intense gastro-intestinal irritation, scanty urine, serious trophic changes in the legs, associated with crampy sensations and "partial loss of motion and sensation."

If, instead of confining ourselves to the paralytic cases, we should ask how often general symptoms of poisoning result from small doses of arsenic, it would be an easy matter to extend this list.

Thus, to go no further than Taylor, a careful and apparently conservative writer, we find in his "Treatise on Poisons" (2d Am. ed., p. 339), the following cases cited:

(15) Dr. Burne. A young female took gr. $\frac{3}{16}$ of arsenious acid [= about $\mathfrak{m}$ vi of Fowler's solution] daily for four days. She then suffered from inflammation of the stomach, delirium, palsied shaking of the head, and such a degree of debility and exhaustion as to place her in imminent danger.

(16) Taylor (p. 340). Gr. $\frac{3}{16}$, taken once or twice a day for seven days, apparently caused "sickness, irritation of the skin, and eczema over the whole body."

(17) Taylor (p. 395). An adult female took in three doses $\mathfrak{m}$ xxx of liquor arsenici chloridi (said to be a very poisonous preparation) in the course of twenty-four hours. The quantity of arsenic thus taken was not more than the tenth part of a grain, and yet the symptoms which followed were of a severe kind, resembling those of chronic poisoning. There was constriction of the throat, pain and irritation of the stomach and bowels, tingling and numbness of the hands and feet, loss of muscular power, and a feeling of extreme depression. The medicine was withdrawn, and the patient slowly recovered. Taylor gives the usual medicinal dose of this preparation as from three to ten minims.

Finally, I would suggest that some of the lighter symptoms of poisoning from arsenic in small doses may be overlooked or referred to other causes.

I have recently had in my own practice the following case: I ordered for an adult female, with Graves's disease, the following mixture:

R. Fowler's sol.	:	:	:	:	6.00
Pyrophosphate of iron	:	:	:	:	5.00
Elix. calisaya	:	:	:	:	500.00

M.

Dose, two teaspoonfuls, t. i. d.

Within, literally, a day or two after beginning to take it, the patient felt symptoms of severe gastro-intestinal irritation, from which she had never suffered before — great pain, nausea, vomiting, and for a time diarrhoea. The medicine was discontinued, but it was a month before she was able to retain solid food, and during the convalescence, as she expressed it, "the whole skin of her mouth came off."

These instances of serious poisoning from small doses of arsenic are, no doubt, very rare, as compared with the vast mass of cases where the drug has been given for long periods without harm. Still, probably more such cases exist than have been reported, and, at any rate, there are enough to show that the danger of poisoning from medicinal doses, though slight, yet is real, and I cannot but sympathize with the following sentiment, expressed by Jaeschke in his inaugural dissertation: "Arsenic is at once a dangerous and a treacherous poison. Let the limits of safety once be overstepped, and there is risk, not only that serious temporary results may follow, but also that, after these have passed away, painful and disabling affections may be left behind."

That it is an agent of the greatest value is also true,

and we need to study its action with great care, in order to extract its good effects and avoid its dangers. To this end I think the following facts should be borne in mind:

(1) The temporary tolerance of a given dose of arsenic, whether large or small, is not a sufficient proof that it is being disposed of so that it will not cause symptoms of poisoning after an indeterminate time.

(2) It is not always enough to withdraw the medicine when the first symptoms of poisoning show themselves, partly because several weeks at least may still elapse before the remaining arsenic can be wholly eliminated, and partly because the symptoms are apt to go on increasing in severity without renewed ingestion.

When this paper was read, Dr. F. C. Shattuck reported in connection with it a very interesting case, which will be found described in the records of the meeting. The patient was a young married lady, and her symptoms consisted in rheumatoid pains in all four limbs, of long duration, and accompanied with some general debility, and with tenderness in the muscular masses and along some of the nerve-trunks. Arsenic had been found in the wall-paper, and an analysis just made by Professor Wood had shown the presence of a small quantity also in the urine. This case acquires a special interest from the fact that the lady is niece to my patient, and that both of them belong to a family in which marked ability and grave neuroses have been common. I had purposely avoided dwelling, in my paper, on the possible influence of a neuropathic constitution in predisposing to an organic nervous affection such as this, feeling that my diagnosis ought to be based on more definite clinical grounds. That such a predisposition may exist is, however, almost beyond a question, and I gladly take the opportunity offered by Dr. Shattuck's interesting communication, to call attention to the fact.

A CASE OF TUBERCULOSIS OF THE BLADDER, PROSTATE AND KIDNEYS, ORIGINATING IN TUBERCULOUS EPIDIDYMITIS.—AUTOPSY.¹

BY F. S. WATSON, M.D.

THE specimens I show here to-night come from a patient aged thirty-five years, who died to-day, and who has been under my observation for the past fourteen months.

I offer the history of the case to the Society somewhat in detail, as serving to illustrate the course of a disease which is often obscure and difficult of diagnosis.

V. M., aged thirty-three years, married eight years since. Consulted me February 10, 1887. Twelve years previous he had his first gonorrhoea, a gleet persisting for three years afterward. A fresh attack occurred soon after recovery, which only lasted a few weeks. About eight years ago noticed a small nodule in either epididymis, about the size of a pea. These nodules were hard and painless, and, I may say at once, never changed their character during the patient's life. Four years ago he began to suffer from frequent urination.

Coincident with the appearance of frequent urination the stream grew smaller.

These symptoms remained unchanged during the next two and a-half years, when he sought surgical ad-

¹ Read before the Suffolk District Medical Society, at the Annual Meeting, April 28, 1888.

vice. The diagnosis of stricture was made, and the patient was operated upon by the method of divulsion. The previous symptoms were at once aggravated. The operation was followed by chills and fever, and he lost in a few weeks thirty pounds weight. On recovery from the acute attack, however, a No. 16 English steel sound could be passed readily into the bladder.

Eight months before I saw him he had measles, and on recovery noticed that his urine contained a dirty gray sediment and small clots of blood from time to time. Two months later he entered the Massachusetts General Hospital, where he was treated by the introduction of large sounds, 32 (French), and washing of the bladder with boracic acid solutions. The symptoms were aggravated by whatever local treatment was employed. When I first saw him he had been out of the hospital for two months. He was thin and haggard, had an anxious expression of countenance, was very weak, and walked bent over, and feebly. The desire to urinate was almost constant, and every fifteen minutes the bladder voided an ounce or a few drops of urine, thick with pus. The urine was neutral. (Specific gravity, 1005.) Contained a large trace of albumen. The sediment consisted of pus corpuscles, blood corpuscles, epithelial cells of a great variety of shapes. He complained of a constant dull pain in the perineum. The prostate, by rectal examination was slightly enlarged. There was no tenderness on pressure over the pubes.

Microscopic examination of the urine for tubercle bacilli was negative.

During the next month internal medication for the relief of the painful cystitis failed to give the least relief. Blood in small quantities appeared in the urine occasionally, independent of exertion.

He was then sent to the City Hospital, where, owing to the kindness of Dr. E. H. Bradford, in whose service he entered, I made a digital exploration of the bladder through the perineum.

The inner surface of the bladder was roughened, as though occupied by very superficial ulcerations. Beyond this the examination was negative.

The operation was not followed by any constitutional disturbance, nor, on the other hand, was any mitigation of the symptoms obtained by it. The patient made a rapid recovery, and the perineal wound was healed at the end of three weeks. He left the hospital, however, in an exceedingly poor condition. The nodules in each epididymis, the marked constitutional disturbance of the patient, wasting and loss of strength, the unvarying presence of pus, and the occasional appearance of blood, the aggravation of the symptoms on every local interference, the total inefficacy of local and medicinal remedies in mitigating the symptoms, and the feeling of the mucous membrane of the bladder led me to the conclusion that I was dealing with a case of tuberculous disease of the genito-urinary tract. The patient was now put upon cod-liver oil, nourishing food, and sent to the country. I did not see him again for three months, when he walked strongly into my office, told me that he had gained thirty pounds in weight, and could hold his water for an hour at a time without difficulty. He then returned to the city. Shortly afterward, that is, about six months before his death, the amelioration in his symptoms ceased, and they returned in their full severity, pain being now a prominent symptom, referred chiefly to rectum and perineum. Rectal ex-

amination now showed a greatly enlarged prostate. Defecation became exceedingly painful. About one month later the rectal symptoms suddenly disappeared, and rectal examination showed a prostate of normal size, the inference from these facts being that the prostate had been the seat of a tuberculous abscess, which had finally ruptured into the urethra, causing a disappearance of the swelling. The specimens confirm, as you will see, this view.

The patient now gained again, and a surprising degree of strength and energy returned. Two months later, however, a new accession of bladder pain, with great prostration, supervened, and to-day, after as suffering an illness as I have ever watched, he died.

No clinical evidence of tuberculous disease of parts of the body other than of the genito-urinary tract existed during life. A partial autopsy only was possible. The kidneys, bladder, prostate, membranous, urethra, rectum and testicles were obtained.

In the epididymis of this testicle I have laid open the nodule which was the earliest manifestation of the disease, and apparently its point of origin. It consists of a sac, with a cheesy contents entirely broken down, a process of long standing. Both lobes of the prostate are occupied by the now somewhat shrunken cavities of tuberculous abscesses, containing cheesy material, and communicating by several openings into the prostatic urethra, some of which would admit a No. 12 French bougie.

The whole organ, however, was not enlarged. The bladder-wall was irregularly thickened, the capacity of the viscus small, the mouths of the ureters stood open, and were of a size to admit a goose quill. The mucous membrane was occupied throughout its entire extent by superficial ulcerations. Both kidneys are the seat of a tuberculous pyelo nephritis, the pyramids and cortical portions being occupied by cavities in various stages of development. The case throws no new light of importance on the class of disease of which it is an example, but emphasizes several facts already dwelt on by various writers, amongst which may again be pointed out as assisting in the diagnosis, the slow development of the symptoms, marked remissions in their severity, which are apt to arouse false hopes of the patient's recovery, and prove very deceptive, the constant presence of large quantities of pus of a dirty grayish-white color, the occasional appearance of blood, generally in small clots or mixed with shreds of pus, without exciting cause. The pus in this case was unlike that seen in cases of ordinary cystitis, in that it lacked the mucous and theropy consistency so often noted in cases of ordinary cystitis of so severe a grade. The alkaline decomposition and foul smell were but slight. The presence of the nodules in either epididymis independent of gonorrhœal process. The evident seriousness of the lesion in a previously strong, healthy man, as shown by the great loss of flesh and strength. The aggravation of the symptoms by all local interference. The total inefficacy of internal medication. The improvement following removal to better hygienic surroundings, and the employment of cod-liver oil and good food. Tubercle bacilli would no doubt have been found had the urine been more frequently examined for them.

The case furnishes another example of the local limitation of the disease in some instances to the genito-urinary tract.

Two of the questions I asked myself while the patient was under my care, were: Was there a time when surgical interference might have prevented the general eruption of the disease along the genito-urinary tract? There was an interval of several months after the appearance of the nodules in the epididymes before urinary symptoms came on. An excision of these nodules might have prevented further progress, and should always, I think, be urged at an early period, when they cannot be definitely traced to a venereal or traumatic source. The second question is: Could any operation have been performed for the relief of the patient's sufferings after the disease was well established?

In another case which presented such suffering as this patient had, I should certainly advise the suprapubic opening of the bladder and the stretching of the vesical neck, in the hope of affording relief to pain. The perineal opening which I made in this patient did not relieve pain. It is interesting in this connection to note two cases of Professor Guyon's, published in the *Revue de Chirurgie*, April 10, 1888, page 314, in which he recommends that the high cut be performed in cases where the disease be limited to the bladder only, with a view to radical cure. It will be doubted by some if the disease ever occurs in this limited form.

His first case was that of a young man of twenty-four years. Cystitis for eighteen months, great pain, tubercle bacilli in the urine. Supra-pubic opening of the bladder, and swabbing out of the bladder with saturated iodoform oil, drainage. The tubes were removed on the seventeenth day. Forty-five days later pain was greatly diminished. Two years and a-half later patient was in excellent health, and the urine was clear, free from pus and bacilli.

Second case. Man of forty years. Vesical pain for four months. Numerous bacilli. Palliative treatment for four months. Had no effect. Operation as before. Curretted the inner surface of the bladder, and touched it with cauter. Tubes removed on the fifteenth day. Bacilli disappeared six months later. This patient, however, has still a cystitis.

A METHOD OF DETERMINING THE ANGLE OF FLEXION OF THE DISEASED LEG IN HIP DISEASE.

BY GEORGE L. KINGSLEY, A.B., HARVARD MEDICAL SCHOOL.

THE estimation of the amount of flexion of the leg upon the pelvis, in the acute stage of hip-disease, is of much importance as a matter of record and as an indication of the progress of the case. The estimation of this angle is commonly made by the use of the goniometer. As one seldom has this instrument at hand, and as its use is attended with many disadvantages, the following method is offered:

The object of this article is to furnish a ready and accurate method of estimating with a common tape-measure the angle of flexion of the leg, and is intended to be supplementary to the article by Dr. Lovett,¹ on the estimation of adduction and abduction by a similar method. Lay the patient on his back on a table or any flat surface, and then raise the diseased leg by the heel until the lumbar vertebræ touch the table; this

¹ Boston Med. and Surg. Journ., March 8, 1888.

shows that the pelvis is in the normal position and the angle which the leg makes with the table, the angle

C A B, is the angle of flexion of the thigh, from the normal position. It is this angle which it is desired to measure. Having placed the child in this position, measure off two feet on the external aspect of the leg with a tape measure with the zero of the tape on the table at (A), and note the point (B), from here measure the perpendicular distance in inches to the table (C), consult Table I and opposite the number of inches found by measuring B C, will be found the number of degrees representing the flexion of the diseased leg from the normal position.

Now we have a right-angled triangle A B C, of which the sides A B (24 inches) and B C (by measurement) are known. $\frac{BC}{AB} = \text{sine } BAC$ (the angle of flexion), or $BC = AB \text{ sine } BAC$. Therefore, if we compute by this formula a table which shall give the angles corresponding to the various lengths of B C, having measured this perpendicular distance (B C) we can by glancing down the table until we find the number corresponding to the distance measured, ascertain the number of degrees in the desired angle.

TABLE I.

In.	Deg.	In.	Deg.	In.	Deg.	In.	Deg.
.5	1	6.5	16	12.5	31	18.5	50
1.0	2	7.0	17	13.0	33	19.0	52
1.5	3	7.5	19	13.5	34	19.5	54
2.0	4	8.0	20	14.0	36	20.0	56
2.5	6	8.5	21	14.5	37	20.5	58
3.0	7	9.0	22	15.0	39	21.0	60
3.5	9	9.5	24	15.5	40	21.5	63
4.0	10	10.0	25	16.0	42	22.0	67
4.5	11	10.5	27	16.5	43	22.5	70
5.0	12	11.0	28	17.0	45	23.0	75
5.5	14	11.5	29	17.5	47	23.5	80
6.0	15	12.0	30	18.0	48	24.0	90

If the leg is so short that it is impracticable to measure off twenty-four inches we can measure to a point on the leg distant twelve inches from the table; ascertain the distance to the table in a perpendicular line just as before, double this distance and look in the table as before.

REPORT ON PROGRESS IN DERMATOLOGY.

BY G. H. TILDEN, M.D.,

Physician to City Hospital, Department of Diseases of the Skin: Instructor in the Boston Polyclinic.

TREATMENT OF LUPUS ERYTHEMATOSUS.¹

THE treatment of this disease being an uncertain and often thankless task, the following lecture upon the subject by an eminent authority is of interest. The treatment of lupus erythematosus is essentially different both in ways and means, from that of lupus vulgaris. In the case of lupus vulgaris it is possible by chemical or mechanical means to destroy and get rid of the pathological infiltration which constitutes the disease. When this has been done and the loss of

¹ Kaposi. Allgem. Wiener Med. Zeitung, No. 8, 1888.