On admission he was suffering from retention of urine, and 65 ounces of alkaline urine were drawn off; from that time up to the date of operation a catheter had to be passed thrice daily, and on each occasion gentle irrigation with boracic lotion was adopted.

Operation.—On June 6th, after irrigating the bladder, the rectum was distended by injecting 10 ounces of water into a pyriform bag introduced *per anum*, the bladder being distended with 12 ounces of warm boracic lotion. The usual suprapubic cystotomy was then performed. The peritoneum was not seen. After opening the bladder, which was very deeply placed on account of the obesity of the patient, large numbers of calculi were found; the smallest about the size of a small pea, the largest an inch and a quarter in length. Fifty of these were removed by means of a lithotomy scoop and forceps, from a pouch behind a greatly enlarged prostate. The bladder was much reticulated, and little calculi had to be dislodged from saccules formed by the reticulations. The prostate was enlarged in the shape of a thickened ring completely surrounding the internal orifice of the urethra. The ring was continuous below and on each side, but the finger could be passed through a natural slit in its margin above. It was easy to pass one blade of a pair of straight scissors into the urethral orifice, and the other blade over the vesical surface of the ring, and by closing the blades to divide the ridge between them. Thus the ring was divided into two halves by the natural slit above, and by the scissor-wound below. The index finger, assisted by forceps, being then passed into the lower slit, easily enucleated two masses the size of walnuts from either side, first on the right, and then on the left. The masses were lobulated, and presented the character of adenoid tissue. Comparatively little bleeding occurred. The bladder having been washed out with boracic lotion, a drainage-tube was introduced, and the wound partially closed by two sutures. The tube was removed on the third day, and the wound was gently supported and strapped. The patient was allowed to sit up on the eighth day. Urine began to be passed through the normal channel during the second week.

On July 16th, as some urine still passed by the suprapubic opening, a soft catheter was tied in the bladder, and the edges of the suprapubic opening were firmly drawn together by plaster. After the catheter had been retained in the bladder five days, it having been taken out every day and washed, the suprapubic opening seemed closed, and the patient was able to pass his urine by the normal channel without difficulty.

He was discharged cured on August 3rd, he being well in health and strength, able to hold his urine for six or eight hours during the day, and not having to get up once during the night.

The foregoing cases illustrate two of the three forms of prostatic enlargement which my colleague, Mr. McGill, described early this year at the London Clinical Society as giving rise to characteristic symptoms of obstruction to the flow of urine. First, the uniform projection surrounding the internal orifice of the urethra, well exemplified in Case II; secondly, the sessile enlargement of the middle lobe, of which Case I is a marked example. As the third variety or pedunculated enlargement of the middle lobe is simply a modification of the last mentioned, it would seem to me scarcely worth while adopting the three divisions.

To those who have not done the operation or seen it performed, it would seem to be a very formidable matter to remove part of the prostate; but the operation is really simpler and more easy than the description would lead one to suppose. As a rule, there is very little hæmorrhage, and by means of the curved scissors and of the forceps with sharp edges, it is comparatively easy to remove those projections that cannot be enucleated; but it is surprising to see how easily some of these masses will enucleate when the mucous membrane and capsule covering them have been cut through.

From what I have seen of prostatectomy in the hands of my colleagues in the Leeds Infirmary, and from my own experience, I do not believe that the operation adds materially to the dangers of suprapubic lithotomy, either in the way of immediate shock or retarded convalescence. I would therefore suggest, that wherever it is suspected in an old patient suffering from calculus, that the prostate is enlarged, the suprapubic operation should be performed, so that at one operation the stone may be removed and the hypertrophied prostate diminished, thus reducing the likelihood of nocturnal incontinence, of cystitis, and of recurrence of stone.

ON THE PHENACETINS.¹

By DR. DUJARDIN-BEAUMETZ,

Membre de l'Académie de Médecine; Médecin des Hôpitaux de Paris.

[TRANSLATION.]

THE number of remedial agents drawn from the aromatic series tends to increase every day. From this source we have obtained not only powerful antiseptics and active antipyretics, but more recently analgesics, which rival, and even surpass, those furnished by the vegetable alkaloids. To such analgesics as carbolic and salicylic acids have to be added antipyrin and acetanilid, and the group is now increased by the valuable addition of the phenacetins.

The phenacetins (or acetphenetidins) are three in number—meta-acet-phenetidin, para-acet-phenetidin, and ortho-acet-phenetidin. The first of these seems to possess no therapeutic properties. Two only have, up to the present time, been studied, the ortho-acet-phenetidin, and more especially the para-acet-phenetidin.

It was in 1887, only last year, that para-acet-phenetidin was used for the first time experimentally in the *clinique* of Professor Bamberger, the results of these experiments being published by Dr. Kobler.² Later in the year Dr. Hugo Hoppe made it the subject of an inaugural thesis. In France, whilst M. Lépine (of Lyons) was making public the results of his experiments, I communicated to the Société de Thérapeutique the first results of my researches, and in the thesis of my pupil, Dr. Gaiffe, will be found an account of the trials made in my *clinique*. Finally, in the month of May last, Dr. Misrachi and Rifat, of Salonica, communicated to the Society of Medicine of Salonica a very important study of phenacetin.³

Chemical and Physical Properties.—I shall not enter into the preparation of these phenacetins; they are derived from phenol, and to obtain them these phenols are submitted to five operations—first, the nitration of the phenol, the separation of the nitro-phenols thus formed, their ethylation, the reduction of the bodies so produced; and, finally, their acetylation. The general formula of the phenacetins is

The para-acet-phenetidin occurs as a white crystalline powder, liquefying at 134° C., barely soluble in water, very slightly soluble in chloroform, insoluble in glycerine, acidulated water, hydrochlorate of ammonia, oils, and liquid vaseline.

The ortho-acet-phenetidin presents itself in the form of brilliant white scales, without odour or taste, and fusing at 75°; it also is very slightly soluble in water, either cold or hot. Chloroform dissolves it in considerable proportions, and one gramme is taken up by three grammes of alcohol of 90° strength.

The recognition of the presence of the phenacetin is based on the following reaction; the phenacetin is brought into contact with dilute sulphuric acid; to these is added a solution of nitrite of sodium, and the whole is poured into a solution of bisulphophenanthol, this latter being obtained by dissolving the bisulphophenanthol in solution of ammonia; the result of this experiment is a very beautiful cherry-red coloration. This colour may be fixed by means of the chloride of sodium. A quantitative estimate may be formed by comparing the grades of coloration obtained with those produced by known quantities of phenacetin.

Physiological Action.—The insolubility of the phenacetins does not permit of their being used subcutaneously, and, for the same reason, experimentation on animals becomes very difficult. To a rabbit weighing 2 kilogrammes we have succeeded in administering 2.5 grammes without producing any toxic effect. MM. Misrachi and Rifat, also, gave to a fowl weighing 1.15 kilogramme, 1.2 grammes of phenacetin without inducing any sign of poisoning. They have even given to animals 2 grammes of the drug per kilogramme of their weight without untoward effect. It may thus be said that, if phenacetin is toxic in character, it must be so to but a very slight degree.

Therapeutic Action.—Like all the analgesic antithermics, the

¹ Read in the Section of Pharmacology and Therapeutics at the Annual Meeting of the British Medical Association, held at Glasgow, in August, 1888.

² *Wiener Med. Wochenschr.*, 1887, 26 and 27.

³ Misrachi and Rifat, "Contrib. à l'étude de la Phénacétine (Para-acet-phénétidine)," *Bull. Gén. de Thérap.*, tome LXIV, p. 481, 1888.

phenacetins have a double action: they lower temperature and soothe pain. The lowering of the temperature is most noticeable in cases of pyrexia; in fevers, 50 centigrammes of phenacetin lower the temperature by 1° to 2° C., and the antithermic action following such a dose lasts four hours. In certain cases, however, the apyrexial period is more prolonged even from the same dose; it may even reach eight to ten hours, as indicated by Kobler and Hoppe. Misrachi and Rifat suggest that a dose of 50 centigrammes be administered every four hours, to maintain the condition of apyrexia in those suffering from fever; even continued for a considerable time, these doses had never given rise to the slightest accident in fever patients. As with all the antithermics of that class, there is invariably observed abundant sweating, and often a sensation of collapse. Phenacetin, then, in febrile conditions, shows itself superior to antipyrin and acetanilid in producing marked antithermic effects without toxic phenomena. But I would, nevertheless, say that in fevers the dose of 1 gramme should never be exceeded.

But it is above all as an analgesic that phenacetin outrivals its predecessors. While it is quite as powerful as antipyrin and acetanilid, it does not cause the pain in the stomach, or the scarlatiniform rash of the former; nor does it give rise to the cyanosis of the latter. However prolonged may be its administration—and we have given it for months in doses of 1 to 2 grammes per day—we have never observed any bad effect. We have used it for the relief of every form of pain (neuralgias, migraine, rheumatic pains, muscular rheumatism, acute articular rheumatism, the lightning pains of tabes, etc.) and always with the best results. Further, in cases of hysteria, and of hysterical or neurasthenic pains, phenacetin has seemed to produce better effects than the bromides; it calms the excitability of the nervous system, and in some obstinate cases of nervous insomnia it procured sleep. Phenacetin seems therefore to be not only an analgesic but a narcotic.

This double action, as an antithermic and an analgesic, results probably from an effect produced on the spinal cord; and phenacetin may be considered a depressor of the excitability of the medulla, but on this point I cannot speak conclusively till the investigation carried on in my laboratory shall have been completed. Here, as in many other cases, clinical experimentation has preceded physiological research.

I have said that the meta-acet-phenetidin seems not possessed of any therapeutic action, and that only the para- and the ortho-acet-phenetidins have been utilised. The ortho-salt is less active than the para-acet-phenetidin; whilst the latter produces its effects in (daily) doses of 1 to 2 grammes, the former must be given in (daily) quantities of 1.5 to 2.5 grammes.

The insolubility of these substances simplifies to a singular degree their administration. They are best given in *cachets* containing 0.5 gramme to 1 gramme; 1 to 2 grammes of phenacetin may be administered daily, in doses of 0.5 to 1 gramme.

If I might be permitted to draw conclusions from what I have said, I would put them in the following form:

1. In the phenacetins we have excellent antihyperthermic and analgesic remedies.
2. Of the three phenacetins, two only possess therapeutic properties, para- and ortho-acet-phenetidin.
3. The ortho-acet-phenetidin must be given in larger doses than the para-acet-phenetidin. The medium dose of the latter is from 1.5 grammes to 2 grammes per day.
4. These two salts seem to be devoid of toxic properties.
5. They are powerful antithermics and very active analgesics, which ought to be substituted for antipyrin for the following reason: *a.* Because they are non-toxic. *b.* Because they act in doses one-half smaller. *c.* Because they are one-half cheaper. *d.* Because, finally, there is no monopoly in their manufacture.

TREATMENT OF CHRONIC CONSTIPATION BY ELECTRICITY.—Dr. G. M. Hammond, in a paper read before the Medical Society of the State of New York, recommended the use of a mild galvanic current in the treatment of chronic constipation; he introduced the negative pole well within the sphincter, and had thus succeeded in curing obstinate cases which had resisted treatment by cathartics. The faradic current also had been found useful to give tone to the abdominal muscles.

PRESENTATION.—Dr. Manke, of Stanley, has been presented by the students of his ambulance class with a silver-mounted riding whip and a pair of electro-plated spurs.

ANATOMICAL AND OTHER FACTS IN SUPPORT OF INTUBATION.¹

By LENNOX BROWNE, F.R.C.S.ED.,

Senior Surgeon to the Central London Throat and Ear Hospital, etc.

WHEN in America last year I had the opportunity of hearing several communications and discussions on intubation at the International Medical Congress, and the additional advantage of several conversations on the subject with Drs. O'Dwyer of New York, Waxham and Ingalls of Chicago, Solis Cohen, and Max Stern of Philadelphia, and others who had had experience of the procedure. I had the further privilege of seeing at Chicago two cases under the care of Dr. Waxham, which made a strong impression on my mind. The first was witnessed fifteen hours after the larynx had been intubated. The patient was a little girl, aged 22 months, and undoubtedly the subject of true diphtheria. The parents, who were extremely poor, occupied with two other children—one at the mother's breast—a single room on the ground floor opening direct on to the street. The apartment was intensely dirty and unwholesome. It was clear to me that in these circumstances tracheotomy, or at least the necessary after-treatment, would have been a hopeless procedure, but the intubated patient was at this early period perfectly comfortable, and in my presence swallowed some milk sop without coughing or difficulty. I have since learned that a good recovery resulted.

The second case was seen by me in conjunction with Dr. Waxham and Dr. Berry on the fifth day after intubation. The child was four years of age, and was the subject of "membranous laryngitis without false membrane visible in the pharynx." The child was dying simply from laryngeal obstruction." The home surroundings were even more miserable than in the previous case, and in addition to sanitary disadvantages, the right hand of the mother was disabled by a knife-wound inflicted by her drunken husband, and the patient was tended only by an elder sister of eight or nine years of age. "The tube had been coughed up on the third day, and the patient made an excellent recovery." She was already convalescent when I saw her.

Such an experience went far to dispel the theoretical objections which I, in common with many other surgeons, had entertained against the operation. I nevertheless determined to examine them and to convince myself if the principles of the treatment were as sound as the results warranted one in believing them to be.

The chief of the objections urged are such as may be considered as either anatomical or mechanical, and are as follows:

1. The calibre of the tubes is so small that respiration is not adequately relieved.
2. The tube is likely to be coughed up or to slip down.
3. The function of swallowing is rendered difficult and even dangerous by means of food, and especially fluids, passing through the tube into the trachea.
4. Membrane is liable to be pushed down during introduction of the tube, and thus induce suffocation at a lower level in the air-passages.
5. The tube is liable to blocking by false membrane and mucus drawn upwards into it on coughing.
6. The vocal cords or some other portion of the air-passages are liable to become injured or ulcerated by pressure of the tubes.
7. The intubators are difficult to remove.

OBJECTION 1.—The Calibre of the Tubes is so Small that Respiration is not Adequately Relieved.—It is perfectly true that almost all authorities from Bretonneau and Trousseau downwards have insisted that for infantile tracheotomy the calibre of the cannula should be as near as possible that of the natural size of the trachea operated on; and one of the most cogent reasons advanced for failure of tracheotomy upon children under three years of age is, that it is difficult to insert tubes sufficiently large. My impression, however, is that no sufficient reason has been advanced in favour of having tracheotomy tubes for infants of the full calibre of the normal trachea, for in adult practice, not only are all tubes of less size than the diameter of the trachea into which they are put, and are quite serviceable for breathing, but as a rule, a moderately small tube is less liable to cause spasm than an unduly large one. I have particularly observed in *post-mortem* examinations of cases of tracheal stenosis that the orifice

¹ Read in the Section of Diseases of Children at the Annual Meeting of the British Medical Association held in Glasgow, August, 1888.