The Antipyretic Action.

Salicylic acid may be said to act as an antipyretic in two ways, namely, by its action as an internal antiseptic, and by its action on the heat centres, sweat apparatus and other parts which enter into the regulation of the temperature of the body. In acute rheumatism the lowering of the temperature after the exhibition of large doses of salicylic acid is probably partly due to its antiseptic action, because in many cases there is an abrupt fall of temperature to the normal or subnormal, very similar to that of a crisis of an acute infection; usually this is followed by very little rise of temperature after the administration of the drug is discontinued. On the other hand, there are cases of fever in which the administration of salicylic acid produces sweating and a transient fall in the temperature, which, as soon as the drug is discontinued, rises to its former height. The antipyretic action of salicylic acid in this kind of case is no doubt dependent on the action of the drug on the heat-regulating apparatus.

Acetyl-salicylic acid also may be said to act as an antipyretic in two ways, similar to those of salicylic acid; but it is usually not administered in doses sufficient to exercise its internal antiseptic action, and the antipyretic action of the drug must therefore be due to the action of the drug on the heat-regulating apparatus (sweat glands, heat centres, etc.), which property is present to a much greater extent than in the case of salicylic acid.

The following observations afford evidence that acetyl-salicylic acid is a more potent antipyretic than salicylic acid:

To 10 patients with typhoid fever of moderate severity we gave 6 grains of sodium salicylate every four hours, and carefully observed the course of the temperature, etc. The skin did not become moist, and we were unable to detect any result from the administration of the drug. After five days the salicylate was replaced by acetyl-salicylic acid exhibited in 3-grain doses every four hours. The result of the change was almost immediately apparent. The skin became moist, and the temperature was lowered; the degree of sweating was variable. In some cases it was very slight, while in others it was profuse. In cases in which there was little sign of action the dose was increased to 4 or 5 grains.

Acetyl-salicylic Acid in Typhoid Fever.

In the prognosis of typhoid fever the course of the fever is an important consideration. A very high temperature, say above 104° F. every evening, maintained for one or two weeks, and unaccompanied by considerable morning remissions, should be considered a danger signal. On the other hand, a low or comparatively low course suggests a favourable outcome. Indeed, in my experience, the mortality in the latter cases has been practically nil. Again, most physicians agree that in the treatment of typhoid fever it is essential to keep the fever under control, because high fever in itself, irrespective of its cause, is harmful. The question whether cold baths or cold spongings are superior to antipyretic drugs, etc., cannot be discussed here, but in private practice, and sometimes in a hospital, either from want of proper facilities or insufficient aid in nursing, it not infrequently happens that hydrotherapeutic measures prove insufficient to control the fever. The question then arises whether it is better to allow the fever to run its high course or call to use antipyretic drugs. Two years ago I decided in favour of the latter view, because it was found that the exhibition of acetyl-salicylic acid in small doses, 3 to 5 grains every four hours, combined with tepid or hot sponging, was generally an effective means of lowering the temperature. The exhibition of the drug in this dosage to typhoid patients does not alter the blood pressure or produce any appreciable ill effects. The skin remains moist, and in some cases there is profuse sweating. The greatest effect on the temperature is obtained by sponging the patient about half an hour after the administration of a dose of the drug, in this way combining the antipyretic actions of the medicinal and hydrotherapeutic agents. It is probable that other beneficial effects are derived from the exhibition of acetyl-salicylic acid. The increase in the amount of perspiration should diminish the toxæmia, although it is very difficult to estimate how much endotoxin is excreted with the sweat. As a clinical observation I may mention that the patients were all of the opinion that they felt better during

a moderate degree of perspiration, and to me they seemed clearer mentally and more willing to carry out other parts of the treatment, such as the drinking of water, etc.

I have been especially impressed with the marked diaphoretic and antipyretic actions of the drug. Three grains every four hours had frequently considerable effect, and in most cases 5 grains at the same periods produced profuse diaphoresis. In only one case were we compelled to increase the dose above 5 grains. In two cases—one treated during September, 1909, and the other during October, 1910—5 grains every four hours appeared almost too active, as the temperature charts show a fall in temperature of 9° and 10° respectively during the exhibition of the drug; there was no untoward effect during the fall of the temperature, but in the case of antipyretics which act as acetyl-salicylic acid does, one does not like to see such precipitous action. In giving acetyl-salicylic acid to typhoid patients, it is desirable, therefore, to commence with a dosage of 3 grains every four hours; if this should not be sufficient, the quantity should be gradually increased until the desired effect has been obtained. The reason why acetyl-salicylic acid is more effective as an antipyretic in typhoid fever than in most other fevers is, probably, that the fever of typhoid fever is frequently labile in character. This theory also affords an explanation of the undoubted value of hydrotherapy in the treatment of the disease, because it is found that the more readily the temperature can be reduced by a bath or sponge the better the prognosis.

The Mode of Administration.

When a drug is given dissolved in water, its action is usually quickly manifest, because it almost immediately passes into the intestine and is absorbed. This principle is of special importance to the exhibition of acetyl-salicylic acid, because the shorter the stay in the gastrointestinal tract the less the decomposition of the drug. The drug should therefore never be administered in tablet form, but in solution. It is only slightly soluble in cold water; it is freely soluble in water containing sodium bicarbonate; the application of heat to a solution in water tends to decompose the drug.

PASSAGE OF A CAST OF THE BLADDER PER URETHRAM.

BY

JEHAN M. BARLET, M.D.BRUX., M.R.C.S., L.R.C.P.

THE patient in the following case, a married woman aged 26, first sent for me on November 2nd, 1911, and stated that for two or three days she had had severe pains in the lower part of the abdomen, which were like labour pains; she had also been losing large quantities of blood, with clots, and had passed a large mass, which she said was like a piece of flesh.

State on Examination.

Bimanually, the uterus was found to be enlarged to about the size of a three months pregnancy; the os was patulous, and admitted the tip of the index finger, and she was losing freely.

Treatment.

She stated that her periods had been perfectly regular, but thinking she had had a partial miscarriage, and that the placenta had been retained, I dilated the cervix with Hegar's dilators to No. 16, and I then inserted my finger into the uterus, and, to my surprise, I came upon a fetus enclosed in the membranes. This being the case, I did not rupture the membranes, but after washing out the vagina with cyllin, I plugged the vagina with iodoform gauze. The latter I removed the next day.

Result.

The patient went on exceedingly well; all the pains and haemorrhage ceased. No miscarriage took place, and on November 12th she got up perfectly well.

Further Development.

Next day, however, she complained of pain on passing water, and also of frequency of micturition—this occurring about every twenty minutes. In consequence, I put her on a mixture containing potass. bicarb., urotropine, tinct. belladonna, syr. limonis and chloroform, which did not improve her condition, except that the pains diminished somewhat.

On November 15th she got up at 2 a.m. to pass her water, and found that she was unable to do so, though she had a pressing desire. She continued to strain for twenty minutes, then had intense pain, and finally passed a fair quantity of water, together with a good deal of blood, and a mass which was seemingly rolled up, and in circumference about the size of a thumb.

On examining this mass I found it to be gritty, and, on closer investigation, came to the conclusion that it was the mucous membrane of the bladder in which were embedded numberless calculi of small size. I sent the specimen to be examined microscopically, and received the following report:

The specimen was a sloughy-looking thick membrane, with irregular corrugated surface, roughly triangular in shape, measuring $3\frac{1}{2}$ in. across and 3 in. in the other direction.

The whole was permeated by concretions of varying size, and composed chiefly of phosphates and urates.

The reaction to litmus was strongly alkaline.

The specimen had to be decalcified in order to obtain a section.

Microscopically it is seen to be composed of very necrotic tissue—so necrotic, in fact, that no cell elements can be recognized.

The membrane appears, however, to be composed of two layers, one of which was probably muscular.

Scattered throughout are small spaces which look at first like tubular glands from which the epithelium has been shed, but on closer inspection it seems more probable that they are merely spaces occupied by crystals of salts which have been dissolved out in the process of decalcification.

There is no histological indication as to the origin of this cast, but in view of the nature of the mineral deposits, the configuration of the specimen (bladder), and the history of the case, there can be little doubt that it comes from the bladder.

The report on the urine was as follows:

Reaction, acid; specific gravity, 1015; albumen, a fair amount; blood, a small amount; sugar, absent.

Microscopy of centrifugalized deposit:

This contains a small amount of pus and blood, with some young vesical cells and granulation cells.

No renal elements have been found.

Bacteria are not very numerous, and are mixed, but consist mainly of Gram-staining bacilli of two kinds, and unusual in the bladder.

There are also some staphylococci of large size.

The *B. coli communis* is not present.

I venture to publish this case owing to two unusual features about it: first, that a dilatation of the cervix sufficient to allow of the index finger being introduced into the uterus was not followed by a miscarriage; and secondly, the circumstance of a passage of a cast of the bladder studded with calculi.

I have been unable to find any literature bearing upon the latter fact, and should be glad if any readers could supply a reason for its occurrence.

I have had the specimen mounted, and shall be very pleased to show it to any one who desires to see it.

I may add that the patient made a good recovery, with the exception that for a little time she experienced inability to hold her water.

UNDER the will of the late Mr. James Law Perrin, a tobacco manufacturer of Bristol, the Royal Ear Hospital, Soho, and the General Hospital, the Royal Infirmary, the Hospital for Women, the Eye Hospital, and the Dispensary in Bristol, as also the Swansea Hospital, each receives a bequest of £500.

THE receipts for 1911 of the Metropolitan Hospital Saturday Fund exceeded by £2,371 the amount collected in any previous year, reaching a total of £37,065. This sum does not include the amounts received by the Distribution and Surgical Appliance Committees in respect of payments made towards the cost of the benefits supplied. These amounted to £8,456, so that the total for the year was £45,521, as against £42,229 in 1910. The number of benefits granted rose correspondingly, reaching 63,361, as compared with 59,737 in the preceding twelve months.

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THE CORRECTION OF ERRORS OF REFRACTION FOR MICROSCOPE WORK.

BY

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THE eyestrain which not infrequently results from prolonged use of the microscope, especially when working with high powers and artificial light, is often so great as to cause considerable discomfort and headache, and may even lead to the abandonment of microscope work, except for brief examinations. In many cases this trouble is caused by errors of refraction, more particularly by some degree of astigmatism. If this astigmatism is considerable, the microscopist is practically certain, in these days, to be aware of it, and to possess glasses which correct his particular error, but if it is small it may never be detected until advancing years lead him to consult an oculist as to his first pair of presbyopic glasses. In either case, when he attempts to work at his microscope with spectacles or pince-nez *in situ*, he is certain to find them so uncomfortable and inconvenient that, sooner or later, he discards them, and trusts once more to his unaided vision and his powers of accommodation, with the frequent result that continuous work becomes increasingly difficult and the effects of eyestrain more conspicuous.

The small device here illustrated has been designed with a view to correcting the error of refraction without employing spectacles. It is so obvious and simple that it is

very probable that something similar may have been described and used long ere this, but, since the writer has been unable to discover that this is the case, it appears worth while, for the sake of others similarly situated, to describe the ocular cap which he has had made for his own use. The increased definition which has resulted from the use of this cap is unmistakable, and there has also been a

marked lessening of the feeling of strain which used to result from long hours of high-power work.

No lengthy description is needed, the principle being merely that the lens necessary to correct the error of refraction of the eye commonly used is fitted accurately into the centre of an aluminium carrier, so constructed as to form a cap which may be placed over the microscope ocular. In the case of a lens with cylindrical correction for astigmatic error the vertical meridian is permanently marked on the carrier by means of an arrow, as shown in the illustration. As most workers employ oculars of the same maker, the external diameter of which is approximately the same, the cap may be made to fit them all by arranging to have the internal diameter adjusted to fit the largest ocular used.

The photograph has been taken from the cap made to the writer's design by Messrs. Cary and Co., 7, Pall Mall.

Memoranda: MEDICAL, SURGICAL, OBSTETRICAL.

TORTICOLLIS IN ACUTE RHEUMATISM.

R. T., aged 12, was admitted under my care on December 14th, 1911, with acute rheumatism. He had been ill five weeks, and the joint trouble, which began in the left ankle, had spread to the knees, shoulders and elbows. A month before admission his neck became twisted and remained so; when we saw him his head was bent towards the right shoulder, the chin being pointed to the left. He cried with pain when attempts were made to straighten it. In addition there was endocarditis with a double aortic murmur, but the boy had never been ill before in his life. I ordered him to lie flat on the bed without any pillows; his neck was