ANALYTICAL NOTES.

Determination of Uric Acid.—In the Goulstonian Lecture recently delivered by Dr. Luff, he stated that of all the published methods for this purpose, that of Gowland Hopkins is by far the most reliable. It consists in saturating the urine with powdered ammonium chloride, allowing to stand for two hours with occasional stirring, and then filtering. The precipitated ammonium urate is then washed three or four times with saturated ammonium chloride solution, washed off the filter with a jet of hot water, and heated just to boiling, with excess of hydrochloric acid. The beaker and contents are allowed to stand in the cold for two hours. When the uric acid separates completely, it is collected and washed with cold distilled water, a correction of 1 milligramme for every 15 c.c. of filtrate should be added to the result. The uric acid is washed off the filter, warmed with sodium carbonate until dissolved, then transferred to a flask and mixed with 20 c.c. pure H_2SO_4 . The mixture is titrated warm, with $\frac{N}{20} K_2Mn_2O_8$ solution, 1 c.c. of which = 0.00375 gramme uric acid.

On the Occurrence of Alcohol in Milk. (Forsch. Ber., 1897, iv., 206.)—The examination of a sample of milk which had been complained of by the consumer as leaving an unpleasant after-taste, gave the following results:

Specific Gravity at 15°C	...	...	1.0335
Fat	...	...	3.89 per cent.
Total solids	...	...	13.307 "
Alcohol (by weight)	...	...	0.96 "

The milk was derived from a considerable number of cows which were fed on distillery "slummage" containing 5.90 per cent. of alcohol. The substance which caused the unpleasant taste could be expelled from the milk in a current of steam, and separated from the distillate in fine flakes. Its amount was very small. It could also be isolated from the slummage in a similar manner. From this instance, the author considers that the statement of König (*Nahr. und Genussmittel*, 1893, 249), that when cattle are fed upon fodder containing alcohol, the latter does not pass into the milk, is disproved.

A New Method of determining Caffeine in Coffee. E. Tassily. (*Bull. Soc. Chim.*, 1897, 766-768.)—The powdered coffee is digested with successive portions of boiling water, a litre of liquid being obtained from 10 grammes. The solution is divided into two parts, each representing 5 grammes. These are evaporated to dryness on the water-bath, the residue treated with 1 to 2 c.c. of sulphuric acid (1:10), and taken up with boiling water. The caffeine can then be extracted with cold chloroform from the solution made alkaline with ammonia, or with hot chloroform

from the residue obtained on evaporating the aqueous solution with sand and magnesia. The former method gives slightly higher results, but in each instance the figures agree well with those obtained by other processes.

Modification of the Thallerquin Test for Quinine. F. S. Hyde. (*Jour. Amer. Chem. Soc.*, 1897, xix., 331, 332).—By substituting a clear filtered solution of calcium-hypochlorite (bleaching powder) for the bromine or chlorine water, the test is rendered more certain, and the green colour more brilliant. After acidulating the quinine solution with one drop of sulphuric acid (1:4), the hypochlorite solution is added until the blue fluorescence just disappears and the solution acquires a faint golden tint. On now adding a few drops of dilute ammonia (1:3), a clear emerald green colour should appear. Potassium or sodium hypobromite cannot be used, as the strong alkali tends to precipitate the quinine.

Detection of Margarine in Cheese. H. Bremer. (*Forsch. Ber.*, 1897, 51-53).—By extracting the fat from the cheese with ether, the author considers that impurities are simultaneously extracted, and in Henzold's method, in which the fat is extracted by means of 5 per cent. potash, all the free fatty acids, as well as those in combination with ammonia, are saponified. The method considered the most satisfactory is to shake the finely-divided cheese with water at 23° to 30° C., acidified with sulphuric acid (5:200), and to apply centrifugal force, when the fat rises to the surface, whilst the albuminoid substances coagulate at the bottom.

In addition to the determination of the usual constants, valuable information may be obtained from the iodine value of the "liquid" fatty acids. In a number of experiments with pure butter-fat, this iodine value did not exceed 95, even when the cows had been fed on maize oil-cake. A sample of Edam cheese yielded a fat, the liquid fatty acids of which had an iodine value of 93.35, whilst the values obtained with two samples of margarine cheese (Rodam and Bachstein) were 110.3 and 109.0 respectively.

A PECULIAR WATER,

BY

J. CARROL, M.B., D.P.H.

ON November 29th, 1896, I collected a sample of water from a bore-hole sunk at the Ilkeston Waterworks, Little Hallam. The depth of the bore was 837 feet. The water had the following characteristics:—

It was bright and clear, with a considerable quantity of gas. It contained no suspended matter or sediment, and gave off a most offensive

smell. What this smell was due to I had not the opportunity of determining. When evaporated to a small bulk the water was alkaline in reaction, the alkalinity not being removed by boiling. There was a slight deposit on boiling. Calcium and sulphates were absent.

On analysis I obtained the following results:—

	Parts per 100,000.
Free ammonia	0.005
Organic ammonia	0.002
Total hardness (all temporary)	5.7
Chlorine (= NaCl, 28.01)... ..	17.0
Total solids	57.12
Barium (as bicarbonate)	3.0
Na ₂ CO ₃ , a considerable quantity, not determined with accuracy.	

The above results show the water to be a peculiar one, especially when we consider that the bore-hole was sunk in a colliery district. The water from a pit shaft 200 to 300 yards away, is of a totally different character, containing calcium and sulphates in abundance, and being decidedly hard.

Another peculiar feature of the water is the presence in it of sodium carbonate and barium bicarbonate. The presence of the barium might be accounted for by its occurrence in the rocks and strata to the south of the bore-hole. The grains of silica in the hemlock stone and the hills about Stapleford and Bramcote are cemented together by barium sulphate, as was shown by Professor Clowes some years ago. Under certain conditions, of which we are at present ignorant, it is possible that barium sulphate may be rendered soluble, or the barium may be in some other combination, and be converted into the bicarbonate, and so held in solution by excess of carbon dioxide. The strata penetrated by the borehole dip from the south. Another sample taken and analysed a fortnight later gave almost identical results.

SCARLET FEVER—RETURN CASES.

P. BOOBYER, M.D., M.O.H. Nottingham.

I HAVE gone somewhat exhaustively into the subject of return cases of scarlet fever (or cases resulting, or appearing to result, from a return of patients to their homes after isolation in hospital) in previous annual reports for some years past. Hitherto the proportion of such cases occurring in connection with Bagthorpe Hospital has ranged from about 4.5 to 5 per cent. I am pleased to be able to report that the return cases during 1896, estimated by exactly the same criteria as before, have fallen to 2.3 per cent. of all cases. Whether this reduction be due, either wholly or in part, to any measures adopted by us, or to intrinsic change in the infection itself (the endemic wave has certainly shown a declining tendency during the

latter part of 1896), I am, of course, unable to say; but during the past year we have certainly exercised the utmost precaution against the propagation of infection through the discharge of patients from hospital. One result of the extra care has been the raising of the average period spent in hospital by nearly seven days. This additional length of stay, however, has been brought about less by a desire to keep the patients longer in hospital, than through the necessity of giving their friends time to make arrangement for their temporary sequestration from other children after their discharge. I strongly deprecate the keeping of patients in a hospital like ours, without convalescent wards, a day longer than is necessary for the protection of others with whom they will mix when they go out. Such a practice retards convalescence, and even exposes them to risk of re-infection; but the interests of the community must be considered before those of the individual, and when there is, in the opinion of the responsible medical man, any appreciable risk of a patient spreading infection, such a patient should not be allowed to go out and mix with susceptible persons. I have frequently recorded the fact that in our experience there is a marked tendency to special severity in those cases arising from contact with old hospital cases, and this is another argument against allowing any laxity of practice in this respect. I have long been of opinion that no isolation hospital for scarlet fever should be established without a convalescent section of adequate capacity attached to it, either on the same site, or (preferably) at some little distance. In this provision probably lies the solution of the difficulty I have here shadowed forth.—A. R. 1896.

FREDERICK BARRY, M.D., ETC.

OBUT 12TH OCTOBER, 1897.

THE Local Government Board has sustained a serious loss by the death of Dr. Barry. So much has already been written in his praise that it is difficult to say more. We would, however, signalise our appreciation of the careful and painstaking work he carried out in his famous inquiry into the Small-pox Epidemic at Sheffield during 1887-88. His results have never been controverted in spite of the many attacks made on methods and deductions, and his report has served as a model for most of the subsequent inquiries. Dr. Barry did excellent work in his inquiry on the prevalence of Enteric Fever in the Valley of the Tees, during 1890-91.

Dr. Barry had a distinguished career at the Edinburgh University. He acted as Medical Officer of Health to the Craven District in Yorkshire for some two years, and then took charge of Cyprus. He was appointed a Medical Inspector to the Local Government Board in 1881.