

London: Longmans and Co.—A useful little text-book, containing in a small compass a large amount of information on a subject about which, in these days, a great many people are anxious to know something.

Common British Insects, selected from the typical Beetles, Moths, and Butterflies of Great Britain. By the Rev. J. G. WOOD, M.A. London: Longmans and Co.—This is an abridged account of the above-named insects, more fully treated of in the accomplished author's fascinating volume, "Insects at Home." Beautifully printed and profusely illustrated, this smaller work is just the kind of present to offer to a boy or girl at this season of the year, whilst it is not destitute of attractions to persons of maturer years.

Letts's Diary for 1883, including the Medical Diary, the Pocket Diary and Almanack, the Office Diary and Almanack, the Rough Diary or Scribbling Journal (two sizes), the Clerical Tablet Diary, and the Housekeeper and Engagement Book.—All who have used any one or more of this group of useful diaries will welcome their reappearance. By means of them, professional work as well as business operations generally, are greatly facilitated. Indeed, to those who have become accustomed to their aid these diaries, or some of them, are simply indispensable.

Our Happy Family, being the Little Folks' Annual for 1883, and Cassell's Illustrated Almanac, 1883 (Cassell, Petter, Galpin and Co., London), are beautiful specimens of the arts brought into requisition for the production of Christmas books. They certainly do no discredit to the high reputation of the publishing firm from which they are issued.

THE ALKALINE PICRATE OF POTASH TEST FOR GRAPE SUGAR.

To the Editor of THE LANCET.

SIR,—For the practical application of the test for grape sugar, referred to, and briefly described, in my letter in THE LANCET of November 18th, and for the indication of the precautions to be observed in its use, both as a quantitative and a qualitative test, several details will have to be carefully worked out. One of the most interesting results of the use of this test is the clear indication which it gives of the frequent, if not constant, presence of a trace of sugar in normal urine, a condition asserted as a fact by some high chemical authorities and denied by others. On this point see Dr. Parkes on the Urine (p. 11).

I am indebted to my son, G. Stillingfleet Johnson, the junior demonstrator of chemistry at King's College, for the following contribution to the chemistry of this interesting subject. I am, Sir, yours obediently,

Savile-row, Nov. 23rd. GEORGE JOHNSON, M.D., F.R.S.

The Picrate of Potash and Caustic Potash Test for Grape Sugar.

Several precautions are necessary in the use of this test. First, care must be taken not to employ too strong a solution of caustic potash, for picric acid is decomposed by concentrated potash on boiling, ammonia being evolved in abundance, and a dark-brown colour being produced. The liquor potassæ of the British Pharmacopœia does not decompose picric acid when boiled with the crystals. A solution of potassic hydrate, containing 20 grammes KHO to 1 litre of water (nearly 2 per cent.) produces no decomposition when boiled for many minutes with crystals of picric acid; whilst the full effect of Moore's test for grape sugar may be obtained with a solution of this strength. In testing the limit of delicacy of the potash and picrate test, a 2 per cent. solution of caustic potash was therefore uniformly employed. Secondly, it is necessary to avoid the presence of an excess of picrate, on account of the strong colouring effects exhibited by this substance when boiled with excess even of dilute (2 per cent.) potash solution. It was found impossible to detect less than 50 parts of grape sugar in 100,000 parts

of water, when a saturated cold solution of picrate of potash in 2 per cent. caustic potash was boiled with the grape sugar, and the colour produced compared with that obtained by boiling an equal volume of water devoid of grape sugar, mixed with the same volume of the alkaline picrate. The deep colour of the alkaline picrate itself interfered with the delicacy of the test.

By adopting the following method it is possible to detect three parts of grape sugar in 100,000 parts. 0.8 c.c. grape sugar solution (containing 0.0006776 gramme grape sugar) was mixed with 20 c.c. of 2 per cent. potash solution and 0.5 c.c. of a cold saturated solution of picrate of potash. This liquid was boiled for about thirty seconds in a flask. 20 c.c. of 2 per cent. potash solution + 0.5 c.c. of the same picrate of potash solution was boiled for an equal length of time in another glass flask. The two liquids were then transferred to two colourless test-tubes, held vertically over a white porcelain plate in a good light, when that containing the grape sugar was seen to be very slightly, but distinctly, darker than the other. This experiment, by which the limit of delicacy of the test was fixed, will give a sufficient illustration of the general method to be employed, and the precautions necessary in applying this delicate test.

As regards the application of this test to the detection of grape sugar in urine; since it was observed that normal urine gives a slight indication with the alkaline picrate, the interesting question suggested itself whether any other substance present in urine is capable of producing a colouration on boiling with a solution of potash and potassic picrate.

In order to solve this question, if possible, Brücke's method for separating sugar from urine was employed. About half a pint of normal urine, which produced, however, a blood-red colouration with the picrate test, was mixed with four times its volume of absolute alcohol in a glass beaker and filtered. To the clear filtrate was added an alcoholic solution of ten grammes of caustic potash, and the mixture having been well stirred was allowed to stand for four days.

The addition of the alcohol throws down a copious precipitate, consisting of the bulk of the inorganic salts of the urine, which are removed by filtration. The alcoholic potash produces a gradual separation after a day or two of a compound of grape sugar with potassic hydrate, which is insoluble in the alcohol liquor.

A few drops of a reddish oily liquid separated out and a few crystals formed on the sides of the beaker. The clear yellowish liquor was now decanted from the sediment, neutralised with dilute sulphuric acid, filtered and distilled to remove the alcohol. The aqueous residue in the retort, which contains the extractives and other substances, gave no indication of grape sugar with the picrate test; indeed, it became somewhat paler in colour after boiling with the alkaline solution.

The solution in water of the sediment in the beaker, on the other hand, gave the sugar reaction with alkaline picrate very strongly. This solution was now treated with an excess of solution of basic acetate of lead and filtered, to remove the extractive matters; the filtrate was freed from excess of lead by sulphuretted hydrogen and filtration, and the resulting clear solution was concentrated by evaporation. On testing with the alkaline picrate, it still gave distinct indications of the presence of grape sugar, and, on further concentration, also with Fehling's solution. So far, then, the chemical application of this very delicate test seems to confirm Brücke's statement that traces of grape sugar may be detected even in normal urine. Further confirmation of this statement can be obtained only from clinical observation.

G. STILLINGFLEET JOHNSON, F.C.S.

PRESENTATION.—The members of the Loyal Albion Lodge of Odd Fellows, Manchester Unity, have presented their surgeon, Dr. Alderson of Hammersmith, with a silver-mounted library inkstand and a collarette, accompanied with an illuminated framed address, in recognition of his valuable services to the Lodge for the past fourteen years.

A CORONER'S jury at Birmingham has returned a verdict of "Wilful murder" against a midwife at Balsall Heath, for the improper use of an instrument for the purpose of procuring abortion, death having resulted from the operation.