon's adhesive plaster six inches wide and of sufficient length to reach from thigh to thigh and fit in quite closely against the perineum, its upper surface being covered with rubber tissue, thus forming a table of support for the scrotum, or, still better, by Fuller's method, described in the "Journal of Cutaneous and Genito-Urinary Diseases," February, 1895, as follows: "A broad waist-band is first firmly applied, then a broad sling is passed under the perineum and scrotum, to hold it up in the supra-pubic position, allowing the penis to lie naturally on the hypogastric region. To prevent the scrotum slipping back, strips of muslin are attached to the middle of the sling posteriorly and carried backward and pinned or tied to the waistband, and, to guard against the testicles slipping over the rim of the loop, a strip of muslin is pinned across the front," or the testicles may be supported by a pillow or suitable roll of cotton pressed up well against the perineum between the

thighs. The ideal support for the testes, which has been successfully used for many months in the genito-urinary ward of the Metropolitan Hospital, is a semi-natural suspensory, and is applied as follows: The testes are pressed up into and against the external abdominal ring, the scrotal tissues well extended and the testes retained in this position by a few turns around the scrotum of an elastic adhesive bandage, one and a half inches wide and eight inches long; this relieves all possible tension on the vas deferens and, at the same time, leaves the lower part of the scrotum exposed for observation.

Poultices of flax seed and tobacco, 16 to 1, or a number of layers of cotton-wool, moistened with a hot Boric acid solution, or of Calendula or Hamamelis, a tablespoonful of the tincture to the pint of hot water, applied over the corresponding side of the hypogastric and iliac regions, covered with flannel and oil silk, and changed as often as required, give great comfort and relief. This form of local treatment must, however, be discontinued as soon as the pain stops or the discharge reappears, with other signs of the subsiding of the inflammation. Sometimes cold applications act well. The bowels must be moved daily, a mild aperient being at times required; a violent one must never be administered. Rectal enemas of hot water, containing a teaspoonful of glycerine to the pint, or Glycerine suppositories may act satisfactorily. When administering an enema, a long, soft, rectal tube should be used to carry it well up into the sigmoid flexure. The intense pain and loss of sleep may necessitate the use of Morphia and Atropine suppositories and possibly hypodermics of Morphia.

The food must be light, milk being the classical diet, to which may be added the usual light nourishment allowed in other inflammatory conditions. Pure waters of all kinds, in moderation, will be of benefit. In some of the more severe cases it is advisable to incise or resect the diseased

mass and drain the purulent sac through the perineum, or to aspirate and inject the cavity with a 10 per cent. emulsion of Iodoform.

The remedies most frequently indicated during the acute period are Aconite nap., Aloes soc., Arnica mont., Belladonna, Bryonia alb., Cubeba, Ferrum phos., Gelsemium, Kali brom., Pulsatilla nig., Salix nig., Veratrum vir., etc., and, during the convalescent period, Hekla lava, Hepar sulph. c., Lithium, Mercurius, Phytolacca dec., Selenium, Sulphur, etc.

CHRONIC SEMINAL VESICULITIS AND AMPULLITIS.

Etiology.—Perverted sexual habits are undoubtedly the most frequent causes of this disease, masturbation taking the first rank, especially when practiced to excess by the growing boy. It is often occasioned by the unnatural sexual acts indulged in by libertines to produce great and prolonged gratification, or to stimulate an orgasm when erections are imperfect or impossible, as well as by excessive intercourse, or cohabitation, when the wife considers it a nuisance, to be allowed only at stated intervals, without a semblance of reciprocity and sometimes with the coldness of a stone. The practice of conjugal onanism and the use of a condom to prevent conception or to conciliate the wife, have a potent influence in the production of this disease. It is often produced in the unmarried, who, from fear of contagion, the consequences, lack of opportunity or for moral reasons, while living a life of continence, encourage a state of constant irritation and congestion in their sexual organs. The same conditions are often operative in recent widowerhood, and in those particularly who play the part of triflers, taking great liberties with members of the female sex, but never consummating the act. In fact anything, be it action or thought, which produces intense strain or hyperæmia of the sexual organs,

if protracted and repeated at frequent intervals, may be a cause. Improperly treated acute seminal vesiculitis frequently terminates in the chronic variety. Often it is caused by the extension backward of an old urethritis which does not reveal itself until years after the original invasion, having lain dormant in the prostatic urethra or elsewhere, when, after some deep urethral or bladder douche, instrumentation, excessive sexual act, etc., it becomes aroused, and, by continuity of tissue, travels up the ejaculatory duct to the seminal vesicles or ampullations. Congenital or acquired stricture of the urethra may cause chronic congestion or inflammation of the posterior urethra, which by extension may also involve the seminal vesicles and ampullations. The reflex irritation excited by a long or contracted foreskin, hæmorrhoids, fissures, strictures of the rectum, etc., occasionally cause seminal vesiculitis and ampullitis. Local conditions are not the only causes, for anything which lowers the general tone of the system may, by weakening the contractile power of the vesicles and ampullations, interfere with their complete collapse and allow them to become over-distended and diseased. When the central nerve mass or the trunks connected with these parts are in any way injured or diseased, a seminal vesiculitis or ampullitis may result and become chronic.

Pathology.—The walls of the seminal vesicles and ampullæ may be greatly thickened and infiltrated, the inflammatory deposit occurring principally in the sub-mucous cellular tissue, and, to some extent, between the fibres of the muscular coats. In well-marked cases there is considerable infiltration and swelling of the tissue in the vesico-rectal space. The muscular layer may become hypertrophied. In these conditions the cavity is usually contracted, though not infrequently it is dilated. In cases in which the vesicular walls are greatly thinned the cavity

is proportionately dilated. In either case, the inflammatory changes in the walls greatly interfere with the normal elasticity and function of the organs.

The inflammatory changes in the mucous membrane are similar to those occurring in inflammations of similar mucous surfaces, and the amount of purulent matter present depends upon the severity of the inflammation. The blood vessels are thinned and tortuous, and upon slight provocation rupture, imparting a red or bloody color to the seminal fluid. When blood from any reason has remained in the cavity of the vesicles for some time, the contained fluid may become quite black. If pus predominates the fluid will be of a yellow or yellowish green color, or it may assume a blue shade, due to the presence of indigo. The condition of the mucous membrane also influences the character of the vesicular fluid. When the seminal vesicles and ampullæ are congested, the vesicular fluid becomes thick, gelatinous and more difficult to expel through the ejaculatory ducts. When the fluid remains alkaline it will contain more or less symplexions, *i. e.*, small highly refractive amylaceous particles, somewhat resembling starch granules. These are never present in the semen of boys or in fresh, healthy specimens, nor when the pathological progress is well advanced. Symplexions are frequently found in the grey, sticky mucus discharge from the urethra, so common in this disease; they are also found mixed with shreds and other material in the urine. They are frequently observed in the small globular masses and in the stringy shreds one-fourth to one inch in length, about the size of the ejaculatory ducts, slightly protected by a mucus coating, voided in the urine by the patient. Symplexions are the cause of the thickening of the vesicular fluid and over-distension of the seminal sacs in the lighter grades of inflammation. The vesicular fluid may contain bacilli *coli communi*, etc.,

but the alkaline condition of this fluid inhibits the growth and causes the death of the gonococci, which may have been the exciting cause. Gonococci are, however, frequently present in the urine, being brought down from co-existing disease in the prostatic urethra.

Occasionally the inflammatory exudation breaks down and small abscess cavities form, which may remain isolated, be absorbed, or, by burrowing and amalgamating form large abscesses and open into the neighboring organs, causing fistulæ, etc.

Clinical History.—The disease may commence insiduously or it may be the sequela of an acute inflammation. When an acute vesiculitis or ampullitis has existed for eight weeks it may be considered chronic, though the clinical aspect of the case will vary greatly with the severity and duration of the disease. The inflammatory symptoms, which are prominent in acute seminal vesiculitis and ampullitis, are rarely present in the chronic conditions, fever being uncommon unless excited by bacterial infection from accidental or surgical traumatism. Pain of moderate intensity is not uncommon; it may be located in the supra-pubic region of the affected side, in the bladder, at the root of the penis, in the glans, the scrotum, perineum, or sacrum. It is aggravated by sexual congress, or excitement without gratification. Sometimes the pain is agonizing and may continue for hours or days; it is then termed spermatic colic. In one of the author's cases, the pain after coitus was so intense that the patient was obliged to walk the floor for relief, his face pale and covered with cold sweat; on a few occasions, the agony was so great that he fainted. The perineal region is often so sensitive that soft seats must be avoided and hard ones selected so the tuber ischii will take the weight of the body, or a ring air cushion may be necessary for comfort.

Micturition is usually increased in frequency, especially

during the day; often it is painful and burning in character. This pain may extend along the whole length of the canal; it may be referred to the fossa navicularis or the neck of the bladder; sometimes it is most severe at the end of the act. It is generally increased after excessive coitus or sexual excitement. In aggravated cases the urethral pain may even cause urinary incontinence, and by reflex spasm, produce retention. The urine is frequently phosphatic in character and often contains quantities of oxalate of lime, derived from an associated chronic prostatitis, which may irritate and congest the urethra. The urine voided may, from the admixture of seminal fluid, be albuminous; when albumen is present it is most marked in the morning. Otherwise, the urine may be healthy and free from all evidences of Bright's disease.

In disease of the seminal vesicles, the bacilli coli communi sometimes appear in the urine, having entered the vesicle, either through lymphatic connection or directly through the tissues, and discharge themselves through the ejaculatory duct into the prostatic urethra, or pass directly into the bladder through its walls or reach it through an undiscovered sinus. In seminal vesiculitis or ampullitis, if the urine is examined when voided, it will be found to contain numerous long, viscid strings composed of symplexions, seminal fluid, spermatozoa, epithelia, etc., or rounded masses of the same nature. In a certain proportion of these cases the meatus urinarius is bathed with a sticky discharge which at times only causes agglutination, or it may be quite profuse, and be especially noticeable after a constipated or diarrhoeic stool. Microscopically, it is composed of symplexions, dead and living spermatozoa, leucocytes, etc. Before careful minute examinations were made, many attributed this discharge to an old gonorrhœa, the improper use of sounds, a urethral douche,

etc. A careful investigation often reveals a clinical history of vesiculitis and ampullitis which have existed for a long period previous to the gonorrhœa or instrumentation. In the majority of cases of chronic seminal vesiculitis or ampullitis, when a urethral discharge forms a part of the history, the patients are virgin to gonorrhœa, but a gonorrhœal infection may rekindle and aggravate an old vesiculitis or ampullitis. This urethral discharge is occasioned not only by the vesiculitis and ampullitis producing overdistention of the cavities by the products of catarrhal inflammation with consequent incontinence, but also by the patulous and relaxed condition of the ejaculatory ducts, the result of associated inflammatory changes in their walls. These pathological conditions account for the discharge as it appears continuously, increased at stool, when urinating or during muscular efforts. It is also increased by sexual excitement, by the presence of a sensuous woman, or of certain women; sometimes by a woman's photograph.

In the early period of seminal vesiculitis and ampullitis, in some cases there is often great and prolonged sexual excitement, with carnal desire and continued priapism, coitus may be very unsatisfactory, gratification giving no relief; in others, the lascivious desire is so great and annoying that the inclination to self-abuse cannot be withstood, while in the less severe forms, the desire and erections amount merely to a little increased erethism.

Chronic seminal vesiculitis and ampullitis develop slowly, consequently the early manifestations in those who are married are often overlooked until a rapidly diminishing power of erection with loss of sexual desire is noticed and that coitus affords little or no gratification; emissions are incomplete and occur too early, complete impotence finally resulting. Pathological nocturnal emissions are frequent, *i. e.*, two or three every night; or only in cycles, with or

without lascivious dreams, and finally without cognizance. In the more chronic and atonic cases, diurnal emissions may occur at any lascivious sight or thought, or without direction of the mind to the subject. In the early stage the too frequent advice to gratify the sexual erethism has caused untold harm. Impotence often becomes a source of great anxiety, especially when the former condition is compared with the present, with the stated power of friends, or the criticism of some female leads the patient to believe that he has lost his manly powers. Perverted sensations are frequently noticed, such as coldness of the glans penis. In one of the author's cases this symptom was so troublesome that, while the coldness was not in any way apparent to the touch, the patient was obliged to cover the glans with a layer of cotton, or the cold, dead feeling of the parts would interfere with his work. A shriveled feeling of the penis is often present. Some patients have a sensation as though the scrotum was abnormally contracted; others complain that the parts are uncomfortably relaxed. These sensations may alternate in the same patient, or there may be a loss of feeling in the testes, which, in time, engenders the belief that the organs are undergoing atrophy.

Localized points of numbness and formication in the limbs and various parts of the body are frequent, inducing in the patients the belief that they are soon to be afflicted with paralysis or some other dreaded disease. The various reflexes may assume all the symptoms of hysteria or neurasthenia, but it must by no means be understood that all the symptoms of hysteria or neurasthenia in the male are dependent upon diseases of the seminal vesicles or the ampullations of Henel.

The mental symptoms are generally very pronounced, their severity often bearing no relation to the magnitude of the local disease. Melancholic conditions predominate;

the patients lose courage and aggressiveness; all mental labor seems difficult; there is a tendency to delegate their work to others, with underestimation of their own ability; aversion to the society of their fellows; mental apathy; mental efforts tire; irritability, and a tendency to become quarrelsome or suspicious. Memory becomes somewhat impaired, with forgetfulness, and they begin to feel they "have lost their grip," or fear they are going insane. Physical and mental unrest are characteristic, while the desire for change of location, change in business principles, indecision, with irritable moods, are ever present. Sleep is frequently disturbed, and insomnia may be present. Sharp pains in the forehead, dull pains in the occiput, as though the head was held in a vise, or a general dull headache are common. Fuller records a case each of tinnitus aurium and one of seeming intestinal colic, and the author a case of successive bilious attacks, relieved and not returning after the cure of the disease of the seminal vesicles and the ampullations of Henel. All reflexes are aggravated by sexual excesses or excitement.

Examination per rectum is very important and much information is obtained by the properly educated touch. The condition of the prostate is first investigated, the tip of the finger being carried along the median sulcus separating the two lobes of the prostate to its posterior border; if the bladder is only moderately distended with urine and the tip of the finger is carried backward, the tissues forming the bladder walls should feel soft and yielding. If it is carried laterally and a little backward, it will meet with more resistance, and the indistinct seminal vesicle, somewhat pear-like in shape, can be located and its lower two-thirds mapped out. When the pathological lesion is confined to the seminal vesicles and ampullations of Henel these organs can usually be recognized by their rigid and well-defined outlines. When the seminal vesicles or am-

pullæ are diseased they are generally enlarged, sometimes to a considerable degree, owing to overdistention, and when pressed upon convey a doughy feeling to the examining finger, or they may fluctuate. If the pressure is continued and the sac somewhat massaged the swollen mass will be distinctly reduced in size, and at the same time a fluid, varying in amount from a few drops to two or three drachms, will flow into the urethra. When the enlargement is due to an inflammatory infiltration of the vesicular wall, the diseased sac may even be contracted, and in these cases the amount of fluid pressed out may be hardly demonstrable. If the circumscribed swelling is due to a peri-vesicular infiltration it may have something of an irregular or nodular outline. The peri-vesicular involvement may extend and fill the space between the vesicles in the centre downward to the prostate, and laterally to the walls of the pelvis, giving the entire space or roof a firm, hard and unyielding feel, similar to the vault of the pelvis in pelvic peritonitis. The infiltration is generally more abundant around the seminal vesicles and ampullæ. When a vesicle or ampulla is invaded by a chronic inflammation it ordinarily becomes painful and sensitive to the touch; sometimes the pain produced is so agonizing as to cause perspiration to appear on the face, with faintness. The pain is neuralgic in character and diminishes with each examination or treatment. As a rule, the more extensive the peri-vesicular and ampullar infiltration, the less sensitive the parts, the point of greatest sensitiveness being noticed while pressing over the diseased organ. As the condition improves the pain and sensitiveness on manipulation will disappear. If the seminal vesiculitis or ampullitis is the result of the lowering of the body tone, the finger will discover the adjacent parts to be relaxed, the prostate movable and the swollen seminal vesicle or ampulla easily distinguishable, and its contents can be evacu-

ated without difficulty. The pain and tenderness attending will be slight, and in proportion to the acute character of the inflammation, or when an acute attack is engrafted upon a chronic condition, to that degree only will the muscular tissues resent examination.

Diagnosis.—This must be verified by rectal examination. Under no circumstances is it safe or advisable to make a diagnosis of seminal vesiculitis or ampullitis without proper local physical examination and exclusion of disease elsewhere. In all cases of mental decadence the seminal vesicles and ampullations of Henel should be interrogated, and, frequently, when local disease is found and removed, the mental powers will return and the nervous manifestations will disappear. Cause and effect must, however, receive proper consideration, as in the idiot, or the sexual pervert, where the disease originates in the nerve centres, the genitalia being free from lesion. If, in the history of a suspected case, the numerous reflex pains and sensations suggest disease of the seminal vesicles or ampullæ, a proper local examination may reveal the cause. At the same time, while many hysterical conditions are caused by chronic seminal vesiculitis and ampullitis, it must be remembered that in a large proportion of the cases of male hysteria and neurasthenia the seminal vesicles are in a normal state. In these cases special care must be observed in the rectal examinations, or hyperæsthesia may be mistaken for evidence of local disease. In hysteria the entire space reached by the tip of the finger is equally sensitive, and if massage treatment is instituted the patient will grow worse.

Nocturnal emissions occurring every one or two weeks, or even in cycles of one, two or three successive nights, followed by a considerable period of rest, without unpleasant symptoms, are entirely within the bounds of health. They must be distinguished from those of a pathological char-

acter, which are always followed by lassitude, etc. In impotence of hysterical nature it must also be remembered that there is always a desire for female society, differing from the pathological condition where there is not only loss of sexual power but aversion to the society of the other sex. In the impotence of seminal vesiculitis the power of erection is gradually lost in contra-distinction to functional impotence, where, as the result of fear, contagion, unpleasant impressions of the partner, fear of incapacity to perform the act, etc., intercourse is impossible or the emission premature, while in the morning on awaking and at other times the erection is normal.

In all cases of chronic seminal vesiculitis or ampullitis, with an accompanying urethral discharge, or where pus or shreds are found in the urine, the entire genital tract must receive careful digital examination, supplemented by a thorough examination with the urethroscope, the cystoscope, the bulbous bougies, and a microscopical examination of the fluid. If symplexions, leucocytes and dead spermatozoa are found the diagnosis of vesiculitis or ampullitis is unquestionable. Many cases of chronic urethral discharge are entirely dependent on a chronic seminal vesiculitis or ampullitis, and cannot be cured until proper treatment is instituted. At the same time it must not be inferred that all persistent urethral discharges are due to these lesions.

A burning pain referred to the neck of the bladder or fossa navicularis in a urethra in which the bulbous bougie and the urethroscope reveal no evidences of local disease should always excite suspicion, especially when a little glairy mucus has been noticed at the meatus mornings, after sexual excitement, after a constipated or diarrhoeic stool, or when shreds are present in the urine of those free from stricture, chronic urethritis, etc.

Prognosis.—This depends upon the degree of inflam-

matory involvement, the duration of the disease, the age of the patient and the concomitant conditions. When the inflammatory induration is moderate in degree, simply interfering with the mechanism of ejaculation, it can be quickly cured, but when the walls of the vesicles and ampullæ are infiltrated and thickened prolonged treatment will be required. If the peri-vesicular and ampullar tissues are indurated and thickened, it will be correspondingly protracted. The average duration of treatment required is from two to ten months, though occasionally one or two years or even a longer period may be required. While some apparently recover without treatment, the rule is for the disease to grow gradually or rapidly worse, with an accompanying loss of sexual vigor and the development of mental symptoms, which turn business successes into failures and a man of good disposition and impulses into an irritable, morose, suspicious, irascible, shrinking being, and often into a condition suitable for the mad-house. Uncomplicated cases occurring in men of thirty or forty usually recover rapidly; between forty and fifty they are more tedious and are liable to prostatic complications; after fifty complications are common, and the disease is frequently protracted and often incurable. The better the general physical condition of the patient the more favorable the prognosis.

Treatment.—This must be directed towards restoring the power of ejaculation, through re-establishment of the normal contractile expulsive power of the seminal vesicles and ampullæ by the removal of inflammatory material deposited in them and in the neighboring tissues. In many cases massage, as originated and applied by Fuller, is all sufficient. He describes his process of stripping the seminal vesicles, as follows: "The patient should present himself with a full bladder, and, while standing with his knees straight, bend the body forward at right angles

Then the operator should introduce the forefinger of one hand well into the rectum, the fist of the other hand exercising firm counter-pressure over the pubes. By these means the end of the forefinger will in all ordinary cases reach well beyond the posterior margin of the prostate. The bodies of the vesicles can be thus detected, one on each side, beyond the posterior prostatic border. Only the lower half of the body of the vesicle can be felt ordinarily by the finger, the rest being beyond reach. After the forefinger has been so introduced, firm pressure should be made by its tip on the body of the vesicle to be treated as far back as it is possible to reach. Then the finger-tip, the pressure being maintained, should be firmly and slowly drawn forward along the line of the vesicle. The manoeuvre is aided by the counter-pressure over the pubes with the free hand. This process may be repeated several times in connection with each vesicle. In this manner some of the vesicular contents, provided the sac be diseased and distended, can be pressed out along its ejaculatory duct and into the prostatic sinus. As has been stated, the stripping should be done when the bladder is distended; after the manipulation the urine should be voided in order that the surgeon may see how much fluid has been expressed. This treatment should be repeated not oftener than once in four days, and in most cases under active treatment but once a week. If it is done too frequently, or too severe pressure with the forefinger is employed, acute symptoms may be stirred up which may leave the patient worse off apparently than before treatment was commenced, besides, at times, causing an acute epididymitis."

The finger should always be protected by a thin, well-fitting rubber tip, which not only shields the operator, but precludes irritation of the mucous membrane of the rectum by the finger nail. Felki and Swinburne have

invented an instrument for massage of the seminal vesicles and prostate, which has acted very satisfactorily in the cases reported by them.

There are some precautions which must be observed in this method of local treatment, or unsatisfactory results will follow, *i. e.*, acute seminal vesiculitis, ampullitis, epididymitis, deferentitis, etc. If evidence of acute inflammation exists, massage must not be performed, as it may increase the inflammatory condition. In the first treatment it is advisable to apply moderate pressure with the finger tips and only strip each vesicle and ampulla two or three times, the duration and vigor of the massage being gradually increased. Should manipulation increase the tenderness, this form of treatment must be discontinued for a few weeks and resumed only after the acute symptoms have subsided. The urine should always be voided after the massage, and the dislodged seminal fluid examined, as the progress and success of the treatment may be determined by the quantity and quality of the deposit in the bottom of the receiving glass. If the urine voided after massage is turbid from the presence of pus, this treatment must be discontinued until the acute symptoms have subsided.

The author has had excellent results in this class of cases by alternating the above treatment every fifth day with a rectal psychrophore, using ice water or hot and cold water alternately. As the psychrophore in general use is very liable to become obstructed, causing the physician and patient much annoyance, the author has constructed one composed of two parts, fitted together by a screw connection, with the entrance and exit attachments placed at right angles, this preventing the tube connecting it with the ice water bag and the one going to the deposit receptacle from becoming twisted. The shape of the psychrophore admits of it being placed well up against the anus

and in close contact with the prostate and seminal vesicles. It is four inches long, somewhat longer than the ordinary instrument. If the bladder is involved to any extent intravesical douches will be of great benefit. They may be administered with Valentine's modification of Janet's hydrostatic method, or, more scientifically and with less danger of overdistention of the bladder, by means of a catheter. A sterile No. 12 F. catheter is introduced into the bladder, and, after the urine is evacuated, four to six ounces of the selected antiseptic fluid is injected through it with a Janet's silver antiseptic syringe. As soon as the patient notices a full feeling in the bladder the catheter should be removed and the fluid expelled per urethra. Sometimes it is advisable to occasionally interrupt the exit of this fluid by pressing upon the urethral canal, to more completely distend the urethra. The solutions which act most satisfactorily are Formalin 1 to 1,000 to 1 to 10,000, Bichloride of mercury 1 to 12,000 to 1 to 20,000, Nitrate of silver, 1 to 2,000 to 1 to 8,000, Permanganate of potash 1 to 2,000 to 1 to 10,000, or Ultzmann's solution. These bladder irrigations, when required, should always be given after manipulation of the seminal vesicles and ampullæ. In many cases of chronic seminal vesiculitis and ampullitis there is a complicating anterior or posterior urethritis which requires deep urethral douches of Nitrate of silver, 1 to 500 to 1 to 1,000, Formalin, 1 to 500, Thalline sulph., 1 to 40 to 1 to 100, Permanganate of potash, 1 to 500 to 1 to 1,000, or a 5 per cent. Iodoform and Vaseline emulsion, applied with the Harrison suppository apparatus or by the author's syringe sound for applications to the urethra of emulsions and ointments. Other cases will require an occasional urethral massage by the careful introduction of the full-sized steel sound. When the steel sound is used, it must not be allowed to remain

in the canal as advised for urethral dilatation, as unpleasant symptoms frequently develop.

Electricity in many of the more chronic cases is of great benefit. Faradism can be employed through the rectum, using Pezzolis' massage instrument or the ordinary rectal electrode, the other pole being applied to the perineum or sacral region, with a secondary current comfortable to the patient, for from five to ten minutes, every second or third day. Galvanism is often more satisfactory, King's rectal electrode being used. In this instrument the hard rubber sheath prevents injury to the mucous membrane, while numerous slits open into and upon the small metallic tip within the cavity, which also has a connection for the attachment of a water supply. After the electrode has been introduced into the rectum, the negative pole connected with it, and the positive applied over the sacral or lumbar region, a normal salt solution is forced through the hollow electrode, sufficient in amount to slightly distend the rectum. As soon as a fullness is felt by the patient the water supply is stopped and a galvanic current of from two to ten milliamperes turned on for two or three minutes. The great advantage of this instrument is, that the current is applied equally to all the tissues located adjacent to the rectum. The faradic current can also be administered in this manner with advantage.

Light outdoor exercise is advisable. The diet must be nourishing and easy of digestion. Sexual congress, as a rule, should be prohibited during the first months of the treatment, and in many cases until a cure is accomplished; in the married, however, intercourse is sometimes beneficial. This question can be best determined by a digital examination a few hours after coitus; if the seminal vesicles and ampullæ are firm and but little vesicular fluid can be removed, the act has not been harmful, and may be repeated once a week; but if they are swollen, tender to

touch and considerable fluid can be expelled the intercourse has been injurious and must not be repeated until the parts are in a better condition. The testicles must in all cases be supported with a suspensory bandage, to prevent sudden pulling or dragging on the vas deferens.

Remedies.—Agaricus, Agnus cast., Alumina, Argentum nit., Aurum met., Baryta carb., Caladium, Calcareo acet., Calcareo carb., Cannabis sat., Clematis, Conium mac., Cubeba, Dioscorea vil., Eryngium, Gelsemium, Graphites, Hamamelis, Hepar sulph., Hydrocotyle, Ignatia, Iodium, Kali brom., Kali carb., Lachesis, Ledum pelt., Lithium, Lycopodium, Magnesia mur., Magnesia carb., Mercurius, Mezereum, Muriatic acid, Natrum mur., Natrum carb., Nitric acid, Nupar lut., Nux vom., Petroleum, Platina, Plumbum, Pulsatilla, Phosphorus, Phosphoric acid, Phytolacca dec., Sabadilla, Salix nig., Selenium, Sepia, Silicea, Stannum, Sulphur, Tribulus ter., Ustilago mad. and Zincum met.

TUBERCULAR SEMINAL VESICULITIS AND AMPULLITIS.

Etiology.—There is but one cause, the presence of the tubercular bacillus and its ptomaines in the diseased organs; it may be hæmatogenic in origin or due to the extension of tubercular disease from neighboring tissues.

Clinical History.—The disease usually develops insidiously, for a long time presenting no symptoms which direct attention to the part. There may be some little disturbance of the sexual power. If the urine be examined, shreds from the prostatic urethra and ejaculatory ducts will be found, together with a few pus corpuscles or leucocytes. Possibly a little pasty discharge may have been noticed at the meatus urinarius. As the disease becomes more chronic, all the symptoms, general and reflex, of chronic seminal vesiculitis appear. Anything, however, which improves the general tone of the sys-

tem will reduce the manifestations of the disease, so that, when the general health is good, all subjective symptoms may for the time being entirely disappear.

Diagnosis.—If the general family history is consulted, and a thorough physical examination of the whole body made, much information may be gained which will assist in a correct diagnosis. Digital examination per rectum in the early stage will reveal nodulations of the seminal vesicles and ampullations, but when the condition has existed for some time the first rectal examination may give no positive diagnostic information, except the fact that in the tubercular variety the parts are more sensitive to digital manipulation. If repeated stripping of the parts is considered proper and is applied, each successive massage will become more painful, giving positive notice that the treatment is injurious. Therefore, in all suspicious cases, the first massage should be carefully performed, in order to avoid unpleasant results. The seminal fluid removed should always be examined microscopically for tubercular bacilli. The testes and appendages should also receive a careful examination, as they frequently give confirmatory diagnostic evidence.

Prognosis.—Recovery cannot be expected, but proper treatment may afford great relief.

Treatment.—In addition to the general remedies indicated for chronic seminal vesiculitis and ampullitis, Bacillinum²⁰⁰, a dose every seventh day, should be administered. The diet must be carefully regulated to give the greatest nourishment without overtaxing the digestive organs. Hemaboloids, a tablespoonful after eating, has proved very satisfactory, increasing the quantity of red corpuscles and in building up the system. Cod liver oil must not be forgotten, Hagies's cordial of cod liver oil being of singular benefit. Massage of the parts generally increases the inflammation and consequent tenderness;

therefore, it must only be instituted after general treatment has improved the systemic condition. If a relaxed condition of the vesicles and ampullæ exist, gentle stripping will sometimes be beneficial. When there are associated urethral and bladder complications, all local treatment of these parts must be avoided until the disease in the vesicles and ampullæ is ameliorated, as they are very intolerant of instrumentation when they are the seat of a tubercular inflammation, and manipulation may cause unpleasant symptoms and sometimes death. If the vesiculitis and ampullitis have been properly relieved, and the bladder irritation or urethral discharge still continues, bladder douches of hot Bichloride solution 1 to 15,000 to 1 to 30,000, of four to six ounces, with natural expulsion of the same per urethra, repeated once every four days, may be of benefit. Climatic changes do as much, if not more, for these patients than anything else. A moderately high altitude, with dry and comparatively cool air, which allows of out-of-door employment or recreation should be selected. Freedom from business cares or anxieties is important. If these means fail to relieve and the other genito-urinary organs and the system in general appear free from tubercular deposits, the removal of the diseased parts may be advisable.

CYSTIC DISEASES OF THE SEMINAL VESICLES AND AMPULLÆ.

These conditions may be caused by obstruction in the ejaculatory ducts, or the closing of a duct of one of the sacs situated in the walls of the seminal vesicles. The cysts may be small and of no consequence, or of considerable size. Jacobson reports a case in which the seminal sac contained ten pints of a brown serous fluid, which was apparently cured by two aspirations. Cysts of the seminal vesicles give rise to no special symptoms, except those common to chronic seminal vesiculitis. Their diagnosis

depends upon rectal examination. Sometimes they cannot be differentiated from dermoid or other cysts.

Treatment.—Simple aspiration, or evacuation followed by the injection of a 5 per cent. Carbolic acid solution, or a 10 per cent. emulsion of Iodoform in sterilized sweet oil, may be beneficial. Permanent drainage or removal is sometimes necessary.

CONCRETIONS IN THE SEMINAL VESICLES AND AMPULLÆ.

The solid masses sometimes found in these organs are composed of spermatozoa, mucus and epithelium. They are whitish in color, growing darker with age, finally becoming calcified and are probably due to an obstruction of the ducts of exit. These concretions may so obstruct the ejaculatory duct as to cause sterility, painful emissions, frequent micturition, tenesmus and many symptoms of posterior urethritis. The diagnosis depends upon rectal examination.

Treatment.—In some cases the concretions can be broken up and forced out by gentle massage, or crushed by pressure against a steel sound in the urethra. These means failing, the removal of the seminal vesicle may be necessary.

MALIGNANT GROWTHS OF THE SEMINAL VESICLES AND AMPULLÆ.

These have occurred, but as they are always associated with malignant growths of other and neighboring organs, no special diagnostic points have been recognized.

Remedies.—Arsenicum, Rhus tox., Conium, etc.

CHAPTER IX.

DISEASES OF THE PROSTATE.

PROSTATIC CONGESTION.

Etiology.—Chilling of the body, abnormal conditions of the urine, traumatism from sounds, catheters and other instruments, the passage of a renal calculus, an irritating prostatic injection or an imperfectly constructed or adjusted bicycle saddle may be the cause of an acute congestion of the prostate. The more chronic congestions are dependent upon unnatural sexual acts, *i. e.*, masturbation, conjugal onanism, sexual excesses and excessive sexual desire without gratification, or a highly concentrated condition of the urine, the result of gouty, lithæmic and other abnormal conditions of the blood.

Clinical History.—The objective symptoms are those of the early stage of acute prostatitis, such as a sense of weight, fulness or pain in the perineum, back and testes; rectal tenesmus, with increased and painful micturition. The urine is usually over acid. Nocturnal pollutions are frequent. The prostate, when examined, appears swollen, is sensitive to manipulation and encroaches to a varying degree upon the rectum.

Prognosis.—Acute cases recover rapidly, while the chronic are troublesome, and many, owing to inability to remove or discontinue the cause, are never cured.

Treatment.—The cause must be removed or discontinued. The treatment serviceable in the early stage of acute prostatitis will be found beneficial in acute congestion. In chronic congestion of the prostate the bowels

must be carefully regulated, sexual hygiene observed and the urine rendered non-irritating by chemical means. The congested condition is often greatly relieved by the daily use of hot sitz baths, or hot or cold rectal douches, through Kemp's prostatic cooler. Prostatic massage is frequently of decided benefit.

These adjuvants, with the indicated remedies, Aconite nap., Aloes, Arnica mont., Belladonna, Buchu., Cantharides, Cubeba, Copaiva, Ferrum phos., Gelsemium, Kali brom., Lithium, Pulsatilla, Sandal-wood or Sabal ser. will, as a rule, be sufficient.

ACUTE PROSTATITIS.

Etiology.—The prime cause is infection, generally the result of an extension backward of an acute specific urethritis. It may be produced by an acrid condition of the urine or by the extension of a non-specific inflammation from neighboring parts. It is sometimes of hæmatogenic origin. Traumatism may cause inflammatory changes, but, if pyogenic germs are absent, a rapid return to health follows.

The predisposing causes are numerous and include everything which produces congestion of the parts or invites infection, such as masturbation, excessive venery, over-acidity or alkalinity of the urine, constipation, varicose conditions of the prostatic plexus, overdistension of the bladder, chilling of the general surface, instrumentation, urethral injections or cauterization, damaged conditions of the deep urethra, calculi of the prostate or bladder, prolonged sitting on damp, cold objects, external violence, and the ingestion of irritating drugs, like Turpentine, Cantharides, etc. An improperly-adjusted or badly-fitting bicycle saddle frequently causes a congestive irritation of the prostate.

Pathological Anatomy.—The prostate is swollen, hard

and œdematous, and often from two to four times its original size. The surrounding tissues are also involved. If the inflammation is the result of an acute posterior urethritis the prostatic ducts and glands will be involved; frequently they degenerate into small muco-purulent sacs. From this condition the organ may return to health, or a large number of minute abscesses may develop through its substance; these ultimately break down and coalesce to form larger abscesses, which may burrow in any direction.

Clinical History.—When the inflammation is of slight degree, there is fullness and uneasiness in the perineum and rectum, with frequent urging to urinate, the urine being voided with difficulty, and its passage followed by a varying degree of relief. Defecation is generally accompanied by pain. These symptoms may disappear rapidly, and, if a urethritis was the exciting cause, the discharge associated with this condition will cease with the advent of the prostatitis, though it is sometimes replaced by a discharge of prostatic fluid. If the inflammation becomes more pronounced and the ducts and glands are involved, the pain may increase and become throbbing and lancinating or deep aching in character, with an increased sense of fullness and soreness in the perineum and rectum, aggravated by crossing the legs, pressure, defecation, urination, motion of any kind, etc. If the examining finger be introduced into the rectum a hard, smooth mass, very sensitive and painful to touch, will be found.

In this stage there is frequent urging to stool, with pain and tenesmus, an uneasy feeling at the neck of the bladder and soreness above the symphysis pubis on deep pressure. The urine is voided in a small and unsatisfactory stream with terminal straining, sometimes accompanied by a drop of blood. The pain is agonizing and is referred to the perineum, rectum, and anus, or shoots down the thighs. Violent erections are common and hæmorrhoids are fre-

quently developed. These symptoms are often accompanied by fever which may have been ushered in by a chill.

The prostrate may return to its normal condition, or, if suppuration takes place, chills, fever and all the symptoms of pyæmic infection occur, and the swelling, when palpated through the rectum, will be boggy or fluctuating. As the swelling increases, diminishing still further the size of the urethra, the stream of urine becomes smaller and smaller until finally it is passed only in drops and great tenesmus or retention may follow.

Diagnosis.—This depends upon the presence of a hot, painful tumor occupying the position of the prostrate, accompanied by the clinical symptoms already enumerated.

Prognosis.—The duration of this disease varies from a few days to a month. If abscesses develop it may terminate fatally. The abscess may rupture spontaneously into the urethra, rectum, perineum, the space of Retzius, the sciatic foramen, peritoneum, etc. Phlebitis is a common complication when the abscess is not properly treated and is a frequent cause of death.

Treatment.—Rest in bed, hot sitz or general baths, fomentations to the perineum and direct applications of heat or cold by rectal enemas or with Kemp's prostatic cooler or a rectal psychophore. Counter-irritation to the perineum and elevation of the pelvis may be required in some of the more severe cases.

The bowels may require a saline cathartic, but continued catharsis must not be encouraged. If retention of urine occurs, catheterization may be necessary. When performed it should be preceded by a deep douche of a 2 per cent. solution of Cocaine, and the catheter should be allowed to remain to give continued drainage until the acute symptoms subside.

The diet must be light and consist principally of broths, *liquid*

milk, matzoon, koumyss, rice, stale bread, etc. Alcohol must be avoided in all its forms. When an abscess develops and it is opened through the perineum, the annoyance and trouble of ischio-rectal or other fistulæ will be avoided. If fluctuation can be distinguished, or the presence of pus is reasonably certain, the patient should be surgically prepared, placed in the lithotomy position and a long, straight, sharp-pointed, double-edged bistoury introduced in the median line of the perineum, about one inch in front of the anus, and with the guidance of the forefinger of the left hand in the rectum its point carried forward into the pus cavity. After evacuation the parts should be dressed with the usual antiseptic precautions and proper drainage instituted. If, after proper antiseptic douches, the pus cavity is over-distended with a warm emulsion composed of Iodoform one part and Vaseline nine parts and retained by proper dressings, recovery is often surprisingly rapid. Should the abscess open into the urethra, as soon as the acute symptoms subside the pus cavity must be irrigated twice daily through the urethra by means of a catheter with a saturated solution of Boric acid, a 50 per cent. solution of Electrozone, or Nitrate of silver, 1 to 2,000, the prostatic pus cavity being well emptied by massage before, during and after irrigation. The local treatment must not be discontinued until the cavity is completely closed, as there is always a tendency to recurrence and the condition becoming chronic.

The remedies most frequently indicated are: Aconite nap., Aloes soc., Belladonna, Bryonia alb., Cantharides, Clematis erect., Chimaphila, Digitalis, Ferrum phos., Gelsemium, Hepar sulph., Heckla lava, Kali brom., Lithium, Mercurius, Pulsatilla, Sabadilla, Silicea, Sulphur and Thuja oc.

CHRONIC CATARRHAL PROSTATITIS.

Etiology.—This disease is frequently the sequel of an acute gonorrhœal prostatitis, a stricture of the urethra, it may arise by extension from a posterior urethritis or a vesical inflammation. The chief exciting cause is infection. It is frequently a result of masturbation, sexual excesses, unnatural sexual acts and irritating deep urethral injections. It may also be engendered by hæmorrhoids, chronic constipation, fissure and pruritis ani, highly concentrated urine, exposure to dampness, cold, etc. It is a disease of early manhood and middle life.

Pathological Anatomy.—The prostate may be normal, swollen or diminished in size. Enlargement is caused by its infiltration with lymph or pus. The glands composing the lobules of the prostate may be generally, unilaterally or irregularly diseased. The prostate may present a general swollen condition, or it may be nodular. The small rounded foci of inflammation may be located deep in the structure of the organ or upon its surface. On section it will be found spotted, red, somewhat boggy, with here and there a small collection of pus, the whole organ being less firm than normal. The mucous surfaces, the sinuses of the prostate, the mucous follicles and their ducts show marked pathological changes. The mucous lining of the tubules is inflamed and the inflammation is often continuous with a similar condition in the prostatic urethra. The tubules are generally dilated and distended by the inflammatory products. The connective tissue surrounding the tubules and glands is infiltrated with a round-celled growth and the blood vessels are engorged.

When the disease has resulted from stricture of the urethra the coats of the prostatic sinuses are thinned, though they may be thickened, and the mouths of the prostatic gland are generally open and pouchy.

Clinical History.—This varies greatly with the original cause and the temperament, age, and habits of the patient. At the best, it is a very chronic disease, and generally has a history of exacerbations, the result of indiscretions in diet, apparel worn, or acts committed ; sometimes there is no apparent reason. The symptoms presented are legion, varying from the most trivial to the most complex. Frequently they bear apparently but little relative proportion to the pathological involvement. The urinary symptoms are in many respects those of posterior urethritis. Micturition is increased in frequency. It may not be troublesome, or the calls may come every half hour. Often there is a slight twinge at the end of the act, and possibly a drop of blood or a little burning or tingling as the urine passes over the prostatic portion of the urethra. The urinary flow is retarded, the urine may be voided only in drops. The pain and frequency of micturition are particularly increased by standing and somewhat by crossing the legs.

The urine is of low specific gravity, pale in color and alkaline or feebly acid in reaction, cloudy, holding in suspension small masses of muco-pus, which are particularly noticeable in the first ounce passed. The patient should, therefore, void the urine in two portions for examination ; the first will contain mucus in abundance, while the second may be clear. This does not always follow, however, as the compressor urethræ muscle may between the acts of micturition be tightly or spasmodically contracted, causing the discharge to back up and empty into the bladder, between the acts of micturition, thus mixing the discharge with the urine. If the urine is allowed to stand for a few hours an iridescent pedicle will generally form upon its surface.

Pain is usually present ; it may be referred to the sacrum, anus, perineum or the inguinal region and sometimes to

the neck of the bladder or end of the glans penis. If in the region of the bladder and rectum it is commonly accompanied by an uneasiness or fulness deep in the perineum, which is increased by sitting on a hard chair, horseback and bicycle riding, standing or muscular exercise.

When the prostate is examined through the rectum in patients under forty-five, the organ appears enlarged and encroaches on the rectal space. Frequently it is very sensitive to manipulation. If the prostate is generally involved it will appear smooth and swollen. More often it is quite nodular. These nodular masses are located irregularly; sometimes they are deep-seated. When situated upon the surface they may give the prostate a decided irregular contour. The left lobe is usually more extensively involved than the right.

When catarrhal prostatitis exists in those over fifty-five, extensive peri-tubular infiltration predominates, giving the impression of increased hardness to the gland. At a comparatively early stage there may be a general enlargement, but at a later period, the infiltration undergoes atrophy, producing great decrease in its volume. If pressure be applied by the finger-tip to the surface of a prostate undergoing a catarrhal inflammation a varying quantity of prostatic fluid will be discharged from the overdistended gland into the prostatic urethra. The same prostatic discharge may occur when straining at stool, during muscular exercise or even without apparent reason, constituting a prostatorrhœa. This secretion is composed largely of mucus and granular phosphates, and is the product of over-activity of the epithelial cells lining the prostatic tubules. The microscope will differentiate it from a gleety or spermatorrhœic discharge, the examination revealing pus, blood corpuscles, epithelium, amyloid bodies, fatty débris, prostatic concretions, granular phosphates,

triple phosphates, crystalline phosphates, oxalate of lime, etc.

When prostatic fluid has been forced out by a hard stool, by means of the finger, or appears as a very slight moisture at the meatus, the addition of a 1 per cent. solution of Phosphate of Ammonia to a drop of it on a glass slide will sometimes give the characteristic phosphatic crystals, known as Böttcher's crystals; but, as urethral and prostatic discharges are usually mixed, appearing as a mucopurulent discharge, the reaction does not always occur. This discharge varies greatly in abundance, it may be so profuse as to require frequent attention to prevent soiling of the linen; it may be observed only after stool, at the end of micturition, or only in the urine voided, giving to the latter, on standing, the appearance as though it was undergoing crystallization by freezing. After a short time the discharge settles into a thick, hazy mass at the bottom of the test glass, adhering to or leaving a pasty substance sticking to its surface. Occasionally it is granular in character, resembling fine sand or plaster of Paris. This variety is not, as a rule, continuous, but occurs only after muscular exercise or prolonged forced retention of the urine. When these granular phosphates are voided, they cause burning and soreness along the urethral canal, and there may be associated faintness and exhaustion. The urethra is usually involved, and the introduction of instruments is consequently painful, though, in some of the more chronic cases, anæsthesia may be present.

Derangements of sexual functions are very pronounced, often being the first manifestations which call the patient's attention to the developing disease. There may be increased sexual erethism and desire, accompanied by premature ejaculation. As the disease progresses, erections become less frequent, less permanent and less satisfactory; finally all power of erection disappears, the thrill of ejacu-

lation is gradually lost, and even prolonged coitus may not be followed by ejaculation. Pathological nocturnal and diurnal pollutions may even occur with their train of distressing symptoms, together with physical and mental exhaustion after coitus. ~~Great depression~~, despondency, melancholia, etc., soon follow. Headache and muscular pain are common, with loss of strength, flesh, and appetite; mental and physical incapacity gradually but surely creeping on.

These patients become nervous and hysterical, weak, feverish and anæmic, and it is with the utmost difficulty that they can be convinced they are not suffering from spermatorrhœa when they see the discharge from the urethra or notice a suspicious moisture at the meatus after a hard stool, even when the microscope demonstrates the absence of spermatozoa.

Diagnosis.—This condition might sometimes be confounded with tubercular prostatitis, but it is more chronic than the latter, although it has about the same history. The absence of tuberculosis elsewhere and the microscopic examination of the discharge will be of much assistance. Hypertrophy of the prostate can often be determined by the age of the patient, it rarely occurring before the fifty-fifth or the fifty-eighth year, and rectal examination will easily differentiate chronic catarrhal prostatitis from a seminal vesiculitis, ampullitis or inflammation of the verumontanum.

Prognosis.—Unless absolute hygiene is strictly observed, and alcoholic excesses avoided, the response to treatment will be slow and unsatisfactory. Young men usually progress more rapidly towards cure than those more advanced in life. In those who are overwhelmed with the magnitude and incurability of their disease, who are suffering with an associated cystitis, or where there is no apparent cause, treatment is often tedious and

disappointing. Every case, however, may expect to be benefited, and with proper care and perseverance a cure may be looked for in the majority.

Treatment.—The diet must be plain, nourishing, and not too stimulating. Condiments, salt food, coffee, tomatoes and asparagus must always be forbidden. Alcohol must be prohibited, and moderation in all things advised, with out-door exercise, removal to the seaside or to the mountains, cold sponge baths in the morning, and rest in the recumbent position when possible. Sexual intercourse must be interdicted and carnal thoughts avoided. In the married, sexual relations may be allowed under proper restrictions. The bowels should be evacuated daily by enemas. Sitz baths of ten to twenty minutes' duration at bedtime should not be forgotten. Massage of the prostate is of the utmost importance. It can be given most satisfactorily with the patient in the position recommended in the treatment of chronic seminal vesiculitis, *i. e.*, the dorsal position with the limbs slightly flexed, or in the knee and elbow position. After the patient is placed in the selected position the first or middle finger of the operator, protected by a long rubber tip and anointed with vaseline, is introduced into the rectum. If the rubber tip, which not only protects the finger from becoming soiled, etc., but prevents injury to the mucous membrane of the rectum by a rough finger nail, cannot be procured, the finger, and especially the nail, should be properly lubricated and protected with soap before it is introduced. The diseased gland is massaged from right to left and vice versa, the tip of the finger being used and pressure made towards the symphysis pubis; the gland should also be massaged forward and backward. The massage should be continued from two to five minutes, and may be repeated with advantage every fifth day. Sometimes it is advisable to introduce a full-sized steel sound through the prostatic

(not up & down as one would think?)

urethra and retain it during ~~the message~~. Feleki has invented an instrument for applying massage, and Swinburne has recently modified it to a slight degree. Pezzoli has recently introduced an instrument for prostatic massage in conjunction with faradism. The secondary current gives the best results. But the author is of the opinion that instruments of this nature may cause more injury than benefit, and that the massage should only be given with the finger.

The passage of steel sounds and direct local treatment are very efficacious. The sound must be passed with the utmost gentleness and care or it will be arrested by the compressor urethræ, which is usually in a state of spasmodic contraction, and is one of the many causes of the unpleasant symptoms which often arise in this disease. In some cases the author's or the Kollmann antero-posterior urethral dilator can be used to advantage. Some attribute the good results derived to the cold sound and go further and apply cold for five minutes to the parts by means of a hollow sound or urethral psychophore. Others claim that the relief is due to the pressure of the sound, which forces the blood out of the organ. The sound when used should be passed every five to eight days. The rectal psychophore and Kemp's rectal cooler should not be forgotten. When the mucous membrane of the prostate is seriously affected, as shown by the presence of round masses from the lacunæ or crypts of the glands, irrigation with some of the silver or Permanganate of potash solutions will be required, as well as applications by means of the Keyes-Ultzman capillary syringe, of two or three drops of a Nitrate of silver solution, one to ten grains to the ounce of distilled water or a few drops of a 1 to 20 to 1 to 5 solution of tincture of Iodine, Carbolic acid and Boroglyceride, equal parts, or dilated and irrigated with a drachm of a solution of Nitrate of silver, 1 to 2,000 to 500, by means of the

Bang's syringe-sound. These applications must not be repeated more frequently than once in five days. Some authorities apply a mild cantharidal Collodion to the perineum, painting one side up to the median raphe and keeping the patient in bed for twenty-four hours; when this side has healed the opposite is painted in like manner, the scrotum and anus being protected by absorbent cotton.

Rectal suppositories containing one and a half or two grains of Iodoform or Ichthyol have been beneficial, one being introduced on retiring after the rectum has been cleansed with a douche.

The remedies symptomatically indicated are Agaricus, Alumina, Arnica mont., Aurum met., Baryta carb., Brachyglottis, Caladium, Cannabis Ind., Calcarea carb., Carbon-eum sulph., Clematis erect., Conium, Cubeba, Equisetum, Eryngium, Ferrum, Gnaphalium, Graphites, Hamamelis, Hepar sulph., Hydrocotyle, Ignatia, Iodium, Kali brom., Kali bich., Kali carb., Lachesis, Lilium, Lycopodium, Mercurius, Magnesia carb., Magnesia mur., Muriatic acid, Nitric acid, Nux vom., Pulsatilla, Phosphorus, Phosphoric acid, Phytolacca, Sabadilla, Sabal ser., Sarsaparilla, Selenium, Sepia, Silicea, Sulphur, Thuja occ., Tribulus ter., Ustilago, Zincum, etc.

CHRONIC CATARRHAL INFLAMMATION OF THE VERUMONTANUM AND THE PROSTATIC URETHRA. *Urethritis*

Etiology.—Unnatural sexual habits, particularly masturbation and conjugal onanism, are the most common causes of this disease. Congenital or acquired stricture, by producing hyperæmia from the pounding of the mucous membrane of the bulbous and prostatic urethra by the urine with each act of micturition, as well as the incomplete cure of an acute posterior urethritis, often produce it.

Pathological Anatomy.—In the early stages, the mucous

membrane of the posterior urethra is engorged with blood. As the disease progresses, the mucous membrane takes on all the characteristics of a catarrhal inflammation, the inflammatory process extending into the open ends of the tubules of the prostate, the ejaculatory ducts and also involves the sub-mucous tissues, the verumontanum becoming especially hyperæmic and irritated. Catarrhal inflammation of the posterior urethra causes changes in the terminal sensory nerve filaments located there, producing irritability of the erection centres, leading to exhaustion of the nerve power, and consequent sexual weakness. This is readily explained when it is remembered that the vesical plexus of nerves supplying the prostate, seminal vesicles and bladder is formed by the union of the anastomosing branches of the hypogastric plexus, the sympathetic filaments being derived from the sacral ganglia and the pudendal plexus of the sacral nerves. This nerve supply gives interpretation to the pain in the hypogastric region, back, rectum, scrotum and thighs, so common in local disease of the prostatic urethra.

Clinical History.—This disease is of frequent occurrence in young men, sexual derangements giving the first evidences of its presence by premature, weak and unsatisfactory ejaculations, excessive sexual desire, and diminished power of erection or inability to command an erection when desired, with excessive pathological pollutions, the emissions consisting of mucus, phosphates, oxalate of lime, a few pus cells, an occasional spermatozön, deficient in size and activity, and a slight discharge from the meatus, often most profuse in the morning, a product not only of the catarrh of the posterior urethra, but also of the ejaculatory ducts, with a consequent loss of tone and natural contractile power which retains the seminal and ampullar fluids. The urine has a low specific gravity, is alkaline, neutral or slightly acid in re-action, pale in color, increased in quan-

tity and contains a variable number of epithelial shreds. If it be examined by the three-glass test, the first glass will contain a large number of these shreds, the second will be clear and the third quite cloudy, owing to the presence of a large amount of mucus and granular phosphates which are squeezed out at the end of micturition by the prostate in its final contraction. Urination, both nocturnal and diurnal, is increased in frequency, often accompanied with considerable pain, which may be shooting in character, extending to the end of the penis, down the scrotum, into the rectum, or burning, with a feeling as though a drop of molten lead was passing through the urethra. If a bulbous bougie is introduced, it will cause sharp agonizing pain as it goes through the posterior urethra, particularly while passing over the verumontanum; on removal, a few drops of blood will generally be noticed upon it. When the prostate is examined per rectum, nothing abnormal may be found, but if a steel sound be introduced previous to the examination, pressure against it through the prostate will cause great pain and distress. This class of patients may enjoy good general health, or they may be markedly depressed and melancholic.

Prognosis.—If proper general and sexual hygiene be advised and carried out, in conjunction with the indicated remedy and proper local treatment, recovery should be rapid and complete.

Treatment.—All congenital or acquired defects must receive proper attention. A cold full-sized steel urethral sound, 28 to 34 F., should be introduced once a week and retained for three minutes. In this variety of sexual disorder the syringe-sound invented by Bangs will be very useful, as it possesses all the properties of the steel sound and at the same time allows of the application of the selected astringent solution while the folds of the urethral mucous membrane are slightly stretched and the mouths of

the ducts open, obviating the necessity of double instrumentation and the accompanying irritation. The sound should always be lubricated with Lubri-chondrin or Glycerine, as they are readily soluble in water, and do not affect the action of the selected astringent. Thallin, in a 20 per cent. solution, is often required, though the silver salts will, as a rule, be the most satisfactory. It is usually best to commence with solution of Nitrate of silver, 1 to 1,000, increasing the strength gradually as indicated. Deep prostatic injections of one hundred grammes can be given once every day or every other day and allowed to flow back into the bladder. The eye of the catheter should always be located in the membranous or prostatic urethra. The first two injections may be of a one-quarter to a one-half per cent. solution of Carbolic acid, followed by a one-half per cent. solution of Sulphate of zinc, and gradually increased to 3, 4, or 5 per cent. After each douche, the bladder should be normally emptied. A one-half, one or two per cent. solution of Tannin or Alum can be substituted.

Irrigation of the posterior urethra, with weak solutions of Zinc or Alum, gives good results, though better may be obtained from small astringent suppositories of Tannin, 0.05 gramme, increasing to 0.1 gramme. The suppositories should be retained for about one-half hour before urinating, and may be inserted every day or every other day. On urinating, after this treatment, the penis usually swells, accompanied with a painful sensation. For the purpose of cauterizing the prostatic urethra, suppositories of Nitrate of silver, each containing 0.02 gramme, have been used. They cause at first severe tenesmus and stinging pain at the neck of the bladder, followed in a few hours by slight bleeding, it may be profuse. The urethra becomes sensitive and micturition painful. If hæmorrhage is profuse cold compresses must be applied to the perineum.

A urethral discharge often appears for a day or two, and retention of urine may occur. When this form of treatment is undertaken, the patient should remain quietly in bed for from two to five days. One cauterization is usually enough, though it may have to be repeated a few times.

Deep urethral instillations, douches, and suppositories, as advised in the sections devoted to sexual disorders and to chronic prostatitis, will be beneficial. The cup steel sound is often employed, as a proper silver or tannic acid ointment can be carried with it.

Diet should be nourishing, easily digestible and non-irritating. Asparagus, celery, tomatoes, spiced dishes, alcohol and coffee must always be avoided.

The urine must be rendered bland and non-irritating. If it is over-alkaline, Boric Acid or Salol in five-grain doses after each meal will be very beneficial; if over-acid it can be readily neutralized by a tablespoonful of the following in a glass of water one hour after each meal:

℞. Potassii bicarbonate ʒ i.
 Tincture hyoscyamus
 Fld. ext. kav. kav. aa ʒ ss.
 Aquæ ad. ʒ viii.

The following remedies as symptomatically indicated have been found useful: Agnus cast., Ambra, Argentum nit., Borax, Calcareæ carb., Cannabis Ind., Cannabis sat., Cantharides, Capsicum ani., Carbo veg., Clematis, Cubeba, Cuprum acet., Eryngium, Ferrum pic., Gelsemium, Gnaphalium, Graphites, Ignatia, Iodium, Kali brom., Kali bich., Kali carb., Lachesis, Lithium, Lycopodium, Magnesium mur., Mercurius, Mezereum, Natrum mur., Natrum carb., Nux vom., Paris quad., Petroleum, Petroselinum, Salix nig., Staphysagria, Selenium, Sepia, Silicea, Sabal ser., Stannum, Thuja oc., Zincum, and Ustillago.

HYPERTROPHY OF THE PROSTATE.

No absolutely satisfactory explanation has yet been given as to the cause of prostatic hypertrophy. For many years the medical world believed that it was due to or was the result of advancing years, and that old age was its only cause. Sir Benjamin Brodie expressed this view when he said: "When the hair becomes gray and scanty, when the specks of earthy matter begin to be deposited in the tunics of the arteries, and when a white zone is formed at the margin of the cornea and at the same period, the prostate gland usually—I might say perhaps invariably—becomes increased in size." It is true that the prostate shows a decided inclination to true hypertrophy after the fiftieth year, but there are no cases on record in which it has developed after the seventieth year, even when many years have been added to the three-score and ten. Numerous cases have been reported as occurring before the fiftieth year. Doctor Mudd found a true hypertrophy in a negro twenty-seven years of age, and one in a child of five. Thompson says that an appreciable enlargement of the prostate will be encountered in about one-eighth of all men who have passed their sixtieth year, and that the overgrowth may be discovered in about one-third of all men of that age and upward. White is of the opinion that the growth is caused by perverted functional activity of the testes. He believes that the function of the testes is two-fold, the reproduction of the species and the development and preservation of the sexual characteristics of the individual; the need for the exercise of the latter function ceasing when full adult life is reached, its continuance after puberty leads to prostatic enlargement. Taylor is of the opinion that prostatic hypertrophy takes its origin in chronic catarrhal prostatitis.

A careful study of these cases and the literature on the

subject can but develop the opinion that everything which tends to increase the function, cause active or passive congestion, transitory or chronic, of the prostate will necessarily increase the growth of its glandular, tubular, intermuscular, and cellular tissues, and a true hypertrophy will result, which would not have occurred had a normal equilibrium been maintained.

The principal causes of prostatic hypertrophy are, therefore, (1) perverted sexual acts, habitual sensual indulgence and unchaste thoughts; (2) imperfectly treated or neglected simple or bacterial posterior urethral inflammations; (3) abnormal functional activity of the testes; (4) obstructions in the urethral canal and other structural changes.

Pathological Anatomy.—The morbid changes in hypertrophy of the prostate consist of a local or general overgrowth of the component cellular elements of the organ. There may be a general increase in all the normal tissues, or any one of the structural elements may be developed at the expense of or beyond the other. Hence there are four varieties or general divisions:

First—Overgrowth of the glandular portion without much change in the muscular or connective tissue.

Second—Overgrowth of the stroma, connective and muscular tissues without much change in the glandular. In this variety the prostate attains considerable size and causes pronounced symptoms. The muscular and fibrous tissues are increased, often at the expense of the glandular. As the disease advances the glandular elements disappear, giving place to a dense fibrous tissue. In well-marked cases, the organ may finally consist of little more than a circular bunch of musculo-fibrous material.

Third—General uniform development of all the normal structural elements. This is the most common variety, and gives rise to few if any symptoms.

Fourth—Localized overgrowth of one or all the element-

ary tissues, and not confined to any particular portion of the gland.

Enlargement of the prostate may involve both lateral lobes and the median portion; it may be confined to the median portion, or be more prominent in either the right or left lobe. The overgrowth may be limited to the posterior isthmus, it may project backward into the bladder, into the urethra, or appear as a pedunculated mass or collar at the neck of the bladder. In overgrowths of the different portions of the prostate, the pathological process generally progresses bilaterally, though there is a tendency to more development in the so-called middle lobe, due probably to the less degree of resistance in this direction. The degree of enlargement may vary from a simple rotundity to the size of a cocoanut. A prostate gland, weighing over six drachms, may be considered enlarged, its antero-posterior diameter being correspondingly increased and the canal lengthened. While the contour of prostatic enlargement is of interest, its importance depends upon the changes produced in the length, direction and size of the prostatic urethra, especially at the neck of the bladder. Symptoms may be absent. In fact a good proportion of the cases of hypertrophy of the prostate are never recognized by their clinical history, even when the gland is greatly enlarged. When infiltration involves the posterior median part of the organ the condition is different and the symptoms are numerous and varied. This portion is not encapsulated, consequently the growth rises from the floor of the posterior urethra and the posterior or middle lobe may project upward like an extended lip, changing the normal outlet of the bladder into a crescentic opening with its convexity upward. It may also extend backward into the bladder, and be shaped like a large pear or be slightly pedunculated. There is frequently a bar of hypertrophied mucous membrane just behind the prostate drawn up by the lateral

hypertrophy. These conditions cause the long train of serious and often fatal symptoms which accompany this disease.

As the prostate enlarges, the return circulation on its surface, through which the venous circulation of the bladder is conducted, becomes interfered with, and passive congestion of the bladder results. The dam of mucous membrane behind the prostate and the hypertrophied posterior lip not only interfere with the natural discharge of urine, but prevent the complete emptying of the bladder, and pathological condition—chronic cystitis, cystic calculi, dilatation of the ureters, pyelitis, nephritis, etc.—result.

Clinical History.—This depends to a very large degree upon the functional change in micturition. Consequently, the symptoms will vary with the anatomical changes which have taken place in the prostatic urethra and bladder at the period when the prostatic hypertrophy is discovered.

As obstructive hypertrophy advances, micturition becomes more frequent, especially at night; the inclination to urinate may occur as often as every half hour. The patient often has to wait a short time for the flow to begin; the stream comes slowly at first, but gradually increases in force, or a main stream may be projected forward, while some of the urine at the same time dribbles or drops down perpendicularly from the end of the penis. On straining, the stream grows smaller, the effort being accompanied by uneasiness and pain in the hypogastric region, perineum or rectum.

If infection does not take place with consequent cystitis and posterior urethritis, the frequency of urination, etc., may be the only symptoms complained of until incontinence of retention develops.

The frequency of micturition during this early period is due to the residual urine, which varies in proportion to the

degree of prostatic obstruction. As the amount of residual urine increases, atrophy and degeneration of the walls of the bladder take place.

If the obstruction is not removed and the inflammation extends and involves the kidneys, polyuria will result, the urine becoming profuse, with a specific gravity of 1003 to 1006, and containing albumen and casts. Under these circumstances the physician must be extremely careful as to the manner in which he performs the first instrumentation.

These and many other symptoms may be overlooked until after a hearty meal, over-stimulation or the chilling of the lower extremities, micturition suddenly becomes impossible and is followed by over-distension and atony of the bladder, causing excruciating pain, etc. This condition may possibly occur in the following manner: After the bladder has been over-distended the neck is pulled open and there is an overflow and apparent relief; but the attack has added to the original lesion, producing increased atony of the bladder with aggravation of the distressing symptoms.

Generally, long before incontinence of retention appears, true cystitis develops as the result of infection from without, instrumentation from within, or from the presence of bacilli coli communi, which have passed directly from the intestine, or, indirectly, through the kidneys, into the bladder. With the advent of the cystitis, micturition becomes painful, the pain varying greatly in character. It may manifest itself as a weak, tired aching, be continuous or intermittent, lancinating or dull, referred to the hypogastric region, perineum, scrotum, groins or inner sides of the thighs. There are associated sharp pains in the urethra, frequently referred to the glans penis, accompanied with much burning and straining, which, if encouraged, cause frequent and sudden interruption of the stream.

The urine at the same time becomes offensive, turbid, alkaline and may even be associated with a muco-purulent discharge from the urethra. The cystitis and retention increase as the disease progresses, and the ureters, pelvis of the kidney and the kidneys themselves become involved. The walls of the bladder become thickened, sacculated, large calculi form and the urging to urinate grows more frequent and painful. Sometimes the location of the hypertrophy makes it impossible to pass a catheter, and sudden retention can only be relieved by aspiration. This class of patients finally grow thin, haggard and feverish from toxæmia, etc. In the latter stage of this disease, the severe tenesmus associated with micturition often causes hæmorrhoids, rectal prolapse, abdominal hernia, etc.

Sexual erethism is frequently present and may become annoying and harassing. Priapism and nocturnal emissions are common; in some there is a varying degree of sexual perversion with lust which is not satisfied by coitus and may give rise to many excessive and unnatural practices. In others, who constitute the larger class of prostatics, sexual desire slowly disappears and true impotence develops.

Diagnosis.—Prostatic hypertrophy should be suspected in men over fifty-five years of age who complain of frequent calls to urinate, particularly at night, when the act is begun with difficulty, the stream seeming full-sized but feeble and followed by a sensation as if the bladder was not completely emptied, with accompanying disturbance of digestion.

In urinary disorders when the patient is over fifty years of age the hypogastric region should always be examined to ascertain whether there is any enlargement indicating an atonic or distended bladder, as it has sometimes attained the size of a foetal head before being discovered. The urine should be passed in the presence of the physician and the effect of forced expulsion noticed. If hypertrophy is pres-

ent, the urinary stream will be diminished, and the urine will dribble after the act.

To examine the prostate per rectum, place the patient in the dorsal position with the thighs flexed on the abdomen; lubricate the first or second finger with soap or vaseline, introduce it into the rectum and carry it along the anterior wall. The prostate will be between it and the pubes and its form and character can be easily mapped out; at the same time, by bi-manual examination, the size and condition of the bladder can be ascertained and the amount of residual urine estimated. Finally introduce a sterile catheter and notice particularly how it enters the bladder. If catheterization is not successful, owing to hypertrophy of the posterior median lobe or dam, a Thompson stone-searcher should be substituted. This instrument can also be utilized to interrogate the presence of stone which is often associated in advanced cases, as well as to empty the bladder. Stone can generally be detected and enlargements mapped out by turning the searcher from side to side and drawing it backward until the curve rests on the posterior median lip. Sometimes nothing is detected except a slight sensitiveness and enlargement of the prostate, though the most serious symptoms may be present.

Treatment.—When enlargement of the prostate assumes sufficient magnitude to cause distressing symptoms, the milder means for relief should be tried before the more radical are resorted to. If the treatment is fairly well directed and observed, all inconvenience may be prevented or relieved. A warm, equable climate is of great advantage. The body should be clothed summer and winter with flannel; when arising at night woolen slippers should be worn. Moderation in all things must be the guide and all over-excitement avoided.

The diet should be carefully regulated and consist principally of broiled steaks, chops, game, poultry, fish, well-

cooked vegetables or fruits, eggs, milk, farinaceous food, etc. Alcoholics of all kinds, must be prescribed with caution and discretion. Thompson, however, advises cider which is not sweet or over acid. Pork, dried and salted meats of all kinds, pastry, sweets, highly seasoned food, rich soups, cheese, uncooked fruits, pickles, condiments of all kinds, as well as tea and coffee, must be strictly interdicted. Plenty of milk, butter-milk and effervescing alkaline mineral waters should, however, be advised. Horseback riding and wheeling must be forbidden, and mental and physical labor never carried to the point of fatigue. Exercise must be carefully regulated, walking and golfing being the most beneficial, but driving over smooth roads is not objectionable. Sexual excitement is harmful and should, therefore, be prohibited.

The bladder should never be allowed to become over-distended. The patient must be counselled to avoid straining while urinating, even when the desire is urgent. Dr. Hale has suggested that the penis be grasped by the patient at the time of urination, thus obstructing the flow in the pendulous urethra and over-distending the membranous and prostatic part of the canal. When the stream is suddenly released, the dam caused by the enlarged prostate will remain open and allow a good-sized flow, provided straining is avoided. By this simple procedure, patients may for years avoid the necessity of the catheter or operation. If from chilling of the surface, over-eating, or neglect of the calls of nature, retention occurs, warmth and the indicated remedies, Aconite, Gelsemium, etc., may give relief. These failing, Bang's suggestion of placing the patient in bed with the pelvis elevated, giving a high rectal enema and irrigating the urethra with a hot Boric acid solution, repeated in an hour or two if necessary, is sometimes followed by a spurt of urine, with evidence of relief on the part of the patient. When these means

fail, the catheter or aspirator will be required for immediate alleviation.

In the more obstinate cases, with atony of the bladder and retention of urine, the catheter may be relied upon to make life endurable. A large-sized catheter is frequently successfully introduced while a smaller one fails.

The amount of residual urine should always be approximately estimated, and whenever it exceeds two ounces systematic catheterization is usually indicated. As a rule, patients with from two to four ounces of residual urine must be catheterized once daily, and once more for each additional two ounces. In removing the catheter the distal end must always be closed by pressure of the finger, to prevent leakage of urine along the urethra, which, if the canal be abraded or diseased, may produce a urethral fever. In withdrawing the urine from an overdistended or diseased bladder care must be given to the amount removed. If the quantity is large and it is entirely removed at the first or even at the second catheterization it may cause syncope, which may be followed by urethral fever and death.

Sometimes the passage of an ordinary catheter is impossible, yet a silver catheter with a long curve may succeed; in other cases a soft, elastic catheter will act best. It may be necessary to use the Mercier catheter, with one or two elbows, which compel the point to follow the roof of the canal and thus over-ride the dam; or an English catheter placed for a few moments in hot water and moulded to an exaggerated curve, then cooled in ice water; if introduced rapidly with stylet removed, it will retain its form, and often succeeds in entering the bladder. The catheters must always be carefully cared for and kept aseptic. The bladder after each catheterization, if cystitis exists, should be carefully washed out, and a little of the selected solution allowed to remain. Cystitis and pyelitis are often greatly

relieved by the internal administration of Boric acid, Salol, Thiosynamin or Urotropin in appropriate doses.

✓ The latest remedies for prostatic hypertrophy are thyroid extract, for which some apparent cures have been recorded, and prostatic extract. Oraison (*Gazzetta degli ospedali e delle cliniche*, May 19th), reports seven prostatic patients, all with retention, treated by prostatic extract, he obtained five cures, one amelioration and one failure. The dried and powdered gland in pills was given to the extent of from three to twelve grains daily, and the glycerin extract in doses of from a hundred and fifty to four hundred and fifty minims.

Before introducing a catheter it should be rendered thoroughly sterile, and during the operation strict asepsis and antisepsis must be observed.

The following advice is of value to those about to commence a catheter life: Procure twice as many catheters as may be needed for a single day, a fresh instrument to be used for each catheterization; a metal box arranged for sterilization by Paraform; a bottle of tablets of Bichloride of mercury, one tablet to a pint of hot water making a solution of 1 to 1000; a roll of Bichloride gauze, a package of absorbent cotton, a tube of Lubri-chondrin or sterilized Vaseline, two ounces of green soap, a quarter of a pound of Boric acid, a teaspoonful to a pint of hot water making a proper solution, and a dozen towels, which must always be boiled, sun-dried or baked before using. To sterilize the catheters, wash them in green soap and hot water, rinse thoroughly in plain hot water, wrap them separately in pieces of Bichloride gauze, and together in a towel, and place in the Paraform box for twenty-four hours, after which they may be removed from the sterilizer and used as required. When catheterization is necessary wash the hands in green soap and hot water and render them aseptic in a Bichloride solution, 1 to 1000; dip a pledget of

cotton in the Bichloride solution and with it thoroughly cleanse the end of the penis. Lay a clean towel about the organ, remove a catheter from the towel, dip it for a moment in the hot Boric acid solution, lubricate with the Lubri-chondrin and introduce. After using, wash and syringe out the catheter with green soap and hot water, rinse in plain hot water, and wrap it in a clean towel, in which it can remain until sterilized as above directed. A soft rubber catheter, with a solid end and one coudé, is preferable, though a firmer instrument made over elastic webbing, with a bend near the end, may be required. If the catheters cannot be constantly sterilized with the Bichloride solution and Formalin vapor, they may be cleansed, after proper washing in hot water and soap, by placing them for fifteen minutes in a 2 per cent. solution of Formalin, or equal parts of Electrozone and hot water, and wrapped in Bichloride gauze or a clean towel until needed for use. New as well as old catheters must be washed and sterilized before using. When it is necessary for the patient to use the catheter when away from home, Alcohol can be substituted for the Bichloride solution to rinse the fingers in before taking the sterile catheter from the Bichloride gauze, which, for protection, should be surrounded by oiled or waxed paper held in place by rubber bands.

Rectal tamponades of the prostate and injections of Cocaine into the parenchyma of the testicles to produce atrophy have had their advocates. Massage in selected cases has been of great service, and in others electricity has been of benefit. When urinary obstruction is only moderate, or even when it is of considerable magnitude, with compensatory hypertrophy of the bladder and a consequent small amount of sterile residual urine, if catheterization is easy and painless, the suggestions already enumerated will be sufficient. But when instrumentation becomes difficult, painful and frequently required, the urine giving evi-

dences of bacterial infection, surgical measures are often indicated, and if an appropriate operation be performed at this period the most satisfactory results may be expected. The operations devised for the cure or relief of this disease may be divided into six classes: (1) Incision of the prostate with Bottini's galvano-caustic incisor. (2) Prostatectomy. (3) Prostatotomy. (4) Emasculation. (5) Vasectomy. (6) Ligation of the internal iliac arteries.

Bottini's Galvano-Caustic Incision.—This operation was first performed in 1872, but as the instrument was complex and cumbersome, the method was little considered by the profession until Freudenburg modified the original instrument.

The instrument consists of a shaft shaped like a lithotrite, provided with a platino-iridium blade or male shaft, which is directly connected with a storage battery, the Willy Meyer battery or with a street alternating current of 104 volts by means of the cautery transformer, and controlled with an ampère-meter, and concealed, when the instrument is closed, within the female shaft.

The platino-iridium blade is exposed by turning the wheel attached to the Archimedian screw to the right, the scale on the exposed shaft behind the wheel exactly gauging the length the male blade is exposed, *i. e.*, the length of the groove made in the prostatic tissues. The incisor is provided with a cooling apparatus, which runs through the entire length of the shaft, crossing at the beak and returning on the opposite side of the instrument. The entrance and exit of the water canals are directed downward and inward. To one is attached a piece of rubber tubing, which supplies cold water from a reservoir, and to the other a similar piece of tubing, which conveys the water to a receiver.

Before the operation, the bladder should be examined with the cystoscope as well as with the Thompson stone



searcher, to ascertain the presence or absence of stone, the relative size of the so-called middle lobe of the prostate, and the prominence of the lateral lobes. This is of great importance. In one of the author's cases the median lobe was so large that it prevented the turning of the incisor, yet anterior and lateral incisions gave excellent results.

When the so-called middle lobe is pedunculated, the median posterior incision should be omitted, as it would be useless, and the divided lobe would only act as a valve which might completely close the internal urethral opening when the urine was being expelled by the contraction of the bladder. In one reported case the division of a pedunculated mass caused a profuse, though not a fatal, hæmorrhage. After the patient has been properly prepared, the bladder is emptied by means of a catheter, and carefully douched with a saturated solution of Boric acid until the solution returns clear. This is followed by a solution of Nitrate of silver, 1-8000. As the catheter is withdrawn and its eye is located in the prostatic urethra, and about one-half inch from the internal sphincter (this distance being ascertained by a properly applied clip mark on the catheter as indicated by the flow of urine when the catheter was introduced), a half dram of a 2 per cent. solution of Cocaine is injected. In about five minutes the parts will be sufficiently anæsthetized to render the operation painless. About three ounces of a warm saturated solution of Boric acid is then injected into the bladder; this distends the vesical walls and prevents a posterior fold of the viscus being caught by the incisor and the walls of the bladder being perforated. It has been suggested that the distention could be better accomplished with air. The incisor is first previously tested by trying the knife heated to a cherry red, on a piece of moist sterilized gauze; the cooling apparatus is then examined, to see that the cold water is running properly, and is placed in the care of a competent

assistant. The incisor is lubricated with Glycerine or Lubri-chonrin and introduced as is customary with all urethral instruments of this class.

After the instrument is in the bladder it is turned and the curved end or hook directed toward the rectum, when properly caught around the posterior median part of the prostate, the electric current of about fifty ampères, controlled by an ampèremeter, is turned on for fifteen seconds, when by turning the Archimedian screw to the right, the platino-iridium blade, heated to a cherry red, is brought forward along the floor of the prostatic urethra, and a groove two or three centimeters in length incised toward the rectum. It is then returned to its original position in the female shaft by turning the wheel to the left. A second groove of the same length is made in the larger of the lateral lobes. The instrument is returned to its position on entering and brought forward, until by depressing the handle slightly it embraces the upper segment of the internal urethral orifice, and an incision about one to one and one-half centimeters is burned in the prostatic urethra toward the symphysis. A posterior incision of two to four centimeters, with a lateral incision of each lateral lobe of two to three centimeters, may be substituted. Should the incisor work too freely, the current must be reduced a little; or increased, if it cauterizes too slowly. The cauterization requires about twenty seconds for the anterior incision and about sixty for the posterior and lateral. If the cauterization is made too rapidly, hæmorrhage often results, and the cautery blade on removal will be thickly coated with decomposed tissue. During the operation the odor of burnt flesh is often noticeable, and a hissing sound can be heard on auscultation over the bladder. When the cauterization is completed the instrument is removed, continuous catheterization or further attention is, as a rule, unnecessary though

in some cases catheterization for one or more weeks may be required. Dilation by sounds is rarely necessary, as the circular muscular coat of the posterior urethral opening and the hypertrophied prostatic collar have been severed. The divided circular muscular fibers tend to keep the grooves open, and the urine voided per urethra also assists. The cauterization sears the grooves made by the incisor, and, as a rule, prevents urinary or bacterial absorption. The patients complain of some burning on micturition, for the first two or three times; there is no rise in temperature; hæmorrhage is uncommon; usually they can safely leave their bed by the third day. There is generally a flow of a few drops of blood after the incisor is removed, and the urine may be slightly discolored for a day or two. Hæmorrhage is generally unimportant, but if of any magnitude and it cannot be controlled by the Bates hæmostat, a perineal or suprapubic cystotomy may be required. There is danger of acute toxæmia from opening a pus pocket in the prostate, from thrombosis of the lungs or from blood clots and abscess of the prostate. When a severe pyelitis or cystitis is present, the operation should not be undertaken until after proper antiseptic bladder douching and internal antiseptic medication.

After operation, the urine is generally voided in a thick broad stream, and the frequency of micturition is greatly decreased, becoming more normal as the bladder, under proper treatment, regains its tone. Bottini has had a death rate of less than 2 per cent., and his patients were usually allowed to be up and around in from two to four days.

In two cases reported by others the incontinence of retention was at once relieved; some of the reported cases have had dribbling of the urine for a few days or weeks after the operation, but in every case this has finally disap-

peared ; constipation, which is often present with prostatic hypertrophy, soon disappeared, though it was often succeeded immediately after the operation by diarrhoea.

Sometimes the first operation fails to give relief, due to an imperfect division of the tissues ; if this occurs the cauterization may be repeated in about two weeks. Bottini says that when the obstruction is relieved by his operation, the cure is permanent and he has never had a case relapse. In his 80 reported cases, of the first 57, 43 were successful, 11 improved, 2 died. His last 23 with the modified Freudenburg instrument were all successful. Freudenburg reports 13 cases ; 1 died 24 days after the operation, another from embolic pneumonia, while 7 of the remaining cases had been dependent upon the catheter for periods varying from two months to five years. After the operation the retention was entirely relieved and they could urinate voluntarily. Four of these were entirely relieved ; though three had some residual urine and were obliged to use the catheter occasionally. The other four cases suffered from painful micturition and spasm of the bladder ; they were all greatly benefited. One before the operation had sixty to eighty calls to micturate daily, which was reduced after the operation to eight or ten. Myers reports five cases, with one death ; two greatly benefited ; one who had ten ounces of residual urine and four years of catheter life, was entirely relieved. Morton reports five successful cases.

The Bottini operation, when properly performed, seems to possess great advantages and in selected cases should be advised when catheterization is difficult, becomes painful, is followed by hæmorrhage, or must be repeated at frequent intervals. Again it would appear to be indicated in cases in which the condition is such that a catheter life must be established, with all its annoyance and often unpleasant sequelæ, medication and local treatment having failed.

From the author's experience and investigation of the subject, he is of the opinion that the Bottini operation will be one of choice for prostatic hypertrophy, when the fibrous elements predominate; it will give the best results when retention of urine of prostatic origin has not been complicated by cystitis; and will be particularly indicated for the contracted fibrous prostate which Fuller describes as a chronic contraction of the prostatic fibers encircling the vesical neck, producing all the objective and subjective symptoms of prostatic hypertrophy except the enlargement.

Bottini's operation leaves the anatomical parts intact, and does not destroy the tissues or organs, which at certain periods of life are of great seeming importance, but it renders a permanent mechanical division of the obstruction, with rapid relief, a cure in many cases, with an exceedingly low death rate.

Prostatectomy.—This operation may be performed through the perineum, by the supra-pubic route or by a combination of both. Perineal prostatectomy is sometimes indicated when the prostatic overgrowth is small or pedunculated. A median perineal incision is made, the projecting portion seized with the fingers or with a pair of forceps, caught with a wire or galvanic ecraseur and removed. This operation is objectionable, as only a small portion of the hypertrophied mass can be removed, vesical projections being inaccessible. Nichol has modified and extended the scope of this operation by making a preliminary supra-pubic cystotomy for the purpose of pressing the prostate well down into the perineal opening, through which he shells the substance of the gland from its capsule by means of a finger or curette. His four reported cases were all successful.

Alexander has further modified the Nichol operation by opening the membranous urethra on a staff by the ordinary

median perineal incision. After the staff is removed two fingers of the left hand are passed into the bladder from above, the prostate pressed down, and, with the forefinger of the right hand, the capsule is torn through at its apex close to the prostatic urethra, and the gland enucleated by blunt dissection. The lateral lobes are first removed, and, finally, the so-called third, if it is hypertrophied. Hæmorrhage is not severe. The wound is dressed with supra-pubic and perineal drainage. Six of his eight cases recovered.

In the supra-pubic method, after the patient is placed in the Trendelenberg position, the supra-pubic incision is made according to approved surgical methods. When there is a pedunculated middle lobe, the pedicle must be divided with curved scissors, but when sessile, the encapsulated tumors can be shelled out with the fingers or curette. If there is a collar-like projection about the entire vesical neck it can be divided into two lateral halves by the blade of the scissors introduced into the urethral orifice, cutting open first the portion above and then that on the floor of the urethra. The projecting mass is enucleated with the fingers and scissors. Hæmorrhage is usually free and often alarming. It may be controlled by very hot water or packing, but, if severe, the Keyes's tampon, made of Bichloride gauze, may be required. If employed it should always be removed in twenty-four hours. When a large amount of tissue has been removed, the supra-pubic opening should be closed by an immediate suture and the bladder drained by the perineal route.

Tobin has successfully removed intra-vesicular prostatic growths with an ecraseur introduced through the urethra, the loop being hooked over the projecting mass and held by the forefinger introduced through a supra-pubic opening. The advantage of this method lies in the removal of only that portion of the gland which interferes with

the flow of urine, leaving a smooth surface sloping into the urethra. Little or no hæmorrhage occurs.

Prostatotomy.—In the past, when mild methods failed, the only hope of making life endurable was permanent drainage by a median or lateral prostatotomy or suprapubic cystotomy, which, while relieving the pain and retention, caused inconvenience and annoyance with offensiveness to mind and body, possibly resulting in urinary abscesses and sinuses; yet in selected cases there is no doubt that these operations are to be preferred to all other means.

Median prostatotomy with temporary drainage is the operation of choice for localized hypertrophy and contraction of a special fasciculus of the muscular wall of the vesical end of the prostatic urethra, the pronounced narrowing of the canal producing urinary obstruction and all the clinical symptoms except apparent increase in the size of the prostate.

Emasculation.—In 1893, Dr. White, of Philadelphia, stated to the medical world that in his experience and from his studies the removal of the testicles would be followed by atrophy of the prostate with relief of the distressing symptoms caused by its overgrowth, and that the death rate was smaller than that from prostatectomy.

Since Dr. White suggested castration many successful cases have been reported, proving the operation to be as rational and justifiable as the removal of the ovaries in overgrowths of the uterus. When dogs are castrated the prostate atrophies. Autopsies have demonstrated prostatic atrophy on one side in monorchids, and complete atrophy in cryptorchids and those suffering from syphilitic sarcocele. Castration is comparatively painless, has a low mortality and is not followed by the serious complications of the supra- and sub-pubic operations, though there is sometimes a sacrifice of the sexual power.

Unilateral orchotomy sometimes acts very satisfactorily. In one of the author's cases, where the left testicle was removed, almost complete atrophy of the prostate of the corresponding side has followed, the opposite being somewhat overgrown; the urinary symptoms have all disappeared.

Vasectomy.—This operation possesses the advantage of causing no deformity, and is readily and quickly performed under Cocaine anæsthesia. The most accessible point to attack the vas deferens is through the posterior surface of the scrotum. The vas deferens, being isolated from the surrounding veins, is held in place beneath the skin, and tightly stretched over the finger of an assistant. The skin is divided and the overlying fibrous tissue cut through, the vas separated and hooked out with a grooved director. Ligatures are applied directly above and below the director and the portion between removed, the cut ends cauterized with Carbolic acid and dusted with Aristol. The wound is closed with a stitch and dressed according to the usual surgical methods.

Even in the very old there is a great antipathy to the thought of the removal of the testicles. All men feel the humiliation of being unsexed, and prefer a considerable amount of pain and discomfort rather than relief with such loss. The nerve and blood supply of the prostate and testicle are of different origin; the relation of the testicle to the prostate is one of function only. Emasculation discontinues the functional life, and also eliminates from the system the power which the testes have of giving to man his virility, just as the ovaries give the feminine characteristics to the female; if the testicles are removed early in life there ensues a complete change of character and development. This being the case, the resection of the vas deferens should give all the relief, while it possesses few of the disadvantages of castration.

Parone, from a series of experiments regarding the difference in effect upon the prostate of castration and excision of the vas deferens, found that both caused atrophy of the prostate, and that the anatomical changes as revealed by the microscope differed in no appreciable manner.

Ligation of the vas deferens is undoubtedly the easiest operation proposed for the relief of hypertrophy of the prostate and prostatectomy the most difficult, though the death rate in prostatectomy, castration, and vasectomy differ but little. After castration or vasectomy, many patients though they survive the operation develop nervous conditions, some becoming maniacal, others losing their mental balance or developing melancholia. In other words, castration and vasectomy, while very successful in selected cases, especially where there is some pathological lesion present in the testes, have not proved the panaceas which they were expected to be when the testes were apparently healthy, though new technique and more extensive knowledge and research may change the results.

Ligation of the internal iliac arteries has been advocated and practiced by Bier, but his success has not been such as to induce others to take up his methods.

In some of the more advanced cases of prostatic hypertrophy, permanent supra-pubic or perineal drainage may be required.

Aloes soc., Argentum nit., Buchu, Cimicifuga rac., Ferum pic., Gelsemium, Graphites, Hepar sul., Kali bich., Lycopodium, Sabal ser., Soladago virga-aurea and Thuja have been found useful in this disease, though the remedies required for the bladder complications will be more frequently indicated, as advised in the Author's Genito-Urinary and Venereal Diseases.

TUBERCULAR PROSTATITIS.

Etiology.—It may be of primary nature, though it is usually secondary to the involvement of adjacent or remote organs, and is always dependent upon the presence of tubercular bacilli and their ptomaines in the prostatic tissues. It must be remembered, however, that tubercular bacilli have been found in the apparently healthy prostate. It is essentially a disease of young manhood. Tubercular involvement is often preceded by gonorrhoea. Anything which causes prostatic congestion may be considered a predisposing cause in susceptible subjects.

Pathological Anatomy.—The gland is usually considerably enlarged by inflammatory congestion. The primary nodules are located in the vicinity of the tubules and by amalgamating form large caseous masses in either the lateral or middle lobe, or in both, in which abscesses develop slowly, and, gradually burrowing, open into the urethra, rectum, perineum or hypogastrium, and numerous fistulous tracts result. Occasionally the tubercular mass becomes calcified and the disease is arrested.

Clinical History.—This has been little studied or understood. Thompson says there is no characteristic clinical history. It is a fact that many suffering from tubercular prostatitis present no symptoms, or so few as not to attract attention. When the tubercular deposit is situated near the prostatic urethra, the manifestations are practically those of a catarrhal prostatitis, *i. e.*, increased frequency of micturition, sharp burning pain or a sense of weight and fulness in the perineum, back and glans penis. Generally there is an accompanying muco-purulent discharge from the urethra.

Diagnosis.—Tubercular prostatitis may be differentiated from the catarrhal variety by the absence of mental depression, and by its developing in those who are markedly

anæmic, or who are already the victims of tuberculosis in other organs. Hæmaturia is often present, and, from the clinical history, stone in the bladder might be suspected, but with the Thompson sound the diagnosis can readily be made. If it was not for the presence of tubercular bacilli in the urethral discharge, or tubercular deposits in other portions of the body, the tumor might be mistaken for a malignant growth. The age of the patient should materially assist in differentiating it from hypertrophy of the prostate. In the early stage the tubercular nodules are usually more circumscribed than in hypertrophy of the prostate; as the disease progresses, the nodulations soften and fluctuation may be present. The infiltration sometimes becomes extensive and diffuse, obscuring almost, or entirely, the outlines of the prostate and surrounding parts.

Prognosis.—Recovery is possible, though rare.

Treatment.—The general health of the patient must receive careful attention, hygienic, climatic and medicinal, such as would be indicated for tuberculosis in other parts of the body. When primary tubercular prostatitis is diagnosed, parenchymatous injections of ten to fifteen drops of a 10 per cent. Iodoform-Glycerine emulsion, introduced by a long needle through the perineum every third to fifth day, have in some cases been apparently of great benefit. When the disease is located upon or near the prostatic urethra, urethral instillations of the Bichloride of mercury, 1 to 6,000, have been serviceable. Silver solutions should never be used in this variety of prostatic disease, as they cause exacerbations and increased suffering. Local instrumentation, as a rule, is harmful. When abscesses develop they must be incised through the perineum, curetted, and the cavity packed with Iodoform gauze. For special therapy see Catarrhal Prostatitis.

MALIGNANT GROWTHS OF THE PROSTATE.

Malignant growths of the prostate, when occurring as primary lesions, usually appear before the tenth or after the fiftieth year. Sarcoma may occur at any period of life, but more than one-half of the cases develop between the first and eighth year. Carcinoma is a rare affection. In 1,904 cases reported by Tanchou, only five developed primarily in the prostate. Malignant growths show a characteristic tendency to rapidly infiltrate the surrounding parts. The deposits in the neighboring glands, by pressure upon the iliac vessels, may produce œdema of the lower limbs and thrombosis. The enlargement of the prostate is always hard at first and its outline either irregular or nodulated. Later, softening may take place in spots.

Clinical History.—In the early period of malignant disease of the prostate the symptoms may be only those of obstruction of the prostatic urethra, *i. e.*, painful and difficult micturition accompanied with hæmaturia, which may be profuse, scanty, or intermittent, but generally terminal. Complete retention of the urine may rapidly develop, with rectal tenesmus, pain in the scrotum, along the inner side of the thighs and in the hypogastric region. The urine should always be examined in suspected cases for fragments of tumors, which may assist in making the diagnosis.

Diagnosis.—In the early stages, when the growth is still confined within the capsule of the prostate, it may be impossible to differentiate it from prostatic hypertrophy. But its rapid increase in size, and the early invasion of neighboring organs and glands, with the resulting cachexia, will soon suggest the diagnosis.

Prognosis.—In children death occurs in three to four and in adults in one to four years.

Treatment.—This is purely palliative. Retention of urine must be relieved by catheterization; the accompany-

ing cystitis may possibly require an appropriate bladder douche. If hæmorrhage is severe or the cystitis very troublesome, supra-pubic drainage, etc., will be indicated. Attempts have been made to remove the prostate when invaded by primary malignant disease; the results, however, have been very unsatisfactory. Much relief is often obtained from the administration of the remedies symptomatically indicated.

CYSTS OF THE PROSTATE.

Cysts of the prostate may be caused by retention of fluids, by obstruction of a prostatic tubule or be of hydatid origin, the symptoms depending upon the size of the cyst and its interference with micturition or defecation. The diagnosis depends upon the detection of a non-inflammatory fluctuating tumor connected with the prostate. The cysts should be evacuated and drained through the perineum.

PROSTATIC CALCULI.

Prostatic calculi are of two kinds, and vary in size from a microscopic point to a filbert. They may be single or multiple. The multiple variety, the most common, originate within the prostate, the calculi have granular nuclei, are made up of degenerated epithelial cells and inspissated mucus evolved in concentrated layers, and are known as corpora amylacea. When they are situated deep in the organ, they may occasion no symptoms, but when near the urethra, especially in the region of the verumontanum, they may, by ulceration, open into it; the urine will assist in their rapid growth, and in producing ulceration. Prostatic calculi may also be of kidney or bladder origin, being brought down in the urinary stream and lodged in the prostatic sinus, finally become imbedded in the organ.

Clinical History.—When situated in the prostatic urethra, calculi may cause frequent and painful micturition with possibly retention of urine. The diagnosis depends upon the grating sensation imparted to the fingers on passing a steel sound over them. They may be discovered by the urethroscope or by digital examination through the rectum.

Treatment.—The calculus may be removed with the urethral forceps through the endoscope, though, as a rule, a perineal urethrotomy will give the most satisfactory results.

POLYPI OF THE PROSTATIC URETHRA.

Polypi of the prostatic urethra are of rare occurrence, though they sometimes exist, causing hæmorrhage from the urethra, urinary obstruction, frequent and painful micturition, and difficulty in catheterization.

INJURIES OF THE PROSTATE.

Prostatic injuries are rare. When they occur they should be treated surgically as the individual case may indicate.

CHAPTER X.

ANOMALIES AND INJURIES OF THE SCROTUM

MALFORMATIONS OF THE SCROTUM.

Deformities of the scrotum are rare, unless associated with defects of the penis or testicles. In scrotal hypospadias and in hermaphroditism a distinct cleft may be found in place of the median raphé. If the testicle is absent the scrotum may be undeveloped. The scrotum is sometimes attached by its anterior median raphé through a web-like band to the under surface of the penis.

INJURIES OF THE SCROTUM.

Injuries are not common, though they sometimes occur. Traumatism is followed by rapid swelling, discoloration and extravasation of blood into the loose cellular tissue of the scrotum. If the skin is abraded, suppuration may follow.

Treatment.—Elevation of parts, pressure, and the application of gauze saturated with hot saturated solution of Boric acid, or Bichloride, 1 to 3000, with Arnica or Aconite, as indicated, generally give satisfactory results.

WOUNDS OF THE SCROTUM.

Wounds of the scrotum may be accidental or surgical. When they occur all bleeding points must be properly secured or a hæmatoma will develop. In closing scrotal wounds, the margins of the integument must be perfectly adjusted to avoid inversion or eversion and consequent imperfect union.

CHAPTER XI.

DISEASES OF THE SCROTUM.

PHTHEIRIASIS PUBIS.

This condition is commonly known as crabs. It is a pruriginous affection of the hairy parts of the genitals, caused by the presence of parasites. It may invade all the hairy parts of the body except the scalp.

When a suspicious itching occurs on the genitals an examination should at once be made. The parasites multiply rapidly, and are firmly attached to the skin from which they draw their sustenance, appearing as minute scabs and are most abundant near the base of the penis; the ova, attached to the hairs, can be seen with the unaided eye. The parasites and their ova are conveyed from one person to another during coitus, by means of the clothing and even by the toilet. They cause intense biting and itching of the parts and often some papular eruption.

Treatment.—The most satisfactory and rapid method is to dust the parts with Calomel, or to apply on retiring a salve composed of one part of Mercurial ointment to three of Vaseline, being careful to protect the scrotum. The hair may be removed, although it is not always essential. The parts should be cleansed the following morning with soap and hot water. It may be necessary to repeat the treatment. Ammoniated mercurial ointment acts equally well, and its application is not so objectionable. A solution of Bi-chloride of mercury, 1 to 1,000, applied to the parts every second day is very efficacious, but it must be con-

ERYTHEMATOUS INTERTRIGO OF THE SCROTUM. 155

tinued for two weeks. The tincture of Delphinium staphisagria, Cocculus indicus or Kerosene oil applied after a hot bath, can also be used with satisfactory results.

ERYTHEMATOUS INTERTRIGO OF THE SCROTUM.

Erythematous intertrigo of the scrotum occurs in those who are fleshy and perspire freely, have a rheumatic diathesis or are not careful in their personal hygiene. It is especially prevalent in fat scrofulous children. It can easily be relieved by washing the parts frequently with a solution of Carbolic acid, 1 to 200, Tincture of hydrastis, 1 to 20, and, after drying carefully, dusting with Oleate of zinc. An ointment of Resorcin, 2 per cent., made with equal parts of Lanoline and Adeps, gives satisfactory results, the parts being separated until healed by means of a suspensory bandage, the use of which should be continued for some time.

PRURITUS OF THE SCROTUM.

This is a very troublesome condition, often occurring without appreciable reason. Unless dependent upon a gouty or rheumatic diathesis, it may be relieved by bathing the parts two or three times daily with a solution of Carbolic acid, 1 to 200, or by the application of Rusc cerate two or three times a week, together with change of air, general hygiene and exhibition of the proper remedies, which are Antimonium crud., Aurum, Graphites, Muriatic acid, Natrum sulph., Nux vomica, Nitric acid, Rhus tox., Staphisagria, etc.

ECZEMA OF THE SCROTUM.

Eczema is of frequent occurrence, particularly in the gouty, rheumatic and diabetic. It may occur in those seemingly healthy. When it attacks the scrotum it is

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often exceedingly obstinate and characterized, in addition to the general symptoms of eczema, by the most excessive itching and swelling of the parts, the surface of the scrotum becoming rough, raw and developing deep rugæ.

Treatment.—The salves found most satisfactory for general use are :

℞. Zinci oxidi, ...
 Ungt. Picia, ... āā ℥i;
 Ungt. Aq. Rosæ, ... ad ℥ii.

Or,

℞. Zinci oxidi, ...
 Zinci carbonat., ... āā ℥vi;
 Glycerini, ... f ℥iv;
 Liquor Calcis, ... f ℥vi.

Pt. shake well before applying.

In some cases powders are preferred, such as Calendulated talc., Calomel, Bismuth sub. nit., or

℞. Pulv. Amyli, ... ℥vi;
 Zinci oxidi, ... ℥iss;
 Pulv. Camphorus, ... ℥ss.

Remedies.—Arsenicum alb., Calcareæ carb., Mercurius sol. H., Rhus tox., Sulphur., Thuja occ., etc.

MOLLUSCUM CONTAGIOSUM.

This is usually a disease of childhood. The lesions appear as small sessile or pedunculated waxy tumors or cysts in the superficial layers of the skin. They cause few or no subjective symptoms at first, but later they soften and become umbilicated, *i. e.*, the centre is depressed and marked by a black spot. They may disappear spontaneously, but as they are contagious their surgical removal is always indicated.

Treatment.—If pedunculated, they should be removed with curved scissors, and the base cauterized with Carbolic acid. If sessile, the contents must be evacuated at the

black pointed centre by pressure, and the cavity touched with pure Carbolic acid.

SEBACEOUS CYSTS OR STEATOMATA.

These occur only in adult and advanced life. Generally only one is present, which is of small size, though it may attain the size of a crab apple. They are soft and doughy in consistency. If by any means the tumor becomes inflamed, suppuration and breaking down may occur.

Treatment.—Incision and removal of the sac with its contents.

SCROTAL ELEPHANTIASIS.

This is a hypertrophic overgrowth of the scrotum of rare occurrence in this country. The colored races are especially afflicted. It is generally due to stoppage or plugging of the lymphatics by the ova of the *filaria sanguinis hominis*, though obstruction from other causes, such as syphilitic deposits and some inflammatory conditions, followed by cicatrization, etc., may be its cause. It commences as a hard circumscribed mass at the side or lower part of the scrotum. Prunner says: "In proportion as this kernel spreads in all directions the skin over it becomes thickened and indurated, and appears furrowed, canaliculated, wrinkled, and granular. At this period also the lower part of the abdomen becomes altered in form, while the lower extremities appear to be getting shorter, a result of the traction which the tumor exercises on the skin of the abdomen. In the same way the skin of the penis yields to the traction of the tumor, and turns downward, beginning at the root, hence this organ diminishes in length, externally, until it is completely hidden in the tumor. Its cutaneous covering is connected merely to the glans and forms a blind canal, whose aperture is situated in front, in the middle line of the tumor, and represents a kind of continuation of

the outer extremity of the urethra. The skin of the penis, however, in consequence of the contact of the urine, becomes converted into mucous membrane."

As the growth develops it forms a large rough, warty, uneven and often excoriated pyriform tumor. The position of the growth allows the urine to flow over it; the skin becomes macerated in consequence and abrasions result. The parts often attain an enormous size; in one case the growth weighed over two hundred pounds.

Treatment.—Galvanism has, in the early stage, sometimes been beneficial. When the growth is large and troublesome, removal is generally advisable. As the operation is frequently attended with profuse hæmorrhage requiring ligation of many vessels, the parts at the base of the tumor should be transfixed with long pins and an elastic band placed behind them to control the bleeding during the operation. The hypertrophied tissues must be carefully separated from the testicles and penis, the vessels secured, and the parts dressed surgically. In time granulation tissue will cover over and protect the testes.

SCROTAL ŒDEMA.

While œdema of the scrotum may be caused by traumatic rupture of a hydrocele, urinary infiltration, or inguinal adenitis, it is usually due to some lesion of the kidney or heart, appearing as one of the numerous general phenomena.

Treatment.—This depends upon the cause, which must be removed or moderated. Needle puncture under strict asepsis may be of benefit.

SCROTAL EMPHYSEMA.

This condition may be due to the entrance of air into the scrotum from without through a punctured wound, or

from within from a rupture of an air-containing viscera. Generally, however, it is caused by putrefaction within the scrotum, and indicates gangrene or sloughing of some of the scrotal contents.

Treatment.—Free incision, drainage, and vigorous douching of the diseased tissues with a solution of hot Bichloride of mercury, 1 to 5000, or Electrozone.

SCROTAL GANGRENE.

This is occasionally due to rupture of the urethra with consequent urinary extravasation, or may be a sequel of excessive traumatism without urinary extravasation. It may also be produced by pyogenic germs in the blood, as sometimes happens in influenza, typhus, erysipelas, etc., as well as by embolism, thrombosis, etc. It has been a sequel of frostbite, of pediculi pubis, a complication of prostatitis, diabetes, etc.

Treatment.—Hot antiseptic stupes should be applied until the slough separates, when the remaining integument must be drawn over the testes, sutured as well as possible, and the parts enveloped in gauze saturated in Boric acid or Bichloride solutions. The dressings should be renewed two or three times daily until the exposed testes are covered in by granulation tissue.

CHAPTER XII.

ANOMALIES AND INJURIES OF THE TESTES.

POLYORCHISM, ANORCHISM AND SYNORCHISM.

With few exceptions, all males have two testicles. When an extra one is present, the condition is called polyorchism. Balasius has reported an undoubted case of supernumerary testis. In a case of scrotal hypospadias of the author's, four testicles seemed to be present. In size and consistency they all presented a normal appearance and pressure caused a sickening pain. But it must be remembered that supernumerary testes generally prove at the post-mortem or when explored surgically to be encysted hydroceles, epiploceles, fibromata or other pathological conditions. When one or both testicles are absent, the condition is called anorchism. A monorchid has one testicle absent from the scrotum; a cryptorchid, both.

Cryptorchidism may be due either to non-development or to retention of the testicle during its descent into the scrotum. The cryptorchid may possess the power of performing the sexual act, but is generally sterile. Sterility can only be decided by a microscopical examination of the seminal fluid. When cryptorchidism is caused by non-development of the testicle, the scrotum will also be undeveloped, the external genitalia will be rudimentary, accompanied with impotence, sterility, and the general attributes of a congenital eunuch.

Synorchism, or fusion of the testes, is extremely rare.

It can only be positively diagnosed by finding the two cords or at the post mortem.

Treatment.—Anorchidism resulting from non-descent of the testicles presents no unusual symptoms and requires no special treatment.

Cryptorchidism, dependent upon non-development, and consequent congenital eunicism, is beyond hope, unless the continued injection of the Browne-Sequard testicular fluid will, by its long and conscientious use, produce a development of the male qualities of the general system.

ECTOPY TESTIS.

Anomalies of position of the testicle often occur and are due to some deviation from the normal course in its descent. One or both testicles may be retained within the abdominal cavity, at the internal or external ring, or in the inguinal canal. The testicle may not fully descend into the scrotal sac (scroto-crural retention), or take an erratic course and produce a condition of ectopy. It may then be found beneath the skin some distance from the external abdominal ring, in the perineum, in the crural or possibly in the femoral region. When retained in the abdominal cavity it may be attached to the posterior wall beneath the kidney, located in the iliac fossa, lie within the internal ring or be attached by a long mesorchium and float in the abdominal cavity. When the testicle is retained in the inguinal canal or at the internal or external ring, it is generally quite movable, unless it has been fixed by a previous inflammatory condition the result of some injury.

In perineal ectopy, the testicle appears as a small avoid mass at one side of the medium raphé in front of the anus, which, when pressed upon, gives the peculiar sickening testicular pain. Its spermatic cord can often be traced. The testicle will be found absent from its scrotal

pouch. Femoral ectopy occupies the position of a femoral hernia, is located below Poupart's Ligament and behind the femoral vessels. Ectopic testicles are generally somewhat atrophied.

The causes of ectopy testis are numerous, such as shortness of the vessels of the cord, a long mesorchium, the small size of the external or internal ring. Irregular development of the gubernaculum testis produces the cruro-femoral and the peno-pubic varieties.

Misplaced testicles are always undersized, and from their abnormal positions are especially liable to inflammation, which often results in degeneration, disease, etc. As a rule, displacement causes sterility but not impotence. The inflammatory condition may be excited by traumatism, blows, etc., from without or by muscular contraction from within. They are especially liable to secondary inflammatory involvement by extension of infection from a posterior urethritis as well as by hæmatogenic infection in mumps, influenza, typhoid fever, etc. These inflammatory conditions may result in abscess of the testicles or be the exciting cause of a malignant growth. Misplaced testicles may be associated with and become a serious complication of hernia.

Clinical History.—There are no symptoms, with the exception of an occasional pain in the misplaced organ, and its absence from the scrotal pouch, until some complicating lesion develops, one of the most frequent and distressing being an epididymo-orchitis, with its agonizing, sickening pains and reflexes. There may be abdominal tenderness, which often requires careful examination to differentiate ectopy testis from acute peritonitis or strangulated hernia, especially when constipation, vomiting, etc., are added to the clinical symptoms, or when, from traumatism or infection, the testicle becomes gangrenous. Inflammatory conditions in an undescended tes-

ticle may cause general peritonitis. Hydrocele and hæmatocele sometimes complicate ectopy testis. Malignant conditions present the usual symptoms of malignant disease of these organs. Hernial complications are particularly troublesome, as the position of the testicle often prevents the application of a proper truss; operation is, therefore, always indicated.

Diagnosis.—This depends upon the absence of the testicle from its scrotal cavity and the finding of a smooth, movable tumor, usually somewhat smaller than a normal testicle, giving on pressure the peculiar sickening sensation always produced by pressing the testicles, with an associated decrease in the size of the scrotum. When the testes are undescended, only the first and last diagnostic points will be present.

Prognosis.—This is generally good in the undescended testicle, of young children, as they have been known to descend as late as the twenty-fifth year. At birth, frequently, they have not descended, though in these cases they usually make their appearance in the scrotum during the first few weeks of infantile life. Testes which do not show signs of descending by the sixth year, or are misplaced, may require surgical attention.

Treatment.—Operative means to relieve undescended and misplaced testicles are indicated in early childhood; in the adult, their position and subsequent traumatism with resulting degeneration and under-development is such that castration is preferable. Particularly is this true when ectopy testis accompanies hernia, excepting where there is reason to believe there is but one testicle; in this case, if possible, it should be saved even at considerable risk. The abdominal variety, as a rule, must always be left undisturbed unless evidence of disease appears, the vascular and nerve attachment of the testicle being often too short to allow it to be properly secured at the bottom of the scrotal

sac. The operation, however, has been successfully performed with subsequent growth and development of the organ, yet it must be remembered that there have been numerous failures. When the testicle is within the inguinal canal, or is of the cruro-scrotal variety, manipulation and the application of a proper truss to keep the gland in front of the external ring may be successful. Operation is rarely indicated in the bilateral variety. When the testicle is within the external ring an incision along the line of the cord, through the skin, superficial fascia, and aponeurosis of the external oblique should be made, the testicle exposed and the cord thoroughly freed. A second transverse incision made through the fibres of the cremaster muscle and those covering the cord entirely frees the testicle with its nerves and vessels, and allows it to be extended beyond the ring; the areola tissue of the scrotum is separated by forcing the forefinger down from the lower corner of the wound; the scrotal sac thus made is invaginated and the testicle attached to its base with a chromicized catgut ligature. The opening in the external oblique is closed and the external ring reduced sufficiently to prevent retraction of the testicle through it, but not enough to cause strangulation of the cord. The external wound is closed and surgically dressed.

Perineal ectopy always calls for surgical relief. For antiseptic reasons it is usually best to operate about the fourth year, though if the condition interferes with exercise it may be necessary before. After the patient is prepared for operation the testicle is pushed as near the scrotum as possible, and an incision about an inch and a half long, transverse to the cord and at right angles to the raphé, is carried through the tissues down to the cord. The testicle and cord are exposed, freed from attachments, and after a passage is forced by the finger through the cellular tissue

of the scrotum the testicle is deposited in the sac and anchored in the usual manner.

Pubic ectopy requires practically the same attention as the inguinal. The crural is generally associated with hernia. The testicle may be returned with the intestine to the abdominal cavity or be removed as may seem best at the time of the operation.

When an undescended testicle becomes inflamed, the usual methods of treatment for this condition as for the normally placed testicle may be all sufficient. In case of doubt, an exploratory incision will be advisable. Hernial complications require herniotomy, generally with castration. Malignant complications indicate immediate removal.

INVERSION OF THE TESTICLE.

In this anomaly the testicle, in its descent, assumes a faulty position. The displacement may be anterior, lateral or transverse, the latter being the most frequent. The rotation may be so complete that the epididymis will appear in front of the testicle. These conditions are important only from a surgical view. Anterior inversion with hydrocele places the testicle and epididymis in front of the fluid, and if the change of position and attachment is not recognized they may be injured by the trocar when introduced in the usual manner to remove the fluid.

LUXATION OF THE TESTICLE.

This is not a common accident, though it may be produced by traumatism or over-action of the cremaster muscle. When it occurs, the testicle may be lodged external to the external abdominal ring, in the inguinal canal or be forced into the adominal cavity. This accident is often followed by great pain, tympanitis, inflammation, etc.

Treatment.—Under Ether the testicle generally can be replaced, though incision of the cremaster muscle and anchoring the testicle to the bottom of the scrotal sac may be required. If anchorage is not deemed necessary, the organ should be secured in its normal position by bands of adhesive plaster placed around the scrotum between the testicle and the base of the scrotum.

TORSION OF THE TESTICLE.

Axial rotation of the spermatic cord is believed to depend primarily upon some congenital defect, and immediately upon some over-exercise or muscular effort. It occurs most frequently in cases of undescended testicle. The twist may be either to the right or to the left, and may be complete or incomplete. According to its degree it may cause infiltration and bloody extravasation into the epididymis, or gangrene of the parts may result. The symptoms are those of a severe epididymoorchitis appearing during or immediately after muscular effort, with lack of other and sufficient cause for the acute inflammation. When torsion of a testicle in a normal position occurs the diagnosis is easy, but when the testicle has not descended it is often difficult or impossible to diagnose it from a strangulated inguinal hernia. A swollen, painful, red oedematous tumor developing suddenly after exercise with no cough impulse, but with possibly vomiting and tympanitis, may call for an exploratory incision to make a positive diagnosis.

Prognosis.—If unrelieved, atrophy or gangrene will result.

Treatment.—When the condition occurs in a normally situated testicle, the cord can generally be untwisted under an anæsthetic; the parts resuming their normal state. Sometimes, however, a normally-placed as well as a misplaced testicle will require surgical relief. If the

testicle is black or gangrenous, it must be excised; if it is only greatly swollen or discolored, it is conservative surgery to remove it. If the inflammation is of lesser degree the cord should be untwisted and the parts properly secured in place by ligatures.

HYPERTROPHY OF THE TESTICLE.

When only one testicle has developed, or when one has been removed at an early age by surgical means or disease, the remaining testicle, following the law of compensation, often increases in size and does duty satisfactorily for both. It may occur without apparent cause.

ATROPHY OF THE TESTICLE.

This is often the result of orchitis, old age or wasting disease. True atrophy is generally a result of retention or ectopy testis. Sometimes, when placed normally, the testicles remain undeveloped; experience, however, teaches that physiological activity often excites development, etc.

Treatment.—Patients suffering from hypertrophy of the testicles should at all times wear a suspensory bandage to prevent dragging upon the spermatic cord. In atrophy of the testicles, daily moderate massage or a light Faradic current, continued for months, may be of benefit. The natural physiological activity of the testicles in married life has often produced development. When atrophy has been due to retention in descent, transplanting to the normal scrotal bed has occasionally resulted in moderate development.

WOUNDS OF THE TESTICLE.

Incised wounds are exceedingly rare, except when surgically made for diagnostic purposes. When the parenchyma is normal, the tunica albuginea should be carefully

and evenly sutured with catgut, and the wound closed without drainage.

Punctured wounds are generally accidental and often caused by the improper use of a trocar. They are unimportant, if the instrument was aseptic.

Contused and lacerated wounds require careful drainage. As much of the gland tissue as possible should always be saved.

CONTUSIONS OF THE TESTICLE.

The testicles are so situated and movable that traumatism is of infrequent occurrence. It is, however, sometimes caused by severe pressure or a squeeze, which presses them violently against the perineum, pubes, etc.

Clinical History.—The symptoms depend upon the degree of traumatism and the quantity of blood extravasated, varying from a slight sickening sensation, which is soon forgotten, to an intense agonizing pain, accompanied with nausea, vomiting, faintness, rapid swelling of the parts, profound shock and even death. After the first few hours, the agonizing pain is succeeded by a continuous dull ache, which often requires anodynes to relieve. The swelling may be confined to the parenchyma of the testicle, or it may involve the tunica vaginalis and general scrotal tissues, which become greatly discolored. These contusions usually remain aseptic and resolution generally commences about the fifth day, but suppuration, with its usual phenomena, sometimes occurs.

Prognosis.—This depends upon the degree of traumatism, the systemic condition of the patient and the treatment. Contusions, no matter how slight, should receive proper consideration, as even a little bruise from the saddle or wheel may be the exciting cause of atrophy or tubercular involvement. Slight contusions generally recover. When

laceration of the gland tissue with general bloody extravasation occurs, atrophy usually follows.

Treatment.—The slight cases require proper evaporating lotions, with support, and Arnica internally. The more severe, application of hot stupes of Lead water and Alcohol or solutions of hot Boric acid with elevation of the parts, and even elevation of the pelvis. The ice bag is frequently very serviceable. Anodynes to relieve the pain may be necessary. Shock should receive general surgical treatment. The bowels must be kept open, and a milk diet advised. Should there be evidence of continued extravasation of blood, the parts must be incised, and the bleeding points secured. The patient must remain in bed until all the inflammatory symptoms have subsided, when a proper suspensory bandage should be worn for months. Absorption of the inflammatory exudate can be hastened by the internal administration of Hecklavalava, Lappa alba, Sulphur, etc.

CHAPTER XIII.

DISEASES OF THE TESTES.

INFLAMMATION OF THE TESTICLE.

Inflammation may affect the epididymis (epididymitis) or the secreting part (orchitis) irrespective of each other as their circulation is independent, but generally both structures are more or less involved, the intensity of the process depending upon the cause.

It may be of urethral, traumatic, infectious, tubercular, or syphilitic origin, the clinical history varying with the cause. The urethral variety, which is generally of gonorrhœal origin, may be confined to the epididymis. In the traumatic variety the epididymis and testicle are generally equally involved; when of hæmatogenic origin from some infectious disease like parotitis, influenza, tonsillitis, typhoid, variola, measles, scarlet fever, and sometimes gout, the disease commences in the testicle proper. The tubercular variety usually appears first in the epididymis. The syphilitic may commence in either part of the testicular structure.

EPIDIDYMO-ORCHITIS.

Etiology.—Gonorrhœa is without doubt the most frequent exciting cause of epididymo-orchitis, but it often results from excessive venery, gleet, stricture, calcareous concretions in the prostatic portion of the urethra, acute or chronic prostatitis, the neglect to wear a properly-fitting suspensory bandage, lifting during an attack of any

urethral inflammation, instrumentation and surgical operations in and around the prostate gland and neck of the bladder, or traumatism. The epididymis is first involved. The first attack is usually the most severe ; one attack predisposes to another ; relapses are frequent.

Pathological Anatomy.—In all cases the tunica vaginalis is involved, as it is continuous in structure with the epididymis. It is congested and inflamed, exuding serum, sero-sanguineous and plastic material into the tunica vaginalis ; the tubes of the epididymis are greatly distended, with an inflammatory, homogeneous plastic exudation. The secreting portion of the testicle, however, while markedly hyperæmic, rarely becomes much inflamed.

Clinical History.—There is generally involvement of both the epididymis and testis, the severity of the inflammation varying according to the cause. The condition is popularly known as “swelled testicle.” Epididymo-orchitis may be single or double. At first there is a slight uneasy feeling, referred to the groin, extending up to the back, as if the cord was stretched, and possibly a little fever, increased frequency of urination with pain in the perineum and scrotum. In a few hours the parts commence to swell, with pain in proportion to the swelling, due to the effusion into and the rapid distension of the tunica vaginalis. In the more moderate cases the exudation is less, and consequently the pain is not so severe. The epididymis becomes inflamed, swollen, and painful, the secreting part of the testicle lying in front of it. The pain is of the most agonizing and sickening character, and greatly increased by standing. The scrotum is red, swollen and œdematous, the veins standing out tortuous and prominent. The whole organ is sore and sensitive to touch, so much so that the patient will unconsciously support and protect it with the hand. The swelling becomes oval or irregular in shape, and may

attain the size of an orange. If urethritis existed before and was the cause of the disease, the discharge will decrease or stop, to return on the cure of the local inflammation.

The disease advances rapidly for from two to six days, but is generally relieved or cured in about two weeks; an inflammatory induration of the tail of the epididymis may persist for years. This induration may, by its mere presence or future contraction, occlude, in part or entirely, the tubes of which the tail is made up; it may cause sterility if both testicles are involved. Fortunately, the occlusion is rarely complete even when the conducting tubes of both have been diseased. The testicles always retain their power of secretion, even when the tubes are completely obstructed, and if, at any future period, the canal is opened, the spermatozoa will again make their appearance in the seminal fluid.

Obstruction of the ducts of the epididymis does not in any way interfere with the act of copulation or ejaculation of seminal fluid, though spermatozoa will not be found in it. Microscopical examinations made in a large number of cases have demonstrated that in double epididymo-orchitis, when treatment is continued, in from two to eight months the spermatozoa will again be found in the semen. The nodule in the tail of the epididymis is liable to become very sensitive and irritable, the least touch producing the most agonizing pain.

Epididymo-orchitis is sometimes accompanied by great swelling and inflammation of the spermatic cord, "deferentitis," which may extend up into the inguinal ring; it may result in inflammatory strangulation, recognized by fever, vomiting, pain, shock, etc. Leeches or puncture of the tense and inflamed cord may be required to give relief.

Traumatic epididymo-orchitis may be the result of direct traumatism, contusions, follow a strain from overaction of the cremaster muscle, or be due to the pinching

of the spermatic cord against the fibrous external opening of the inguinal canal. The left testicle is the most frequently involved. The disease may be very acute, with symptoms varying little from those of the gonorrhœal variety, or it may run a more chronic and less painful course. Atrophy of the testicle frequently follows.

Treatment.—Rest and suspension of the scrotum are the earliest requirements. If proper precautions are taken, the statistical record of one case of epididymo-orchitis in every six or eight cases of gonorrhœa may be avoided. When the dragging sensation in the inguinal region and cord, with pain in the perineum and frequency of urination announce the commencement of an epididymo-orchitis it can often be aborted if the testicle is properly supported, a hot bath taken, followed by rest in bed for a day or two, together with light diet and the administration of Aconite, Belladonna, Pulsatilla or Clematis, as indicated. If the inflammation continues, accompanied by increased swelling, and Belladonna, etc., does not relieve the intense pain, which often occurs in very acute cases, the scrotum can be painted twice daily with a solution of Guaiacol, one part, and Glycerine, two parts, full strength Guaiacol being applied over the cord. In many cases the pain is immediately relieved; in others poultices will be required. Immediate relief can be given by puncturing the tense tunica vaginalis under proper aseptic conditions in addition and allowing a little of the fluid to escape, which shows that the pain of epididymitis is due to overdistension of the sac.

After the puncture, or in cases where the pain is not severe and puncture is not necessary, the scrotum should be wrapped in cotton, covered with oiled silk and placed and retained in a shallow suspensory bandage, with side laces, to give gentle, equable and continuous pressure. This dressing gives rest, heat and pressure to the parts and allows the patient to continue at his daily vocation with-

out loss of time. Some will not permit puncture to be made; they must remain in bed and apply hot poultices made of tobacco and flaxseed, in proportion of one part to sixteen, large enough to completely envelop the scrotum, every three hours; the poultice should be covered with cotton or flannel and enclosed in a piece of oiled silk. To retain the poultice a bandage is tied around the body and a large silk handkerchief is folded from corner to corner, the base of the triangle placed under the scrotum and the ends tied to the bandage in the median line; the middle end or apex of the triangle is brought up and also tied to the bandage at the same point. This simple bandage supports the scrotum and enables the patient to move freely about in bed with out danger of dislodging the poultice. A better method is that used in the genito-urinary ward of the Metropolitan Hospital, see page 89.

Hot fomentations of Hamamelis applied with absorbent cotton in the same manner as a poultice, act very satisfactorily. After the pain has subsided and there is a decrease in the size of the swelling, a paste made of equal parts of Belladonna and Mercurial ointment, spread upon lint, can be applied to the scrotum and retained in place by a suspensory bandage which supports the organ at the same time. Under this treatment the swelling rapidly subsides. Or, after the scrotum has been cleansed with hot water and green soap, the hairs removed with the scissors and douched with Bichloride, 1 to 2000, and dried, it can be painted with Nitrate of silver, sixty grains to the ounce of water, covered with a layer of absorbent cotton, and supported by a proper suspensory bandage, with, as a rule, very gratifying results. If the swelling does not all disappear by the seventh day the local treatment can be repeated. When double epididymo-orchitis exists it is wise to continue the Belladonna and Mercurial salve until the swelling ceases to diminish or

entirely disappears, to avoid, if possible, permanent occlusion of the tubes in the epididymis. Some good results have been obtained from the daily application of an ointment of Nitrate of silver, 1 to 10.

When pain has ceased, strapping is advocated by some to reduce the swelling. The hair is first removed from the scrotum, which is then made aseptic. Strips of adhesive plaster, about an inch wide and six or eight inches long, are cut. The spermatic cord is encircled about the swelling with the left hand or by an assistant pushing the tumor well down into the scrotum, making the parts tense and firm. A piece of muslin bandage is then carried twice around the swollen parts at the upper border and fastened at the end by a piece of adhesive plaster. This cotton bandage prevents the adhesive straps cutting into the tissues. The straps are applied, encircling the upper part of the scrotum, over-lapping one another from above downward, until a little below the centre, when the direction of the strap must be changed and be carried under the scrotum so as to draw the pendulous part upward. The dressing is completed by a single strip to hold the ends. Pain sometimes follows the strapping, but it usually passes off in an hour or so. The parts should then be supported by a suspensory bandage and the patient allowed to go about and attend to his business. The straps should be removed in from twenty-four to forty-eight hours or whenever they become loose. Some œdema of the pendulous portion of the scrotum may be noticed on removal of the straps, but it is not, as a rule, of any consequence. When the parts have been strapped and much pain follows, the straps must be removed at once, as over-tight strapping has caused gangrene.

Aconite will be required for the fever and arterial tension; Belladonna when the pain is excessive or neuralgic and the parts swollen and congested; Gelsemium for

fever, swelling, etc. Hamamelis and especially Pulsatilla are the remedies most frequently indicated for the active symptoms, and later, Clematis, Mercurius or Sulphur.

ORCHI-EPIDIDYMITIS.

This condition is so named because the lesion commences in the testicle before involving the epididymis. When the inflammation does not extend to the epididymis it constitutes true orchitis. It may be acute or chronic.

When orchi-epididymitis is of the infectious type the inflammation generally commences in the testicle proper. It may be confined to the testicle, constituting an orchitis, although, as a rule, it should be considered as an orchi-epididymitis. It is of hæmatogenic origin and dependent upon some systemic infectious disease.

Clinical History.—The pain, swelling, and fever in the acute cases is moderately severe. Exceptionally, there is an associated constipation, with tympanitis, abdominal tenderness, etc. When the disease accompanies infectious parotitis (mumps), the diagnosis, is generally easy from the history, though it may be only the physical evidence of the disease.

The typhoid variety is rarely severe in character, developing during the convalescent period, and occurs most frequently in patients under fourteen years of age. It may terminate in suppuration. When this occurs, typhoid bacilli are often found in the débris.

Orchi-epididymitis, as a sequel of tonsillitis, has about the same clinical history as that of mumps. The disease generally continues about fourteen days, and usually terminates in recovery. Swelled testicles caused by the toxic poisons of smallpox, scarlet fever, and influenza have no special characteristics.

Prognosis.—Atrophy of the testicle often follows, particularly when there has been a high grade of inflammation.

Treatment.—Rest in bed, suspension of the parts with hot tobacco and flaxseed poultices or hot fomentations, together with general treatment as advised for acute epididymo-orchitis.

A spray of a hot 2 per cent. Carbolic acid solution applied for fifteen minutes daily, after which the parts are wrapped in cotton and supported in a suspensory bandage, is highly recommended. The spray must not be continued longer than fifteen minutes, as it excoriates the skin.

Remedies.—Aconite, Belladonna, Gelsemium, Hamamelis, Pulsatilla, and Quinia sulph.

CHRONIC ORCHI-EPIDIDYMITIS.

Etiology.—It may be the result of traumatism, exposure to cold, excessive venery, or strumous, gouty, rheumatic, or malarial condition of the system and the debility of old age, though it sometimes occurs in children.

Clinical History.—Pain referred to the lumbar region is often the only subjective symptom; usually, however, the pain in the testicle is agonizing, and out of all proportion to the amount of swelling, being due to the distension of the firm and unyielding tunica albuginea. It may be continuous, disappear gradually or stop suddenly. The sudden cessation of the pain may indicate gangrene or death of the part, which will be accompanied by a chill and rapid swelling. When pus is formed it may work its way to the surface and point, when it should be opened; if it occurs in the centre of the organ it may become encapsulated.

As the disease progresses the testicle becomes swollen, ovoid in form, hard, tense, and sensitive, and the scrotum red, inflamed and oedematous. Examination and manipulation of the inflamed and swollen organ may be so exquisitely painful as to cause faintness, if not complete syncope.

Recovery without atrophy may occur, the testicle may undergo degeneration, or result in the formation of an abscess with sinuses, which in time may terminate in fungus outgrowths and necessitate the removal of the organ. Malarial orchio-epididymitis is chronic in character with paroxysmal exacerbations, the periodicity of increased pain, etc., being the chief diagnostic point.

Gouty orchitis may alternate with gouty conditions elsewhere. Relapses as well as sudden seizures are common. The condition may be transferred from one testicle to the other, without apparent reason.

Treatment.—The pain and acute symptoms will require rest in bed, suspension of the testicles by a sling or suspensory bandage, with hot tobacco and flaxseed poultices. If these means do not give relief, the puncture of the tunica albuginea with a sharp-pointed, narrow bistoury, introduced posteriorly, under proper antiseptic precautions, usually relieves the pain and tension.

Remedies.—Aurum, Clematis, Conium, Gelsemium, Hepar sulph., Hypericum, Kali iod., Mercurius, Pulsatilla, and Rhus tox.

TUBERCULAR EPIDIDYMO-ORCHITIS.

This condition may be either acute or chronic. It may be caused by hæmatogenic infection, during the evolution of a general tuberculosis, it may be secondary to prostatic, vesical, or renal tuberculosis or to tubercular foci in other parts of the body. It may develop primarily in the epididymis.

Clinical History.—The acute variety is usually dependent upon some traumatism or urethral inflammation. The symptoms vary little from an ordinary epididymo-orchitis, excepting that instead of resolution occurring in from ten to fourteen days, the swelling persists and terminates in a few weeks in pus formation. This form

of epididymo-orchitis usually attacks debilitated young men and is soon followed by involvement of the other genito-urinary organs. The chronic cases are characterized by the slow gradual painless development of a nodule—generally in the globus major of the epididymis, or in the testis—and therefore may go on for some time without being discovered. Often, early in the disease, the testicle loses its sensibility, and does not give the usual sickening sensation when examined even if handled roughly.

Sometimes the growth is accompanied with dragging pains, frequent emissions, sexual hyperæsthesia, and a urethral discharge which is usually scanty, muco-purulent, most marked in the morning, occurring without apparent cause, and is often uninfluenced, or even aggravated, by treatment. There is also frequent urination and slight bleeding at the close of the act. The infiltration occurs particularly in the head of the epididymis, and often is discovered only by accident. On examination the epididymis will be found hard, knotty, irregular and swollen, heavy and full. There is no accompanying lymphatic enlargement or increase in the size of the veins, as occurs in cancer. One or both testicles may be involved. The infiltration may include the entire epididymis, and form an irregular bossiated tumor, or extend up the cord and by contiguity of tissue implicate the vas deferens, prostate, seminal vesicles, etc. It may also be complicated by hydrocele due to tubercular involvement of the adjacent tunica vaginalis. These infiltrated masses may terminate in suppuration, become encapsulated, be absorbed, or after existing for a number of years may soften and break down and open by numerous fistulæ, which may discharge a thin fluid, and finally terminate in hernia testis or possible recovery.

Diagnosis.—The acute tubercular variety should always

be suspected in epididymo-orchitis occurring without apparent cause, particularly when tubercular foci are known to exist in the prostate, seminal vesicles, kidneys, or other parts of the body, if following a seeming acute inflammation of the testicles, the swelling persists after the pain and other symptoms have subsided; or when nodules develop in the epididymis and rapidly soften, form fistulous tracts and discharge, the detritus containing tubercular bacilli.

The diagnosis of the chronic variety is based upon a tubercular history, a painless infiltration of the head of the epididymis, a slight urethral discharge, frequent micturition and terminal hæmaturia.

Prognosis.—When the disease is secondary to tubercular conditions in other parts of the body or dependent upon a general acute involvement little can be expected, but where the lesion is confined to the epididymis its early removal is often followed by the most happy results, and in many cases even where the seminal vesicles and prostate have been involved recovery has followed.

Treatment.—This will vary with the general condition of the patient, the cause of the tubercular condition, the degree of local lesion, family history, etc. Where tubercular epididymo-orchitis is dependent upon general systemic infection or a lesion in the uro-genital tract, change of air with freedom from business and other cares, a nutritious diet and the indicated remedy may give relief, but a cure cannot be expected.

When the disease is chronic in nature, but one testicle involved and the vas deferens healthy, orchectomy or epididymectomy may be expected to prevent future invasion in 50 per cent. of the cases operated. Where the vas deferens is involved, the diseased part should be removed at a point where it appears to be free from disease, its free end seared with the actual cautery or pure Carbolic

acid and buried with a few catgut sutures in the tissues. Epididymectomy is not as a rule followed by atrophy of the testicle. When radical surgical methods are refused, the tubercular growth may be curetted out, the cavity packed with Iodoform gauze, with the expectation that the cavity will fill by granulation, though it often fails and terminates in fungus testis. At an earlier period the diseased tissues may be treated with parenchymatous injection of Iodoform and Glycerine (1 to 10), sixty to ninety grains being introduced and distributed along the epididymis every two weeks. Two to thirty drops of a 15 per cent. alcoholic solution of Thiosynamin, administered in the same manner, has given very satisfactory results. A 10 per cent. solution of Chloride of zinc has also been used. Guaiacol administered internally has its reported cures.

Remedies.—Aurum, Mercurius, Spongia, etc.; if these are not successful castration is often advisable.

SYPHILITIC ORCHITIS.

Etiology.—It may develop during an attack of constitutional syphilis.

Clinical History.—The growth is slow and painless. The testicle becomes hard, tense, and nodular. It often exists a long time before it is discovered.

Treatment.—The disease is generally readily amenable to Mercurius and Kali iod.

FUNGUS TESTIS.

Fungus testis is a benign fungous growth of the testicle, made up of granulation tissue containing some seminiferous tubules, growing from the interior of the tunica albuginea, or of granulation tissue springing from the scrotal tissue, or the anterior surface of the tunica albuginea. A microscopical examination should be made to differentiate them from malignant fungoid growths.

Clinical History.—These outgrowths are the natural sequence of degeneration of abscess walls following true orchitis, syphilis, tuberculosis, etc. They present a granulating surface, somewhat pale in color, which bleeds easily. Manipulation of the growth gives the peculiar sickening feeling experienced when pressure is applied to the normal testicle.

Treatment.—Pressure and caustics are often satisfactory. The edges can be scarified, brought together by sutures over the hernia, and dressed antiseptically until union is complete, or be curetted and packed with Iodoform gauze. If they do not yield readily to treatment, castration may be required. The tubercular variety should be curetted, touched with Cautic potash, and packed with Iodoform gauze. The syphilitic, in addition to the local treatment already outlined, will require the administration of the proper syphilitic remedies.

CARCINOMA OF THE TESTICLE.

Etiology.—Cancer may follow as a sequel of epididymo-orchitis, traumatism, gonorrhœa, syphilis, etc. It is especially likely to happen when the testicle is misplaced. The growth may be either of the medullary or scirrhus variety, the former, however, being the most common.

Clinical History.—It may develop at any time of life, but the medullary is more frequently seen in the young. The hard variety (scirrhus) is usually secondary to general carcinomatous involvement, and it can often to be traced to some traumatism. It progresses slowly, though sometimes its growth is rapid. At first the tumor is smooth and tense, from the general swelling and effusion into the tunica albuginea, but as time goes on it becomes uneven and irregular in contour. The swelling, though rapid, is

often without special pain, but when the cord is involved the pain is usually severe.

After a time spots of deep fluctuation appear, which break through the tunica albuginea, giving rise to malignant fungoid growths, with a bloody, ichorous discharge. The veins of the scrotum become prominent and swollen and the legs oedematous. The abdominal, pelvic, and inguinal glands become enlarged and infiltrated with cancerous material. The growth increases rapidly, accompanied by sharp shooting and burning pains. When a question of diagnosis exists, it should always be confirmed with the microscope. The duration of the disease is about two years.

Malignant involvement should always be suspected when there is a rapid and progressive new growth in the testicles without apparent cause, especially if accompanied with marked dilatation of the blood vessels of the cord and scrotum, with involvement of the lymphatic glands; this, with the later developing cachexia, makes a picture not easily mistaken. When it follows traumatism, the progressively increasing size is characteristic. Gummata never grow larger than an apple. The clinical history will be of great assistance in differential diagnosis.

Treatment.—In the early stage Arsenicum or Conium may prove useful. Castration, however, is usually not only necessary but should be advised as soon as a positive diagnosis is made.

SARCOMATA OF THE TESTICLE.

Sarcomata may develop as small-celled medullary tumors, with very little intercellular substance, or as fibro-sarcomata—firm, fleshy tumors composed of mixed cells with a fibrous stroma. When the matrix is elastic, mucous or granular, they are called myxo- or granulo-sarcomata.

Sarcomata commence in the connective tissue between the tubules. In growth they act like carcinomata, but usually attack the testicle bilaterally. Myo-sarcomata are found frequently in the testicles of children between birth and puberty.

Tumors of the testicle, whether benign or malignant, are characterized by their mixed elements, the myxomatous, sarcomatous and cartilaginous blending in a single new growth, the latter often complicating the former, when even least expected.

LYMPHO-SARCOMATA OF THE TESTICLE.

These neoplasms develop in children and young men, and are characterized by rapid growth and a tendency to secondary growths in other parts of the body, with fatal termination.

ENCHONDROMATA OF THE TESTICLE.

These tumors develop from the interstitial connective tissues, appearing generally between the thirtieth and fortieth year, 'as hard slowly-growing masses,' with no symptoms excepting weight. After a time, however, they grow rapidly, soften, and fluctuation appears. They may be simple or mixed in character, the former being dense and hard and remaining so, while the latter often soften. They are generally malignant and should be removed at once.

FIBROMATA OF THE TESTICLE.

These are extremely rare. The diagnosis depends upon the hardness of the tumor, non-involvement of the cord and epididymis, slowness of development and presence of testicular sensation. They should be excised.

MYXOMATTA, OSTEOMATA AND MYOMATA.

Myxomatous, osteomatous and myomatous tumors of

the testicle have been reported, but their special history and character have not been formulated.

Remedies.—Baryta carb., Calcarea carb., Mercurius, Nitric acid and Thuja have cured these conditions, but treatment is sometimes ineffectual and castration is generally indicated.

CYSTS OF THE TESTICLE.

Cysts are frequently found in or upon the testicle, either alone or associated with some other disease; they vary in size from a millet seed to an egg. At first they grow slowly, but if bruised they become inflamed and grow rapidly; sometimes suppuration occurs. Pain is usually absent. When of large size, they often fluctuate, and are sometimes mistaken for hydrocele or hæmatocele.

Treatment.—When they become large and troublesome, inflamed or suppurate, an operation will be necessary. If the growths are within the testicle, castration is often indicated; if upon the side, they can be dissected off.

Remedies.—Apis, Conium, Graphites, Sepia, Sulphur, etc., are useful in some cases.

CYSTOMATA OF THE TESTICLE.

These include cysto-fibromata and the cysto-sarcomata, the latter being malignant. They may develop at any age, from birth to advanced life. The benign variety grow slowly and rarely attain the size of a lemon, though one removed by the author was four inches in diameter. The growth is smooth, ovoid in form and firm until it attains considerable size, when careful palpation may detect spots which seem soft and less resistant. The spermatic cord and lymphatics are not involved, and the general health is not impaired. The malignant variety grow more rapidly, are more elastic to touch, and often become uneven or bossilated.

Prognosis.—This is always uncertain.

Treatment.—Castration.

DERMOID CYSTS OF THE TESTICLE.

The origin of dermoid cysts of the testicle are uncertain. They may be located entirely within the testicle, or at the junction of the testicle with the epididymis. They are always congenital, commonly developing during the first few months of infancy, remaining quiescent for twenty to forty years, when they again grow rapidly, suppurate and discharge. The differential diagnosis generally depends upon removal and an examination of the contents, when hair, teeth, bone, sebaceous material, etc., may be found.

Treatment.—Incision and evacuation may be successful, though castration is often required.

ABSCESS OF THE TESTICLE.

Any acute or chronic inflammation of the testicle or epididymis may terminate in an abscess. It may occur as a sequel of tubercular, malignant or syphilitic disease, but happens most frequently in the swelled testicle, caused by instrumentation. Occasionally it complicates acute infectious diseases. Circumscribed collections of pus in the testicle may undergo caseous degeneration and become encysted, or may extend and cause sloughing of the entire gland, and rupture into the tunica vaginalis, or open on the surface of the scrotum by one or more sinuous openings. The formation of pus in the testicle is usually accompanied with cedematous swelling of the parts, fever, pain, etc.

Treatment.—When the abscess is small it should be opened, thoroughly irrigated, curetted if necessary, and packed with Iodoform gauze. When there are numerous abscesses or sloughing has taken place, castration will give better final results.

Castration.—Too much care and attention cannot be given to the aseptic preparations. After the usual precautions have been taken, the parts should in addition be thoroughly scrubbed and cleansed with lime and soda, sterile protective towels arranged and the penis enclosed in a sterile bandage. To prevent retraction of the vessels and bleeding during the operation. The cord is taken between the thumb and index finger of the left hand just at its exit from the external abdominal ring, the integument rendered tense by firm pressure, and an acupuncture pin introduced at right angles to the cord, the head of the pin depressed and the point brought out on the opposite side. To make the operation still more safe, Prof. Helmuth advises the introduction of a second pin about half an inch below, and over them to hold the cord in position and two small India rubber rings. The incision, extending from the external abdominal ring, is made on the anterior aspect of the scrotum, down to the testicular mass, which is dissected out, and the cord divided with a single stroke of the knife. The cremasteric, spermatic and artery of the vas deferens are tied separately and the bleeding points secured and properly dressed. If the spermatic cord is not fixed and bleeding controlled as advised by Prof. Helmuth, the cord may be ligated in two or more sections before the diseased mass is excised. The direction and length of the incision will vary with the conditions present. When the tumor is small the incision should be only sufficiently large to shell it out. If the growth is adherent and extends up the cord, it may be necessary to carry the incision up to the internal ring in order to remove all of the diseased tissues. In some cases when no adhesions exist, the testicle can be shelled out from the tunica vaginalis and the tunic allowed to remain.

Bleeding from the scrotal tissues must always be controlled, all redundant scrotal tissues removed, the edges of the wound properly approximated with silk sutures, and in cases where infection has probably occurred, a drainage tube should be secured in the lower angle.

CHAPTER XIV.

DISEASES OF THE TUNICA VAGINALIS, ETC.

Hydrocele consists in an accumulation of serous or sero-fibrinous fluid within the tunica vaginalis, or a cyst connected with the testicle or some part of the spermatic cord. It may be acute, chronic, congenital, acquired, encysted or diffuse.

ACUTE HYDROCELE.

Etiology.—This condition accompanies in a varying degree all inflammatory conditions of the testicle or epididymis, particularly gonorrhœal epididymo-orchitis and sometimes the syphilitic and tubercular varieties. It may be caused by traumatism or irritating injections. It is a simple inflammatory exudation, sero-plastic in character.

Clinical History.—This varies greatly with the exciting cause, which generally masks the special symptoms. Pain is sometimes very severe, accompanied by heat, redness and scrotal œdemā. As a rule, there are no local or constitutional symptoms. When the effusion is profuse, a hard, round, pyriform fluctuating tumor is presented.

Diagnosis.—The presence of fluid may be demonstrated by transmitted light, by fluctuation or by the aspirating needle.

Prognosis.—As the primary disease disappears the fluid exudate is generally absorbed, but the plastic material may organize and cause adhesion and obliteration of the sac. If the inflammation is severe suppuration may occur.

Treatment.—Rest, etc., as indicated for the cause. If pain is severe, immediate aspiration of the fluid may be

required. If the fluid distension is persistent, Apis, Cantharis or Helleborus may cause absorption. If the fluid persists for eight or more weeks the treatment as laid down for chronic hydrocele will be required.

CHRONIC HYDROCELE.

This condition signifies an effusion into the tunica vaginalis of an albuminous fluid, neutral or slightly alkaline in reaction, with a specific gravity of about 1022, of a light amber or straw-color, though it may be red, brown, chocolate or black from the admixture of blood. It varies in consistency from a thin liquid to a jelly-like substance containing fibrin, albumin, paraglobulin, cholesteroline plates, epithelium, fatty particles and sometimes spermatozoa and pus corpuscles.

Etiology.—It may be caused by anything which disturbs the balance between secretion and absorption within the tunica vaginalis. Sometimes the cause cannot be discovered, but chronic hydrocele is generally secondary to some pathological lesion of the epididymis, testicle or cord. It may be produced by mechanical irritation, as horseback riding, tight trousers, etc.; by the presence of loose, cartilaginous bodies in the tunica vaginalis which irritate and cause over-secretion; by an ill-fitting truss, by interference with the return circulation, by the presence of the *filaria sanguinis hominis*, as well as by renal or hepatic disease. It may be the sequel of an acute hydrocele which for some reason remains unabsorbed, and also occurs as a sympathetic affection in diseases of the bladder, urethra, etc. It may develop at any period of life, from infancy to old age, though it is most frequent between the twentieth and fiftieth year, and is more prevalent in warm than in cold climates.

Clinical History.—The amount of effusion varies from a few drachms to many ounces. The fluid accumulates

slowly, generally without pain, and causes so little inconvenience that it may not be observed until the scrotum has attained a considerable size, though a dragging sensation is occasionally noticed. When the fluid accumulates rapidly the pain is intense and may indicate a high degree of inflammation, suppuration or disease of the testicles.

The swelling appears first at the most dependent portion of the scrotum and, gradually increasing, becomes pear-shaped; if very large it may be spherical and the penis may be practically concealed. The spermatic cord can easily be made out above the swelling. If the tunica vaginalis is not attached low down the upper part of the hydrocele may extend upwards towards or through the ring. If old adhesions exist in the tunica vaginalis the swelling will be irregular, and distinct points of fluctuation may be found. Hydroceles are tense, cannot be compressed and are light in weight compared to their size. The cutaneous layer of the scrotum is drawn somewhat tightly over the distended tunica vaginalis and is usually free from redness and heat. If the tumor is pressed back between the legs, when the pressure is removed it will return to its original position. Hydroceles are not sensitive to touch, which differentiates them from diseases of the testicles.

The testicle is usually found a little below the centre, in the posterior part of this fluid. This point must be remembered to avoid injuring this organ when using the aspirating needle or trocar, which should be introduced in front and a little above the centre of the hydrocele. Sometimes the testicle is inverted and situated in front and below the centre, but its location can be ascertained by a little manipulation, the presence of the organ being recognized by the sickening feeling produced when it is squeezed.

Fluctuation is easily demonstrated; cough impulse is

never present. The disease is progressive, and the quantity of fluid may become enormous, causing great inconvenience. The presence of fluid may be confirmed by the test of translucency if the walls of the tunica vaginalis have not been thickened by the deposit of plastic material or cartilaginous and calcified plates, which sometimes form in old cases of hydrocele, or the fluid has not been darkened by blood, chlorestherine, fat or spermatozoa. This test is a most satisfactory one when the effusion has been slow, the walls thin and white, and the fluid clear, free from blood, pus, etc. To apply the test, the room must be darkened and a candle or an electric light held in a small shallow cup, placed against or in front of the suspected swelling, which is made tense, the surgeon standing on the opposite side, either shading the eye with the hand or looking through a short tube, the end of which is placed against the posterior wall of the swollen scrotum. If it is a hydrocele the whole mass will look clear and translucent except where it is darkened by the outline of the testicle.

Diagnosis.—This depends upon the slow development of a fluctuating tumor beginning at the base of the scrotum, which becomes pyriform as it develops, projects somewhat forward, is not materially changed by position, and is connected by a small spermatic cord. An omental hernia may appear slightly translucent, but will not have the red glow of a hydrocele. If the walls are much thickened or the cavity is filled with opaque fluid the aspirator must be relied upon to clear up the diagnosis, though, in cases of doubt, it is much better to make an exploratory incision. The smooth, tense feel of the hydrocele differentiates it from cancerous or tubercular growths, which are more tense, heavy, and generally accompanied with marked dilatation of the scrotal vessels. Hernia is generally easily differentiated, the swelling developing above

and extending downward, disappearing with the recumbent position at night and on taxis with a slight sound on reduction, is resonant on percussion, hangs directly down, and does not project forward. In hydrocele the spermatic cord is small; in hernia the inguinal canal is enlarged and fully distended. The two conditions may co-exist, and incision may be required to differentiate them.

Prognosis.—Spontaneous recovery is rare. Surgical treatment is generally successful, though it may cause atrophy, or suppuration of the testicles. A chronic hydrocele may be ruptured by traumatism and disappear through the inguinal canal.

Treatment.—This may be palliative or radical. In infants, hydrocele has disappeared after painting the scrotum with a weak solution of the tincture of Iodine, Collodion, Ammonium muriate, ten grains to the ounce of water, or with a 3 per cent. aqueous solution of Ichthyol. The usual palliative treatment, however, is evacuation of the contents of the sac with a trocar or aspirator, as follows:

The scrotum is surgically prepared. The testicle having been carefully located, it being as a rule at the lower third and posterior part of the sac, and hernia and other complications excluded, the tumor is grasped firmly in the left and the instrument in the right hand; the aspirating needle or trocar and canula is plunged obliquely upward and backward from the middle and front of the hydrocele; when the trocar is removed the fluid contents will escape. Care must be taken to see that the canula fits the trocar closely, otherwise it may push the tense tunica vaginalis before it and render the operation unsuccessful. In removing the canula, the finger should be kept over the end to prevent leaking of the retained fluid into the areola tissue. The point of entrance should be closed with a small piece of cotton and Iodoform collodion. Sometimes the sac does

not refill, a reactive or adhesive inflammation setting in which closes the tunica vaginalis, especially in recent cases and in the aged; usually, however, the fluid returns in a few weeks or months.

The radical injection treatment consists in not only removing the fluid, but in the immediate introduction into the cavity of either Tincture of iodine or Carbolic acid.

When this form of treatment is decided upon, after the usual surgical aseptic preparations, and before the general fluid is removed as above described, a medium-sized hypodermic needle is thrust into the cavity of the tunica vaginalis, and retained in place by an assistant, after the fluid is removed, to prevent injury of the skin of the scrotum in case of leakage of the Carbolic acid or Tincture of iodine from any cause. A little sterile vaseline is first smeared around the hypodermic needle and surrounding scrotal wall. From one-half to eight drachms of the Tincture of iodine are then introduced through the needle. The Iodine causes great pain and swelling, refilling the sac, fluctuation, etc., necessitating rest in bed for a few days and possibly the use of hot fomentations to the parts, together with the administration of anodynes, but the results are generally satisfactory, the swelling disappearing in three to four weeks. A weaker solution is sometimes used. The Tincture of iodine for the operation may be made by adding one part of Iodine crystals to ten parts of 95 per cent. Alcohol and allowing it to stand uncorked for a few days, when it is ready for use. Of late years, Carbolic acid has been usually substituted for the Iodine, it having the advantage of being painless, inflammatory reaction from the injection taking place within twenty-four hours, and the patient not being detained from business more than a day, sometimes not at all.

The results are equally satisfactory. Thirty to one hundred minims of liquefied Carbolic acid (Carbolic acid crys-

tals eight parts, Glycerine one part) will be required, depending upon the size of the hydrocele.

After either Carbolic acid or Iodine injections, a certain amount of manipulation is necessary to bring the injected fluid in contact with all parts of the sac and thus insure complete adhesive inflammation.

To prevent the pain which often follows the injection treatment, after about one-third of the hydrocele fluid has been evacuated a drachm of a 1 per cent. solution of Cocaine may be injected and retained about three minutes, when the operation can be painlessly completed.

The tunica vaginalis, after withdrawing the fluid, may be irrigated with a 3 or 4 per cent. solution of Carbolic acid; this often stops excessive secretion by the serous coat, but does not set up adhesive inflammation; or, after the fluid has been evacuated, fifteen drops of a solution of Bichloride of mercury, containing one grain to the ounce of sterile water may be injected and allowed to remain. This is followed by some reaction and re-accumulation of fluid, which, however, is soon absorbed; sometimes it is necessary to repeat the operation.

Injections of Carbolic acid, Iodine or Bichloride solutions are contra-indicated if the withdrawn fluid contains blood or pus, or if the walls are thickened or calcareous.

Whether Iodine, Carbolic acid or Bichloride of mercury is used, it is advisable for the patient to remain in bed until all reaction and fever have disappeared, and also to wear a suspensory bandage for a few weeks following the operation. Setons have been used, but are now obsolete. Electricity has cured some cases; Aurum, Graphites, Iodum, Kali iod., Pulsatilla, Rhododendron and Spongia, have their recorded cures without surgical treatment.

When, for diagnostic or other purposes, it is desirable to explore the condition of the testicles, if the hydrocele is congenital, the Iodine or Carbolic method of treatment

has been unsuccessful, the walls of the hydrocele thick or cartilaginous, the sac of great size, the condition of the patient such that it is believed the reaction from the injection treatment will not be satisfactory, incision or excision of the hydrocele sac may be indicated and advisable.

Incision with drainage may be performed under general or local anæsthesia. The incision is made along the anterior and lower side of the hydrocele through the scrotal tissues, until the tunica vaginalis is exposed, which is opened with the bistoury and scissors, the contents evacuated and its edges stitched to the skin with a continuous catgut suture, the tunica vaginalis swabbed with Tincture of iodine or Carbolic acid and the cavity packed with Iodoform gauze, or a drainage tube leading from the upper and lower angle of the wound to the bottom of the hydrocele cavity may be substituted. The cavity should be redressed in about five days. The external dressings should be abundant and changed daily. Another method frequently advocated is to make a puncture with a medium-sized trocar and canula at the most dependent part of the hydrocele. After the fluid is evacuated through the canula and the cavity douched with a hot 5 per cent. Carbolic acid solution the trocar is again introduced and the instrument carried through the hydrocele wall at its upper surface. The trocar is again withdrawn and a small drainage tube with five or six openings is threaded through the canula; on removing the canula the drainage tube is left in place to allow the inflammatory secretion to escape. The tube should be removed about the fifth day, the parts dressed antiseptically and the proper bandage for protection and support applied. Recovery often takes place in about ten days.

Excision or other radical surgical methods are often advisable. They vary from complete removal of the

parietal layer of the tunica vaginalis, von Bergmann's method, to Volkmann's, who leaves enough of the parietal layer of the tunica vaginalis to cover the testicle, or Ferguson's, who, while leaving sufficient sac to cover in the testicle, denudes the parietal surface in spaces of about one-half inch in diameter with the scissors at frequent points, and scarifies the glandular layer, drains by a few pieces of silk-worm gut for three days and closes the tunica vaginalis and the skin by plain catgut sutures. In all of these various methods, after the usual surgical preparations, the incision is carried through the scrotal tissues down to the tunica vaginalis, all bleeding points properly secured by pressure, artery clips, torsion or ligation, the sac opened, the finger introduced into the hydrocele cavity, and the location, etc., of the testicle ascertained. The sac is then slit up, and by rough sponging, blunt dissection or by the finger the tunica vaginalis is separated from the scrotal walls as far as may be required and removed with the scissors. When it is removed as far back as the attachment of the epididymis, the wound can be closed without drainage. If enough is left to cover the testicles, the edges of the parietal tunica vaginalis may be stitched to the integument, and the cavity packed with Iodoform gauze for drainage. Or the surface of the tunica vaginalis can be touched with Carbolie acid and drainage introduced. Sutures are generally removed and redressings made on the third to the fifth day. In these cases great care is required to prevent infection from the urine, fæces, etc.

CONGENITAL HYDROCELE.

Etiology.—This condition is frequently met with in childhood and occasionally in adults. It is the result of imperfect obliteration of the communication between the

peritoneum and its prolongation, known as the tunica vaginalis, hence any fluid accumulating in the peritoneum flows easily into the scrotal sac, giving rise to symptoms which might be mistaken for hernia, with which it is sometimes associated. This communication, however, is usually so small that only fluids can escape through it, the intestines and omentum being retained in the peritoneal cavity. It may be caused by over-secretion of the tunica vaginalis.

Congenital hydrocele appears or is noticed soon after birth; it has no well-defined upper border and is continuous with the inguinal canal. It can be readily reduced or its contents made to return slowly into the peritoneal cavity by placing the patient in the dorsal position and elevating the scrotum, but it does not give the gurgling sound which is heard on reducing a hernia. At night in bed it often disappears, but even if moderate pressure is applied to the inguinal ring on assuming the upright position the fluid quickly returns.

Cough impulse is present and the tumor gives flatness on percussion. When the sac is distended with fluid the testicle cannot be easily located, but when the contents have been emptied into the peritoneum the testicle will be found in its proper position.

Prognosis.—This variety of hydrocele commonly disappears spontaneously.

Treatment.—A truss properly applied, with remedies as indicated by the general condition, or incision with drainage by means of a small tube through the sac, or a piece of catgut, the parts finally enclosed with abundant antiseptic gauze, and all protected, by guttapercha tissue, from the urine and fæces, and kept in place by a proper bandage. The removal of the fluid through a canula and the introduction of a small piece of sterile catgut, which is allowed to remain in the cavity, has in some cases been very satis-

factory. When a doubt of diagnosis exists a radical operation will be indicated.

ENCYSTED HYDROCELE OF THE TESTIS AND EPIDIDYMIS.

Encysted accumulations, distinct from the tunica vaginalis, of a serous, opaque, limpid, milky fluid, usually containing spermatozoa sometimes occur. When connected with the testicle, they are of small size, and are located between the tunica albuginea and the visceral layer of the tunica vaginalis. When located in the epididymis, there may be one or many. They are more correctly retention cysts, though they may develop in the connective tissue, and by pressure from within open into some of the numerous ducts. Occasionally they become of large size. The acute variety may develop very rapidly and become painful. The fluid may be clear, like that of hydrocele of the tunica vaginalis, but differs from the latter in not containing albumen. When occurring in connection with chronic hydrocele it may remain undiscovered until operation, although attaining a large size. The cyst usually begins in the head of the epididymis and grows slowly, accompanied by a slight pain which may escape notice. It is often heart-shaped, with the testicle below it. Sometimes these cysts form distinct fluctuating tumors, containing a clear fluid. They have been mistaken for supernumerary testicles or tubercular growths.

Diagnosis.—From the clinical history, the diagnosis is usually easy, though an exploratory incision may be necessary. The patients are usually hypochondriacal.

Treatment.—That advised for chronic hydrocele.

BILOCULAR AND MULTILOCULAR HYDROCELES.

When bilocular, the cavities are connected by one or more minute openings. Multilocular hydroceles are congenital or the result of inflammatory adhesion. The cavi-

ties often communicate, hence operation may sometimes be but partially successful. Both varieties usually present an irregular outline.

HYDROCELE OF THE CORD.

Hydrocele of the cord, may be acute or chronic, diffuse or encysted.

ACUTE HYDROCELE OF THE CORD.

Strain or traumatism is the usual cause producing a clear transparent effusion into the cellular tissue of the cord. It is sometimes of rheumatic origin.

Treatment.—Hot Boric acid solutions, strops and compresses, with elevation of the parts.

DIFFUSE HYDROCELE OF THE CORD.

This condition is caused by some obstruction to the return circulation from the testicle and is of rare occurrence. It may happen spontaneously or develop after the application of some local irritant, as Iodine, etc.

It is simply an oedema of or an effusion into the areolar tissue of the spermatic cord of a yellowish, limpid, albuminous fluid, and appears as a smooth, rounded, elongated, doughy tumor, somewhat distended below, pitting on pressure, generally painless unless associated with some acute inflammation, and not communicating with the tunica vaginalis.

Treatment. — Incision and drainage. The indicated remedy should be tried before operation.

ENCYSTED HYDROCELE OF THE CORD.

This condition does not often occur. It is most frequent on the right side, and is recognized by the presence of one or more rounded and elongated swellings in the unobliterated funicular portion of the tunica vaginalis of the spermatic cord, which may be situated anywhere between the internal opening of the inguinal canal and the

testicle. The elongations are in the direction of the cord, and when large may be somewhat pyriform in shape; they vary in size from a millet seed to an egg and contain a straw-colored albuminous fluid. They are generally translucent and painless unless irritated. When located in the inguinal canal they are sometimes mistaken for incomplete hernia, and much pain and inconvenience has been caused by improper treatment.

Treatment.—If single, operation as advised for chronic hydrocele. When multiple, incision followed by antiseptic dressings gives the best results.

INFANTILE HYDROCELE OF THE CORD.

An effusion of a serous fluid into the unobliterated funicular portion of the tunica vaginalis, which is closed from the peritoneal cavity above, but communicates with the cavity of the tunica vaginalis below sometimes appears in infancy. The tumor extends well up the cord.

Treatment.—Aspiration. If this is not successful, the Carbolic acid treatment or a seton may be required, or a dozen acupunctures with an ordinary surgical needle, followed by stoops of lead water. There is a tendency to spontaneous cure.

BILOCULAR FORM OF INFANTILE HYDROCELE OF THE CORD.

This condition sometimes happens, the sacs communicating by small openings in the constricting bands. The scrotal end of the tumor is usually smaller than the abdominal.

Treatment.—Incision and removal of the sac.

HERNIAL HYDROCELE.

This is an effusion into the scrotal sac of an inguinal or scrotal hernia. The symptoms are those of hernia, with subsequent development of a translucent tumor.

Treatment.—Excision of the sac, with the radical operation for hernia.

Arsenicum will be beneficial in old cases with weakness and debility. Dr. Richard Hughes reports a cure with Aurum. Calcarea carb. is indicated for scrofulous cases with general Calcarea symptoms, especially in childhood; China is sometimes useful; Conium when traced to mechanical injury; Dulcamara when caused from cold; Graphites if subject to eruptions, constipation, etc. Iodum and Kali iod. have caused the absorption of fluid from the tunica vaginalis and the disappearance of other symptoms of hydrocele. Mercurius is frequently indicated; Pulsatilla in lymphatic temperaments, with veins prominent, swollen and bluish in color; Rhododendron when no cause can be found; Rhus tox. when the left side is involved; Spongia, from its pathogenesis, is often indicated.

HÆMATOCELE.

This term signifies an extravasation of blood into the tunica vaginalis, the sheath of the spermatic cord or the various structures and cellular tissue of the scrotum producing a swelling of varying size. It may be caused by rupture of a bloodvessel in the scrotum from external violence, punctured wounds, imperfectly ligated or overlooked vessels from surgical operation, or extravasation of blood into the tissues from blood-vessels weakened by disease during exercise, coughing, etc.

ACUTE HÆMATOCELE.

In acute hæmatocele the swelling generally appears suddenly after a traumatism or the giving way of a ligature after surgical operation; the scrotum becomes very painful from the large and rapid extravasation of blood, which may be bright red, but more often is dark brown and mixed with pus. The scrotum itself becomes blue-black or livid, and if the swelling is great the penis will be seemingly retracted. If the extravasation is large or

suppuration has resulted, evidence of fluctuation will be present. When the hæmatocele is a complication of a cyst or hydrocele the original swelling becomes more tense and painful, with symptoms of shock, which may be followed by traumatic fever and suppuration.

Acute hæmatocele is differentiated from hydrocele by its history, sudden appearance, absence of translucency, and general heavy feeling of the swollen scrotum.

Treatment.—Acute hæmatocele has no tendency towards spontaneous recovery, and if not relieved will increase in size. Rest and elevation of the parts are imperative with removal of the cause, cold applications, support of the scrotum, and *Aconite* if there is fever and shock; *Arnica Conium* if the result of traumatism; and later, *Sulphur Pulsatilla*, *Nux vomica*, *Hamamelis*, etc. The removal of the extravasated blood from the tunica vaginalis by incision will often be necessary to secure the bleeding points properly, after which the cavity may be washed out with a hot, normal saline solution until the fluid comes away clear when it must be dressed properly. When the extravasation is moderate, and confined to the scrotal tissues, evaporating lotions are often sufficient.

CHRONIC HÆMATOCELE.

This condition may follow a neglected acute hæmatocele, but is generally dependent upon some disease of the tunica vaginalis of a hæmorrhagic tendency, and appears between the fortieth and sixtieth year. In old hæmatoceles the fibrin of the blood adheres to the walls of the tunica vaginalis or cyst, gradually thickens and becomes organized. The tumefied mass in time becomes heavy, tense and hard; this sometimes leads to the diagnosis of malignant tumor or chronic enlargement, and operation for excision of the supposed growth has even been attempted. In these cases, in order to confirm the diagnosis, the peculiar sensitiveness

of the testicle to pressure should be remembered. The testicle is usually found behind the tumor and about in the centre; sometimes it is displaced, and the sensitive point will be found elsewhere. The position of the testicle, if possible, should always be located before commencing an operation for the removal of these products of exudation, as serious injury has followed neglect of this precaution, though in old cases the continued pressure, or original disease, may obliterate all trace of the testicles.

Hæmatoceles, like hydroceles, are pyriform in shape but not translucent, and have a heavy feel, with smooth bosselated surfaces, the contained fluid being red, chocolate or black in color and of varying consistency. The pain varies greatly and in the most chronic cases may scarcely be noticed. The general health remains good. Sometimes even with the points already given it is impossible to make a diagnosis without incision or the use of the exploring trocar. When clots close the opening of the trocar or inflammation is imminent from tension, incision is indicated, but should be performed only under the most rigid antiseptic methods.

When incision is indicated in hæmatocele a small opening is made with a bistoury high up and in front of the tumor, and carried straight down the anterior surface of the scrotum by means of blunt-pointed scissors to avoid injuring the testicle. In making the incision it should always be remembered that full drainage must be provided for.

Prognosis.—There is no tendency to spontaneous recovery. The disease is generally progressive, sometimes intermittingly so.

Treatment.—Clots should be turned out and the cavity washed with a hot, normal saline solution or a dilute solution of Carbolic acid, the damaged and redundant part removed, vessels ligated and the raw surfaces touched with a

solution of Chloride of zinc, the edges of the wound and the tunica vaginalis attached by sutures and the cavity packed with Iodoform gauze, which should remain until separated by exudation. The wound should be dressed antiseptically until closed by granulations. Erysipelas and gangrene sometimes follow this operation in the aged from the severe and rapid reaction, hence castration is believed to be better. In the young and middle-aged the operation is not only successful, but the parts are restored to usefulness, as the testicle is not involved in hæmatocele. Happily in the chronic cases the exhibition of Sulphur, Iodum, Kali iod., etc., often produces satisfactory results.

ENCYSTED HÆMATOCELE.

This consists of an effusion of blood into an encysted hydrocele; it is of infrequent occurrence.

Treatment.—The same as that advised in hæmatocele.

HÆMATOCELE OF THE CORD.

This is an effusion of blood into the cord. If general it is called diffuse hæmatocele of the cord; if into a cyst or when circumscribed it is known as encysted hæmatocele of the cord. Both conditions are rare, and only recognized by their clinical history.

Treatment.—As advised for hæmatocele.

INTRATESTICULAR HÆMATOCELE.

Intratesticular hæmatocele develops as the result of traumatism, and is followed by extravasation of blood into the parenchyma of the testicle, accompanied with severe and continued pain.

Treatment.—Rest, elevation of the parts and the continued applications of cooling, evaporating lotions are indicated. If the condition is not relieved, aspiration, using a large needle, may be necessary to remove the fluid

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blood. If clots are present exploratory incision and evacuation may be required.

FLOATING BODIES IN THE TUNICA VAGINALIS.

Floating bodies in the tunica vaginalis are sometimes present. They vary greatly in size and are sometimes diagnosed as supernumerary testicles. These smooth bodies may prove to be cysts, fibroids, or be the result of inflammatory exudations, etc.

CHAPTER XV.

DISEASES OF THE SPERMATIC CORD.

NEURALGIA OF THE SPERMATIC CORD AND TESTIS.

This condition is sometimes designated as irritable testicle. It may attack one or both.

Etiology.—It occurs, with or without appreciable lesion of the testicle or cord, from atrophy or hypertrophy of the testicle, hydrocele, varicocele, or a reflex from deep urethral, prostatic and bladder diseases. It may be associated with nodular growths on the epididymis, and may accompany a nephritic colic. It is sometimes caused by the spasmodic contraction of the cremaster muscles, associated with vomiting, cold sweat, etc.; by continence in widowers, and by sudden reformation in masturbators. Malaria, gout and syphilis often produce neuralgia of the spermatic cord and testicle.

Clinical History.—The pain varies in intensity, sometimes being greatly increased by the slightest touch; it may be continuous, spasmodic, localized or radiate over various parts of the body, and often becomes so severe as to cause collapse.

Treatment.—Massage, general hygiene, cold applications, etc.

Remedies.—If from perverted sexual functions, Ignatia. Neuralgic pain, heat and over-sensitiveness of the parts, Hamamelis. When accompanied by hard and indurated growths, Aurum. Neuralgic pains with or without cause, Colocynthis, Magnesium phos. or oxalic acid.

VARICOCELE.

Elongation and enlargement of the veins of the spermatic cord constitute this condition. It is the most common affection of the male genito-urinary organs, being present in a varying degree in 10 per cent. of all males. Senn, in his recent examination of recruits, found 21.7 per cent. with a varying degree of varicocele. He found it most common in the strong and robust, and in very few instances did he consider it of sufficient importance to exclude the applicant from military service. Fifty per cent. of those suffering with varicocele are ignorant of their condition, and of this number less than 20 per cent. never consider it of sufficient importance to call for medical or surgical care. The symptoms produced do not bear any special relation to the degree of local lesion.

Etiology.—It may be caused by anything which increases the flow of blood through the veins of the testicle or cord and interferes with the return circulation, as over-exercise, standing, long marches, constipation, constriction of the parts by the clothing, and over-lifting. It frequently occurs as the result of perverted sexual functions or habits—over-indulgence, unsatisfied longing, etc.—which cause passive and continuous congestion of the parts.

Clinical History.—It occurs most frequently on the left side, on account of the anatomical construction of the parts. It is not necessarily associated with venous enlargement elsewhere; in fact, they bear no relation to one another. It is essentially a disease of early life, being found in infancy, and commences almost invariably before the twenty-fifth year. It may exist for years unnoticed; its progress is slow and irregular. Frequently, after reaching a certain point, the condition remains stationary without treatment; again, as after an epididymitis, it may increase rapidly. There is pain, discomfort, and dragging, referred

to the scrotum, perineum, cord, and back, but rarely in proportion to the size of the varicocele. It is sometimes associated with neuralgia of the spermatic cord and testicle. The dilatation of the veins varies from a slight turgescence and enlargement to enormous distension, elongation and thickening of their coats, with destruction of the valves. The varicocele, when of large size, appears as a pyriform tumor encroaching on the opposite side of the scrotum, the bluish color of the venous blood in the enlarged veins may sometimes be seen through the scrotal tissues.

When manipulated, the veins within the scrotum feel like bunches of angle-worms or cords. If any doubt exists as to the diagnosis, the patient should be placed in the recumbent position and the scrotum elevated, when the tumor can be easily reduced; then pressure should be made at the inguinal ring and the patient requested to stand. If the pressure is strong enough to compress the artery there will be no change, but if the pressure is only sufficient to compress the veins the scrotum will gradually fill up and become distended from below upward as the blood is brought in by the artery. The superficial veins of the scrotal walls are also enlarged. When the varicocele is marked there is usually some atrophy of the testicle.

Treatment.—Traumatic cases and those of moderate severity are best treated by frequent cold sponging of the scrotum and support with a suspensory bandage. Marriage is to be recommended when the trouble arises from perverted sexual functions. The most severe cases, and those which are producing reflex conditions or atrophy of the testicle, while not endangering life, often require operation, though the indiscriminate operation of any and all cases which consult the surgeon must be condemned.

Keyes' Operation.—The scrotum is first washed with a solution of Bichloride of mercury, 1 to 1000. The patient

Dr. P. Johnson
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Army Surgeon
the best.

should stand beside the bed, so that if he becomes faint, which often happens after the puncture, he may at once be placed upon his back and the operation continued in that position. The distended veins, being easily felt among the structures of the cord, are separated by manipulation from the vas deferens and moved towards the outer side of the scrotum. The Keyes' varicocele needle is threaded with one strand of silk and the scrotum is trans-fixed between the veins and the vas deferens. When the eye of the needle emerges on the opposite side of the scrotum the silk is drawn through the eye with a tenaculum and disengaged. The punctured scrotum is then traversed independently by the needle and one strand of silk. The scrotum is again washed with the Bichloride solution and the needle partly withdrawn until it clears the veins without allowing it to emerge at the original point of entrance. The veins are allowed to rejoin the vas deferens, and the point of the needle is again advanced upon the outer side of the veins under the dartos and made to emerge posteriorly at the exact point where the silk is protruding. The eye of the needle is then opened, the silk placed in it and the instrument entirely withdrawn, carrying the silk with it.

The scrotum is again washed, the hair is removed from the posterior point of puncture on the scrotum, and the anterior ends of the silk are firmly held while the scrotum is pulled away so that the shreds of dartos included in the loop at the posterior puncture will be pulled free from the integument. All hairs at the anterior point of puncture should be removed to avoid their being tied in. The silk should be tied forcibly with a triple knot for security, the ends cut short and the knot allowed to sink into the scrotum. Bleeding seldom occurs. The punctured spot is simply dusted with Iodoform or closed with Iodoform collodion, dressed with absorbent cotton, and the

parts supported in a sling. Pain and swelling sometimes follow, but as soon as the patient is able to stand, about the third day, he is allowed to go about. The hard spot remains at the point of ligation for a year, and possibly longer.

Subcutaneous Ligation may be performed in another way, after the usual surgical preparations: Two or more harelip pins are inserted between the separated veins and the vas deferens, the first being carried through the scrotal tissues in the upper third of the scrotum and a second about the junction of the middle with the lower third of the cord. A straight varicocele needle, threaded to the middle with silk, is introduced at the upper pin opening. As the point enters, it is carried between the mass of veins and dartos and made to make its exit with the pin at the opposite side. The silk loop is loosened and the needle withdrawn. The loop is passed over the pin and the anterior ends securely and firmly tied around the pin. A second ligature is fixed at the lower pin in a similar manner. The parts are dressed antiseptically with an abundance of gauze. The pins can be removed the third day. Either of these operations will prove very satisfactory when the veins are not greatly varicosed or the scrotal walls greatly relaxed.

Excision of the dilated veins should be the operation of choice when the scrotum is relaxed and the veins elongated. It is performed as follows: After the patient has been cleansed and washed with lime and soda, and douched with sterile water, an incision about two inches in length is made over the most prominent portions of the veins, along their longitudinal axes, the skin, dartos and fibrous investment of the cord being divided. The lips of the wound are seized and held with blunt forceps which retract and expose the tissues, while the veins of the pampiniform plexus enclosed in its glisten-

ing sheath are freed by blunt dissection. An aneurism needle is passed beneath the veins at the lower end and after being threaded with catgut or silk is withdrawn. A second ligature is placed at the upper end in a similar manner. The ligatures are tied tightly with a triple knot while the testicle is supported by an assistant, the lower one being secured first. One end of the ligature is left uncut. The intervening veins are removed, the stumps brought together by tying the long ends of the ligatures. They may be more securely held if the stumps are transfixed with the long end of the ligature before tying. This shortens the cord and raises the testicle to its normal position. Sometimes it is best to drain for twenty-four hours, although it is usually unnecessary. The connective tissue and dartos should be approximated over the stump by a continuous catgut suture and the integument with three or more black silk sutures. The parts should be dressed antiseptically, held in place by a cross of the perineum or a T-bandage.

Recurrence of varicocele may take place after any method of treatment if the patient is allowed to go about too early. In all cases it requires about two weeks for a perfect coagulum to form, and three weeks should elapse before the patient is allowed to assume his usual vocation.

Remedies.—Arnica, when traumatism has been the cause of the varicocele. Aconite, if accompanied by fever and engorgement of the vessels. Hamamelis is one of the most important remedies in this condition.

CHAPTER XVI.

PRIAPISM AND SATYRIASIS.

PRIAPISM.

This deviation from a normal sexual condition may be the result of traumatism of the penis, or the consequence of injury or disease in various parts of the nervous system. Occasionally, it occurs without apparent reason, or as a concomitant of some long and exhausting general illness; it is sometimes of leucæmic origin. The traumatic variety is the most common, originating in an injury to the roots of the corpora cavernosa, with consequent extravasation of blood into their meshes. It is generally the result of violent or excessive carnal congress while intoxicated. At one time it was thought to be of alcoholic origin.

Priapism usually develops rapidly. Intercourse gives no relief, and ejaculation is often painful. Micturition may be normal, or frequent and painful. As this condition develops the penis becomes tense, hard, frequently cartilaginous, and exceedingly sensitive to the touch, particularly over the roots of the corpora cavernosa and in the region of the perineal muscles. There are associated pains in the back and along the course of the spermatic cord. Priapism persists often from two weeks to two months; with rare exceptions longer. Anxiety and apprehension are generally present. The position in bed is characteristic, *i. e.*, the patient reclines on his back with the limbs drawn up to protect the organs from any jar or sudden pressure; but even in this position the bed clothes may produce pain, which at times is agonizing, the parts being

so extremely sensitive and painful. Between a case of this character and one of mild degree there are all gradations.

Treatment.—Hot fomentations and possibly incision into the injured or hæmorrhagic area, when of traumatic origin, may be required to relieve arterial tension, with Aconite nap., Arnica mont., Belladonna, Cactus grand., Camphor, Cantharides, Digitalis, Eryngium, Euphorbium, Gnaphalium, Graphites, Hyoscyamus, Iodine, Mercurius corr., Mygale, Natrum carb., Platina, Phosphorus, Phosphoric acid, or Staphysagria as symptomatically indicated.

SATYRIASIS.

Satyriasis is that condition in which the sexual desire becomes the one central topic of existence, driving the unhappy individual to many unnatural and immoral acts. It may be of an acquired origin dependent upon some lesion of the genito-urinary apparatus. But usually it is of a mental nature, caused by an inherited taint, fanned into existence by some local irritation. Magnan locates this cerebral defect in the sensory region of the cortex behind the central convolution. The zone of desire and instinct are quasi-automatically influenced by the genito-spinal centers. This variety of sexual excitement occurs most frequently in those of nervous neurotic habit, and may be excited not only by tactile and visual impressions but by auditory or olfactory sensations. Kraft-Ebling says: "The imagination is in a state of acute excitement, and the mind is filled with obscene images so that the most elevated ideas are besmirched with the most cynical images and thoughts. The whole desire is directed to the sexual sphere. The flesh being weak is led on by fancy, leading to indulgence in the grossest perversions."

Treatment.—After relief of the cause or general disease, the administration of some one of the drugs mentioned for priapism, as symptomically indicated, often gives gratifying results.

CHAPTER XVII.

PSYCHICAL IMPOTENCE.

This is the variety of impotence in which the sexual organs are capable of full erection when the patient is alone, excited by lascivious reading or thoughts, by stimulation of the erection centres of the nerve mass, or a full bladder in the morning, yet when coitus is attempted under certain mental impressions originating within or conveyed to the brain by the special senses these impressions inhibit the action of the sexual centres, diminishing or suppressing for the time being the power of erection and ejaculation. There is sometimes a diminution or an absence of sexual desire with great shrinking of the organs.

Nervous or psychical impotence may be dependent upon an increased action of the inhibitory nerves brought about by unpleasant or excessive agitating excitement of the brain. Through the action of these inhibitory nerves the organic muscular fibres of the corpora cavernosa contract and oppose the entrance of the blood into the cavernous tissue. Indeed, patients are not infrequently met with in whom, when not in a state of sexual excitement, the penis though shrivelled moves in a worm-like manner, due possibly to the action of these organic muscular bands in the corpora cavernosa. Examination usually shows the penis of such persons to be small, retracted, and with the skin wrinkled on the dorsum.

Sometimes intromission is only possible when the vagina is large, and even then the penis soon becomes flaccid, no emission follows and the act is very unsatis-

factory. Those who have practiced unnatural sexual excesses when attempting normal coitus often find it unsatisfactory.

The size of consistency or the testicles in this class of patients is often extremely misleading. In fact, the cases presenting the most marked reflex disorders may present testicles apparently perfectly normal. Again, when the function of spermatozoa production of the testicles has been wholly lost by obliteration of both vas deferens after a gonorrhœal epididymitis, the patients may have remained unusually potent, though dragging and stinging sensations in the testicle in the groins and along the urethra are not uncommon during and after emission.

There are few men who have not been at some period in their life transitorily in this state from excessive mental application, business worry, prolonged bodily exercise, etc., but with the subsidence of the cause the condition has righted itself.

This form of impotence is not infrequent in recent widowerhood, when, for a time, all sexual desire and interest in the opposite sex is lost. Young men and frequently those advanced in years, who have led a chaste and moral life, when first attempting intercourse, from over-anxiety, nervousness, timidity, etc., find the erection fails when most desired. Those who have indulged excessively in masturbation or sexual excesses, particularly when they have been led astray by vicious literature or ill-advised counsel, are often the victims of this condition. Nervousness attending marriage, with fear or inability to perform satisfactorily the part of the husband, may cause temporary impotence. Young men who live a rather rapid life, yet from fear of disease shun intercourse with women of the town, but who at some ungarded moment, when semi-intoxicated, attempt the act and are unsuccessful, owing to the inhibitory action of the alcohol ingested,

the fear of the consequences or the surroundings, suffer a strong mental impression through this physical failure, *i. e.*, a complete loss of confidence in their sexual power which causes future incapacity even under favorable conditions.

Psychical impotence may also be produced by the environments, *i. e.*, noises, peculiar odors, fear of discovery, mental thoughts, moral or otherwise, repugnance, fear of contagion, pregnancy, the general dress and physique of the partner, her general hygiene, condition of the genitalia, etc.

In the relative variety of psychical impotence, intercourse can only be accomplished satisfactorily with a woman of certain stature, a blonde, a brunette, one with auburn hair, or when she is dressed in a special manner. Again, intercourse may only be successful when the mind is concentrated upon some absent but pleasing consort. In others, while the erection may be perfect, the satisfaction is inadequate, due frequently to the want of real reciprocity on the part of the female, who indulges in intercourse for financial reasons and poorly simulates emotions which are not experienced. The want of this reciprocity on the part of the wife sometimes produces a seeming impotence, which under changed condition, entirely disappears. Perfect intercourse is only possible under the normal conditions of mutual love and esteem.

Psychical impotence is sometimes a cause of much worry and anxiety to the unmarried, but a congenial and moral marriage generally establishes a healthy relationship. Of course, at first there may be an occasional failure, but the final outcome is usually satisfactory.

Treatment.—These cases require careful examination, and the patients should receive a plain statement of their condition, though great tact must be used and their minds strongly impressed with hopefulness of the results. They

cannot be dismissed with a laugh in an attempt to lightly cast aside their preconceived opinions. The nervous impression is usually so completely fixed that they will not accept a favorable opinion of their sexual status and future health unless, to a certain extent, it agrees with their conceptions and is based upon a most thorough and searching examination, which must include not only a careful local examination of the parts by all approved methods but a thorough general examination as well. The general examination must include the past history, diet, sleep, habits, recreation, hygiene, amount of exercise taken, condition of the bowels and urine, the use of drugs, tobacco, alcohol, etc. All unnatural and unhygienic acts must be investigated, proper advice given and appropriate measures instituted. Fresh air and outdoor exercise are to be commended. Early marriage may be advised, but fornication never.

In the psychical form of impotence produced by the mental frigidity or indifference of the wives with consequent flabby condition of the vagina and vulva with the absence of encouraging reciprocity—which stimulation is of the utmost importance in satisfactory intercourse—the husband should be encouraged, suitably treated and morally advised.

The genitalia must always be carefully examined, and if local lesions are found approved treatment instituted, an extra stimulating diet advised, including oysters, clams, eggs, fish, red meat, celery, asparagus, tomatoes, etc., with a little red wine at lunch and dinner. Tobacco should be avoided. With many this treatment is successful. A strong and frequently successful stimulant to sexual vigor is a strict command to avoid sexual thoughts or intercourse under any and all circumstances for a certain stated period. While under treatment for psychical impotence no trials of power should be allowed to interrogate its success. When intercourse is first attempted, advantage should be taken of

the morning erection, the act being precipitated without delay or preparation. A glass of wine is sometimes a successful stimulant.

In some cases Scheinkman's potentor will be useful. It consists of two soft, and at the same time resistant, longitudinal plates, concavo-convex in section, united anteriorly so as to form an elastic collar-like opening, at the circumference of which is attached a highly elastic rubber tubal sheath, provided with a ring at its free extremity to facilitate the rolling in of the sheath when in the process of application. The object of this sheath is to keep the two plates *in situ* when inclosing the flabby penis with the glans protruding through the anterior opening, and also to give it a smooth round contour, thus maintaining the organ in such a state as to allow of its introduction into the vagina, which would otherwise be impossible of accomplishment. When the impulse becomes sufficient to counteract any psychical or imaginary drawback the instrument can be instantly removed and natural coitus continued. In obstinate cases, however, the experiment may have to be repeated several times before unaided natural intercourse can be established. To apply the instrument, grasp the ring between the thumbs, forefingers and middle fingers on both hands on opposite sides and roll it inward up to the anterior opening of the longitudinal plates, then, grasping a plate in each hand, enlarge the opening by stretching them apart, and with both thumbs push the head of the penis through the opening, steady the glans with the thumb and forefinger of one hand and with the other roll the ring over the plates, inclosing snugly the body of the penis and the plates. The instrument is removed painlessly by pulling off the sheath.

The administration of Ignatia or Anacardium, depending upon the mental symptoms, is often efficacious, though all cases must be carefully individualized and the remedy prescribed according to the totality of symptoms.

CHAPTER XVIII.

SYMPTOMATIC IMPOTENCE.

This form of sexual impairment may be the result of general illness or symptomatic of some cerebro-spinal disease or defect, occurring even when the sexual organs are free from pathological lesions. It may be a reflex of a local disease of the testicles, or the effect of certain drugs ingested. Anything which lowers the general tone and vitality of the body always reduces sexual power. In some of the general fevers the loss of sexual power is as much the result of toxic conditions of the blood and its poisonous effect upon the nerve centres as the anæmic state and consequent poor nutritive power. Digestive disturbances may produce symptomatic associated sexual weakness. In diabetes, the loss of sexual power and desire is pronounced. Sexual excitement, produced either by organic or functional nerve lesions, is often followed by profound and continued impotence. The testicles in health are supposed, in some way, to influence the degree of man's virility, and, when diseased, to weaken the generative powers; in what manner it is not known, though it is probably through the sympathetic nerves. Through this is explained many of the symptoms which are present in atrophy of the testicles from a varicocele, as well as the mental depression and unbalancing of the mind following double castration or vasectomy when the testicles are free from disease. Anorchids are impotent; cryptorchids are generally potent, though usually sterile. The removal of the testicles may cause impotence, though it is frequently many years in be-

coming complete. Tubercular, syphilitic and other tumors of the testicles are often associated with impotence.

The continued ingestion of certain drugs, *i. e.*, Alcohol, Opium and its alkaloids, Iodine, Iodide of potash, Lead, Camphor, Turpentine, Antimony, Bisulphide of carbon, Carbonic acid, etc., has undoubtedly a symptomatic influence in inhibiting the sexual power and desire. The use of tobacco, especially cigarettes, particularly when the smoke is inhaled, as well as the excessive use of coffee and absinthe, often produce impotence, all varying with the individual susceptibility, though one or two cups of coffee daily, in those who have no special idiosyncrasy, may act as a sexual stimulant.

Treatment.—This depends upon the cause, the eradication or removal of which is usually followed by a disappearance of the symptomatic condition.

CHAPTER XIX.

ORGANIC IMPOTENCE.

This variety of impotence may be partial, complete, congenital or acquired. It is due to the absence, imperfect development, disease or traumatism of some portion of the male genitalia. These conditions, however, do not necessarily cause sterility. Congenital absence of the penis is of rare occurrence. In the few reported cases there were other associated anomalies of development. In children, penes of rudimentary size are occasionally met with, though, as a rule, in the process of development they become of sufficient calibre to make satisfactory intromission, and regular and naturally conducted intercourse generally causes considerable increase in the size of the organ. The daily use of a vacuum tube has produced seeming development of an undersized penis. Phimotic conditions frequently stunt the growth of the glans and body of the penis, but a proper circumcision is usually followed by a rapid development of the organ. Acquired absence of the penis from surgical removal, traumatism, or the outcome of destructive ulceration and accidental or designed strangulation, is sometimes the cause of this condition. A seeming absence of the penis, rendering intromission impossible, may be produced by a large overhanging abdomen, a large scrotal hernia, hydrocele, hæmatocele, varicocele or scrotal elephantiasis.

Congenital over-development of the penis may make intercourse absolutely impossible. This, however, is exceedingly uncommon. The hard œdema of the prepuce or glans penis following inflammatory phimosis, chancroid or

chancre may make intromission difficult or even prevent coition, and will require surgical methods of relief adapted to the individual case. Elephantiasis of the penis, congenital aneurismal dilatation of the corpora cavernosa, or that acquired from violence, as well as varix of the dorsal veins of the penis, may prevent intercourse. A double penis, a congenital union of the penis to the scrotum, or a stunted, fibrinous frenum may cause organic impotence. Those afflicted with malformations of the genital organs, who have reached adult life, may be potent or impotent, depending upon the character of their anomalies. Incomplete organic impotence frequently results from disease or traumatism of the part, the distortion being sufficient to prevent intromission only to a partial degree, as sometimes occurs after phagadema, syphilitic ulcerations, serpiginous chancroidal ulcerations, gangrene of the skin and underlying parts, as well as extensive injury or burns, which in healing distort the penis, preventing expansion of the erectile tissues.

If the prepuce is long and the preputial opening narrow, smegma may accumulate and harden behind the corona glandis, interfering with, if not preventing, copulation. In China, preputial calculi are common, distorting the parts and making sexual intercourse impossible.

Vegetations on the glans penis occasionally develop to great size, and when large may check intromission. They are the result of uncleanness or of a specific dyscrasia. Horny growths sometimes develop and bar all intercourse. They are generally preceded by vegetations upon the glans penis. Cancer of the male organs of generation may not at first cause impotence, but as the malignant process progresses intercourse is proportionately impeded, and in time it becomes impossible.

Ossification of the penis is a disease of advancing years. As the deposit increases the organ becomes more distorted, painful during erection and sensitive at all times.

Sometimes in the tertiary and less frequently in the secondary period of syphilis, the penis is invaded by a localized infiltration or gummatous deposit, producing impotence. Frequently the deposit is confined to the corpora cavernosa, where it forms a sharply-defined nodule, or to the corpus spongiosum, where it may completely encircle the urethra and cause curvature, etc. Under anti-syphilitic treatment, absorption may occur and the parts return to their normal usefulness. If neglected, the syphilitic gumma will soften and degenerate into an abscess terminating in loss of tissue, with distortion of the penis, etc.

In addition to the above causes of organic impotence, there are many degrees of curvature of the penis impeding perfect intercourse which may be congenital and due to a short frenum or corpora cavernosa, but more frequently they are the result of injury or disease of the corpora cavernosa, a deposit in the walls of the corpus spongiosum, a short frenum, the result of removal of too much tissue in circumcision, an over-dilatation of the urethra or internal urethrotomy, or an inflammatory phimosis or paraphimosis.

CHAPTER XX.

DERANGEMENTS OF THE SEXUAL FUNCTIONS OF MEN.

Etiology.—The primary causes of sexual derangements of men are to a large degree congenital or acquired deviations of the genitalia from the normal standard. A narrow or adherent prepuce; a frenum, which is shortened or fibrous, causing irritation of the penis in the flaccid state and deformity during erection; a contracted meatus, giving rise to a water pound at each micturition, with resulting chronic hyperæmia of the posterior urethra; congenital or acquired strictures in the bulbous or prostatic urethra, with accompanying pronounced and distressing reflex symptoms, mental depression, etc.; inflammation or other pathological conditions in the urethra, prostate, seminal vesicles, ampullations of Henel, or testes; all the etiological factors of ampullitis, vesiculitis or prostatitis; lesions in neighboring or remote organs may one and all, through reflex action, have a potent influence in the causation of sexual weakness. Sexual disorders of men are caused not only by local changes in the deeper sexual organs, but also by general disturbances of nutrition as occurs in chronic brain and spinal disease, and from hyper-sensitive reflexes, which may be congenital or acquired. They are generally associated with an anæmic and devitalized constitution, but may develop in a perfectly normal individual when the system has been weakened by physical or mental activity, as often occurs after shock, fright, grief, pain, great loss of property, unfortunate speculations, etc. Most cases, however, can be traced to a hyperæmic condition of

the parts, due to sexual excesses or the results of a chronic posterior urethritis. When congestion of the prostate or prostatic urethra is long continued, a catarrhal condition is produced which extends into the prostatic ducts, the sinus pocularis and the ejaculatory ducts, resulting in extreme reflex excitability, accompanied with a high degree of general nervousness, which might well be compared with hysteria.

Clinical History.—The different symptoms so commonly designated as distinct diseases of function of the sexual organs usually represent only different stages of a local pathological lesion, except when they appear as symptomatic reflexes of a nerve involvement or of a systemic disease, which requires general and not local consideration. In the early history of these disorders, the nervous reflexes are usually not pronounced; occasionally they appear early. As the local lesions become more defined the reflexes become more prominent, though, in some cases, the mental conditions are out of all proportion to the local cause.

Sexual erethism is a deplorable condition, as it brings out all that is immoral in a man. The mind centers on sensual subjects, acts and associations, with continued and uncontrollable sexual excitement, which can not be held in subjection; and is often fanned into renewed activity by the presence of a female, her garments, or her picture, with a craving for licentious companions, literature or plays. Among the first symptoms of commencing sexual disorders is an irritable state of the genital organs, due to a hyperæmic condition of the prostatic urethra, the prostate, seminal vesicles or the ampullations, revealed in erections from trifling causes or without apparent reason. Sometimes there are persistent violent erections, which frequently are not relieved by intercourse. This condition is usually transitory in character. It is not to be associated

with priapism resulting from injury of the parts, disease of the nervous system, leucæmia or any prolonged illness. When sexual erethism appears as a symptom of a chronic local lesion of the genital organs, it may pass unnoticed, or, if observed, it is sometimes considered an indication of renewed animal vitality, and, if the morbid desire is excessively gratified in this condition, permanent damage frequently results. In many of the acute genito-urinary diseases, irritability of the parts and distressing erections constitute the chief, if not the most painful, symptoms.

In this condition the following drugs, as symptomatically indicated, will be beneficial: Ambra, Anacardium, Arnica mont., Belladonna, Cactus grand., Calcarea carb., Camphor, Cantharides, Capsicum ani., Carboneum sulph., Digitalis, Equisetum, Eryngium, Gnaphalium, Graphites, Hyoscyamus, Ignatia, Iodium, Jatropha, Kali brom., Lachesis, Ledum pal., Magnesia mur., Mercurius, Mezereum, Mygale, Natrum carb., Nux vom., Osmium, Paris quad., Phosphorus, Phosphoric acid, Picric acid, Platina, Salix nig., Secale cor., Sepia, Silicia, Stannum, Staphysagria and Ustilago madis.

Impotence may be the first symptom noticed indicating the presence of sexual impairment, as manifested in feeble erections, or strong sexual desire without erection, shrinking and retraction of the parts sometimes occurring even when erection is most desired, possibly accompanied with a urethral discharge, without erotic sensation. Erections, while apparently perfect or excessive, are somewhat unreliable. Sexual desire may be increased with emissions which occur too early during sexual congress and which are often followed by an immediate subsidence of the erection. As the impotence advances and becomes more chronic, erectile power and sexual desire are lost, with a corresponding shrinkage and a general anæsthetic condition of the genital organs. Diminished sexual power, no

matter how slight, is generally considered by the afflicted individual as the beginning of the end; and if it progresses it engenders the greatest apprehension. The skin of the penis is often very insensible to the faradic current in impotence. According to Benedikt, the right half of the glans penis is physiologically more sensitive than the left.

Impotence is frequently traceable to a hyperæmic or catarrhal condition in the bulbous or prostatic urethra, the verumontanum, the caput inglinus, the prostate, the seminal vesicles or the ampullations of Henel. One or all of these parts may be involved. Impotence has two stages, the hyperæmic or irritable and the anæsthetic. The first or irritable stage is sometimes dependent upon cerebro-spinal conditions or general disease; but generally it is produced by a hyperæmic condition of the genital apparatus, having its origin in masturbation, conjugal onanism, sexual excesses, or hyperæmic conditions resulting from great desire without gratification; it is often caused by the various unnatural methods employed to prevent conception, by urethral stricture, drug effects and irritating urine. In impotence due to weakness and abnormal irritability, ejaculation is always premature, often taking place with relaxation of the parts as soon as the penis is introduced into the vagina, the reflexes acting too quickly. It is especially noticeable in chronic masturbators. The second and third attempts may however be successful. If the sexual organs of one afflicted with hyperæmic impotence are thoroughly examined the integument covering the penis will be found to be normal in appearance and sensation, the lips of the meatus slightly everted, the mucous membrane of the urethra hyperæmic and over-sensitive to instrumentation, especially in the prostatic portion. A severe burning sensation is often present in the fossa-navicularis, which may occur before, during or after micturition. A general rawness of

the urethra is not uncommon. There may be sharp shooting pains, burning and lightning-like, through the penis. It must be remembered, however, that a hyper-sensitive condition of the penis, especially of the glans, is common in patients having growths in the region of the prostate and neck of the bladder. The efferent nerves, so abundant in this part of the urethral canal, are hypersensitive, owing to the local congestion keeping the lumbar centers in a state of constant irritation, which finally results in their exhaustion. The genito-spinal centers may however be inhibited from other causes.

In the second or anæsthetic variety there is usually an infiltration of inflammatory products in and around the verumontanum with other structural changes in the genital organs, the genitalia presenting a shrunken appearance. The sensibility of the urethra is diminished, frequently almost absent, especially in the prostatic portion, the urethral mucous membrane pale and anæmic, erections imperfect, finally disappearing, and emissions occur without accompanying pleasurable sensations. The seminal fluid after attempted intercourse may dribble or drop from the flaccid organ. Impotence usually appears slowly; it may be noticed only after forced abstinence for any reason.

Anæsthetic impotence not dependent upon physical lesion of the generative sphere, or general disease, is extremely rare and sexless individuals are extremely uncommon. When present, it is usually dependent upon some organic or functional cerebro-spinal condition requiring neurological and not genito-urinary care.

The remedies most frequently indicated are: Agaricus, Agnus cast., Argentum nit., Baryta carb., Berberis vulg., Borax, Caladium, Calcarea carb., Cannabis Ind., Cannabis sat., Carboneum sulph., Carbo veg., Causticum, China off., Chlorine, Conium mac., Cubeba, Cuprum ars., Dioscorea, Euphorbium, Gelsemium, Graphites, Hydrocotyle,

Ignatia, Kali carb., Kali iod., Lachesis, Lycopodium, Magnesia carb., Mercurius corr., Mercurius sol., Naja, Natrum mur., Nitric acid, Nuphar lut., Nux vom., Opium, Osmium, Petroleum, Phosphoric acid, Phosphorus, Plumbum, Sabal ser., Selenium, Sulphur, Sumbul and Tribulus ter.

Pollutions.—Pollutions might be described as a motor neuroses of the sexual apparatus with spasm in the muscular coats of the seminal vesicles. Spermatorrhœa has a similar neuroses with paresis of the ejaculatory ducts, allowing seminal fluid to be discharged during and after urination, at stool, or even continuously. The most frequent cause of pollutions and spermatorrhœa is sexual excesses, especially masturbation. The pathological must always be differentiated from the physiological emission. The latter, the result of continued continence, may occur as often as once a week, or in cycles of two or three successive nights, then subside for one or many months, depending upon environment, food, etc. It is not followed by unpleasant manifestations, but usually by a feeling of relief, as it frees the system of a secretion, which, if long retained in the seminal vesicles, may cause disease and nervous reflexes. When of pathological origin, the succeeding day is characterized by slight, transitory headache, backache, mental depression, etc. At first, these symptoms pass off quickly, but may finally continue all day. When the local lesions become more deeply seated, diurnal emissions occur, accompanied by some degree of impotence. The slightest mental or physical impulse may be sufficient to produce an ejaculation. These pollutions are not usually accompanied with pleasurable sensations, and often occur without erection. They are frequently produced by the presence or thought of a woman, her picture, the jarring of a horse-car, the brushing of the penis against the trousers, the introduction of urethral instruments, retraction of the pre-

puce, etc.; physical fatigue, overlifting, jumping, etc., may also be sufficient.

For this symptomatic condition the following remedies will be of great service: Alumina, Anacardium, Argentum nit., Ammonium nit., Bromium, Caladium, Calcareo acet., Calcareo carb., Camphora, China off., Cobalt., Conium, Digitalis, Dioscorea, Gelsemium, Graphites, Hamamelis, Kali brom., Kali carb., Lachesis, Lycopodium, Magnesia carb., Muriatic acid, Naja, Natrum carb., Natrum mur., Natrum phos., Nuphar lut., Nux vom., Plumbum, Phosphorus, Phosphoric acid, Pulsatilla, Rana bufo, Staphysagria, Sulphur, Thuja occ., Tribulus ter. and Zincum.

Urethral Discharges.—In the early stage of sexual disorders there is often over-activity of the peri-urethral and Cowper's glands, as well as those of the seminal vesicles and prostate, producing an over-secretion, often improperly designated as spermatorrhœa. In the anæsthetic stage the secretions are usually diminished.

The discharge may be quite profuse and continuous; at frequent intervals during the day a drop may be noticed at the meatus, or there may be simply an agglutination of the lips of the meatus in the morning. It may appear only during sexual excitement, after urination, after a constipated or diarrhœic stool, or perhaps be observed only as a few shreds floating in the urine. The discharge is frequently the cause of great mental anguish and despair, the ideas of the layman's spermatorrhœa being sometimes so deeply seated that it is almost impossible to dislodge them. It is frequently accompanied by a sensation as though something was trickling down the urethra; this sensation is frequently present when there is no discharge. An uneasy, burning sensation may be noticed in the fossa navicularis or in the prostatic urethra, with tenderness in the perineum on deep pressure. Urination is often followed by straining and the discharge of a drop of blood.



Reflex pain in the rectum, thighs, hypogastric region, aggravated by standing, motion, etc., may be present. The origin and import of the discharge varies with the local condition causing the unnatural condition, and various names, dependent upon the locality involved, have been applied to it, *i. e.*, urethrorrhœa ex-libidine, urethral blenorhagia, prostatorrhœa, spermatorrhœa, urethral tuberculosis, etc.

Urethrorrhœa ex-libidine is frequently condition. The discharge is the result of over-activity of the urethral glands, and often causes much mental worry. It is frequently produced by the pernicious habit of stripping the penis to find the morning drop. It is also the consequence of chronic hyperæmia or over-activity of the peri-urethral glands which follows urethritis, or excessive and continued sexual trifling without gratification. It is often observed in young men under sexual excitement, especially during long and protracted courtship. In itself it is harmless. Microscopically the discharge is composed of flat cylindrical epithelial cells, shreds of mucus and an occasional crystal of the phosphate of magnesia or lime, usually of the coffin-shaped variety. The discharge may be quite profuse.

While removal of the cause and the discontinuance of unnatural acts are of the greatest importance, much assistance and a rapid cure will be obtained from the administration of the indicated remedy: Aconite nap., Calcarea carb., Cannabis Ind., Cannabis sat., Cubeba, Camphora, Capsicum ani., Eryngium, Graphites, Hepar sulph. c., Iodium, Magnesia carb., Nitric acid, Nux vom., Phosphoric acid, Pulsatilla, Sabal ser., Sulphur, Thuja occ., etc.

Urethral blenorhœa is an indication of a chronic bulbous or prostatic urethritis or urethral stricture. It is a very common associate symptom in sexual disorders. The discharge may be profuse or appear only as a few shreds in the urine. Microscopically, it is composed of pus corpuscles

and urethral epithelium held together by mucus, fibrin, etc., with an occasional nidus of gonococci, urethral diplococci, etc. When the urethra is examined with the aid of the urethroscope, the mucous membrane which is thickened to a varying degree presents a deep red or purple color. The inflammatory change may be confined to the mucous membrane, presenting a circular, red, thickened spot, or the whole membrane may be granular and resemble a section of beefsteak cut crossways. A urethral discharge associated with sexual weakness is often due to local disease in the bulbous portion of the urethra. It is almost always the result of a gonorrhœal invasion of recent or remote origin, which has induced a profuse, round-celled infiltration of the urethral wall which often completely fills the space between the vessels and the muscular and elastic tissues. In a variable length of time, this round-celled growth organizes and the new-formed connective tissue contracting narrows the lumen of the canal. At the same time, there is thickening of the tissue involved in the inflammatory process from deposits of fibrous tissue. This growth is abundant in the bulbous portion of the urethra, owing to the fact that the canal is not surrounded by a fibrous capsule and to its spongy walls. As it develops it takes the place of, or drives out, the vascular and erectile tissues, the healthy tissue being transformed into a firm, hard, homogeneous white structure, termed a stricture. When the prostatic urethra is invaded by a chronic catarrh there is a round-celled infiltration with subsequent fibrous changes in the sub-mucous tissue, the surface of the mucous membrane becoming thickened and granular.

Urethral blennorrhœa may depend upon a chronic hyperæmia of the prostatic urethra, due to a contracted meatus, or to a congenital stricture of the pendulous urethra, with its subsequent water pound of the urethra behind the stricture during urination, finally terminating in a localized

catarrhal inflammation of the verumontanum and the caput inglinus with associated inflammation of the lobules of the prostate.

The remedies found beneficial in gleet discharges in general will here be of great benefit. The following are often indicated: *Agnus cast.*, *Argentum nit.*, *Calcare carb.*, *Cannabis sat.*, *Clematis erect.*, *Cubeba*, *Cuprum acet.*, *Euphorbium*, *Graphites*, *Gelsemium*, *Iodium*, *Lycopodium*, *Mercurius corr.*, *Nitric acid*, *Natrum mur.*, *Natrum carb.*, *Nux vom.*, *Petroselinum*, *Pulsatilla*, *Sabadilla*, *Sabal ser.*, *Selenium*, *Silicea*, *Sulphur*, *Thuja occ.*, etc.

Gouty Urethritis.—While this is not a common condition, its importance can not be over-estimated. It depends upon a gouty state of the patient, and may develop after any special over-indulgence at the table, etc. The urethral discharge does not contain gonococci, is never very profuse, is muco-purulent or whitish in character, and accompanied with considerable burning and smarting in the urethra, particularly in the prostatic portion. If the urine is examined it will be found to be loaded with uric acid and urates, accompanied with a high specific gravity.

Prostatorrhœa.—This muco-purulent or thin, glairy discharge, of milky or white of egg appearance, occasionally bloody, depends upon disease of the prostate. Microscopically, it abounds in mucus, granular phosphates, and not infrequently it contains triple phosphates, oxalate of lime, a few pus corpuscles, some degenerated cylindrical epithelial cells and, occasionally, a few blood corpuscles. Böttcher's sperm crystals are readily formed by adding to the prostate fluid a one per cent. solution of ammonium phosphate, allowing the mixture to dry on a glass slide, when they can be microscopically examined. This discharge is the product of a catarrhal inflammation of one or many of the lobules composing the lobe of the prostate, producing

in the organ a general nodular enlargement. The disease may be confined to one side, in which case, as in seminal vesiculitis, the left is the one usually affected. When catarrhal prostatitis exists, if the finger is introduced into the rectum and slight massage applied to the prostate a thin, clear, viscid, milky fluid (prostatic fluid) will be expelled into the urethra, and may even flow from the meatus. If the ejaculatory ducts are invaded by this catarrhal process, they may become patulous and allow some of the spermatozoa and the surrounding vesicular secretion to escape and mix with the prostatic fluid.

In health the prostate secretes phosphates in abundance, and in disease frequently in excess, sometimes in quantity sufficient to produce the classical urinary evidence of phosphaturia. In health the phosphates are necessary to the vitalization of the spermatozoa in the spermatic fluid. In chronic catarrhal prostatitis as much as one hundred and twenty grains by weight have been massaged from the organ. This prostatic phosphatic discharge is frequently the cause of the cloudy, cider-like urine often noticed in sexual disorders. If the turbid urine be placed in a glass receptacle a thick flocculent deposit, which may be mistaken for pus or mucus, soon settles and may cause the unwarranted diagnosis of cystitis, pyelitis, etc. When a portion of such cider-like urine is boiled, the cloudiness, if due to urates, will immediately clear; if to phosphates, albumen or carbonates it will increase in density; if a drop or two of acetic acid is then added, the dimness, if caused by phosphates, will vanish; if to carbonates, the urine will clear, accompanied with an evolution of gas, and if albumen is present it will remain unchanged. If the cloudiness is due to bacteria or catarrhal secretions boiling and acetic acid will cause no reaction.

The following remedies have been found beneficial as

symptomatically indicated: *Agnus cast.*, *Ambra gris.*, *Arnica mont.*, *Argentum nit.*, *Calcarea carb.*, *Cannabis Ind.*, *Cannabis sat.*, *Causticum*, *Conium*, *Cubeba*, *Cuprum acet.*, *Eryngium*, *Euphorbium*, *Graphites*, *Hepar sulph. c.*, *Iodium*, *Lachesis*, *Lycopodium*, *Magnesia carb.*, *Mercurius*, *Mezereum*, *Muriatic acid*, *Natrum carb.*, *Natrum mur.*, *Nitric acid*, *Nux vom.*, *Phosphorus*, *Phosphoric acid*, *Phytolacca*, *Pulsatilla*, *Sabadilla*, *Sabal ser.*, *Sarsaparilla*, *Selenium*, *Sepia*, *Silicea*, *Sulphur*, *Thuja occ.*, *Ustillago maidis* and *Zincum*.

Spermatorrhœa.—Taylor has ably summed up this symptomatic condition in three classes: "First, young men who, as a result of masturbation and, perhaps, gonorrhœa, notice, after urination, defecation, or hard labor and in their sleep, the escape of a fluid which comes from the prostate. Second, cases in the same condition plus a little discharge, due to relaxation from chronic inflammation of the ejaculatory ducts, the ampullations and the seminal vesicles. Third, older men, in whom gonorrhœa and sexual excesses have reacted upon all the seminal parts, and who spontaneously or in urination, or at stool, or in exercise, notice a quite copious secretion, which consists, in some cases, of prostatic mucus, and also of the secretions of the seminal vesicles and ampullations. In these three categories may be included all the cases to which the term spermatorrhœa may in any way be applied." Thus this great bugbear of quack medicine, the so-called spermatorrhœa, which has deluded the minds of youth and many of mature age, becomes at once recognized as a symptom dependent upon an easily located and usually curable condition.

The symptomatic remedy, if carefully selected, is often one of the following: *Agaricus*, *Agnus cast.*, *Alumina*, *Argentum nit.*, *Aurum met.*, *Baryta carb.*, *Caladium*, *Calcarea acet.*, *Calcarea carb.*, *Cannabis Ind.*, *China off.*,

Clematis, Conium, Dioscorea, Eryngium, Gelsemium, Graphites, Hamamelis, Hepar sulph. c., Hydrocotyle, Ignatia, Iodium, Kali carb., Kali brom., Lachesis, Ledum, Lithium, Lycopodium, Magnesia carb., Magnesia mur., Mercurius, Mezereum, Muriatic acid, Natrum carb., Natrum mur., Nitric acid, Nuphar lut., Nux vom., Petroleum, Platina, Phosphoric acid, Phosphorus, Phytolacca dec., Plumbum, Sabadilla, Sabal ser., Sepia, Silicea, Stannum, Sulphur, Tribulus ter., Ustilago maidis or Zincum.

Tuberculosis of the urethra may locate in any portion of the canal and cause a urethral discharge. The disease may originate from tubercular bacilli entering at the meatus, but more frequently it results from direct extension of a prostatic or vesicular tubercular involvement. The bacilli may be found in the discharge, though sometimes the diagnosis can only be positively made by inoculation of guinea pigs with the fluid and their subsequent examination. Tubercular epididymitis is frequently preceded by a urethral discharge, which is often erroneously diagnosed.

The climatic and general treatment will be greatly assisted by such remedies as Bacillinum, Calcarea carb., Calcarea iod., Sulphur, etc., when indicated by the symptoms.

The urine in sexual disorders not infrequently presents all the evidences of polyuria, being straw-colored, clear and of low specific gravity. Sometimes the specific gravity is not proportionately changed. It is usually neutral or faintly alkaline. When the alkalinity is decidedly marked the urine may be turbid and cloudy. The alkaline reaction is usually due to the carbonate of soda and the phosphates, the ordinary alkali carbonate of ammonia or other alkaline urines not being present. Urination is usually increased in frequency; pain as a rule is absent. Transitory albuminuria and glycosuria sometimes happen; occasionally oxaluria.

Indican is frequently present in large quantities in the urine of those who practice sexual acts of any kind to excess; the spots on the linen from emissions are often bordered with a marked indigo-blue or violet color. In the urine it may appear as blue or bluish-black scales in the sediment. When it is present in considerable quantity and the nitric acid test for albumen is made, a blue or bluish zone will appear resting on a ring of brown coloring matter at the junction between the colorless nitric acid and the urine. Jaffes' test for indigo is as follows: Mix equal quantities of urine and strong hydrochloric acid to make twenty cubic centimetres; to this add two drops of a saturated solution of the hypochlorite of lime. When indicans is present indigo will immediately separate and the mixture will turn bluish-black or violet. If a few cubic centimetres of chloroform are added and the mixture shaken it will turn a beautiful blue.

The oxalate of lime or an excess of uric acid may, by their local irritant action, be accountable for many of the symptoms of sexual derangement. Oxalate of lime is frequently found in large quantities, occurring as colorless crystals, the quadrate octohedron and its combination with the prism, also the hour-glass and spheroidal form. Another, but not as common urinary sediment, is a finely granular carbonate of lime mixed with amorphous phosphate of lime. There is often mixed with this amorphous sediment small colorless, wedge-shaped crystals of phosphate of lime. They may be so grouped as to lie side by side with their apices converging to a single point, or they may represent sheaves or rosettes. Crystalline phosphate of magnesia, appearing in the form of long quadrilateral tablets, with the corners rounded off, are occasionally found. Spermatozoa are not present as a rule. A strongly acid or irritating urine, from any cause, may, by its direct effect upon the mucous membrane of the prostatic

urethra, produce structural changes and consequent sexual weakness.

Micturition may be increased in frequency. There is often more or less dribbling of urine after micturition, which may be due to contraction of the circular muscular fibres, which, when the spasm ceases, allow the urine to dribble out. Again spasm of the external sphincter of the bladder may induce frequent difficult and unsatisfactory calls to urinate, often necessitating a wait of five or ten minutes, the urine starting in drops, followed by little spurts, and finally coming in a full stream. It stops in the same manner, and when the act is completed and the parts are replaced a little dribbling often occurs. This condition in nervous individuals makes it impossible for them to urinate in the presence of a second person or under certain conditions, as in one of the author's cases, where it was utterly impossible for the patient to urinate when aboard a train or a boat. Some are only able to urinate in a sitting position or while at stool. Sometimes this spasm becomes so violent that retention of urine results. It has often led to the mistaken diagnosis of prostatic lesions and constriction of the urethra. It is, however, almost invariably due to a hyper-sensitive condition of the prostatic urethra. It may be caused by catarrhal ulceration or fissure of these parts. The catarrhal inflammation is usually the result of an imperfectly-treated gonorrhœa or the long-continued habit of masturbation. The prostatic urethra in these cases is very sensitive, bleeds easily, and superficial erosions of the mucous membrane usually are present. The condition is best treated by the daily introduction of a full-sized metallic sound, which is allowed to remain from five to fifteen minutes. When erosions or fissures are present local application of Nitrate of silver may be required.

Spasmodic contraction of the detrusor muscles, causing frequent urination, often occurs as a result of local lesions

in the urethra, especially of the prostatic portion, as well as from irritations seated in the central nervous system. It is often due to sexual excesses, prolonged unnatural erections, and not infrequently to protracted coitus, or irritation by concentrated urine, all causing a hyperæsthesia, hyperæmia and mild catarrh of the prostatic urethra. This condition may be produced by reflexes from diseases of the rectum, etc. The drinking of large quantities of fluid, which acts as a diuretic; fright, fear, mental emotions, over-mental activity, especially in those of nervous temperament, are also causes. This frequent painless impulse to urinate occurs generally during the day, when physical and mental activity are greatest. The desire may appear every few minutes, and if the call is not heeded the urine may be involuntarily voided. This frequency of urination does not occur at night or when the mind is pleasantly and quietly employed. Polyuria is not infrequently present. The urine may appear turbid and alkaline without any signs of catarrh of the bladder. The urethra and bladder, however, are always very sensitive to instrumentation and require local treatment, differing from those conditions dependent upon irritation of the central nervous system, where mental relaxation and change of climate are particularly indicated.

This condition is often relieved by *Agaricus musc.*, *Agnus cast.*, *Ambra gris.*, *Anacardium*, *Alumina*, *Argentum nit.*, *Arnica mont.*, *Aurum met.*, *Belladonna*, *Berberis vulg.*, *Borax*, *Brachyglottis*, *Caladium*, *Calcarea acet.*, *Calcarea carb.*, *Calcarea phos.*, *Camphora*, *Cannabis Ind.*, *Cannabis sat.*, *Cantharides*, *Capsicum*, *Carboneum sulph.*, *Causticum*, *Clematis*, *Cobalt*, *Conium mac.*, *Cubeba*, *Equisetum*, *Eryngium*, *Euphorbium*, *Ferrum*, *Fluoric acid*, *Gelsemium*, *Ginseng*, *Graphites*, *Hamamelis*, *Hepar sulph. c.*, *Ignatia*, *Iodium*, *Jatropha*, *Kali bich.*, *Kali carb.*, *Kali iod.*, *Lachesis*, *Lithium*, *Lycopodium*, *Magnesia carb.*, *Magnesia mur.*, *Manganum*, *Mercurius*, *Mezereum*, *Moschus*, *Muri-*

atic acid, Natrum carb., Natrum mur., Nitric acid, Nux vom., Opium, Osmium, Oxalic acid, Petroleum, Phosphorus, Phosphoric acid, Pulsatilla, Sabadilla, Sarsaparilla, Sepia, Stannum, Staphysagria, Sulphur or Zincum.

Reflexes.—In the early stages of sexual disorders, a highly hyper-sensitive condition of the urethra is characteristic, accompanied by burning pains extending to the testes, anus, inner side of the thigh, hypogastric region and the kidneys.

In the earlier periods of disease the mucous membrane of the posterior urethra is greatly engorged and the terminal sensory nerve filaments consequently irritated. Later, the inflammatory exudate, becoming organized, contracts and presses on the terminal nerve fibres causing many reflex and unexpected but characteristic symptoms. Mental application is fatiguing, concentration of mind difficult, and brain work, formerly easy, grows difficult and burdensome, and in time impossible of accomplishment. Gradually the patients become dependent upon others, and, with the loss of self-command, irritability of temper develops with suspiciousness of their immediate family, friends and business associates with loss of control of self and firmness of character. Indecision gradually creeps on, accompanied by a desire to shun acquaintances, the victims going out of the way to avoid business or social friends, through loss of aggressiveness and individuality, or the assumption that the community knows their mental and physical condition. They are cognizant of the fact that they have lost their grip. Some contemplate and, if not properly treated, do commit suicide, fearing that if they live much longer they will be proper subjects for the madhouse. Restlessness, both mental and physical, is very characteristic; vertigo and dull headaches occur; wandering neuralgic pains, with weakness in the small of the back and extremities, accompanied by general muscular

feebleness and emaciation, cardiac palpitation, shortness of breath on the slightest exertion, cough, poor circulation, cold, clammy hands and feet, digestive disturbances, with colic and constipation accompany this condition.

The remedy in sexual disorders is often suggested by the reflex symptoms which are well marked in *Agnus cast.*, *Ambra gris.*, *Anacardium*, *Alumina*, *Argentum nit.*, *Aurum met.*, *Berberis vulg.*, *Caladium*, *Calcarea acet.*, *Calcarea carb.*, *Cannabis Ind.*, *Cantharides*, *China off.*, *Conium mac.*, *Digitalis*, *Eryngium aq.*, *Gelsemium*, *Graphites*, *Hydrocotyle*, *Ignatia*, *Kali brom.*, *Lachesis*, *Lycopodium*, *Muriatic acid*, *Natrum carb.*, *Natrum mur.*, *Natrum phos.*, *Nitric acid*, *Nux vom.*, *Oxalic acid*, *Petroleum*, *Phosphoric acid*, *Phosphorus*, *Platina*, *Rana bufo*, *Sarsaparilla*, *Selenium*, *Sepia*, *Staphysagria*, *Sulphur*, *Tribulus ter.* and *Zincum*.

Prognosis.—The cure or relief of functional disorders of the generative organs of men depend somewhat upon the age of the patient, being more favorable when they are under forty and in comparatively good general health, the prognosis becoming progressively unfavorable as age advances. It is also dependent upon acquired local lesions, congenital malformations or the variety of sexual excesses and habits which have produced the sexual weakness. The younger the patient when unnatural acts were committed, the more difficult will be the cure, excesses in developing youth being especially detrimental. If bad habits are practiced only after full adult life is reached, their lasting effects are not so serious, provided, in all cases, they are discontinued. The prognosis depends upon the ability of the medical adviser to find the true cause. If it can be found and hygienically, medicinally or surgically removed the more favorable will be the prognosis. If treatment is properly advised and followed, all cases can be relieved and the majority cured, the time required varying greatly in different cases, being from a few months to years, much

depending upon the individuality of the patient. The most troublesome cases are those of the later or anæsthetic stage, with symptoms of impotence, diurnal emissions, chronic seminal vesiculitis and chronic prostatitis in its various forms. Many of these cases are curable, but in some relief only can be promised.

Treatment.—The cause should, if possible, be removed and attention given to the local lesion. If the original cause cannot be removed or discontinued, the treatment will be a failure. Sexual and general hygiene are of great importance. All sexual excitement must be prohibited. The society of men and women who are, in any way, likely to carnally excite the patient is to be shunned, and only persons with pure minds, instincts and inclinations cultivated. Literature of a licentious tendency or of too deep mental requirements must be avoided and reading restricted to that of a light interesting nature of good moral character. To remove unchaste thoughts from the mind, it is well to cultivate some special hobby of the day, as stamp or coin collecting, biology, etc. Moral plays, games, golf, musical societies, etc., are to be recommended, but no patronage should be given to theatricals in which the lewd is suggested or introduced. The amount of sleep must be regulated and at least eight of the twenty-four hours should be so occupied. A bed with woven wire springs and a hard hair mattress is advisable, with light, comfortable but not too warm clothing. Sleeping in the dorsal position should be discouraged, as it causes congestion of the spine and pollutions. A towel tied around the waist with the knot placed in the center of the back, or a square block of wood held in place by tapes, which awakens the patient when he turns on his back during sleep, will often prevent or break the tendency to nocturnal emissions.

In cases of great hyperæsthesia of the parts, and frequent

nocturnal emissions, light calisthenics followed by a cool bath and massage at bed-time are sometimes advisable, or an alarm clock may be used to ring every four hours to awaken the patient, at which periods he should arise, evacuate his bladder and thus relieve the pressure upon the return circulation. These means failing, King's electric ring annunciator can be used, but the anti-pollution ring with sharp teeth to dig into the skin when erections occur is ill-advised and barbarous. Bathing must not be neglected; in the hyperæmic stage of sexual disorders, hot sitz baths, 105° F., of ten minutes' duration at bed-time, are of great benefit. Drying the parts after the bath must be carefully accomplished with a soft towel; friction and rough towels must never be employed. In the later period, with anæsthesia of the parts, cold baths and friction are better. A cold shower gives good results; a needle spray applied to the genitalia, inner sides of the thighs, hypogastric region and the small of the back for ten minutes night and morning is of advantage. If possible, the water should be used alternately hot and cold. A good general effect can be obtained by pouring a pitcher full of cold water down the back or by allowing it to flow over the chest, abdomen and genitals. If bath accommodations are wanting, ablutions of the parts night and morning can be substituted.

The diet must be plain, nourishing, easy of digestion, and non-irritating to the intestines. Stimulants must be avoided in the hyperæmic stage, but sometimes in the anæsthetic they are of great service. Tobacco must be interdicted, it having the power in some constitutions to destroy sexual desire. Cigarettes are especially harmful. Celery, tomatoes, asparagus, condiments, salt and salt meats of all kinds must be discontinued during the hyperæmic stage; they are, however, beneficial in the more chronic conditions. Pure water is to be advocated, but fluids of all

kinds must be avoided after the 6 P. M. meal, as they cause over-distension of the bladder during sleep, interfere with the return circulation from the prostate and produce hyperæmia with its consequent train of symptoms. Coffee must not be allowed in the hyperæmic, but may be resumed during the later stages. The bowels must be regulated. If this cannot be accomplished with the indicated remedy, Hunyadi water, or fluid extract of Cascara in appropriate doses may be administered, but catharsis must not be produced. When nocturnal emissions are frequent, the bowels should always be evacuated before retiring. Local diseases of the anus and rectum should receive appropriate treatment, as they are frequent causes of functional sexual disorders. The liver and digestive organs, as well as the other organs of the body, must in all cases receive attention. If the urine presents abnormal conditions medical, chemical, or physiological means must be employed to return it to and keep it in a healthy condition.

Out-of-door exercise and employment are to be generally advised, but always in moderation. The bicycle, under careful medical supervision, is in some cases beneficial. The saddle must, however, be so constructed that the body is supported entirely by the tuberischii, and all pressure upon the perineum relieved. The erect position must always be maintained, and racing and over-fatigue avoided. It must be discontinued if at any time it appears to be detrimental. Horseback riding is to be interdicted. General massage is beneficial. Exposure to cold, damp draughts of air or anything that causes cold must be avoided. In fact, the daily life of the patient must be carefully and scientifically regulated, yet with care and judgment, shunning restrictions which may become irksome.

As a rule it is advisable that coition be discontinued during treatment. The forcing of the sexual act through fear that, if relinquished, all power will be lost is always to

be condemned. Treatment must be so directed that the parts are kept in a quiescent state. In those who are married, intercourse may be allowed once or twice a month, providing it does not produce exhaustion, pain in the lumbar region, congestion of the prostate or increase the local disease in the seminal vesicles. If it does, it must be strictly prohibited. It is sometimes advisable for married couples to occupy separate beds, but in this respect much depends upon the nature of the wife, etc. When masturbation has been suddenly stopped, nocturnal emissions usually become more frequent, but, as the genital organs regain their healthy tone, they cease or become normal. Patients should be informed of this or they may, in their morbid state, think they are growing worse. Under no circumstances should fornication be allowed or advised, as it is injurious, will do no good, and makes the treatment unsuccessful. In the author's opinion, in the majority of cases, the physician might as well advise masturbation.

The indicated remedy must be carefully selected to cover not only the local but the general symptoms. In this part of the treatment the Homœopath has a great advantage over the Old School physician. Fuller and Lydstone, who have given this subject very careful consideration, affirm that, after the cure of the local disease, symptoms frequently remain for months or years. These same symptoms are frequently quickly removed by the indicated remedy.

Cod liver oil acts very kindly. Hemaboloids, by building up the system and increasing the number of red blood corpuscles, in the blood streams, are beneficial. Hypophosphites are very useful.

In many cases of hyperæmia or catarrh of the posterior urethra, as well as in all cases complicated by cystitis, the bladder douche, as advised in chronic seminal vesiculitis, is to be recommended. Deep urethral douches, applied either

by the hydrostatic method of Valentine, or with the Janet antiseptic vesical syringe, or a fountain syringe to which is attached a soft rubber catheter of proper size and length are useful. A few ounces to a pint of the hot selected solution, as recommended in bladder lavage, every one to four days, as indicated, may be used to advantage. Sometimes instillations act best when applied through a soft rubber catheter eight and one-half inches in length, so that the eye of the catheter when fully introduced will be located in the centre of the prostatic urethra; when, with a Taylor's minim syringe, from ten to sixty minims of the appropriate solution can be introduced and applied without injury or special pain, the compressor urethræ muscle preventing the solution from passing forward into the urethra and facilitating the backward flow of the surplus into the bladder. The Bang's syringe sound should be used for the strong instillations, and the bladder should be partly full at the time to properly dilute the solution before its exit through the urethra. If the neck of the bladder or prostatic urethra requires local treatment with the weaker solution, the bladder should be emptied before the application. The stronger solutions which give excellent results are Nitrate of silver, 1 to 10 per cent.; Cuprum sulphate, 16 per cent.; or tincture of Iodine, Carbolic acid and Boro-glyceride, equal parts. When the stronger solutions are employed, ten minims of a solution one-tenth the strength of the one to be finally used should be applied at the first seance, the strength being gradually increased every fourth day until the desired strength is reached or satisfactory results have been obtained.

The weaker solutions should always be deposited in the posterior urethra, and allowed to flow back into the bladder and be voided per urethra, thus giving a double application. In the anterior urethra, strong applications should be made

through the electric urethroscope; the weaker urethral irrigations of Nitrate of silver, 1 to 2,000 to 8,000; Permanganate of potash, 1 to 1,000 to 10,000; Permanganate of zinc, 1 to 3,000 to 10,000; Bichloride of mercury, 1 to 10,000, Sulpho-carbolate of zinc, 1 to 1,000 to 3,000; Carbolic acid, 1 to 100 to 500, can be used with the hand syringe or by the hydrostatic method of Valentine and Janet. The efficacy of all urethral irrigations is greatly increased by heat, douches should therefore be used as warm as is agreeable to the patient. When Nitrate of silver solutions cause too much reaction, the pain can be relieved by a supplementary douche of Sodium chloride. If urethral instillations cause too great reaction they must be discontinued, reduced in strength, or be preceded by a solution of Cocaine.

All instrumentation must be performed under strict asepsis. Instruments must be anointed to facilitate their introduction with Lubri-chondrin, Boro-glyceride, 33 per cent., sterilized white Vaseline or Albolene. When the hyperæsthesia in the posterior urethra, with or without impotence, continues, the urethral psychophore, with cold water at 40 to 50° F., applied for five or ten minutes, every one to three days, is very beneficial, especially when the urethral discharge is free from pus. In anæsthetic impotence, with loss of tone of the parts, hot water, at 105 to 110° F., acts very kindly. A psychophore of sufficient size to fill the urethra should be selected, and so placed that its three distal inches come in exact relation with the local lesion, the remaining portion of the instrument not transmitting heat or cold.

The warm or cold full-sized conical steel sound introduced every fifth day, by its massage effect, relieves hyperæmia of the urethra, and its pressure from within acts kindly upon all the lobules of the prostate which are in a state of catarrhal inflammation. If proper care, however,

is not observed in introducing the sound, particularly early in the treatment, or it is allowed to remain in the urethral canal too long (five to ten minutes as advised by some authorities), many unpleasant results may occur. As the canal becomes accustomed to instrumentation the sounds may be allowed to remain for five to twenty minutes, producing marked reaction and much benefit.

Strictured conditions of the urethra may necessitate meatotomy, internal or external urethrotomy, gradual dilatation or a possible division by Fort's linear electrolysis.

A diseased condition of the prostatic urethra may require the prostatic dilator to mechanically open and empty the follicles of the prostate, as the prostatic urethra cannot be completely distended with a steel sound which the remaining portion of the canal admits. When this is necessary the author's prostatic dilator will be satisfactory, but if it is desired to dilate the bulbous urethra simultaneously the Kollmann antero-posterior dilator will be required. The prostatic urethra can frequently be dilated to a 36 to 42 F. to great advantage. Prostatic dilatation should always be preceded by urethral irrigation and be followed by a proper bladder douche or urethral instillation. It should not be repeated more frequently than once in ten days.

Hot or cold rectal injections of a full quart of a weak Sodium chloride solution, about $\frac{1}{4}$ per cent., thrown against the prostate and seminal vesicles once daily, may be of benefit, but in chronic cases the rectal psychophore or Kemp's prostatic cooler will be found more convenient and will give equally satisfactory results. Next to sitz or general warm baths, enemas of warm water, or hot Chamomile tea, 95° F., will prove very efficacious. In acute cases, hot water should be used. The rectal bag of hot or cold water as indicated, applied from ten to twenty minutes every second day, is often very beneficial.

After the administration of rectal enemas or when

sounds are allowed to remain in the urethra, powerful erections are often produced.

Rectal suppositories containing a grain of Ichthyol introduced at bedtime often cause rapid absorption of inflammatory material in the prostate and peri-prostatic tissues. Massage of the prostate is of the utmost importance. It can be given advantageously once a week. Electricity often gives satisfactory results. The constant or weak current gives good results; the copper pole is placed over the lumbar region; the zinc pole applied to the perineum, spermatic cords and penis. The seance should be of about two minutes duration, and repeated daily for six to ten weeks. In obstinate cases the zinc pole should be employed with a Newman electrode. This causes a slight galvanic cauterization of the prostatic urethra. When the faradic electrode is placed in the rectum and the other successively applied over the bulb of the urethra, the ascending rami of the pubes and penis, contraction of the bulbo-cavernosa and the ischio-cavernosa muscles is caused, thus stimulating the power of erection and ejaculation. The faradic current is especially indicated when the parts are weak, relaxed, and there is a constant discharge of seminal fluid; the galvanic when pollutions are present. Faradism can be used to advantage with the brush applied to the genitalia, or with King's rectal electrode. It invigorates the muscles of the genital organs and perineum. When using the galvanic current, the positive pole must be applied to the lumbar or sacral region and the negative to the parts by means of the electrode or a conical steel sound. In the hyperæmic urethra the ordinary steel sound is the best electrode. A current of one or two milliampères may be given, but should not be continued for more than one or two minutes. As the general urethral condition is relieved, and the hyperæsthesia becomes localized or confined to the prostatic urethra or the openings of the ejaculatory ducts,

the Newman sound will be required. With this, three milliampères can be applied. Galvanism by means of King's rectal electrode, as advised in chronic seminal vesiculitis, is frequently beneficial. In some cases, local treatment irritates and aggravates the condition; here the indicated remedy and general hygiene must be depended upon. The various methods of local treatment can be used separately or together. Every case, however, must be carefully studied and individualized and surgical relief given when required. Careless or routine medication almost invariably results in failure.

CHAPTER XXI.

PSYCHOPATHIA SEXUALIS.

The various forms of sexual perversion may be described under the following headings: Masturbation, Conjugal Onanism and Sexual Excesses, together with Sexual Paræsthesia, which is divided into Heterosexual and Homosexual perversions.

Masturbation.—The etiology has already been discussed in the introductory and in the chapter on functional sexual diseases. In the opinion of the author, the mental and physical conditions caused by this habit have been greatly exaggerated. He believes that a great injustice has been done boys collectively by the claim that it is universal and is practiced to excess by a majority of them. From a careful history of a large number of patients he is thoroughly convinced that the habit is only practised to excess by those who have some local focus of irritation, as phimosis, adhesions of the preputial sac, retained smegma, thread worms, hemorrhoids, stone in the bladder, etc. Sometimes it is induced and established by nurses, who handle the parts to quiet the child. It is occasionally a result of the accidental discovery of a pleasurable sensation, as when climbing a tree or sliding down a bannister. Onanism is undoubtedly caused in many cases by nervous defects, as noticed sometimes in epileptics, hydrocephalic infants, and those suffering with cerebral and spinal diseases.

The views of Sir James Paget seem to us to be wholly correct. He said that: "You may teach positively that masturbation does neither more nor less harm than sexual

intercourse practised with the same frequency with the same conditions of general health, age and circumstances—that is, at any time before or at the beginning of puberty—masturbation is very likely to produce exhaustion, effeminacy, oversensitiveness, and nervousness, just as equally frequent copulation at the same age would probably produce them. Or, practised every day, or many times in one day, at any age, either masturbation or copulation is likely to produce similar mischiefs or greater. And the mischiefs are especially likely or nearly sure to happen, and to be greatest, if the excesses are practised by those who, by inheritance or circumstances, are liable to any nervous disease, to 'spinal irritation,' epilepsy, insanity or any other neurosis. But the mischiefs are due to the quantity, not to the method, of the excesses; and the quantity is to be estimated, in relation to age and the power of the nervous system." He has seen as numerous and as great evils consequent on excessive sexual intercourse as on excessive masturbation; but he has not seen or heard anything to make him "believe that occasional masturbation has any other effects on one who practises it than has occasional sexual intercourse, or anything justifying the dread with which sexual hypochondriacs regard the having occasionally practised it."

Dr. H. Fournier, one of the most eminent physicians of Paris, says: "There is not a vice more fatal to the conservation of man than masturbation. This unfortunate habit is sometimes acquired by very little boys and girls. Foolish or vicious nurses may bring it on by handling young children most indelicately. This is one of the many reasons why none but virtuous servants and nurses should be employed by wise parents and physicians. In later years, children often learn this degrading and most injurious vice from their depraved companions, some of whom seem even to regard the practice of it as a manly

accomplishment. When habitually indulged in, it produces on the health and the strength of the constitution effects the most deplorable. Even the intellect is liable to become thereby enfeebled, a want of virility is exhibited both in the body and in the mind of its victims; then follows a loss of ambition and self-control."

Von Schnuck-Notzind says: "Masturbation has a much more intense effect than sexual intercourse, as the content of ideas in this very onanistic act must overcome reality. That masturbation moderately practised exercises on a good constitution no direct disturbing effect; but when long continued it changes the character, the imagination, and the whole mental existence in a way that is unmistakable. The evil effects of onanism seem greater than the lesser disturbances, which seldom affect materially the general health."

Lowenfeld says: "The most frequent results of these unnatural acts are excessive pollutions, spermatorrhœa, premature ejaculation, hyperæsthesia of the genital centers, spinal neurasthenia, congestion of the prostate, inflammation of the urethra, and intense sensitiveness in the glans. In young children vesical tenesmus, wetting of the bed, spasm of the compressor urethra and urinary incontinence, and secondarily neurosis of the lumbar portion of the cord, general neuræsthenia, tachycardia, pains in the eyelids, spasm of the eyelids, photophobia, diminution of the acuity of central vision, neuræsthenic asthenopia."

An experienced practitioner in medicine, writes: "When this morbid passion gets control of a person, it is as though an unclean spirit had entered, subdued the will, weakened the moral forces, enfeebled the intellectual faculties, lessened the power to resist temptation, and overcome every obstacle opposed to its gratification. Even while the intellect is still clear, and the sense of wrong keen, the individual is a slave to this morbid impulse."

Scott says masturbation produces certain conditions, which he has duly tabulated. The psychical results are:

"1. It destroys the normal sexual feeling and substitutes for it inflamed passions and a hyper-excitability of the sexual functions.

2. It separates the victim further and further from women and puts him in a peculiarly unnatural relation to them.

3. It renders him indisposed to marriage by poisoning the very source from which the impulse to love comes.

4. It tends to ruin the very foundations of his *vita sexualis* by substituting an unnatural and purposeless act for the physiological incentive of procreation.

5. The onanist transgresses the law of self-preservation and prostitutes his sexual powers, thereby losing the stimulus to put forth his strength, with the loss as well of self-confidence.

6. He becomes a morose, solitary, timid and cowardly semblance of manhood.

7. He becomes psychically impotent and unfit for natural coitus, because natural means disappoint him and are not so pleasing as the fantastic fancies which he pictures to himself.

8. His conscience is perverted by the inherent apperception of his sin and shame, and his mental strength and power of concentration become weakened.

9. Being maintained in a constant state of lustful feeling he is liable to fall a victim to male seducers and pederasts, of whom there are many.

10. Psychically and physically he becomes characterless, less and less a man, and more and more a slave to his passions, the opportunity for the gratification of which is always in his power.

"Our very lives are bound up with our reproductive organs, the testicles being wonderful laboratories for the

development of a secretion which is superlatively essential in the activities of life. From the time of puberty on, this secretion is constantly being elaborated, and its function is for procreation and not for debasement by sensual pleasure. The constitutional effects of wantonly squandering it are mostly manifested in injury to the nervous system."

The physical effects are:

"1. The victim is subject to loss of spirit, weakness of memory, despondency and apathy.

2. He suffers languor, irritability, headaches, neuralgias, dimness of vision, etc.

3. Anæmia and facial acne are common.

4. There is loss of manly bearing, and proneness to blush.

5. The path leads to imbecility and premature senility.

6. The countenance and demeanor stamp the onanist as an object of reasonable suspicion.

7. He is often unable to free himself from the grasp of the habit, because there is poor material on which to call for manly restraint.

8. His genitals bear the marks of his degrading practice.

9. His digestion and heart action are disturbed, and he becomes a moody, apprehensive, hyperchondriacal invalid, if not a gross pervert.

10. He may suffer from diurnal and nocturnal involuntary pollutions, spermatorrhœa or prostaticorrhœa. Sometimes there is irritability at the neck of the bladder with inability to pass water or to retain it.

11. He bequeaths an undesirable legacy to his posterity, giving both his sons and daughters a proneness to psychoses and neuroses, especially in their sexual proclivities."

This habit, if practiced to excess, produces hyperæmia of the bulbous and prostatic urethra, which in time becomes a

true catarrhal inflammation, involving, the verumontanum, the sinus pocularis, the prostate and the seminal vesicles and manifesting itself by the many and varied symptoms already described as peculiar to these local conditions. There is accompanying general relaxation and numbness or hypersensitiveness of the scrotum, the testes may become soft and flabby, the skin of the penis dark and thickened, the prostate swollen and sensitive, and, if pressure is applied, prostatic fluid is easily pressed into the urethra. The seminal vesicles are frequently hyperæmic, inflamed and distended. In the more severe cases micturition becomes frequent and incontinence or dribbling of the urine is not uncommon. The voiding of the urine is frequently accompanied by a severe burning sensation as though hot lead was passing down the canal, the act terminating with a flow of blood and constrictive pain in the prostate. The nervous lesions and neurasthenic manifestations are legion, as already enumerated under chronic seminal vesiculitis and disorders of function of the generative organs of man.

When long-continued, masturbation undermines the constitution. It is especially harmful when practiced to excess by the growing boy, whose sexual organs and nerve centres are immature and undeveloped. Fortunately in the majority of cases, the bad effect of the habit is discovered by the patient and discontinued, or proper steps are taken to make him understand the effect of the habit and realize its demoralizing results if continued. Infantile masturbators are usually characterized by their irritable, peevish condition, flabby tissues and lowered powers of digestion and assimilation.

Treatment.—The young masturbator must be told of the perniciousness of the habit and its serious consequences if continued. This advice should be given in a kindly way, persuasion and sympathy doing more than fear and punishment. In all cases, the parts must be carefully and

scientifically examined and judicious attention given to any point of irritation likely through reflex action to cause abnormal hyperæmia of the genitalia. In young children the knowledge of its danger should be imparted by the mother; at a later period, by the physician.

The N. Y. *Medical Journal* commenting upon neurectomy as a prevention of masturbation says:

"Persistent masturbation, when it is a symptom of deep-seated nervous disease, has long been a source of despair to physicians. Many measures, moral, coercive, pharmaceutical, or mechanical, have been tried, commonly with varying and usually disappointing results. Dr. Campbell Clark and Mr. Henry E. Clark, however, report in the *Lancet* for September 23d a surgical measure undertaken not with a view to exercise mechanical restraint, but to eliminate sensation, and therefore gratification. It was performed, with the necessary consent, of course, upon a middle-aged man who had been insane only about three years, and who had not shown any sign of early neuro-mental degeneracy. The operation, consisting of the resection of a portion of the afferent nerve of the reflex circuit, was performed as follows: After the usual aseptic precautions, a dressing of lint steeped in carbolic solution (one per cent.) was applied to the region of operation and was kept on for four hours before the operation. The incision was transverse and was made across the dorsal surface and about half an inch from the root of the penis. The skin here being elastic and flaccid, it can be drawn into a longitudinal fold, and this is easily transfixated transversely by a sharp, narrow-bladed knife without injury to the dorsal vein. The nerves, two in number, are not easy to identify or isolate, being intimately wrapped up in the loose superficial fascia. They must be sought for on the lateral margins of the dorsum of the penis, and they are in close relation to the dorsal arteries, generally to the .

outer side of these. Fortunately, the arteries are more closely attached to the capsule of the corpus cavernosum and they are not, therefore, liable to be injured. The nerves were raised by means of a blunt hook and about half an inch of each nerve was resected. The wound was closed by a continuous catgut suture and, after it had been made thoroughly dry by washing with Ether, a layer of thin gauze was made to cover it by means of Collodion. The healing process took ten days and the patient made a satisfactory recovery.

"The result was entirely satisfactory. The habit has been discontinued for over a year, sensation being absent, and the beneficial effect upon the patient's mental condition has been marked, he being 'no longer the degraded creature he was.' No atrophy of the testicles ensued. Some mental depression followed the operation for a while, but disappeared in time. The man, however, is said to 'admit that he is not so energetic as before the operation.' It is clear that such an operation, entailing, as it does, all loss of sensation and power of erection, must be safeguarded against such an excess of surgical enthusiasm as once set in around the operation of clitoridectomy. Especially in the young must it be held in abeyance; for it is folly to deny that numbers, if not the majority, of young boys have masturbated to some extent at some period of their lives, and yet have grown up into healthy, clean, and wholesome men—and to run the risk of emasculating such would be an infamy. But among the insane and the incorrigibly vicious, the operation as described may with due safeguards find, perhaps, a legitimate place."

Pure morals promote health and strength, give vitality to form, grace of action, keenness of intellect, continued energy, and lasting success, with years of life, while excessive and abnormal sexual acts and habits undermine the system, sap the constitution, exhaust the mental and phy-

sical system, and lead to early death or decrepit old age. Boys who have practiced or who are suspected of practicing masturbation should not be kept too closely at their studies, but should be encouraged to engage in out-door sports and exercise. They should be carefully watched and advised, and when the habit is discovered should not be allowed to associate too intimately with other children or to occupy the same beds.

Conjugal Onanism.—Many men in the endeavor to escape the duties of paternity, etc., in ignorance of the evil effects, practice unnatural coitus, *i. e.*, withdrawal, the use of a cundum, etc., etc. The practice is said to be quite common and evidence indicates that it is most prevalent among the educated class.

It is true that many have for years indulged in conjugal onanism without seeming detriment, but there is no question that many a man has been ruined by the practice of this unnatural act and in untold cases has fallen into the lowest depths of despair and ill health without the cause being even suspected. Between these two results of the disobedience of Nature's laws there is every gradation of effect which may manifest itself at an early or remote period, depending upon the stability of the nervous and physical system of the individual.

Unnatural coitus not only produces local lesions of the sexual organs with consequent reflexes, but has a very decided effect upon the nervous system at large, causing deterioration of nerve power, which if it does not manifest itself in the parent often shows itself in weakly nervous children who often present many of the symptoms which class them as pervers.

In a varying degree many of the following symptomatic conditions may appear: Loss of sexual vigor, premature and unsatisfactory ejaculations, pathological pollutions, erotic dreams and sexual erythism, pain and uneasiness.

in the penis often accompanied with some sero-mucus discharge, pain in testicles and spermatic cord often very severe; sharp or undefined pains in the back, groins, thighs, super-pubic and femoral region and anus which may be burning in character. Micturition is frequently increased in frequency and may be somewhat painful, the pain being especially referred to the glans penis. With the local conditions there is an accompanied general weakness and lassitude, loss of flesh and pallor, unrest, irresolute, irritable, despondent conditions, with dyspeptic symptoms and constipation. As the disorder progresses, with dull feelings in the head, ill humor, melancholia, loss of memory, etc., becomes more pronounced. At first these general symptoms are most noticeable in the morning, but finally they become continuous, with sharp pain in the heart, nervous palpitation, small, weak, feeble pulse, asthmatic attacks, painful spots in various parts of the body, especially along the spine and in the joints; sharp pains radiating around the body, sensation of constriction about the throat, great weakness and profuse perspiration on the slightest effort, mental or physical.

Treatment.—All unnatural acts must be discontinued. A change of air, climate and relaxation from business cares will be of great assistance to the indicated remedies: Lach., Nux vom., Rano bufo, Salix nig., Staphysagria, Sulphur, etc., with local treatment for the lesions produced.

Sexual Excesses.—The sexual vigor varies greatly in different individuals. Immoderate indulgence for one may be moderation for another. The results of sexual excesses usually appear between the fortieth and fiftieth years. If the cause of diminished sexual vitality can be found and removed, though there is frequently associated general disease or intemperate acts, much can be accomplished. Sexual excesses, if continued only for a short time or indulged in occasionally, usually right themselves, as is fre-

*Once in 2 wks. & 3 X a week. Depends on g. feeling. -
Some can go 6 times a wk. q. 2 w. , 1st 1 d. N - q. 2 M.*

quently observed in the young or old recently-married man. Excesses are always to be condemned, and whenever they have produced sexual weakness, if any part of the sexual tract is diseased, it must receive proper attention, its return to a normal condition frequently resulting in revitalization of the patient. At the same time it is well to impress the idea that the control of the sexual appetite adds strength of mind, bodily health, power and soundness of judgment, with length of life. If the inordinate appetite is gratified the commencing vesiculitis, ampullitis and prostatitis will become chronic, with the train of well-known symptomatic manifestations.

Beside-Sens.

PARÆSTHESIA SEXUALIS.

= Munch or perverted sex

This is a condition which is somewhat prevalent, and it must be acknowledged that it is unfortunately on the increase. It is largely hereditary, and is often forced upon the instinct of children born of a father who has allowed sexual habits to have the mastery. Though many undoubtedly enter into these vile acts from association, it is unusual, unless hereditary weakness is present, and its victims are ripe for contamination. This class of men seem unconscious of their debased condition. Some even glory in their acts, and take pleasure in parading their shameful perversions to the world.

Masturbation is not common among the perverts as would be expected, many looking upon it as very injurious, while they consider their perverted acts as a special mark of superiority and a condition to be commended.

This repulsive sexual condition is divided according to the perversions presented into heterosexuality and homosexuality.

Heterosexuality is a variety of sexual perversion characterized by a desire for association during coitus of acts of

Pharisee

*("I thank God
I am not such
asthetical
men")*

cruelty and violence, presenting itself either as an active or passive algolagnia. *pain-*

*Comte de Sade
(d. 1814)*

Sadism, or Active Algolagnia, is that variety of sexual perversion where the acts of violence are directed against the co-partner. It is more common among males than females. It is a frequent cause of uncontrollable and unnatural crimes, as probably exemplified in the Whitechapel murders, and, in a less degree, in those abnormal impulses in which ejaculation only occurs while its victims are biting, scratching, or in some other manner inflicting pain upon their companions. *Napoleon thrown into cataleptic fits each time.*

Moschism, or Passive Algolagnia, is the opposite to sadism, the sexual pervert only experiencing carnal pleasure when he subjects himself to violence and cruelty, varying from the slightest to the most repulsive.

Homosexuality is characterized by sexual desires and instincts opposite to those which the sex would naturally indicate. It has the following varieties:

Psychical Hermaphroditism, characterized by a degree of inversion of sexual instinct with pronounced desire for sexual relations with members of the same sex, with an occasional desire towards the opposite sex.

Urnings, characterized by sexual desires and inclinations for persons of the same sex exclusively, with disgust for coitus with the opposite sex. The victims are usually emotional and passionate, and present sentimental attachments for those of their own sex which would be considered normal only between individuals of opposite sexes. They are usually unable to have normal successful intercourse.

In this class mutual masturbation is common, and *By a fine* pederasty affords the greatest sexual gratification.

By a fine **Effemination and Viraginity** is characterized not only by inversion of the sexual instincts, but all feelings and inclinations in habit, sentiment and character are reversed.

Coitus with the opposite sex is impossible. The man has the feelings of and acts like a woman.

Androgyny and Gynandry is a most extreme type of homosexuality. Not only are the feelings and sexual desires reversed, but the form, features and voice closely approach those of the opposite sex, and the genital organs frequently present anatomical signs of degeneration.

Treatment.—Hypnotism has, by mental suggestion, been of apparent benefit after the physical defects have been removed by appropriate surgical methods. In two cases, treated by an eminent New York physician, the most gratifying results have been attained. All other forms and varieties of treatment have generally been unsuccessful, though it must be remembered that the indicated remedy has its reported cures.

CHAPTER XXII.

STERILITY.

As a twentieth to a fifth of all childless marriages are due to some sexual weakness of the husband, this condition should receive careful consideration. The inability to propagate one's kind is not necessarily accompanied by impotence. It may be due to absence of or a diseased condition of the spermatozoa, to congenital or acquired obstruction or obliteration of some portion of the genital tract.

In some of the uncivilized parts of the world male sterility is compulsory. Carl Aumholt, in his "Four Years in Australia Among Cannibals," says the "Mika-Operation" is required by law. "In a few tribes the children are operated on, only about 5 per cent. being spared. In other tribes it is the husband who, after becoming the father of one or two children, must submit to the requirements of the law, the reason for the operation being that they do not like to hear the children cry in the camp, or be burdened with too many children." The artificial hypospadias is produced as follows: "The cut, which is made with a flint knife, is about an inch long, and extends almost to the scrotum. The surface of the wound is first burnt with hot stones, whereupon the wound is kept apart by little sticks, and in this manner an opening is formed through which the sperma is emitted." He further adds: "The natives of these tribes are fat and in good physical condition."

For convenience of description sterility is classified as Oligospermatism, Oligozoospermatism, Azoospermism, Asspermatism and Misemission.

Oligospermatism is that variety in which there is a deficiency in the quantity and quality of the seminal fluid. It may be due to the various anomalies of the genitalia or removal of the parts, but more frequently it is the result of disease. Excessive venery may, for the time being, impair the quantity and quality of the seminal fluid ejaculated. In wasting diseases, in the feeble and those advanced in years, the quantity of spermatic fluid ejected is usually reduced. When the prostate fails to give its quota of secretion to mix with the deeper fluid a thick spermatic fluid results. Chronic inflammation of the seminal vesicles and ampullations of Hénel may so modify their secretions as to produce thickening of the vesicular fluid, and the spermatozoa, though properly liberated, become agglutinated, or the seminal fluid may, on the other hand, become so watery in character and so diluted that the spermatozoa are washed out of the vagina. This latter condition is sometimes the result of gonorrhœal vesiculitis. The spermatozoa contained in the seminal fluid may be of low vitality or lifeless, the admixture of pus from the deeper portions of the genital track being a frequent cause of this condition, its presence giving a yellow or green color to the spermatic fluid.

Oligozoospermatism is the variety in which the ejected spermatic fluid contains comparatively few spermatozoa, the result of imperfect development of the testes, as in ectopy testis, or of advanced years, when there is a tendency to fibrous and malignant degeneration, temporary or permanent disablement of the testicles by epididymo-orchitis of any form—simple, tubercular, traumatic, gonorrhœal or syphilitic—producing obstruction in the conducting tubes by inflammatory changes. Syphilis often brings

on this condition without producing local lesions demonstrable by a local or general examination of the parts, though, usually, there is a history of a specific orchitis or epididymitis, in which case it involves by preference the head of the epididymis, while in gonorrhœal involvement the tail is usually attacked. Pressure exerted by hydrocele or hæmatocele may temporarily cause the process of spermatogenesis to cease, the function returning on the removal or cure of the cause. Varicocele is supposed to produce atrophy of the testicles, and may, therefore, cause oligozoospermism. Nerve involvement and the ingestion of certain drugs, such as potassium iodide, the bromides, etc., have caused it.

Azoospermism is the condition where the seminal fluid does not contain spermatozoa; or, if present, they are diseased and unproductive. It may be due to double occluding epididymitis, simple, syphilitic or tubercular orchitis, obstruction at any point of the conducting tubes of both sides, atrophy or absence of the testes, etc.

Sterility is often due to want of life and vitality in the spermatozoa ejected, or the result of neurasthenia, masturbation or unnatural and ungratified sexual desires. Healthy spermatozoa should retain their life and vibratory motion for at least twelve hours after emission.

When azoospermism is caused by inflammation and obliteration of the vas deferens, the seminal fluid discharged represents only the secretions of the seminal vesicles, prostate and urethral glands. It may appear normal in amount, transparent, watery, and coagulate like normal semen, but it contains no spermatozoa. If allowed to settle, large numbers of spermatic crystals will appear. The quick or tardy appearance of these crystals affords an inference to the fructifying power of the semen. If they develop quickly the spermatozoa contained in the seminal fluid are of low vitality. When they appear late, not until the

second or third day, their fructifying power may be considered strong.

Aspermatism is a condition where copulation is not completed with the ejaculation of seminal fluid, the act in all other respects being normal. In these cases the sexual desire may be normal or absent. True aspermatism is uncommon, though the temporary variety is of frequent occurrence, the patient having the ability to satisfactorily conduct intercourse but being unable to ejaculate semen. Aspermatism may be absolute or relative; temporary or permanent, congenital or acquired. The congenital and permanent variety are quite uncommon. They may occur without any local reason. The acquired form may be due to any temporary or permanent occlusion of the seminal ducts. The temporary variety is generally found in persons of a nervous temperament, who have suffered from venereal disease or have practiced sexual excesses. The relative variety is rare. In these cases erection may be perfect and the act may even be prolonged until stopped by exhaustion without emission. A nervous form of aspermatism exists where the patient is unable to complete the act except with certain parties, due to imperfect co-ordination of the muscles of ejaculation. In some cases there are occasional nocturnal emissions, but a complete failure of ejaculation when intercourse is attempted, owing to the above reason, or to a sensory paralysis. It may be due to obstruction by a foreign body in the seminal ducts. The pressure excited upon the urethra by tubercular, malignant and other growths, loss of tone of the muscles concerned in the act of ejaculation, or anæsthesia of the prostatic urethra or glans penis may produce aspermatism. In some cases it occurs without local pathological cause from want of lumbar reflex in the ejaculatory centers. In others there will be, under apparently the same conditions, ejaculation at one time and failure at another.

Misemission, also called false aspermatism, or male emission, is the condition where, although seminal fluid is ejaculated during the act, it is not deposited in the vagina, it either passing back into the bladder to be voided with the urine or to be discharged as a dribbling fluid after relaxation of the penis and deeper parts. It may be due to hypospadias, epispadias, strictures or fistulæ of the urethra. The prognosis and treatment vary with the cause, which must be carefully searched for and treated as the individual, local or general lesion may dictate.

Polyspermia is very rare. The amount of semen discharged may be three or four times the normal quantity, the increase being found in the fluid constituents of the ejaculation.

CHAPTER XXIII.

THERAPEUTICS.

Acidum fluoricum.—Sexual desire increased, with erections at night during sleep; erections in the morning without desire; occasional sticking pain extending through the left testicle along the spermatic cord to the abdominal ring; frequent desire to urinate; burning in the urethra during and after micturition in the morning; whitish or copious purple sediment in the urine. Forgetfulness of dates and common employments; exceedingly anxious; sensation of weakness, like numbness in the head. A marked characteristic is apparent necessity for rapid and energetic motion.

Acidum muriaticum.—Erections feeble; weak feeling in the genitals; awakens with a sensation as though emission would occur; seminal discharge watery, frothy, odorless, followed by persistent erection, with tensive pains in the penis; boring tension in right testicle, extending to the middle of the penis; constant desire to urinate, with scanty flow; must wait some time before the urine can be voided; frequent ineffectual urging at night to urinate; involuntary micturition at night; cutting pains far back in the urethra when urinating and when at stool; cutting and biting in the meatus after urinating. Tottering gait from weakness; vertigo and unsteadiness. Headache on rising up in bed, or moving the eyes; restlessness.

Acidum nitricum.—Erections diminished, unsatisfactory or absent; excited only by fondling, occasionally satisfactory; thrill imperfect; discharge of prostatic fluid during

excitement; frequent emissions; tearing, twisting and burning pains in the left testicle and spermatic cord; bruised, sore feeling in the testicles; orchitis; hernia testis; hard nodules on scrotum suppurating; sore, itching spots on scrotum; swelling of scrotum sensitive to touch; after stool and micturition discharge of prostatic fluid; discharge of mucus when not urinating; smarting in the urethra when urinating, with burning, cutting and sore pains; penis sore to the touch; urine has the odor of horse urine; clear on passing, but on standing becomes cloudy and thready; sad and despondent; irritable, vexed at trifles. Especially suited for lean persons, with dark complexion, black hair and eyes.

Acidum oxalicum.—Erections in the forenoon and when lying down, followed by dulness in the occiput, or by pains in the testes and spermatic cord; terrible neuralgic pain in spermatic cord, worse from slightest motion; during micturition burning in the urethra, with voluptuous sensations; increased frequency of urination; burning through the urethra, as if a drop of acrid urine had passed; urine loaded with oxalate of lime; numbness and weakness of the limbs; circulation poor.

Acidum phosphoricum.—Frequent and debilitating emissions, with very little sexual excitement; erections, without sexual desire, in the morning and when standing; sudden relaxation of the erection during intercourse; intercourse or emissions are followed by great exhaustion; excessive loss of seminal fluid, voluntary, involuntary, nocturnal or diurnal, when straining at stool, while urinating; penis and scrotum relaxed; testicles hang low down; general crawling sensation over the scrotum; erection difficult or impossible; when coitus is attempted ejaculation occurs too early in the act; micturition frequent, profuse; urine milky, having a white jelly-like sediment; frequent micturition; burning in the neck of

the bladder ; cutting in the prostatic urethra during micturition and followed by cramp-like pains in the small of the back ; burning in the prostatic region ; vertigo, as if about to fall ; when reclining, sensation as if the feet would go higher than the head ; crushing pain in the vertex, accompanied by cold, clammy perspiration late in the afternoon and evening ; stupefaction or sensation as if intoxicated ; low spirited, indifferent, sad, disinclined to talk ; eyes glassy and lustreless. Aching in the small of the back. Whole system generally relaxed without marked local pain ; burning sensations in lumbar region ; back and legs weak ; totters when walking. It is particularly indicated in those who grow too fast or who are greatly debilitated ; in cases of excessive masturbation ; for the debilitating effects of seminal emissions, being more suited for the acute than the remote symptoms. Onanism, when the patient is disturbed by the thought of the culpability of his indulgence ; pain on the top of the head following the loss of animal fluids ; indifference to the affairs of life ; quiet apathy ; weak feeling in the small of the back and heavy limbs ; nervous palpitation in masturbators ; face pale, eyes sunken, blue rings around them.

Acidum picricum.—Priapism ; violent erections ; penis distended almost to bursting ; agonizing desire for an embrace. (It is reported that many of the provers were compelled to leave lectures and return to their homes for a few days.) Seminal emissions, followed by hot feeling in the dorsal and lumbar regions, worse from motion ; desire, with almost constant priapism night and day ; lewd dreams and emissions ; emissions every second night ; erections continue for some time after the emission ; violent erections at 11 A. M., with bruised pain in the left testis, extending up the cord to the external ring ; urine yellow, dark, with strong odor, copious and pale ; urine hot when voided, causing burning pain in the urethra ; urine con-

tains urates in abundance and indican. Tired, aching feeling in the lumbar region on awakening, with heaviness in the feet and lower extremities, accompanied by a heavy, tired feeling in the occiput, forehead, or both. The least mental exertion causes prostration and brain fag; vertigo on walking, stooping or going up stairs; numbness, crawling and pricking in the limbs; rapid development of boils over all parts of the body.

Aconitum napellus.—Stitching and pricking pains in the glans when urinating; stitching, crawling and stinging pains in the glans and prepuce; prepuce swollen and inflamed; frequent erections; drawing pains in the testes; tenesmus at the neck of the bladder; burning in the prostatic region when not urinating; drawing and pressing pain in the sides of the abdomen on pressure; prostatic region sensitive to deep pressure; fever, thirst, restlessness; testes swollen and hard, accompanied with bruised agonizing pains.

Agaricus muscarius.—No pleasurable sensation in the embrace in spite of strong excitement; aversion to sexual intercourse; ejaculation insufficient or very late; frequent nocturnal emissions; great desire for intercourse with relaxation of the penis; emissions painful, with burning pain in the urethra; dragging in the testes in the evening; spasmodic pain in the left testicle and cord; penis cold and shrunken; discharge of viscid mucus from the urethra, or a sensation as though a drop of cold urine had passed; disagreeable sensations in the glans penis; tickling as of a small foreign body in the fossa navicularis; burning when urinating, or a sensation as though they have not finished; micturition intermittent or only possible after several attempts, followed by dribbling; frequent urging to urinate; urine copious, accompanied with stitches in the meatus urinarius; urine scanty. It is often beneficial when coitus is followed with great weakness of the whole

body ; choreic symptoms caused by masturbation ; bad effects from sexual excesses ; complaints after sexual debauch, with loss of appetite ; pains in thighs ; nervous symptoms, twitching and jumping of the muscles.

Agnus castus.—Impotence ; organs relaxed and cold, nothing excites an erection ; sexual desire diminished or almost lost ; emission of mucus from the urethra during sexual excitement ; involuntary emissions during the night, even after coitus ; seminal fluid watery or yellow ; great relaxation and coldness of the testes and scrotum ; crawling sensation in the testes ; testes swollen hard and painful ; emissions at night after an embrace ; seminal fluid discharged in a stream without ejaculation ; spermatic fluid scanty and almost odorless ; discharge of prostatic fluid when straining at stool and during micturition ; disagreeable sensation in the back part of the urethra during urination ; deficiency of sexual instincts ; penis small, flaccid ; low-spirited ; melancholy ; fear of approaching death ; loss of memory ; heaviness and pressure in the head as if it would fall forward ; pain in the vertex and great debility ; sleeplessness though very tired when retiring ; sleeps but little during the night. This remedy has acted very kindly in impotence the result of a neglected gonorrhœa ; useful in those advanced in years, who in their youth have carried sexual indulgence to extremes, and who, while physically impotent, are mentally excitable as in early life thus leading to many perverted acts and orgies.

Aloe socotrina.—Frequent urging to urinate at night ; difficult micturition ; flow interrupted ; burning on urinating ; urine dark, with slimy sediment, bloody ; fine granular cloudiness, with whitish sediment ; pollutions during the mid-day nap ; heaviness and pressure in the lower part of the abdomen, with a feeling of a plug in the pelvis ; disinclination to mental labor ; speedy fatigue on mental

application. It has been of benefit in acute prostatitis and in prostatic hypertrophy.

Alumina.—Emissions at night, with voluptuous dreams, also during the afternoon nap; jelly-like emissions during coitus; violent erections during the night and in the afternoon; constrictive pains in the right spermatic cord accompanied with the painful drawing up of the right testicle; pressure and drawing-like pain in the prostatic region; tenesmus at the neck of the bladder and in the rectum after urinating; urine white and turbid, as if chalk had been stirred into it; urine turbid at night; painful feelings about the soles of the feet; staggers when walking in the dark; burning pains in the spine. This remedy has been found especially useful in old people suffering with involuntary emissions, particularly when straining at stool.

Ambra grisea.—Violent erections on awakening without carnal desire and the parts externally numb; after the erection subsides, tingling in the fore part of the urethra, burning internally in the region of the seminal vesicles; intercourse delightful and voluptuous; pinching constrictive pain in the region of the mons veneris and bladder, sometimes on one side only; it may extend down the dorsum of the penis, occurring when the bladder is full and after emptying it; dragging pains in the spermatic cord, extending into the testes; smarting, burning, stitch-like pains in the testes; coldness and swelling of the scrotum; penis shriveled and retracted; coldness and numbness of the prepuce and glans; stitches in the fore part of the penis; smarting and burning in the fore part of the urethra; ejaculations too early and too weak; neuralgic pains in the cord and testes; bloody emissions; urging to urinate, often the urine cannot be retained; feeling in the urethra as though a few drops were being expelled; burning in the orifice of the urethra; pain in the bladder and rectum; urine turbid and dark brown; great sensitiveness

to external impressions, the slightest influence causing excitement and difficulty in breathing, usually attended with vertigo; forgetfulness; does everything in a hurry, yet time passes slowly; sleeplessness. Often indicated in thin, spare, nervous men. All pains in the genitals are increased by motion.

Anacardium.—Cutting pains along the penis; desire for an embrace from voluptuous itching in the scrotum; emissions at night without amorous dreams; discharge of prostatic fluid after micturition and stool; constant desire to urinate; frequent, clear, watery urine, especially before breakfast; urine turbid when voided, depositing a turbid sediment. Nervous prostration resulting from excessive emissions; lack of confidence; weakness of memory with impaired intellectual powers; psychical impotence; lack of confidence in their own powers; fear marriage on account of their supposed sexual weakness; tendency to curse and swear.

Apis mellifica.—Cystic growths; hydrocele; epididymitis; erysipelatous inflammation of the scrotum; excessive oedema of the scrotum; testes swollen, with tension and itching; fullness, with aching and stinging pains; scrotum tense, full, swollen and oedematous; inflammation and great oedema of penis, with sharp, stinging pains; burning and stinging pains on urinating; warty excrescences.

Argentum nitricum.—Coitus painful, with stitches in the urethra and absence of pleasure; spasmodic contraction of the cremaster muscle, drawing the testes high into the scrotum; right testicle enlarged, hard; bruised pains; pain as from pins and needles in right testicle; pain shooting down cord and into testicle; orchitis from suppressed gonorrhœa; erections fail when intercourse is attempted; generative organs shriveled, with loss of desire; cutting pain from the prostate to the rectum when voiding

the last drops of urine; sensation as though fluid was running down the urethra, or a burning drop after urinating; micturition difficult; burning pain and discharge of a white pedicle with shreds of epithelium from the mucous membrane; inability to void the urine in a projecting stream; at night, urine copious, pale and frequent; at noon, cloudy from mucus; inorganic salts increased. This remedy has been found useful in hypertrophy of the prostate and the anæsthetic stage of impotence accompanied with general emaciation, poor circulation; blue skin, general loss of strength and trembling of the limbs, particularly of the lower extremities.

Arnica montana.—Contusions and bruises of the genital organs; testicles swollen, indurated and tender; erections after walking, without amorous thoughts or desires; carnal desire with continued erections; stitches through the glans penis in the afternoon; itching of the glans; emissions during a caress; several at night with voluptuous dreams; stitches in the anterior part of the urethra after urinating, also between the acts; ineffectual urging to urinate; desire to urinate, with burning and biting after urinating; frequent micturition; urine scanty and white, pale and copious; urine retained with aching and pressing in the bladder; has to stand a long time before the urine is voided; inability to retain the urine long at night; urine flows slowly; earthy phosphates increased; sediment contains crystals of phosphoric acid, ammonio-magnesia phosphates and urates; urine acid in reaction, high specific gravity; sulphur-colored, turbid, frothy, neutral in reaction, depositing a sediment.

Dr. W. S. Mills reports a case of chronic prostatitis, with a feeling of soreness in the testes, pain extending to inguinal region and back accompanied with a discharge at the end of the penis in the morning and on walking, cured

by Arnica. The remedy is also indicated in traumatic priapism.

Arsenicum album.—Hernia testis; scrotum swollen; hydrocele of children; testes swollen; cutting colic; cramp-like pain at abdominal ring and perineum; hydrocele in weak and debilitated patients; fungoid growths, burning pains, with acrid, burning, corrosive discharge; painful swelling of penis with burning pains; itching in glans which is blue, red and cracked; corrosive pain in penis; stitching and itching pains on the end of prepuce; inflamed, bleeding surfaces.

Aurum metallicum.—Nightly erections, with or without pollutions, not followed by weakness; strong erections, with relaxation on attempting intercourse; penis relaxed, with discharge of prostatic fluid; seminal emissions do not apparently cause weakness; tearing stitches in the glans penis when obliged to urinate; urine more copious than the amount of water imbibed, turbid like buttermilk, with much mucus sediment; orchitis, chronic or tubercular; neuralgia; induration of the testicle, with pressive pain on touch; testes swollen, indurated, with severe tensive pain, especially at night; aching as if bruised; hydrocele; testes on the point of atrophy; false tuberculosis of testes; neuralgic pain in the cord with swollen testicle; low-spirited; lifeless; memory bad; settled melancholia with suicidal mania; appetite for plain food poor; tongue coated at the back.

Baryta carbonica.—Diminished sexual power and desire; falls asleep during coitus; sudden erection in the evening, with shivering of the body and great desire; emissions are followed by a dryness of the whole body; enlarged prostate; hernia testis; senile orchitis; want of confidence in others; vertigo; trembling when standing, with fear of falling; feeling of heaviness in the body; general emaciation; sensitiveness to cold; all symptoms aggravated when

thinking of them. Useful in the aged, where there is great weakness of mind and body ; premature impotence.

Belladonna.—Nocturnal emissions with relaxed penis and without lascivious dreams ; drawing pains in the spermatic cord during micturition ; discharge of prostatic fluid from relaxed penis ; epididymitis ; orchitis ; neuralgia ; acute inflammation of the testes with much swelling and induration ; pain unbearable, neuralgic in character ; great sensitiveness ; scrotum hot and swollen ; stitching and throbbing pains ; tearing in left spermatic cord from below upwards in the evening or when falling asleep, with sharp lancinating pain in the testicles ; micturition difficult ; urine voided only in a small stream ; frequent urging to urinate ; pain in the region of the bladder ; twisting as of urine in the bladder ; when walking stitch-like pains from the bulb to the meatus ; burning in the urethra, with ineffectual urging to urinate ; involuntary micturition when asleep ; irritation at the neck of the bladder, with strangury and bloody urine ; urine deep red, bloody, turbid with reddish sediment ; soft, painless pimples on the glans ; prepuce retracted behind the glans, causing disagreeable feeling ; itching and biting on fore part of glans ; frequent erections ; smarting on outer edge of prepuce after urinating ; sexual irritation in boys manifested by constant erection and seizing of the member with the hands.

Berberis vulgaris.—Erections weak ; ejaculation occurs too early ; thrill not satisfactory ; neuralgic pains in the testicle and cord, increased by motion ; urine pale yellow, with slight gelatinous sediment, which does not deposit, or a turbid, flocculent, clay-like, copious, mucus sediment mixed with white or whitish gray, and later a reddish mealy sediment ; urine clear, saturated, yellowish thick, flocculent, or like muddy water, depositing a copious mealy sediment, with white, greyish white or a dirty red granular sediment. It is specially useful in sexual dis-

orders, accompanied by neuralgic pains, apparently located in the testes, which are sore and sensitive.

Borax.—Rapid emissions with dreams of coitus which awaken; emissions very soon after intromission, with continued irritation of the genitals; meatus agglutinated; urging to urinate, with pain at the meatus after urinating, as if it were sore; burning tension in the urethra after urinating; urine has a pungent odor.

Brachyglottis repens.—Pain in the bladder during micturition, with soreness in the urethra and a feeling as though the urine could not be retained; pain in the bladder and urethra after evacuation, with stinging in the penis; pressure at the neck of the bladder, with soreness and urging to urinate; stinging pains in the urethra; throbbing of the penis, with a desire to urinate, and pressure in the bladder; urine abundant and pale; full of mucus, pus corpuscles and epithelium, oxalates, phosphates and triple phosphates; loss of flesh, weakness, heaviness, irritable mood, confusion in the head; vertigo with flushed face. Gnawing pain in the region of the kidney; weakness after walking, weariness in the back, weakness of the limbs in the morning.

Bromium.—Emissions at night; during coitus, early discharge of clear mucus from the urethra; stitches in the meatus and along the side of the penis; burning after urinating, with pulsation behind the testes; sensation of fulness in the prostate gland when walking; stitches in the spermatic cord and pressure in the right; swelling of the left testicle; testicles swollen hard and perfectly smooth; pain increased from jarring; parts hot and inflamed. Urine turbid with whitish sediment, containing large flakes of white mucus. To be considered in persons of light complexion and blue eyes.

Bryonia alba.—Glans covered with a red, itching rash.

Buchu.—Scalding burning pain at neck of the bladder when urinating, in catarrhal prostatitis.

Cactus grandiflorus.—Congestion of the genito-urinary organs; priapism towards evening, just before retiring, with great desire; copious emissions about 12 P. M., after strong desire; frequent urging to urinate at night; ineffectual urging; urine voided in drops, with much burning; irritation of the urethra, as though he would constantly urinate; redness of the orifice of the meatus; heat in the urethra.

Caladium seginum.—Glans penis flabby and relaxed, the result of masturbation; want of tone in the organs; when the foreskin is retracted there is not sufficient reaction or contractibility of the parts to replace themselves, or, after coitus, the prepuce remains behind the glans and becomes swollen and painful; glans covered with red points; dryness of glans penis, with a desire to rub; prepuce swollen along its margin; sore and painful, with biting on urinating, compelling rubbing; sore, corrosive pain in prepuce; relaxation of the penis during sexual excitement and desire; erection suddenly ceases during coitus, without cognizance as to whether there was an ejaculation of semen; no orgasm; parts flabby; imperfect erection, with permature orgasm; nocturnal emissions, with or without lascivious dreams, or with dreams in no way associated with sexual subjects; complete impotence without erections; genital organs cold to the touch; urine pale, turbid, with a pedicle and gelatinous precipitate, smells strong; low-spirited, gloomy, forgetful; attacks of faintness after writing or mental exertion; disinclination to move or act; lewd thoughts without erection.

Calcareo acetica.—Frequent emissions at night with or without voluptuous dreams; tickling and itching at the end of the glans and prepuce; left testicle spasmodically drawn up to the abdomen; painful to the touch; frequent urging to urinate; urine turbid, becoming like gruel on



standing ; anxiety as if he had committed a crime, or feared reproach, with constant inclination to work ; anxiety about the present and future ; sadness, almost to weeping ; fretfulness, disinclination to talk ; indifference to the most important subjects.

Calcareo carbonica.—Scrotum relaxed ; crushing, pressive and bruised pain in testes ; pain in spermatic cord as if contracted ; cutting and burning on glans penis ; prepuce inflamed and red, with burning pain on touch and on urinating, sexual power diminished or imperfect ; emissions premature ; great prostration after coition, followed by weakness and trembling, especially in the knees, with headache, vertigo and night sweats ; impotence, with increased sexual desire ; during coitus burning and stinging while the semen is ejaculated ; frequent nocturnal emissions ; pain in the spermatic cord, as if contracting ; crushing pain in the testes ; sexual desire increased in the evening and when walking, caused by lascivious fancies ; erections only induced by handling followed by ejaculation on intromission, then weakness and excitability, anger and general giving way ; flow of prostatic fluid after urinating and after stool ; urging to urinate, aggravated on walking ; sensation as though the act was not finished ; pains in the urinary passage after wetting the feet, and through the bladder at night, with cutting on urinating ; scrotum relaxed and hangs down ; much mucus voided with the urine ; urine turbid, with whitish, flaky sediment ; fatty pedicle having a fatty smell on the surface ; white, mealy sediment in the evening ; urine copious and sour smelling ; weakness of mind and body ; apprehension and anxiety about health ; fear they will lose their reason, or others will notice their confusion of mind ; despair ; mental application difficult ; nervous relaxation, ill-humor, faintness, great debility and emaciation, with prominence of the abdomen and good appetite ;

dark circles around the eyes; palpitation of the heart; perspiration of the hands and feet; coldness of and dead feeling in the feet, especially at night. Frequently indicated for those who have led a rapid and unchaste life, and, having settled down to a moral and healthful state, suffer from excessive sexual desire and physical deficiency; more passion than physical power to carry out the act. Indicated in all conditions caused by sexual excesses.

Calcareæ phosphorica.—Erections without desire when riding in a carriage; painful erections in the evening, with burning in the urethra and tension in the penis; cutting pains in the neck of the bladder and in the urethra before urinating; shooting pains in the root of the penis and bladder; cutting, drawing pains in the glans when sitting; urine copious with flocculent deposit, smell like strong tea; general trembling and weakness; mental or physical weakness and indifference.

Camphor.—Painful priapism, relieved by urinating; when standing, pressure and pain in the left side and root of the penis and groin; desire increased with delusions in respect to the object of embrace; nightly emissions; urine voided in a thin, small stream; dribbling; frequent and painful micturition; strangury; biting pains in the posterior part of the urethra when urinating, followed by pressure in the region of the bladder; burning and sticking pains in the urethra when walking; urine scanty, burning.

Cannabis Indica.—Penis relaxed and shrunken; sticking and burning sensation in the glans; satyriasis; painful erections after coitus; thrill prolonged, with more than a dozen ejaculations; the thrill may consist of intense burning with no ejaculations; during coitus scarcely any emission or ejaculation, but afterwards acute pains in the loins; erections when riding, walking or sitting, not caused by amorous thoughts; excessive discharge of pros-

tatic fluid at night and during hard stool ; stitches and burning in the urethra before, during and after micturition ; sensation as though a gonorrhœal discharge was present ; uneasiness in the urethra and penis with burning and frequent desire to urinate ; oozing of white, glairy mucus from the meatus ; urging after micturition, with much straining ; constant ineffectual desire to urinate ; dribbling of the urine after the straining has ceased ; has to wait some time before the urine flows ; has to force out the last drops with his hands ; frequent micturition ; the stream suddenly stops and then flows on again ; urine colorless, copious ; disinclination to physical efforts ; weakness from short walks ; desire to lie down in the day time.

Cannabis sativa.—Penis swollen without special erection ; frequent erections, with stitches in the urethra ; dragging sensation ; pulling and pressure on standing ; epididymis and spermatic cord swollen in spots, like soft beans ; tensive pains in spermatic cord ; moisture about the corona ; glans red and covered with dark spots ; penis is painful, as if excoriated or burnt, when walking ; prepuce dark-red, with heat, swelling and inflammation ; burning and corrosive pains in the glans penis with exudation ; constant burning of the glans and prepuce ; burning on urinating, with excoriation of the preputial opening ; coldness of the genital organs with warmth of the rest of the body. Impotence from sexual abuse.

Cantharis.—Inflammation, heat, swelling ; pain and itching of glans penis ; gangrene ; red, hot and shining swelling of prepuce, with phimosis and discharge of purulent matter from beneath it ; discharge of blood ; pruritus ; pain on urinating ; brown, cheesy accumulation behind the corona, in the morning ; priapism ; satyriasis ; spermatorrhœa resulting from gonorrhœa ; great increase of sexual appetite, which is sometimes uncontrollable ; erections violent and sometimes painful ; erections continuous without

sensation ; urethral irritation, with priapism and constant desire to urinate ; seminal fluid bloody. Painful erections, severe at night, with contraction and sore pain the whole length of the urethra ; uneasy and uncomfortable sensation in the glans penis, producing a desire to pull at the organ ; cutting pains in the urethra before, during and after micturition, and burning pains through the whole urethra ; discharge of a pasty, colorless liquid from the urethra ; urine scalds and is passed drop by drop ; frequent micturition ; constant urging to urinate ; great urging and tenesmus, always preceded by pains in the penis ; pain at the base of the urethra extending to the meatus ; burning pain in the seminal vesicles during and after coitus ; discharge of blood from the rigid penis and the anus ; pain before micturition ; drawing in the back and thighs ; urine bloody, contains bloody filaments, coagulated masses of blood and mucus, high specific gravity, turbid when voided ; urine has a white sediment which adheres to the glass ; sometimes an iridescent film ; urine turbid, loaded with sediment. Insanity of masturbators ; amorous frenzy ; unchaste actions ; shamelessness ; eyes fiery, sparkling and protruding ; oversensitiveness of all parts of the body.

Capsicum annuum.—Violent erections occurring during the day and relieved only by the application of cold water ; violent erections in the morning ; trembling of the whole body during sexual excitement ; loss of sexual power ; coldness of the genitals, accompanied by cold chills down the back ; loss of sensibility, with atrophy of the testes ; coldness of the scrotum in the morning ; drawing pains in the spermatic cord, with pain in the testicles during and after urinating ; frequent desire to urinate, difficult and in drops ; burning pains in the urethra after urinating ; constant pressure in the glans, with bruised sensation ; aggravation morning and evening ; itching and stinging like

the bite of insects; urine copious with white sediment. Vertigo; pressive headache, darting pains through the head, worse when at rest; peevish and sleepless.

Carboneum sulphuratum.—Erections with nightly emissions; violent erections, with burning in the urethra; loss of sexual power; erections rare; ejaculations short and incomplete; constant fatiguing erections, speedily changing to impotence; indefinite coitus without ejaculation; scrotum shrunken and painful; testes small with diminished sensitiveness to pressure; tickling in the fore part of the urethra as though a discharge would appear; sexual organs relaxed; burning, sticking pains in the spermatic cord running deep into the abdomen, aggravated in the evening and at bedtime; cramping pains at the neck of the bladder during micturition, extending to the urethra, with similar pains in the anus and rectum; urging to urinate, with burning in the urethra and neck of the bladder; inability to retain the urine even an hour; urination painful and slow; bloody urine; turbid and pale; burning, smarting and cutting in the urethra during micturition; urine high in color, containing an abundance of carbonates and phosphates.

Carbo vegetabilis.—Swelling and hardness of the testes; hernia testis; vesicles on the inner side of the prepuce, with itching and soreness; during coitus, ejaculations too early, followed by a roaring in the head; emissions without sensation; excessive emissions which strain the nerves and cause burning in the fore part of the urethra; cutting and burning in the urethra on urinating; discharge from the urethra when straining at stool; loss of ejaculatory thrill; excessive emissions; burning in the fore part of the urethra; burning and cutting in the urethra when voiding the urine.

Causticum.—Red spots or herpetic redness with oozing on glans and frænum; vesicles under the prepuce becom-

ing suppurating ulcers; burning pains in penis; itching on inside of penis; at other times burning and biting; increased secretion of smegma; discharge of prostatic fluid after stool; frequent emissions in old men; emissions every night and during the afternoon nap; impotence with ejaculation of semen during coitus; discharge of blood; burning in the urethra after urinating and after emissions; urging to urinate after walking; intermittent micturition in the evening; delay of the last drops of the urine; enuresis, with violent erections without desire; urine copious, then scanty, slightly acid, becoming turbid on standing; vertigo on looking upward or fixedly at anything.

Cinchona officinalis.—Burning in glans and prepuce; jerking pains between the glans and prepuce when walking; itching of the glans in the evening; sore sensation on the margin of the prepuce; tearing pains in left side of prepuce and in left testicle; morbid excitability, with lascivious fancies; emissions caused by slight abdominal irritation; premature ejaculations, followed by great weakness; frequent nocturnal emissions after self-abuse; scrotum relaxed; itching and crawling in scrotum at bedtime; spermatic cord, testes and epididymis painful and swollen; tearing pains worse on the left side, especially in the evening; chronic orchitis, with general weakness and debility; sticking pains in the urethra when urinating; urethra sensitive when sitting or rising, with stiffness in the penis; burning and biting in the fore part of the urethra; urine whitish, turbid, depositing white sediment; mental indifference; pain in the small of the back when lying upon it; weakness of the knees; trembling of the hands. It is useful for the weakness immediately following a sexual debauch, or when several emissions have occurred during the previous night, with nervous irritability and desire to be alone.

Chlorinum.—Impotence of recent appearance, with

aversion to sexual intercourse ; fear of impending danger ; fears loss of reason ; forgets names and places ; disinclination to arise in the morning, accompanied by ill-humor ; loss of flesh ; aged appearance.

Cinnabaris.—Red spots on glans penis as if pimples would form, with itching and burning of corona glandis relieved by rubbing, then aggravated with exudation of much pus of a nauseating, sweetish smell ; warts on the prepuce, bleeding from the slightest touch, with swelling and itching ; soreness on urinating ; itching in the fossa behind the glans ; jerking in penis ; stitching pains in the glans.

Clematis erecta.—Burning pains in the penis on emission during coitus ; long-continued erections, with aversion to coitus ; erections frequent and strong ; right spermatic cord sensitive, with drawing up of the right testicle ; painful swelling and inflammation of both testes ; pains shoot from testicles up the spermatic cord ; testicles swollen, indurated, heavy and hang down ; pinching and bruised pain in testicle on touch, with drawing and tensive pains in the inguinal region, thigh and scrotum ; pain drawing and shooting upward in the spermatic cord ; pain is worse at night and from warmth ; inflammation sub-acute in character ; epididymitis from gonorrhœa ; frequent, intense pain in the prostate ; frequent urging to urinate during the day, with burning at the orifice of the urethra ; micturition slow, urine voided in a thin stream, as if the urethra was contracted ; mucus discharge ; sticking in the meatus and fossa navicularis ; when not urinating, irritation in the fore part of the urethra ; urine milky, with floating flakes of mucus ; low-spirited, fear of approaching misfortunes ; aversion to talk ; fear of being alone ; memory impaired ; giddiness in the head.

Cobaltum.—Lewd dreams are frequent, with seminal emissions which awaken, and are accompanied by head-

ache ; voluntary emissions are followed by backache, referred to the lumbar region, aggravated when sitting ; emissions without erections ; frequent micturition with flocculent deposit in the urine, burning in the urethra during micturition ; frequent desire to urinate after drinking coffee ; urine has a greasy pedicle.

Coccus cacti.—Pustule in the middle of penis ; throbbing in the glans ; heat and itching in the glans ; biting and stitches in the prepuce.

Cochlearia armoracia.—Burning and cutting in the glans penis before, during and after micturition ; frequent calls to urinate.

Colocynthis.—Painful twinges and drawing pain in testicle ; neuralgia of the testicle ; the prepuce is always drawn back and constricted behind the glans at night ; tearing and pricking in the glans.

Conium maculatum.—Inflammation of the prepuce ; sticking and cutting pain in the prepuce ; tearing pains through the penis when not urinating ; itching of the prepuce and glans not relieved by rubbing ; impotence ; imperfect erections ; excessive seminal emissions resulting from sexual excesses or celibacy ; seminal weakness, with erethism and premature emissions ; flaccidity of the parts, with weakness in the back ; emissions without erection ; orchitis from injury ; induration and swelling of the testes ; scrotum swollen ; cutting, griping, sticking pains in the testes ; drawing pain in spermatic cord ; testes heavy and sore ; pain in testicles after erection ; discharge of prostatic or other fluid from the urethra during stool and with every emotion ; sexual organs very irritable ; desire increased ; emissions while caressing ; frequent urging to urinate, with burning pains at the neck of the bladder and along the urethra ; frequent micturition at night ; discharge of mucus from the urethra after urinating ; cutting pains in the meatus in the morning ; urine turbid, frothy, bloody ;

copious urine, voided by fits and starts ; hypochondriacal ; morose ; avoids society ; sad, anxious and low-spirited ; vertigo, worse on turning in bed ; difficulty in walking ; numb feeling in the brain ; dread of being alone, yet dreads society ; melancholia of celibacy ; sudden loss of strength, as if paralyzed ; desire for sun's warmth ; inability to sustain any mental effort ; vertigo on lying down. Especially indicated in complaints from denial of carnal desires.

Copaiva.—Excoriation of the glans and prepuce ; tickling and itching of the glans ; discharge profuse and milky with much burning and smarting.

Corralium rubrum.—Red, flat ulcers on glans and prepuce with a yellowish discharge ; the glans and under surface of the prepuce secrete a yellowish or greenish offensive matter with redness, swelling and sensitiveness of the organ to touch ; swelling of the prepuce with sore pain on the edge when it rubs against the clothes ; pain in the frænum as from needles ; ulcers bleed easily and exude an offensive moisture.

Croton tiglium.—Inflammation of the inner surface of the prepuce with irritation of the parts and some secretion ; burning in the glans on urinating ; redness of the glans ; vesicles on the penis ; herpetic eruption on the scrotum ; corrosive itching of the scrotum and glans ; most offensive spots and desquamation of the epithelium of the glans.

Cubeba.—Prostatic gland enlarged ; impotence ; weakness of the sexual organs ; cutting and constricting pains on urinating ; the last few drops of urine voided with pain ; after micturition bladder still feels as if a portion was retained ; urine frothy and copious.

Cuprum aceticum.—Impotence ; penis easily becomes erected, but on intromission immediately becomes flaccid, sometimes followed by an escape of semen ; during erec-

tion, tension in the perineum, often accompanied by rheumatic pains in the back and legs.

Damiana.—Relative impotence.

Digitalis.—Violent erections; involuntary seminal emissions without dreams, followed by great prostration, sadness and utter despair; frequent sensation at night as though emission would occur without pollution, and in the morning agglutinous moisture of the meatus; sexual power and quantity of seminal fluid diminished; bruised pain in the right testicle. Gloomy; peevish; great anxiety and apprehension about the future; dullness in the head, with a limited power of application; attacks of debility and faintness, especially after breakfast and dinner; great nervous weakness.

Dioscorea villosa.—Sexual organs relaxed and cold, with great weakness of the parts; seminal emissions frequent, sometimes two or three nightly, accompanied by erotic dreams, followed by weakness about the knees, and possibly pain and spasm of the spermatic cord; strong-smelling sweat on scrotum and pubes.

Equisetum hyemale.—Violent erections; pain in the bladder not relieved by micturition; pain and tenderness in the region of the bladder with soreness of the testes and spermatic cord; pricking pain in the urethra during and after micturition; constant urging to urinate, only a small quantity voided; sharp pains in the right testicle before urinating; the urine becomes cloudy on standing from excess of mucus.

Eryngium aquaticum.—Excessive erotic priapism; nightly erections without emissions; sexual desire suppressed, then excited with lewd dreams and pollutions; discharge of prostatic fluid from slight causes; urine contains semen; decrease of vital powers; lassitude; dragging pains in the lumbar region; general depression; urine scanty; sensation as though some of the urine remained in

the urethra with continued burning, smarting and urging to urinate; urine voided in drops, with stinging and burning in the urethra and fossa navicularis during micturition; thoughts confused; difficult of concentration of mind; loss of energy; spirits depressed; nervous, constantly running about; faintness on rising suddenly, stepping down or turning the head quickly.

Euphorbium.—Erections at night, without emissions or lascivious dreams; emissions without cause when sitting; voluptuous itching of the prepuce, with discharge of prostatic fluid; pinching and burning pains in the left side of the scrotum; whole body seems relaxed and tired; discharge of prostatic fluid from relaxed penis; frequent desire to urinate with scanty discharge; urine voided in drops, with sticking pains in the penis; strangury; itching in the fore part of the urethra when not urinating; whitish sediment in the urine; cutting and sticking in the glans when standing; apprehensive, starting as from an electric shock at night when awake.

Euphrasia.—Sticking pain on tip of glans; voluptuous itching of glans when sitting, becoming painful after scratching; voluptuous itching on the margin of the prepuce, and pressing pains after scratching; slight watery discharge from the parts.

Ferrum metallicum.—Constant urging to urinate, accompanied with pains in the region of the kidneys, liver and chest; tickling in the urethra, extending to the neck of the bladder; tickling in the urethra, when beginning to urinate, gradually extending along the whole length of the canal; soreness of the urethra on urinating; tickling of the glans, with warmth and irresistible desire to urinate; urine light-colored with a whitish sediment.

Ferrum picrate.—Frequent desire to urinate at night, producing great interruption of sleep; incomplete evacuation of urine; scalding pain at the neck of the bladder;

prostatic hypertrophy of the lateral lobes, with frequent desire to urinate; drawing pains in the perineum and large intestines, with associated hemorrhoids.

Gelsemium sempervirens.—Epididymitis from gonorrhœa or exposure to wet or cold; the glans and prepuce are swollen and congested with irregular red spots over the membrane; sexual organs relaxed, cold, and often accompanied by cold perspiration on the scrotum; frequent nocturnal pollutions without lascivious dreams; diurnal emissions; spermatorrhœa; emissions followed by languor; impotence, with weakness and irritability of the seminal vesicles from masturbation; agreeable sensation in the urethra when micturating; sensation when urinating as though the urine had not been entirely voided; stream intermittent; frequent micturition of a clear limpid urine, which relieves dullness in the head; urine at times clear and limpid or milky and turbid; vertigo, accompanied by pain in the occipital region; irritability and languor. Acute prostatitis, following suppression of the urethral discharge.

Ginseng.—Erections frequent, occurring at night without pollutions; frequently when sitting quietly engaged in engrossing business; sexual excitement; urine scanty; clear urine voided in a thin stream, when pressure is applied is voided in a broad stream; urine yellowish or lemon-colored; frequent urging to urinate, with burning and itching in the urethra, sometimes smarting in character, with tickling pains in the fossa navicularis.

Gnaphalium polycephalum.—Erections and desire for an embrace; occasional stinging pains in the glans penis; frequent pain in the region of the prostate; bladder feels full and tense, even when just emptied; urine copious, pale and inodorous.

Graphites.—Swollen testes; hydrocele, accompanied by general scrofulous disease, skin eruptions and constipation;

glans penis covered with thick mucus; tension of parts aggravated by contact with the clothing when walking, with pinching, jerking and drawing pains; vesicles on prepuce and other parts, with voluptuous itching; the prepuce swollen like a large water-blister without pain; itching and moist eruption; violent erections, with uncontrollable sexual desire and excitement; during coitus cramps in the calves of the legs; no ejaculation follows the sexual act in spite of every exertion; impotence; absence of sensation during coitus, and no discharge of semen; gluey, sticky discharge from the urethra; voluptuous irritability; sticking and jerking pains in the testes; sexual debility; seminal emissions; biting in the urethra during micturition; urine voided in a thin stream as if the urethra was contracted; tickling in the urethra when urinating; at the meatus, after urinating; burning in the urethra between the acts of micturition; rawness and pressure at the root of the penis, with desire to urinate; urine clear when voided, but after a few hours is covered with an iridescent film; urine becomes turbid and deposits a white sediment; melancholy; inclined to grief; fear of approaching danger; forgetfulness; on awakening semi-lateral headache; fear of insanity; sexual thoughts fill the mind to the exclusion of all others, with voluptuous irritability of the sexual organs; emaciation, with feeling of great debility; unhealthy condition of the skin.

Hamamelis virginica.—Nocturnal emissions, without lascivious dreams and without cognizance of their occurrence; emissions without erections; neuralgic pains in the testes, extending to the stomach and abdomen, causing nausea and vomiting; worse at night and in rainy weather; pain in spermatic cord, running into testicles; dull, heavy pains in testicles; soreness, great pain and swelling of testes; spermatic veins enlarged, swollen and inflamed; pain almost unbearable at times in the scrotum

which is red, hot and shining; perspiration and moisture on scrotum; frequent pain in the spermatic cord, extending into the testes; drawing pains in the testes; itching, tingling and throbbing pains in the glans and prepuce; enlargement of the veins of the penis, which is inflamed and painful; copious and frequent urination; profuse, light-colored urine, having a greasy deposit, which may rise to the top when shaken and have the appearance of pus.

Hepar sulphur calcareum.—Discharge of prostatic fluid during stool; sticking pains in the prepuce and frænum; during caress, painful erections, accompanied with soreness and pinching pains in the penis, extending into the bladder; emissions without amorous desires or fancies; testicles relaxed; abscess and hernia testis; with usual symptoms of commencing suppuration; itching and sticking pains in the glans penis and scrotum; ulcers on prepuce with fetid discharge; profuse, offensive discharge around the glans penis; herpes of the prepuce very sensitive to touch; vegetations discharging an offensive pus; inguinal glands involved and suppurating; micturition impeded, must wait some time before the flow commences; can never completely finish the act, some urine always remaining behind in the bladder; the urine drops vertically from the end of the penis; urine pale and clear, becoming thick and turbid on standing, with a whitish sediment; urine dark and scanty or copious and pale, frequently presenting an oily film on standing; urine acrid and burning.

Hydrocotyle Asiatica.—Impotence; no desire for sexual intercourse; drawing in the spermatic cords; scrotum relaxed; feeling of weight and heaviness in the prostatic gland; frequent desire to urinate; irritation of the neck of the bladder; urine turbid without sediment; weariness, dulness and heaviness of the body; gloominess, indifference and inclination for solitude.

Hyoscyamus niger.—Constant erections after meals; excitement and erections, without lascivious fancies; licentious mania; improper exposure of person, etc.; hallucinations, etc.

Ignatia amara.—Irresistible desire for an embrace, with relaxed penis; profuse nocturnal emissions; impotence, with weakness in the hips; urging and pressure about the penis, with violent erections, ending with emissions; erections during stool; paroxysms of pain at the root of the penis, relieved on walking, aggravated when standing or leaning against the sacrum; biting and itching in the glans penis; pain in the neck of the bladder, aggravated when urinating, relieved by walking and eating; stitches and scraping pains in the middle of the urethra, worse in the evening and when sitting; burning and biting in the urethra, aggravated when urinating; during stool, discharge of much prostatic fluid; micturition increased in frequency; urine lemon-colored, with whitish sediment; urine turbid; excoriation on margin of prepuce with ulcerative pain and itching; biting itching on inner side of prepuce and glans; sore pain in frænum and glans as if excoriated. This remedy is frequently indicated by its general symptoms in diseases of the genital organs caused by continence, grief, etc. Lascivious fancies, with sexual excitement, followed by weakness of the genitals and external heat of the body. Psychical impotence.

Iodium.—Priapism; violent and continued erections, without lascivious thoughts; frequent tickling and itching of the glans; sexual desire increased; seminal fluid increased; nocturnal emissions followed by weakness; orchitis; burning pain in right side of scrotum; dragging pain toward testicle; testes hypertrophied, with pain, extending towards abdomen; testicles increased in size, followed by diminution in size and consistency, with impotence; increased frequency of micturition; polyuria;

cutting and itching in the meatus urinarius; urine dark, turbid, milky, greenish yellow. It has been found of benefit in tubercular prostatitis; hydrocele has been cured by this remedy.

Jatropha curcas.—After excessive intercourse, aching in the testicles, with drawing pains extending along the inner side of the right thigh to the knee; spasms at the neck of the bladder, with desire to urinate; constant, frequent and difficult micturition; tickling in the fossa navicularis, with frequent micturition; stitches in the urethra; oozing of clear mucus from the urethra, when walking or sitting.

Kali bromatum.—Sexual excitement during light sleep, with erections and emissions, which awaken him, and of which he is conscious; nocturnal emissions; nocturnal pollutions, followed by great nervous irritability; erections persistent and normal; impotence, with wasting of the organs; pains, swelling and tenderness in the left spermatic cord and testicle; burning at the neck of the bladder, with sensation of a ball being forced from behind, then discharge of a half an ounce of liquid, like the white of an egg; frequent desire to urinate, with burning and smarting pains along the urethra; the act of micturition closing with a spasmodic constriction of the urethra, and sharp pains extending back into the bladder, as though it was being distended with a large instrument, followed with a whitish-yellow discharge; urine copious, clear and yellowish; urine loaded with phosphates. This remedy is especially efficacious in sexual diseases the result of excesses where there is loss of memory, melancholia, impaired coördination, numbness and weakness in the limbs; nervous conditions from continence; weakness in the lower extremities, with great nervous excitability, after imperfect intercourse and masturbation; nervous conditions from continence; mental depression, with weakness in the lower extremities

after sexual abuse or imperfect intercourse and great nervous excitability.

Kali bichromicum.—Constrictive pain at the root of the penis on awakening in the morning; pain in the penis; sticking pains in the prostatic region, preventing walking; discharge of prostatic fluid during stool; frequent micturition, with burning along the urethra after the act; burning in the bulbous urethra and fossa navicularis when urinating and afterwards; urine turbid and thick, milky, with whitish sediment; urine high-colored, with pearl-white sediment and white film.

Kali carbonicum.—Emissions followed by weakness; erections, with voluptuous dreams; coition, without emission; violent erections during sleep; painful and spasmodic contraction of the spermatic cord; soreness and bruised pain in the scrotum; itching of the scrotum, preventing sleep; drawing, tearing, burning sensations, with tension and itching of the glans or meatus, becoming tearing and itching; tearing at the neck of the bladder when not urinating, with cutting pain during the act; burning and cutting pain in the urethra during and after urinating; urging desire to urinate but obliged to wait some time for the flow to commence; discharge of prostatic fluid after micturition; urine dark yellow and cloudy; turbid, with much sediment on standing.

Kali iodatum.—Erections tardy; coition painful, prolonged, with no emission; atrophy of the testes; chronic specific orchitis; frequent micturition; increased micturition at night; bladder irritable; urine pale and watery; increase of the ammonia-magnesia-phosphates. Sterility from specific disease.

Kreosotum.—Vegetations with profuse, foul-smelling pus, with much burning and smarting.

Lachesis.—Red pimples beneath margin of the corona glandis; red spots on glans with jerking pains and profuse

discharge; gangrenous condition; excessive desire, with constant erections at night; during the day amorous thoughts, and at night lascivious and quarrelsome dreams; awakening in the morning, with pain and bruised feeling in the loins with relaxed penis; erections feeble; inability to accomplish the act; emissions during the mid-day nap, followed by weakness and headache; pollutions at night, followed by unconsciousness and weakness; seminal fluid has a penetrating odor; urinary symptoms are aggravated by alcohol in all forms; discharge of a milky fluid from the urethra; discomfort in the region of the bladder; slimy sediment in the urine; milky, gleet-like discharge after micturition; cutting, sticking pains in the forepart of the urethra; pressure and burning in the urethra during urination; jealousy; incessant talk; nervous palpitation; can bear nothing tight around the throat or abdomen. This remedy is especially useful in the early stages of sexual derangements.

Lactuca sativa.—Relative impotence.

Ledum palustre.—Excessive and constant erections; nocturnal pollutions, without dreams; seminal fluid bloody and watery; constant desire to urinate; burning in the urethra after urinating; stitches in the meatus.

Lithium carbonicum.—Pains in the right side of and at the root of the penis; throbbing stitch-like pains in the penis when sitting; twitching stitch-like pains in the seminal vesicles, super-pubic region and in the spermatic cord, tenesmus before and after micturition; urine copious, clear and frothy; urination followed by sensitiveness and pain in the middle of the urethra; fugitive pains in the region of the bladder, especially on the right side, before urinating; afterwards extending to the left spermatic cord.

Lycopodium clavatum.—Erections imperfect or absent; parts cold, small, relaxed and shriveled; licentious thoughts cause no erection, though they may be persistent and the

inclination may be ever present; voluptuous dreams and fancies, with excessive emissions, followed by great exhaustion; dread of sexual intercourse after too much indulgence; complete impotence; falls asleep during coition, without emissions; drawing and sticking pain in the seminal ducts; sticking, griping, pinching pains in the testes; scrotum relaxed; sticking, cutting, jerking, drawing pains in the penis; pain in the perineum when sitting; pain in the region of the bladder and scrotum; redness and inflammation of prepuce with great itching of its inner surface and of the frænum; yellow exudation behind the corona glandis, with dark red, soft elevations, and biting, itching and tearing in this region; much smegma behind the glans; discharge of prostatic fluid; thin and yellowish discharge from the urethra, with burning after micturition; constant desire to urinate, with tickling in the urethra; micturition ceases suddenly with the discharge of a few drops of slimy fluid, with pain in the urethra and groin; frequent micturition at night, with interrupted urination and subsequent dribbling of the urine; urine burning, of ammoniacal odor; urine turbid, as if mixed with brick dust; urine copious, with red, sandy deposit; low-spirited, melancholy, despondent, desires to be alone, dreads the company of men; general prostration and emaciation, faintness at certain hours of the day; gastric disorders. The old man's balm; mental torpor; confusion of thoughts and words.

Magnesia carbonica.—Sexual desire diminished, and, while erections appear slowly, intercourse terminates naturally; discharge of prostatic fluid; during emission of flatus; frequent micturition with smarting in the urethra, during and after the act; stitching pains in the forepart of the urethra; urine has a whitish sediment.

Magnesia muriatica.—Violent erections; if the desire is not satisfied it is followed by pain in the testes, sper-

matic cords and small of the back, with soreness and tenderness of the testes; frequent emissions; morning erections, with burning pains in the penis; urine voided in drops, some always seeming to remain behind; micturition only possible by exertion of the abdominal muscles, and it may even be necessary to press upon the abdomen with the hands to facilitate the act; frequent micturition day and night, accompanied with burning in the urethra and frequent erections; involuntary micturition when walking, yet on attempting to urinate no urine is passed; urine almost opaque, as if mixed with yeast; deposit copious.

Manganum carbonicum.—Drawing pains and weakness in the spermatic cords and testes; itching pains within the scrotum, relieved by manipulating the parts; itching of the corona glandis; burning, dragging pains from the seminal vesicles to the glans; cutting pains in the region of the bladder in the evening when sitting, aggravated when standing and walking; cutting and sticking pains in various portions of the urethra, when not urinating; increased frequency of micturition.

Mercurius corrosivus.—Violent erections, with great desire; coitus slow, emission delayed; sticking pain in the right testicle; sticking pain in the forepart of the urethra in the evening after urinating, when walking, accompanied with pain in the anus and left testicle; burning during micturition; itching in the orifice of the urethra, with burning, biting and sticking pain through the urethra during urination; micturition frequent, painful, difficult, ineffectual.

Mercurius solubilis Hahnemanni.—Sub-acute epididymitis; orchitis, simple, tubercular or specific; testicles swollen hard; scrotum shining, with dragging, drawing and itching pains; drawing pains in groins; spasmodic tearing between testicles; sensation of coldness of the tes-

ticles; when abscess threatens and there is chilliness and perspiration; pains are worse at night; impotence; emissions at night, frequently bloody in character; cutting, biting and burning in the urethra when beginning to urinate, after a nocturnal emission; urine looks as if mixed with meal; urine clear at first, but afterwards as if mixed with chalk, followed by pain and burning in the urethra and when touching the penis; acute suppurative prostaticitis; the most important and most frequently indicated remedy in balano-posthitis; the prepuce swollen as if distended with water; swelling and inflammation of both glans and prepuce, with more or less discharge; fine, red eruptions; cracks and chaps, with burning, biting itching and voluptuous pain; red vesicles on the glans, which become ulcers; profuse muco-purulent discharge and involvement of the inguinal glands; herpes of the prepuce; the abraded surfaces itch and sting if pressed or bathed.

Mercurius iodatus ruber.—Syphilitic orchitis; testicle and spermatic cord sensitive.

Mezereum.—Frequent erections during the day, becoming violent in the evening, with yawning and sleepiness; testicles painful to pressure; drawing and stitching pains in the spermatic cords; after emission or sexual excitement, crawling over the whole body, as from lasciviousness; swelling and heat of the penis; stitches in the meatus; tearing and jerking pains in the penis and right side of the abdomen; after urination, discharge of a few drops of blood; between the acts of urination, discharge of a watery mucus and tenacious transparent fluid; sticking, crawling pain in the urethra, with emission of fluid; cutting pain in the forepart of the urethra after micturition; dark, wine-colored urine, becoming turbid on standing; bloody and hot, with reddish sediment. Obstinate cases of balano posthitis, with profuse discharge from the glans, with excoriation in the fossa behind; tearing, burn-

ing and lancinating pains ; itching in the prepuce, especially after urinating ; swelling and inflammation of prepuce ; itching and burning vesicles.

Moschus moschiferus.—Increased sexual desire ; with intolerable titillation in the genital organs ; involuntary emissions ; painful emissions without erections ; great pain in the penis, followed by relaxation ; coitus followed by nausea and vomiting ; during erection, burning in the urethra ; urine clear and copious, or scanty and thick as yeast.

Mygale lasidora.—Violent erections of the penis ; penis curved, exquisitely painful.

Naja tripudians.—Great sexual desire, with psychical impotence ; awakes at night, with vivid imaginations and involuntary emissions, followed by prostration and great distress ; stinging, burning pains along the right side of the penis ; uneasiness and pressure in the region of the bladder ; urine straw-colored, loaded with mucus.

Natrum carbonicum.—Erections in the morning without sexual excitement ; frequent erections during the day, often violent and painful ; nocturnal pollutions, followed next day by fretfulness and discontent ; lascivious dreams, without erections ; intercourse incomplete ; erections imperfect, ejaculation too early ; heaviness, pain and pressure in the testes and spermatic cords ; priapism towards morning ; emission, without desire, followed by tensive cutting pains in the penis ; excessive irritability of the genital organs ; coitus always followed by physical weakness ; glans penis swollen ; pain back of the glans, with erections after coitus ; itching, burning and stinging in the prepuce, glans and frænum ; prepuce inflamed, glans swollen, sore and painful ; smegma behind glans ; emissions retarded during an embrace ; nocturnal emissions, even immediately after coitus ; discharge of prostatic fluid during stool or voided with the urine ; tearing and smarting in the ure-

thra during micturition; pain in the urethra and testicles; burning in the urethra during and after micturition; frequent desire to urinate, urine may be scanty or copious; desire to urinate continues after finishing the act; when voiding the last few drops of urine cutting in the bladder and discharge of a few drops of mucus; frequent micturition at night; urine sour-smelling, offensive, becomes turbid soon after passing.

Natrum muriaticum.—Emissions even after coitus; great weakness after seminal emissions; erections not strong; ejaculations weak; pollutions followed by back-ache, night sweat, weakness in the limbs and melancholia; nightly pollutions, with or without erethism or lascivious dreams, followed by weakness of the back; trembling of the knees, as if they would give way; sudden voluptuous irritation when sitting, relieved by walking; sexual erethism, followed by depression and weakness; emission delayed or absent during coition; ejaculation too early; emissions with the morning stool; pain in the testicles; stitching, pinching pains transversely in the neck of the bladder when walking; after urinating, discharge of a thin, yellow, purulent liquid, soiling the linen; may cause burning and itching in the urethra; discharge of prostatic fluid, with lascivious thoughts, without excitement and without erection; constant moisture of the meatus, with drawing pains in the spermatic cord; sticking pains in the fossa navicularis during and after micturition and after coitus; burning and cutting in the urethra towards the close of micturition, followed by thin moisture; offensive secretion; the prepuce is retracted from the glans, causing a dry sensation; aggravated by walking and contact of the clothing; itching of the corona glandis with moisture; itching with crawling and prickling pains in the glans, which is red at the tip with red elevations; offensive-smelling smegma; jerking, throbbing, rhythmical

pains in glans and frænum ; greenish discharge ; agglutination of the meatus in the morning ; urging to stool, with constriction in the rectum ; dribbling after micturition, with pressure in the rectum so he could not sit down ; urging to urinate, with frequent micturition ; urine turbid, with strong odor, milky in the morning, depositing a white sediment ; urine clear, greenish, reaction feebly acid, frothy on shaking.

Natrum phosphoricum.—Pollutions nightly, with or without erethism or lascivious dreams, but followed by weakness in the back ; trembling in the knees, as if they would give way.

Nuphar luteum.—Impotence ; entire loss of sexual desire and erections ; diminution of carnal thoughts and inclination ; voluptuous ideas and imaginations do not cause erection ; nocturnal pollutions ; discharge of seminal and prostatic fluid during stool and with the urine.

Nux vomica.—Involuntary emissions ; erections easily excited ; nocturnal pollutions ; pollutions without erections, followed by relaxation of the lower part of the body, coldness of the feet ; emissions occur mostly toward morning, followed by headache and difficulty in walking ; during an embrace the penis often becomes relaxed ; constrictive and stitch-like pains in the right testicle and spermatic cord ; stitching, aching and contractive pain in the testicle ; pinching and itching in the scrotum ; tearing in the spermatic cord ; in gouty individuals ; sore pain, burning, biting and itching in glans, especially after urinating ; corrosive pain morning and evening ; prepuce retracted behind the glans penis, with soreness of its margin, with biting and itching on the inner surface of the prepuce ; increased smegma behind the glans ; abrasion of the membrane when the prepuce is retracted ; all symptoms are worse towards evening ; pain in the neck of the bladder before micturition, with burning and tearing during the

act and pressure afterwards; discharge of tenacious mucus during micturition; constriction in the forepart of the urethra, extending backwards; itching and burning in the urethra when urinating; frequent, painful, ineffectual urging to urinate; incontinence of urine; urine turbid, watery, pale, followed by a discharge of thick, whitish matter; nervous depression; irritability; over-sensitiveness to external impressions; inclined to fault-finding; habitual maliciousness; debility of the nervous system; sensation of heaviness of the body, alternating with lightness; aversion to motion in the open air; attacks of faintness; gastric and bilious disturbances; congestion of the abdominal organs. Especially useful in derangements resulting from self-abuse or excesses at an early age.

Onosmodium virginicum.—Constant sexual excitement; severe erections; numbness and tingling in feet and legs; pain in lumbar and dorsal regions.

Opium.—Erections during sleep, but impotent when awake; involuntary emissions at night, even when awake; procreative power lessened; tenesmus on beginning to urinate; is obliged to wait on account of spasm of the sphincter vesicæ; stream interrupted; micturition possible only after long exertion; urine turbid, scanty, brown, with iridescent film; trembling of the whole body, with external coldness and jerking of the limbs; stupid, indifferent.

Osmium.—Priapism; rigid erections after midnight and on awakening in the morning; continuing after rising without sexual desire; during coition, long-lasting emission of semen; sexual act suppressed; conjugal act accomplished by volition, the usual thrill and ejaculation being absent; pain in the testicles, preventing sleep, and in the spermatic cord, extending into the testicles; stinging, throbbing, pinching pains on the left side of the glans and in the tip of the penis.

Paris quadrifolia.—Sexual erethism, with rigid erections ; desire increased, with voluptuousness during coition ; nocturnal pollutions ; burning, drawing and sticking in the forepart of the urethra between and during micturitions ; frequent desire and urging to urinate ; has to wait a few minutes before the act can be accomplished ; tenesmus after urinating ; urine turbid and on standing becomes covered with a fatty film.

Petroleum.—Tearing, itching pains in the glans, with red spots or a reddish eruption ; sticking pains on urinating ; herpes ; frequent erections without amorous thoughts ; violent desire, with itching of the genitals on awakening in the morning ; emissions followed by anxious heat ; discharge of mucus with the urine ; jerking in the urethra as in ejaculation of semen ; cutting of the neck of the bladder at the beginning and end of micturition, and during the act so severe that the urine may stop ; frequent desire to urinate, only a little being voided ; burning at the neck of the bladder, involuntary micturition ; urine bloody, turbid, offensive, depositing a reddish film, which adheres to the vessel ; excited, irritable ; inclination to anger and to scold ; sadness, despondency ; great debility and trembling, fainting, with ebullitions ; heat, pressing on the heart, palpitation ; sleep, with distressing dreams, as though some one was lying alongside of him.

Phosphorus.—Uncontrollable sexual desire ; frequent emissions, with great feebleness, loss of strength and flesh ; abnormal sexual appetite and excitability, with burning, tingling and formication along the spine ; erotomania ; great sexual excitement ; revealing the person without shame and seek to gratify debased appetites without regard to time or place ; sexual mania ; constant torment for an embrace, followed by impotence ; discharge of seminal fluid during stool ; nightly emissions, with great prostration ; discharge of fluid from the urethra during stool, after

micturition, from friction of the clothes or when talking to a woman ; genital organs relaxed, with moisture at the meatus as of prostatic fluid ; discharge of prostatic fluid when walking ; moisture at the meatus, yellow and causing a yellow stain ; cutting and sticking pain in the anus and perineum when at stool and urinating ; pain in the penis, with cramp-like pain in the upper part of the scrotum, aggravated when urinating ; burning, sticking pains in the forepart of the urethra during micturition ; often extending forward from the scrotum when not urinating ; discomfort and biting in the forepart of the penis ; dribbling and burning after urinating ; urination difficult and burning ; urine covered with an iridescent, fatty film ; whey-like sediment, whitish, like white sand ; urine offensive, having the odor of violets ; urine milky white ; contains an abundance of triple phosphates, epithelium, etc. Great excitability ; becomes easily vexed and angered ; never wants to be left alone in a room ; mental application difficult, cannot think ; easily fatigued ; vertigo on arising in the morning or on rising from a seat ; dull pain in the head ; trembling on beginning to walk ; tired feeling ; difficulty in walking ; heaviness of the back and limbs ; locomotor ataxia from sexual excesses.

This remedy will be indicated not only in satyriasis, but is required in impotence and other sexual disorders which have resulted from over-excitability or abuse of the genital organs. Impotence from chastity is frequently cured by this remedy. It is also indicated in those who have lived a rapid life and are trying to restrain their passion and are unable to do so from local erethism, etc.

Phytolacca decandra.—Frequent gurgling sensation in the prostate, grinding and sharp pains, sometimes paroxysmal, shooting up the spermatic cords, followed by soreness ; urine copious, clear and watery, chalk-like sediment.

Piper methysticum.—Burning pains in prostatic urethra

during micturition; catarrh of prostatic urethra; gleet discharge; orchitis.

Platinum.—Sensitiveness and pressure in the mons veneris, with internal shaking and external coldness, followed by oppression, anxiety and exhaustion; sexual desire inordinately increased, with violent erections, especially at night; excessive sensitiveness and titillation in and upon the genital organs, with an almost uncontrollable desire for an embrace; satyriasis; sexual desire and strength abnormal; micturition frequent, but slow; urine red, with white clouds, becoming turbid on standing; spasms and convulsions from abuse of the sexual organs previous to puberty; the mental symptoms are characterized by haughtiness, egotism and a feeling of self-superiority; looks upon everyone as being inferior; objects appear smaller than normal; home associations appear strange; great excitability of the nervous system; sees horrid objects, demons, ghosts, etc.; hysterical conditions, crying and laughing at inopportune times and places. In boys this drug is frequently required where they have masturbated to excess before puberty, resulting in hollow eyes, yellow skin, melancholia and sheepishness; tendency to spasms and epileptiform seizures; consciousness not often lost, the limbs are drawn up and separated. Grauvogl says this remedy will cure mental imbecility resulting from masturbation.

Plumbum.—Impotence; penis flaccid; frequent erections, with spasmodic contraction of the testes, and emissions during the colic; violent emissions on the slightest provocation, scanty during coition; shooting pains through the testicles, almost causing faintness; paroxysmal jerking pains in spermatic cord, extending into left testicle; induration of the prostate; pain, itching and burning in the neck of the bladder and perineum; micturition difficult, by drops a little at a time.

Pulsatilla nigricans.—Epididymitis; orchitis; varicocele; dark-red, painful swelling of testicles and spermatic cords, especially if caused by gonorrhoea or metastasis from parotitis; pressive, tensive, tearing pains; testicles so sore that the touch of the clothing cannot be tolerated; drawing pains, lasting a long time, in the spermatic cord; the veins bluish, with soreness and tingling pain; pain may shoot to the back or down the thighs; tickling, itching, biting and crawling pains, sometimes agreeable, referred to the glans penis towards morning or in the evening and when sitting, sometimes accompanied by a discharge of prostatic fluid; constrictive pain behind the glans, with pressing pain after urinating; itching beneath the prepuce; itching in the region of the seminal vesicles, causing inclination for an emission without erection, and without amorous thoughts; nocturnal pollutions, followed by lassitude and heaviness in the limbs; sticking, cutting pains, with pressure at the neck of the bladder, without the desire to urinate; burning in the neck of the bladder, as if it would compel micturition; backache, extending into the hips; acute prostatitis; no thirst with fever; especially adapted to those of lymphatic temperament.

Rano bufo.—Imbecility and loss of decency. Useful in convulsions from masturbation and in those who seek solitude to practice the vice. Fits during coition; constant pulling at the penis.

Rhododendron.—Epididymitis; hydrocele; testicle indurated, distressing pains in epididymis; testes drawn up, swollen and painful; swelling and induration with drawing pains shooting to thigh and abdomen; testicle tends to atrophy; feeling as if the testicle had been crushed; constrictive drawing pain in the testicles (alternately); sticking and drawing pains in the right testicle and spermatic cord, especially at night.

Rhus toxicodendron.—Redness and swelling of the glans

penis, with burning and biting in the urethra after urinating ; swelling of the prepuce, dark red on its inner surface, with sticking and itching pains and moist eruption ; the prepuce looks and feels as if scalded, the vesicles exuding a transparent fluid ; vesicles on the glans and on prepuce, with intense itching, soreness and smarting.

Sabadilla.—Painful erections in the morning without desire ; insensible to excitement ; nauseated by amorous caresses ; penis relaxed, accompanied by lascivious dreams and emissions ; afterwards painful erections and extreme lassitude ; desire lost ; pollutions, followed by loss of power in the extremities ; genitalia relaxed ; mind filled with voluptuous thoughts, which cannot be expelled ; intermittent, bruised pain in the left testicle ; slow, undulating motion in the testicles, with tingling from thigh to thigh ; drawing, beating, sticking, intermittent pains in the tip of the penis ; constant desire to urinate, with burning in the urethra ; scalding when urinating ; urine muddy, mixed with blood.

Sabal serrulata.—Weakened sexual power ; impotence ; loss of ejaculatory thrill ; discharge of yellowish, watery prostatic fluid ; prostate enlarged, with dull, throbbing, aching pain at the neck of the bladder ; sharp pains in the testes and spermatic cords, with depression of spirits ; urinary retention ; dribbling of urine ; lack of mental vigor ; muscular jerking of the body on first lying down, which awakens him from sleep.

Salix nigra.—Has proven itself to be of great usefulness in nocturnal pollutions, spermatic discharges, seminal vesiculitis and irritations of the prostatic urethra, with their long train of mental and physical aberrations so common in these cases, produced and continued by excessive sexual erethism which often exists to such a degree that the mind cannot control the immoderate masturbation or excessive

sexual indulgence. This remedy acts best in doses of thirty to sixty drops of the θ , three or four times daily.

Sarsaparilla.—Herpes on prepuce; secretions have an intolerable odor; the glans is red and inflamed; tearing pains from the glans to the root of penis after urinating; pimples which burn and itch and become moist after scratching; desire for coitus, with restless sleep and emissions; pollutions bloody, with lascivious dreams; the least carnal excitement causes emissions without sexual feeling; pollutions followed by backache, prostration, vertigo, etc.; tearing pain from the glans to the root of the penis; burning pain in the urethra during micturition; urine copious, containing elongated flakes; urine turbid when voided; on standing, clay-colored sediment and iridescent pedicle; strangury, with discharge of mucus and a white, turbid matter; when urinating the stream frequently stops, with burning and straining; swelling and soreness of the spermatic cord, especially after sexual excitement.

Secale cornutum.—Erections vigorous and numerous, even after coition; dragging in the spermatic cord; testes draw up to the groin; micturition frequent and copious; burning and cutting in the urethra, with tenesmus and bearing down pain during micturition.

Selenium.—Impotence, with lascivious thoughts; carnal desires, mental not physical; erections slow and incomplete; emissions premature; seminal discharge thin and without odor; seminal discharges when walking; discharge of a sticky watery substance before and during stool; dribbling of prostatic fluid, with disagreeable sensation; dribbling of prostatic fluid, after urinating, walking and sitting; always obliged to urinate after stool; sensation as if a biting drop was forcing its way out of the urethra; urine dark and scanty, with the odor of violets; jerking pains in the testicles; general relaxation of the system, all conditions worse after sleep and from mental or physical exertion;

easily fatigued; irritability; headache, sleeplessness and mental confusion; paralytic weakness of the spine; wants to sleep from sheer exhaustion, yet is always worse after sleep. Pollutions are followed by irritability, mental confusion, paralytic weakness, etc.

Sepia.—Coition and nocturnal emissions followed by erections; erections painful when sitting, after the bath; erections strong, but emissions premature; intercourse followed by vertigo, weakness of thought, relaxation of body, low-spiritedness and nervousness; imperfect emissions, with lascivious dreams; intercourse unsatisfactory; seminal fluid watery; heat, pinching, cutting, tearing, rheumatic pains in the testicles and along the thighs; discharge of a milky fluid from the urethra after micturition and with a difficult stool; burning in the forepart of the urethra after micturition; red spots on glans, which are almost raw, coming and going on the glans and inner side of the prepuce; tickling on touch; discharge of a sour, salty-smelling fluid, with great itching and soreness; sometimes a pale eruption on glans, with or without itching; tearing and smarting near the meatus; burning in the forepart of the urethra; pressure in the bladder, must wait a long time before the urine comes; burning in prostatic urethra without desire to urinate; urine copious; general relaxation, fatigue and exhaustion; staggering gait and forgetfulness from sexual excesses; coitus is followed by restlessness and anxiety; chronic headaches.

Silicea.—Sexual desire increased; violent erections during the day, at night without desire; discharge of prostatic fluid when straining at stool; dragging pain in the prostate, extending forward; testicles retracted; pain in the testicles and spermatic cord; worse at night; elephantiasis of scrotum; hydrocele; scrotum itching and moist; pain in testicle at night and when lying down; testicle indurated, with compressive, distending, jerking pain; crawling

pain in testicle ; pressure in spermatic cords ; abscess and hernia testis ; exhaustion ; patient dreads exertion of mind or body, but when the work is commenced does fairly well ; numbness in the toes, fingers and back, with constipation.

Solidago virgo aurea.—Doctor Gallavardin records the fact that the first dilution of this remedy in seven cases, ranging from 42 to 74 years of age, in which catheterization was necessary for weeks, months and years, were thoroughly cured, the indications being scanty urine, with dark brown sediment, pains in the kidneys, etc.

Spongia.—Orchitis ; acute, chronic or tubercular hydrocele ; testicle smooth, swollen and inflamed ; squeezing, strangulating and aching pains in testicle ; testes swollen hard, with throbbing dull stitches and darting pains shooting up the spermatic cord ; testis painful to touch, squeezing pain in testes and cord, worse on motion of the body or contact with clothes.

Stannum.—Erections at night and emissions with lascivious dreams, especially when sleeping on the back ; voluptuous excitement of the whole body, even to a pollution ; erections at night without emissions, and without lascivious thoughts ; drawing, tearing pains in the testicles ; discharge of prostatic fluid after hard stool ; burning in the urethra, and sprained pain in the upper part, during and after micturition ; biting and crawling in the orifice of the urethra and along the canal when not urinating ; jerking pains in the penis, almost as if ejaculating semen ; pain in the neck of the bladder and along the urethra, after urinating ; seems as if more urine would pass, and some drops follow, when the pressure is worse ; frequent micturition at night, in a thin stream ; dribbling sensation, as if the bladder were not empty, with erections ; burning at the neck of the bladder and frequent desire to urinate ; fullness in the bladder ; urine scanty and offensive ; frequent desire to

urinate; great anxiety and restlessness; irritable, sadness, disinclination to talk; vertigo, seems as if all objects were too far off; pains as if paralyzed in the extremities; emaciation, weakness and trembling, felt more when slowly exercising or walking.

Staphisagria.—Drawing, tearing pain in right testicle; swollen testes from metastatic parotitis; drawing, burning, stitching pain from right inguinal region in spermatic cord to testicle; aching in left testicle when walking; worse from touch; soft excrescences around the glans, with an offensive discharge; moisture around the corona beneath the prepuce; moist growth behind the corona, with itching from rubbing of the shirt; sticking pains in right side of the glans, when standing; prostatic irritation and posterior urethritis, the result of unnatural or perverted thoughts or habits. This drug is frequently indicated for the results of perverted sexual habits and the dwelling of the mind upon habits of vice. These conditions are frequently accompanied in the male by prostatic irritation or posterior urethritis. Useful in masturbation and other sexual perverts who become over-sensitive and easily angered; in these cases this remedy is frequently of untold value, as well as for those nervous derangements of highly nervous patients, when continuance is enforced from reading and pondering on impure literature; nervous system worn out; weakened and undermined condition of brain and spinal cord, caused by perverted sexual habits, or the result of a mental state which has allowed the mind to dwell too much on sensual thoughts; gloomy; apathetic condition; shy, peevish; prefers solitude, and avoids the company of the opposite sex; the face appears shrunken; eyes listless, deep-set and hollow, surrounded by dark rings; nose pointed; great emaciation. This remedy is characterized by constant suspicion; chip on the shoulder waiting for some one to knock it off.

Sulphur.—Genital organs relaxed ; testicles and scrotum hang down ; moisture on the scrotum ; pressure and tension in the spermatic cord ; induration of the testicle ; tingling in testicle ; penis cold ; erections infrequent ; involuntary discharge of spermatic fluid, with burning in the urethra ; if coitus is attempted the ejaculation occurs too early, almost at the first contact of the parts, and before intromission ; nocturnal pollutions frequent ; discharge of prostatic fluid after micturition ; seminal fluid thin, watery and almost inodorous ; tingling in the testicles ; redness of the glans and inner surface of the prepuce, with soreness, burning, and smarting ; pimples and pustules on the glans and desquamation ; fetid smegma, causing burning, smarting and itching, or discharge of a viscid mucus, which bites and burns ; the parts are sometimes ice-cold ; redness of the glans ; the prepuce is stiff and hard, with shooting pains ; prepuce red, swollen, with burning pain ; sticking pains in the neck of the bladder passing through the anus, with soreness on pressure ; dragging and pressure in the prostatic region, after micturition, with sensation as though the urine was retained by contraction of the sphincter, with the same sensation in the anus ; urging to urinate at night with cutting pains over the symphysis pubis ; frequent urging to urinate, with voluptuous pressure reaching as far as the anus ; discharge of prostatic fluid from the urethra in long threads, after micturition and stool ; sticking in the forepart of the urethra in the morning ; painful ineffectual desire to urinate ; retention of urine ; hypochondriacal ; faintness ; low-spiritedness ; peevishness ; irritability ; difficult thought and speech ; heat on top of head ; cold feet ; backache ; weakness in the lower extremities ; unable to digest milk or farinaceous food ; chronic prostatitis ; profoundly melancholy ; forgetful ; constant pain upon the top of the head. Useful for the bad results following sexual excess.

Sumbul.—Desire absent, from physical weakness ; erections few and without pleasurable sensations.

Thuja occidentalis.—Enlargement of veins of epididymis ; aching pains in testicles as if crushed, aggravated by motion ; sharp stitches extending into spermatic cord ; hernia testis ; sticking and boring pain in scrotum and spermatic cord ; itching, crawling and burning pain in scrotum ; condylomata, with sticking pain ; dirty, flat ulcers of the glans surrounded by redness and sticky discharge, with burning pain ; the glans is covered with a foul-smelling, yellowish-green secretion ; eroded spots, surrounded by red margins ; sensation as of granular elevations ; the sebaceous glands of prepuce are inflamed ; depressed vesicles, with stinging pains when urinating ; meatus red and puffy ; excoriated feeling near the frænum ; itching on glans and prepuce when walking alternating with pain in anus ; burning in tip and excoriated feeling in the glans when urinating ; sensitiveness to touch ; reddish excrescences behind the glans penis ; red spots with inflammation on the inner surface of the prepuce ; red, eroded spots, exuding a thin, yellow, foul-smelling discharge ; the prepuce is swollen, with red, condylomata-like growths on the surface ; on the inner surface a red, moist tetter, depressed in the middle, painful to the touch, with burning and itching in the glans and prepuce ; aggravation in afternoon ; dirty looking ulcers and growths. Prostatitis following gonorrhœa ; impotence after gonorrhœa ; painful erections at night ; nocturnal pollutions ; watery discharge from the urethra.

Tribulus terrestris. (Indian name, Ikshuganha.)—It has proved useful for sexual disorders caused by sexual excesses, by irritation or chronic inflammation of the prostatic gland, seminal vesicles, etc., or masturbation, and both diurnal and nocturnal emissions. Also for impotence

caused by masturbation and accompanying spermatorrhœa, especially when the vice has not been committed to such an extent as to have ruined the nervous system, and for partial impotence or seminal debility caused by excess or impotence produced by diseased state of the testes, with resulting thin and watery secretions. In impotence accompanied by such urinary trouble as painful micturition, inability of the bladder to keep the urine for a long time, etc. It is more suitable in partial impotence and seminal debility than a thoroughly confirmed case of impotence where sexual pleasure and erection are entirely lost. It is used in painful micturition, calculous affections, urinary disorders and spermatic derangements. Of great benefit for old persons getting weak sexually day by day. Dose, ten to twenty drops of the θ three or four times a day.

Ustilago maidis.—Erections frequent during the day ; irresistible desire to masturbate ; pain in the testicles, sometimes neuralgic in character, sometimes causing a faint feeling, genitalia relaxed with a cold sweat upon them ; erotic fancies, followed by prostration, dull pain in the back, and irritability.

Veratrum viride.—Neuralgia of the testes ; acute orchitis ; erysipelatous swelling of scrotum ; testicle swollen, pain shooting from testicle up the spermatic cord ; high fever and arterial tension. Frequently indicated, according to its general symptomatology, in acute prostatitis and acute seminal vesiculitis.

Zincum metallicum.—Emissions at night without lascivious dreams ; ejaculation premature ; spermatorrhœa ; neuralgic pains in the spermatic cord, with headache and depression of spirit ; discharge of prostatic fluid ; after painful micturition, flow of blood ; urine discharged in a thin stream, with dribbling ; cutting, drawing, tearing pains in the forepart of the urethra ; urine yellow, depos-

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iting white flakes ; the last urine voided has a turbid appearance ; these patients cannot keep quiet, must be in motion all the time ; hypochondriacal. Useful in spermatorrhœa following long-lasting self-abuse, with face pale, sunken, and blue rings around the eyes.

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