

coloured, more or less deeply, blue or blue violet. On shaking, the colour does not disappear, but diffuses through the fluid. The more grave the glycosuria, the more intense and rapid the reaction. When this colour reaction is present in a urine of high specific gravity, it is a certain indication of glycosuria.

[The reaction does not seem to offer many advantages over the ordinary sugar tests, save that with practice the test can be rapidly applied. The possibility of fallacy must be remembered, for an abnormal solubility of colouring matter may be present in urine which contains an increased proportion of the products of metabolism.]

24. Levulosuria.

Sekeyan (*Thèse de la Faculté de Paris*, 1897-8), writing on the different forms of diabetes, describes a form of levulosuria attended by marked general symptoms. There is mental depression and tendency to suicide, insomnia, and marked general weakness. The urine contains a levorotatory sugar, and reduces copper in alkaline solutions. The condition is not fatal, and readily yields to treatment, which consists in a diabetic diet, the administration of arsenic and alkalies, with suitable hydropathy.

III.—MISCELLANEOUS.

25. The genital phenomena of renal calculi.

Abrahams (*New York Medical Journal*, 1897, p. 349), writing on the genital phenomena of renal calculi, records several cases in which genital phenomena were the only indications of the presence of renal calculus and its most painful manifestation—colic. In the first case the patient, a male, was suddenly attacked with intense pain in the testicle, nausea and collapse. The testicle was intensely tender, and there was some swelling of the epididymis. The symptoms were entirely relieved some days afterwards by the passage of bloody urine, with the *débris* of a calculus. The second patient complained of pain and swelling of the testicle. Under treatment he made little progress till one day he was seized with a definite attack of renal colic with intense testicular pain. On passage of a calculus the pain and orchitis entirely disappeared. Two patients were women who complained of intense pain in the stomach, vomiting, and tenderness over the ovarian region. On examination in both cases the left ovary was enlarged and tender. In both the condition was considered acute oöphoritis. On the passage of a large quantity of bloody urine, containing broken calculi, the symptoms vanished and the ovarian swelling rapidly disappeared. The author accentuates the necessity of remembering the possibility of a renal condition as the cause of an acute

attack of pain and swelling in the ovary or testicle when attended by no history of sepsis or trauma. He records a similar case met with in a child, and advances the view that possibly some of the obscure cases of orchitis seen in children may be due to renal calculi, which are known to be common at that time of life.

26. Alkaptonuria.

This rare and peculiar condition first described by Bodeker in 1861 (*Ann. Chem. u. Pharm.*, 1861) has received lately some attention. Hirsch (*Berlin. klin. Wochenschr.*, No. 40, 1897) describes the case of a young woman, 17 years of age, who was admitted to the hospital for a feverish gastric catarrh. From this she recovered in two days. On the morning of admission the specimen of urine obtained was noticed to be of a dark brown colour. The colour appeared to be darker than in carboluria, and to be of a brownish, not a greenish, tinge. The patient had not been taking any drugs of the phenol group. The urine was dark in colour when passed, and the colour deepened on standing. There was a slight reduction of Fehling's solution. An acid was extracted from the urine which (1) in alkaline solution gave a dark brown colour, (2) reduced an ammoniacal silver solution in the cold, (3) reduced Fehling's solution in the presence of heat, (4) with very dilute iron chloride solution gave a blue colour. The substance was present in the urine for two days, and then disappeared.

Futcher (*New York Medical Journal*, January, 1898) gives a full *résumé* of the literature of the subject, and recounts a case which had come under his observation. The patient was a robust, healthy-looking man, 57 years of age. He had repeatedly made application to insurance companies for policies, but had always been rejected owing to the alleged presence of sugar in his urine. He consulted several specialists, who assured him that he was suffering from diabetes. He went to Carlsbad, where he was treated for the disease, though he had had none of the usual symptoms of diabetes, such as thirst, emaciation, large appetite, and polyuria. The urine showed a peculiar, deeply-pigmented, reddish-brown colour, and had a slightly aromatic odour. The specific gravity was 1023, the reaction acid. There was no albumin present. On the addition of a few drops of the urine to boiling Fehling's solution, the mixture immediately became of an inky-brownish colour, and on further boiling there was distinct copper reduction. The fermentation test and Bötger's test were negative, and no osazon was formed with phenyl-hydrazin. The urine was optically inactive; it deflected neither to right nor left. The addition of an alkali to the urine caused a marked deepening of the colour. On standing exposed to the air in a test-tube the

upper layers of the urine became deeply pigmented, and the colour gradually spread down the layer of urine. Reduction took place in an ammoniacal silver solution on addition of the urine. A solution of chloride of iron was turned a bluish-green, the colour, however, rapidly disappearing. The author considers that the condition cannot be described as a disease, and apparently has no pathological significance, and is without influence on the health of the individual. The condition is of importance from its liability to be mistaken for glycosuria.

[The property of urine of darkening by exposure to the air from the taking up of oxygen seems to be common to many hydroxyl derivatives of benzene. According to Smith (*Practitioner*, May, 1898, p. 477) it has been definitely associated with the presence of pyrocatechin, homogentisic acid, and uroleucic acid.]

27. Cystinuria.

Smith (*Practitioner*, May, 1898) recounts two cases of cystinuria. The first, a boy aged 8 years, enjoyed excellent health. The urine deposited a greenish sediment, and had a fragrant odour. The microscope showed the presence of cystin crystals. The deposit was transitory. The second, a stout lady, in fair general health, sought advice for rheumatic pains in the leg. The urine contained a white sediment almost entirely composed of cystin. The deposit was transitory. The author thus summarises the present knowledge of the subject:—

1. Cystin is a product of proteid metabolism, probably the result of a synthetic process.
2. It has no relation to uric acid or to gout or rheumatism.
3. It is in no way connected with taurin, which is a sulphuric acid.
4. Its probable forerunner in the body is cystein, which is a strong base soluble in water.
5. Traces of cystin or of a body closely related to it occur normally in urine.
6. The sulphur of the cystin is, as a rule, oxidised into SO_4 (ordinary and ethereal).
7. Under certain unknown conditions cystein escapes full oxidation, and is partly excreted as cystin.
8. Cystinuria has been found to be associated with diaminuria by several observers.
9. Cystinuria may be intermittent or occasional.
10. Cystinuria and diaminuria are possibly due to a common cause, viz. peculiar intestinal micro-organisms.
11. Therapeutically the indication is to disinfect the intestine.

28. The influence of calcium carbonate of the metabolism in man.

Von Straufs (*Zeitschr. für klin. Med.*, 1897, xxxi., p. 493), working in Von Noorden's clinic on the metabolism of two normal individuals and a number of patients suffering from nephrolithiasis and gout, came to the following conclusions as regards the influence of calcium carbonate on metabolism:—

1. The total excretion of P_2O_5 in the urine was markedly reduced by calcium carbonate.
2. The diminution occurred mostly at the cost of the monophosphate of soda. An alkaline reaction was never obtained.
3. A diuretic action from the calcium was never noticed.
4. A progressive increase in the calcium excretion did not follow the increased exhibition.
5. The nitrogen excretion was not markedly influenced; and the same might be said of the uric acid and alloxuran bases.
6. The urine under the influence of the calcium carbonate was found to possess uric acid solvent properties.
7. There was no noticeable increased putrefaction in the alimentary canal in spite of the large proportion of ethereal sulphates in the urine.

The calcium carbonate proved useful in patients with nephrolithiasis. The acidity of the urine diminished though it did not become alkaline. The calcium carbonate should be taken in water an hour to an hour and a half after meals.

29. A new method for the estimation of indican in the urine.

Amann (*Rev. méd. de la Suisse Rom.*, 1897) describes a new method for the estimation of indican in the urine. Twenty c.cm. urine are taken in a reagent glass and about 5 c.cm. chloroform and 5 c.cm. of a 10 per cent. potassium supersulphate solution are added. The glass is gently agitated to mix the chloroform without forming an emulsion. The mixture is then placed at rest that the ozone of the atmosphere may oxidise the indoxyl contained in the urine. Indigo is formed, which is dissolved in the chloroform, and a more or less deep blue colour is produced. By comparison with a standard solution the amount of indigo present may be estimated. As by more or less complete oxidation of skatoxyl a red or violet pigment is formed which is insoluble in chloroform, the fluid above the chloroform is coloured and an approximate estimate of the amount of skatol in the urine can be obtained. The advantage of the reaction is that the alkaline sulphate does not cause the precipitation of proteid bodies, therefore they do not require to be removed from the urine.

30. *Rhus aromatica* in incontinence of urine.

Freyberger ("Treatment, 1898," No. V.) strongly advocates the use of *Rhus aromatica* in the incontinence of urine in children when resulting from an atonic condition of the bladder. The drug is best prescribed in solution with an aromatic syrup to disguise the taste. The dosage advised is 5 to 10 m in children from two to five years, 10 to 15 m for children five to ten years, and 15 to 20 m in older children. The author claims that the drug is as efficacious as belladonna, and can be given without the slightest ill-effects, and that good results can be obtained when belladonna proves inefficient.

GOUT, RHEUMATISM, AND RHEUMATOID ARTHRITIS.

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Gout.

In the "Year-Book for 1898" (p. 130) some papers by Mordhorst were referred to, in which he describes the granular form in which urates are deposited from saturated solutions under certain conditions (*Kugelurate*).

In a more recent publication (*Centralblatt. f. innere Medicin*, 1898, xix., p. 409) the same observer discusses the action of sodium carbonate and salicylate in gout and rheumatism.

He believes rheumatism to be but a preliminary stage of gout and ascribes the pains and swellings of the former disease to the formation in the affected parts of uratic granules. When the urate retains its granular form for a longer or shorter time we have rheumatism, but when it becomes converted into crystalline sodium biurate gout is developed.

On this theory he ascribes the action of sodium salicylate in rheumatism to a solvent action exerted by this salt upon the granular urate, and, with the view of testing this theory, he instituted a series of experiments.

Mordhorst found that neutral phosphate, acetate, bicarbonate, sulphate, tartarate, or lactate of sodium, as also common salt, when added to weak solutions of sodium carbonate saturated with uric acid, caused precipitation of granular urate, and that the granules formed retained their spherical shape for months.

He next found that the addition of sodium salicylate delayed the granule formation, and that the addition of salicylate after the granules were formed was capable of causing them to be redissolved. In two to five hours acicular crystals fell.

He next argues that the fluids of connective tissues and cartilage, and synovia, owe their alkalinity to sodium carbonate, and not to the bicarbonate and di-sodium phosphate, as is usually taught. He bases this conclusion on the fact that whereas the addition of uric acid to a dilute solution of sodium bicarbonate