and make them possible. With the attainment of this knowledge, discoveries and inventions become clothed with illimitable possibilities. This knowledge has made the great discoveries of the ages the blessings of mankind, printing, steam, electricity, antiseptics; these and more have been made the servants and the saviors of men. Empirical practice is always limited in its application and the good that great discoveries and inventions may accomplish is limited because we are hampered by lack of knowledge of their underlying principles. In the progress of the development of dental practice this is quite apparent. A useful invention or discovery made in an empirical way, is practiced in a limited field for many years with the result of circumscribing its benefits, until some bold investigator, dissatisfied with the mere results without knowing how they are produced, proceeds to experiment and discovers the underlying laws which govern its action. Then it is found that the invention, so useful in one field, could be made of far more general application, and further experimentation leads to the verification of those expectations and its extended usefulness.

It is too true that our art, on which so much of our reputation and usefulness depends, has outstripped our science and this art is largely the result of empirical practice. Take the one item of crown and bridge work, which, while protested against by many as unscientific and pernicious, and it is so in regard to its worst features, yet holds its own and grows because it is practicable and useful. It is unscientific in theory but useful in practice and has sprung from pure empiricism. On the other hand, the other great item of our recent progress, antiseptic medication, has proceeded from pure science, the reasoning from cause to effect, the producing of results from the prediction of discoveries. That is pure science, the producing of practical results from a basis of scientific fact. The mechanical treatment of caries long preceded our knowledge of the real nature of the disease, and the cure attained was the result of pure empiricism and experimentation. The treatment was scientific but it remained for later discoveries to reveal the scientific basis. So with many of our most noted achievements in the conservation of the teeth or their prosthetic restoration; we attained a certain success that was practical and useful but the scientific basis long remained unknown. It was the main characteristic of the old practice that results were reached by the slow process of experimentation, trying first one thing and then another, until something was stumbled upon that answered a practical purpose in a greater or less degree.

The new practice is more scientific. In all its main features it proceeds from a scientific basis. It does not experiment in a blind way but reasons from cause to effect and applies the remedies or appliances that a discriminating judgment suggests as the proper agent for securing a desired result. That is science. The empiric would try what was at hand without regard to its qualities or what he desired to accomplish, and failing in one try another. The success of modern practice depends more on scientific judgment than that of the past, for all of the ordinary possibilities are exhausted. We have gained all the victories within easy reach and to attain more conquests and extend our field of usefulness, we must search deeper and define closer to be enabled to wrest yet other secrets from nature. But that is the motive and the

mission of modern dentistry. We must do yet greater and better things, but to do them we must carry our investigations into untried fields and far deeper into the old ones that we may bring more things to light that will help us to grow scientifically and practically and thereby increase our capacity for service to humanity.

CURE OF PROSTATIC HYPERTROPHY BY INTERNAL PRESSURE.

BY EVAN O'NEILL KANE, M.D.

KANE, PA.

Some years ago I wrote an article for the *Medical Times* of Philadelphia, in which I set forth the superior advantages of internal pressure absorption, as a treatment for senile hypertrophy of the prostate gland with its attendant evils, over the usual forms of palliative and operative procedure. I then gave the credit of this mode of cure, as I do now, to the originator of the operation, the late Dr. S. D. Freeman. The details of the procedure being, perhaps, not sufficiently entered into, my article was received without comment, and, so far as I am aware, it has not led any one to perform the operation. The radical and, it would seem to me, the over-heroic course advocated by Dr. White of the Pennsylvania University, in removing the testicles in order to bring about an atrophy of the gland, if it be a satisfactory cure, entails too great a sacrifice upon those subjected to the ordeal to ever become a popular method of treatment. While the attention of the profession is being attracted to this subject through Dr. White's experiment, I have thought it a fitting time to again point out the merits and method of my pressure treatment. Senile hypertrophy of the prostate gland is not a disease worthy of the surgeon's consideration until its enlargement markedly interferes with the free evacuation of the bladder, as shown by the various disorders, painful, frequent and difficult micturition and the like, incident upon a partial retention of urine. The increased development of the muscular elements in the prostatic organ or muscle becomes harmful only in degree with its encroachment upon the caliber of the urethra by distorting or constricting it. If, therefore, the channel of exit from the bladder can be restored to its normal course and caliber nothing further in the way of treatment is necessary.

The technique of internal pressure treatment is simple, and depends for its successful conduct on a thorough knowledge of the anatomic relations of the parts involved, together with a fair degree of skill in the management of the solid sound and silver catheter. Having determined, by means of a flexible instrument that no stricture exists as a primary trouble, or if there be one, having overcome it, the gland is carefully examined per rectum, in order to ascertain its altered relation to the urethral canal and the precise course of the deviations which have been produced. By means of the index and middle finger of the right hand introduced into the rectum the prostatic gland is steadied and manipulated. A large silver catheter, No. 26 or 28 with an S curve, is introduced along the urethra by means of the left hand, until it reaches the point of resistance. At the same time the fingers in the rectum guide the tip of the instrument through the tortuosities of the prostatic urethra. This manipulation is rendered far less difficult of execution if the beak of the instrument is blunt, as large

as the stem and well polished. Its caliber being large it will be enabled to press the urethra into place ahead of it with far greater ease than if it were small and pointed. It will thus fill the canal snugly. Otherwise the mucous membrane, thrown into loose folds before the advancing instrument will tend to catch upon its point and tear, allowing the urethra to become perforated, a false passage resulting. The structure of the organ being mainly muscular, and its enlargement of a fibro-muscular character it is somewhat resistant. Further, being more or less congested and edematous the impinging portions of the gland are readily displaced laterally by the tip of the instrument, provided a moderate amount of pressure, and a sufficient degree of time are allowed to the maneuver. With patience and gentleness, being careful not to exert undue force, the operator is not likely to be disappointed in reaching the bladder in safety and without injury to the urethra. This step in the operation is the only difficult one, and I repeat, should occupy considerable time, especially if the enlarged gland is dense and hard. The catheter is passed until it rests well within the bladder. Here it is retained by guys fastened from eyelets in its open extremity, extending to a band in the usual manner for retaining urethral instruments in place. A cork is inserted in the open end of the catheter to prevent dribbling of urine, and after the effect of the anesthetic has passed off, the necessary amount of opium is administered to insure quiet. The patient is kept lying upon his back with the knees and shoulders elevated by pillows to a sufficient height to keep the abdominal muscles relaxed. Every four hours he should be turned upon his side, the cork withdrawn from the catheter and the contents of the bladder allowed to discharge. I advise, if the urine is foul and ammoniacal, as it generally is in these cases, that the viscus be washed out daily with warm boracic solution until the odor and cloudiness disappear. The opiate may generally be discontinued by the end of the first twenty-four hours, but should signs of increased irritability of the bladder, or much pain ensue, it must again be resorted to.

The silver catheter should not be disturbed for three days, or at least until it is found that it no longer appears to hug closely the walls of the prostatic urethra. If it is found to glide freely in and out when the guys are loosened it may be withdrawn for an hour with safety. It should then be cleansed, polished and replaced. If not withdrawn too early, or allowed to remain out more than an hour, no difficulty will be encountered in its re-introduction. Each day after the first withdrawal of the instrument, it can be allowed to remain out for a longer period of time, although I advise its retention all night and a portion of each forenoon up to the seventh day, after which time it may be removed entirely. I sometimes find it advisable on account of the resiliency of the prostatic tissue, not to remove the instrument at all, for the entire week. No further surgical treatment is necessary after the final removal of the catheter; all that is required being the administration of ordinary absorbent remedies, such as muriate of ammonia or iodid of potassium for a month or two.

On examination per rectum, it will be found that, while the gland has not yet become appreciably reduced in size, the portions of it which had formerly impinged upon the urethra and diverted it from its proper course have, by the pressure brought to bear upon them by the instrument, been absorbed away, the

urethra appearing to occupy its normal situation. The pressure exerted by the instrument is not only immediately beneficial in its action, by restoring the normal caliber and direct course of the urethra. By its presence within the gland, it appears to set up an alterative, or more properly speaking absorptive action, which, after its withdrawal, is continued until the gland finally assumes its ordinary dimensions.

Pressure treatment of the prostate gland will commend itself to every conservative operator as much superior both to the more brilliant and more dangerous operative methods, and to the various palliative measures which simply have the merit of prolonging life without removing many of the attendant miseries; and there is practically no shock connected with the procedure, not a small consideration in an operation performed only upon middle-aged or elderly subjects. There being no cutting or laceration, there is no danger from the absorption of urine or other septic matter. The benefits resulting from the work done are realized immediately, even before the completion of the cure, and there is less difficulty in persuading nervous elderly patients to submit to a treatment wherein there is no cutting.

I would suggest that were the urethra so tortuous, the gland so enlarged, and its structure so dense as to baffle all attempts to discover per rectum the precise position occupied by the urethra, a modification of the operation might be permissible. This modification, though it would necessitate the use of the knife, would still be safe from the usual dangers incident upon opening the urethra or bladder and the dangers incurred through infiltration of urine. The gland might be cut down upon as in operating for stone, the incision in this case not extending actually into the urethra, but simply sufficiently near to it for the operator to ascertain the position of the tip of his instrument and its relations to the urethra through the wound. This would permit him to guide the tip along the canal to its destination within the bladder with ease. The wound could then be sutured and expected to unite without drainage by first intention, since we would have no urine to irritate and keep it open. The exploratory opening needs only to be large enough to admit the index finger, and deep enough to permit the recognition of the urethra within the substance of the gland.

PERITONEAL SUPPORTS—(LIGAMENTUM PERITONEI.)

BY BYRON ROBINSON.

PROFESSOR OF GYNECOLOGY POST-GRADUATE MEDICAL SCHOOL,
CHICAGO.

(Continued from page 497, Vol. xxv.)

The mesosigmoid is a double right and left-bladed membrane consisting of two serous, polygon-shaped, epithelial-celled layers one on each side, while the middle layer, the essential one, is the membrana mesenterii propria, the real neuro-vascular visceral pedicle. In the membrana mesenterii propria are arranged in definite order the nerves, lymphatics, the arcs and arcades of vessels and the elastic and fibrous tissue bundles which surround and retain in fixed relations the essential structures which maintain the existence of the S-romanum. The nerves which supply the mesosigmoid chiefly arise: 1, from the abdominal brain; 2, from the ganglion at the bifurcation of the aorta, close to the origin of the inferior mesenteric artery; and 3, from nerves arising out of the