

comes in. Does he assert that the daily pouring into the body of 6 or 8 grains of uric acid in foods and drinks has no effect on the causation of headache or gravel?

As this is not a question of the diet of a remote Indian province about which my information is, according to Mr. Freyer, so lamentably defective, but one which can be demonstrated any day here in England, if he will furnish me with details of a case which diet fails to cure, or will publish such case or cases in the *BRITISH MEDICAL JOURNAL*, he need not fear that I shall be ready to meet him, as clinical research is much more to my taste than a battle of words, some of which, as "diathesis used in conjunction with uric acid," have but few shreds of meaning left.—I am, etc.,

Brook Street, Dec. 28th, 1896.

ALEXANDER HAIG.

#### SAFEGUARDS IN CHLOROFORM ADMINISTRATION.

SIR,—I should like to endorse the opinions contained in the excellent letter of Mr. F. C. Larkin in the *BRITISH MEDICAL JOURNAL* of December 26th, 1896. For some years past I have taught:

1. That the anæsthetic condition is essentially abnormal, and therefore can never be absolutely free from risk.

2. That although there is no royal road even to relative safety, yet much may be done in this direction by insisting that the student should thoroughly grasp what I believe to be the fundamental principle of all good administration—that is, to concentrate the whole of his care and attention upon the actual administration and the state of the patient, rather than rely in the slightest upon any reputed mechanical safeguard, or any so-called "perfectly safe" method.

3. That as far as chloroform is concerned, it is of great importance not only to observe and feel the breathing, but also "to watch the complexion, colour of the ears, etc., and so get information concerning the actual state of oxygenation of the blood."

It is because of the tendency of the Junker or Krohne's modification to distract his attention that I hesitate to advise the student to use it, at any rate, until he has mastered the first principles of the art; and I also agree with Mr. Larkin that with this particular apparatus it is sometimes difficult to induce such a profound degree of anæsthesia as is occasionally required.—I am, etc.,

Weymouth Street, W., Dec. 28th, 1896.

J. FRED. W. SILK.

#### THE CHEMICAL CHANGES WHICH TAKE PLACE ON HEATING MILK.

SIR,—Dr. Macphail in the *BRITISH MEDICAL JOURNAL*, 1896, p. 1767, presents an argument that pasteurised milk is more nearly approaching to milk than sterilised milk. He comes to this conclusion on grounds which are purely chemical, and makes statements which do not appear wholly warranted.

First, grave exception may be taken to the statement that it is to the presence of fat that the higher boiling point of milk than that of water is due. This is quite wrong; it is really due to the osmotic pressure of the dissolved sugar, salts and proteids.

Dr. Macphail states, "When a temperature above 167° F. is applied to milk, then the changes incident to boiling commence. The fat globules are broken up and the fat is liberated, the lactalbumin is coagulated, and changes occur in the milk sugar and casein."

The following statement is more in accordance with the facts. "When milk is raised to such a temperature (certainly below 160° F.) at which evaporation takes place to an appreciable extent from the surface, and at which the cream rises quickly, the larger fat globules have a tendency to coalesce, and fat is liberated in visible globules. Lactalbumin as such does not exist in milk; the alkaline salts of soluble lactalbumin are converted into the alkaline salts of coagulated lactalbumin, which are still soluble and do not appear to be difficult of digestion. The milk sugar is somewhat changed by the action of the alkaline salts in milk; its carbohydrate constitution does not appear to be seriously affected, and the change is not rapid. The casein is unchanged, or so slightly changed that the alteration cannot be detected unless the milk be alkaline, when a portion of the sulphur is removed as sulphide. At high temperatures a deposit of calcium citrate occurs, causing loss of both lime and citric acid. Owing to the deficiency of lime in boiled

milk the action of rennet, which produces from casein (in solution as calcium caseinate) the calcium salt of dys-chymocaseose (curd), is modified."

All these changes take place below 167° F., and the difference between milk pasteurised at 167° F. and milk sterilised at 212° F. is one of degree, depending on the length of time the milk is kept at the temperature named, not of kind.

The amendment to Dr. Macphail's statement does not in the least affect the excellent results obtained by the Walker-Gordon Laboratories, but only shows that his very sweeping condemnation of sterilised milk was made on insufficient or erroneous data; were this not the case, it would be difficult to reconcile it with the fact that hundreds of infants thrive on the Aylesbury Dairy Company's Humanised Milk, which is completely sterilised, including many whose lives were despaired of till fed on sterilised preparations.—I am, etc.,

H. DROOP RICHMOND, F.I.C.

Analyst's Office, Aylesbury Dairy Company, Dec. 28th, 1896.

#### HOSPITAL REFORM ASSOCIATION.

SIR,—At the request of the Hospital Reform Association, Dr. W. Knowsley Sibley and Dr. Ernest Snape have kindly undertaken to make a report on the special hospitals of the metropolis. The Association will feel grateful if the officers of these institutions will afford them facilities for making their report as complete as possible.—I am, etc.,

T. GARRETT HORDER,  
Honorary Secretary.

Cardiff, Dec. 28th, 1896.

#### GENERAL MEDICAL COUNCIL: ELECTION OF DIRECT REPRESENTATIVE FOR SCOTLAND.

SIR,—Lest silence on my part under the circumstances should be misconstrued, will you kindly allow me also, through the medium of your columns, to cordially thank the 564 members of the profession in Scotland for the honour which they did me by this substantial and absolutely spontaneous support. Late of appearing in the contest, and with no personal organisation whatever, not even the employment of a single law agent, I take it that the support which I received demonstrates two conclusions—first, that there is a large feeling of dissatisfaction in Scotland with the present state of medical economy; and, secondly, contrariwise, that there exists a remarkable indifference to the remedying of it. Out of a constituency of close upon 4,000, not 50 per cent. took the trouble to return their voting papers, so that the present representative may be held as personifying the views of about one-third of the constituency. If absolute demoralisation and disintegration of the profession, which seems to me imminently to threaten, are to be averted, the first step to be taken is to obtain a new Medical Act supplanting the present useless and farcical machinery, and with a united profession throughout the kingdom, no Government could deny this imperative and just demand.—I am, etc.,

Glasgow, Dec. 29th, 1896.

D. CAMPBELL BLACK.

#### THE ETIOLOGY OF CHOLERA.

SIR,—The most interesting and instructive communication from Mr. Hankin in the *BRITISH MEDICAL JOURNAL* of December 26th, 1896, tracing with much probability an outbreak of cholera at Sangor, Central India, to pollution by an infected dishcloth, brings to my mind an isolated fatal case of cholera in which the attack was also fairly traced to an infected cloth which had impregnated the drinking water.

Briefly stated, the facts of the case were as follows:

A warrant officer in the Ordnance Department employed in the Fort at Mhow, Central India, was attacked by cholera one evening in August, 1895, and was dead by the following morning. The cause of the attack was at once investigated, with the following result: The warrant officer had been working on the day of his seizure in the room of the fort set apart for the filling of cartridges. The other occupants of the room were about a dozen natives. He had not left the room between 9 A.M. and 5 P.M., except for his dinner hour at 1 o'clock. He then partook of a simple dinner in the fort in the company of another European, who subsequently suffered from no illness. In the verandah of the room where the warrant officer had been working there was placed for his