Regarding the length of time that a mother should breast-feed her child, we possess as yet no trustworthy physiological data by which we can settle definitely this thorny question; but in barbarian and civilised countries alike, because it is well known that lactation tends to inhibit the fertile state of the woman, it not infrequently happens that the child is undoubtedly suckled far too long, as it sometimes is not weaned until it is two or even three years old. As, however, menstruation is apt to be inhibited during lactation we naturally desire to have an explanation of the mechanism of this phenomenon. On experimental evidence alone there is an overweening disposition to believe that ovulation and menstruation are not copartners, but that menstruation depends upon and is caused by an internal secretion formed in the ovary. Brushing aside and ignoring altogether clinical facts, experimentalists would have us learn that the ovary exercises a direct influence upon the uterine mucosa both in the unimpregnated and the pregnant state. If, however, the findings and conclusions of those authorities be unimpeached, there are then many clinical facts which will remain inexplicable. We shall, for example, experience the greatest difficulty in understanding how a placenta under such circumstances could possibly complete its development and growth and attain perfection in any structure outside the uterus, and yet it is common knowledge that the placenta in every case of full-time extra-uterine pregnancy is as perfect structurally and functionally as any placenta formed in the cavity of the uterus. There is, as I have on several occasions shown, abundant clinical proof that the menstrual discharge is itself a product of secretion, but let us for the nonce assume that it is the consequence of a more or less extensive destruction of the uterine mucosa and outpouring of blood from ruptured capillaries caused by a "hormone" issuing from the ovary. On the latter hypothesis, when menstruation is held in abeyance because of lactation, we must infer that "the specific hormone" which dominates menstruation is on account of the activity of the secretory cells of the mammary glands either suppressed or rendered powerless to exert its wonted influence upon the endometrium. But milk is merely a complete food, containing as it does all the elements essential for the maintenance of the well-being of every organ and tissue of the body, and it possesses no other known virtue. When, therefore, the mammary glands draw upon the maternal blood for the materials necessary for the sustenance of the infant, the assimilatory powers of the gastro-intestinal tract of the mother should be so heightened that the nutritive state of no one organ or tissue of her body should be more likely to suffer than another. It is consequently difficult for us to believe that the "hormone" of menstruation is suppressed or rendered functionally useless during lactation, because the cells of the mammary glands abstract from the maternal blood the constituents of milk. On the other hand, on the hypothesis that menstruation is a secretory phenomenon, the suppression of menstruation by lactation resolves itself merely into the question of the inhibition of the functional activity of one organ by the functional activity of another set of correlated organs through the influence of the blood-vessels.

Concerning the question of the direct influence of lactation upon ovulation and gestation, I find that during the progress of lactation impregnation under such circumstances occurs in 22 per cent. of the cases; in 7.5 per cent. the fertilisation takes place in spite of the fact that menstruation is held in abeyance, whilst in 14.5 per cent. it occurs sooner or later after menstruation has been re-established. Occasionally I have seen young married women who had never menstruated during the first five or six years of their married life because menstruation was held in abeyance by lactation, and fertilisation occurred during lactation. To some misinterpreted fact of the aforesaid type we are probably indebted for the statement which is still reiterated "that women who have never in their lives menstruated have nevertheless been pregnant." Judging, however, from the numerous cases which have come under my observation of women who had lived in wedlock many years before attaining the climacteric age and who had never menstruated, I am confident that no woman has ever been pregnant whose uterus had never displayed and would never exhibit the external manifestation of menstruation. When conception occurs whilst menstruation is held in abeyance by lactation it is of course quite

possible that the ovum which is then fertilised is that maturing for an approaching menstrual period, and I have already expressed the opinion that most probably the ovum which is fertilised under ordinary circumstances is that of an approaching, and not that of a past, menstruation, because the ovum of a past menstruation is too old to respond to the attractive influences of any spermatozoon. In any case it is very evident that ovulation may occur independently of menstruation and in consequence of sexual excitation, and it is highly probable that the fertile powers of the woman are diminished whilst lactation is in progress, because the ability of the uterus to respond adequately to the irritative influences of a vital oosperm is repressed by the maintenance of a state of activity in the mammary glands.

When impregnation occurs during lactation, and whilst menstruation is held in abeyance, it not infrequently happens that the woman, being unaware of the fact that she has conceived, continues to suckle until she is three or more months pregnant. Clinically we have no proof that lactation affects in any prejudicial manner the process of gestation. In many cases, however, the evolutionary changes going on in the pregnant uterus call a halt in the activity of the mammary glands, and as the child can no longer be satisfied with its breast feeds the mother is compelled to wean it.

I am, Sir, yours faithfully,

JAMES OLIVER, M.D., F.R.S. Edin., F.L.S.,
Gynaecologist to the Hospital for Women, London.

Jan. 11th, 1913.

LEUKANÆMIA.

To the Editor of THE LANCET.

SIR,—The report of Dr. C. H. Treadgold of a case of myeloid leukæmia, with so-called megaloblastic degeneration, in a child (THE LANCET, Jan. 11th, p. 94), is of special interest as the blood picture of leukanæmia became that of leukæmia before death. It differs thus from the cases I have published,¹ referred to by Dr. Treadgold, and from others I have seen since that date (1908). In Dr. Treadgold's case the blood picture on May 21st was that of pernicious anæmia, and post mortem well-marked evidence of hæmolytic was obtained. The close resemblance to, if not association with, Addison's anæmia is thus obvious, although clinically it is well known that the latter disease does not become a leukæmia, except as regards a relative change in the leucocytes in certain cases. The most striking feature to my mind of these leukanæmic cases is that they suggest a pathological basis common to leukæmia, leukanæmia (or atypical leukæmia), and pernicious anæmia. The agency which produced hæmolytic and anæmia (832,500 to a cubic millimetre) of a primary and pernicious type (normoblasts 183,700 to a cubic millimetre) may apparently end in producing myeloblastic (60,375 to a cubic millimetre) and myelocytic (7875 to a cubic millimetre) changes in the blood (? of a "regenerative" nature). The anæmia of the leukæmias, including atypical, shows the close original association between the red and white cell "series" and the difficulty in maintaining the barrier between the three diseases. Hence Leube's term of leukanæmia in such cases as Dr. Treadgold records.

I am, Sir, yours faithfully,

F. G. BUSHNELL,

Jan. 10th, 1913.

Tuberculosis Officer, Essex County Council.

FUNCTIONAL DISORDER OF THE HEART IN THE YOUNG.

To the Editor of THE LANCET.

SIR,—In your issue of Jan. 4th you reported some remarks I made at the discussion on heart disease in children at the Royal Society of Medicine. The subject discussed was so extensive, and the time at the disposal of the meeting so short, that many important points could not be dealt with by every speaker. With your permission I should like to write a few lines on a matter with which, for the reasons stated, I was unable to deal at the time, because it is important in itself, and evoking some interest at present. I mean so-called functional disorder of the heart in childhood and adolescence, and the attitude which the physician should take towards it.

It was, perhaps, scarcely germane to the subject under

¹ Liverpool Medico-Chirurgical Journal, 1908, vol. xxviii., p. 415.

discussion, as Dr. Edmund Cautley pointed out in his reply, that adolescents should be taken into consideration at all, but such an extension was not unnatural and was of practical interest. As Dr. Cautley also remarked, functional disorder in children, other than one form or another of innocuous arrhythmia, is decidedly uncommon, and even arrhythmia is not so often met with as it is later. This rarity is probably due to the higher rate of pulsation in childhood. Even in the foetus, it is true, the heart-rate may be slowed by nervous influence during labour, but who has ever noted cardiac arrhythmia in the quickly beating heart of the baby when the organ has been sound?

When we come to the functional cardiac disorder of adolescents the matter is different. In them the area of cardiac dulness may be enlarged, the apex beat displaced outwards to the left, an auriculo-ventricular systolic bruit present, and inability to exert themselves with their wonted vigour manifest. In these cases it is questionable whether such bruits are often mitral, for even functional leakage here is not a sign which can be ignored with safety. In the adult the sudden establishment of a "functional" mitral bruit may be the harbinger of speedy death. The bruit in functional disorder is most frequently tricuspid and of a quasi-physiological character. The prognosis is good in these cases with reasonable care. Dr. James Mackenzie said he had not heard of their dying. It is not easy to say what the ultimate fate of all these cases may be, and, as Dr. Cautley remarked, some are so persistent as to suggest a more serious affection of the myocardium. But the absence of a record of mortality is no justification for the assumption of such an optimism as deprecates a rational care of the case while the abnormal phenomena continue. It is known that the "strained heart" of the youth with the signs of cardiac insufficiency mentioned, may occasionally be observed to continue for years and to render strenuous exertion impossible without an aggravation of the cardiac state; while it would certainly be fatal to the adoption by such a youth of a profession calling for severe and sustained effort, such as the army. It should, moreover, be reckoned with in life insurance, for such a heart is not an ideal one for encountering the stress of severe illness. The importance of some transient auscultatory signs may have been exaggerated in the past, and the meaning of cardiac irregularity be better understood now, although a good many current notions on the subject may require revision, and possibly in the not very distant future, but the necessity for reasonable care in the treatment of functional disorder in the young, as indicated by the signs referred to, remains. These cases are not very common, and their rarity argues their abnormality. Dr. Walter Carr appeared to suggest that such functional disorder was probably more common in the rich than among the poor. It is probably more often detected in the former class than in social strata in which the survival of the fittest is, from the intensity of the struggle for bread, still the first and only law. But when one recalls the innumerable cases one has examined in hospital and private practice over a term of years, it cannot be denied that functional disorder, other than mere arrhythmical action, is not common, and must, therefore, be regarded as abnormal. As such it demands care until, if possible, normal action be restored. If the signs persist, whatever the graphological record, the case cannot be regarded as one of "functional" disorder, but of heart disease, and demands recognition as such.

I am, Sir, yours faithfully,

ALEXANDER MORISON.

Upper Berkeley-street, W., Jan. 10th, 1913.

THE WATER-SUPPLY OF TUTICORIN (SOUTH INDIA).

To the Editor of THE LANCET.

SIR,—May I be allowed to bring the following facts to your notice? They are based on letters and information received from relatives in Tuticorin, which information I am ready at any time to lay before you. There are roughly 36,000 natives living there and no drinking water. I think that tells you about enough, but I will expand the story somewhat.

The Madura Company, which runs the mail steamers to and from Colombo, brings every morning Colombo water for all of the Europeans free, but they have to employ coolies to

carry the tins. There is no possibility of bringing water for thousands of natives in the same way. Two years ago the rains failed there and there was a water famine. The distress was awful; the people used to go down to the jetty in crowds to buy just one tumbler of water. I hope you will use any influence you may have to prevent such horrors.

The water they have there at present is brought from a large tank some four or five miles away, in which those natives who live near wash their clothes and bathe. From this reservoir the water runs into open wells, exposed to all the dust, and if there is any rain (and rain in the tropics is heavy when it comes) a flood rushes down the roads and gutters, such as they are, carrying with it all the filth of the streets into these wells. That is all the poor natives have to drink. Enteric fever is very bad there, even amongst the natives. The Chamber of Commerce has made more than one representation to the Government and wrote again lately about the need of a good water-supply. After many weeks of waiting they got an answer from the local Government man to say that a scheme was under consideration. (It has been under consideration for at least six years, but nothing happens.) The Government, it was said, is discussing the financial part of it, and the Chamber of Commerce was asked if it wished its letter sent up to the Head Office. Of course, the representation should have been sent to the Head Office weeks ago. What is the use of anyone sending a letter to the Tuticorin office? And all the other letters on the subject have gone, I suppose, into the same pigeonholes. Naturally nothing gets done if the Head Office is never told about the situation.

But surely, Sir, visitors from the Head Office should go down occasionally and see the state of things themselves. They are improving the water-supply in Madras and one or two other places where the Government people are, but they do not even bring any supply to Tuticorin fit to drink. There, where there are huge cotton mills in which thousands of natives are employed to work, in the port of Southern India where all the coolies for Ceylon have to pass, and through which there goes in the year £6,000,000 of products, there is no drinking water.—I am, Sir, yours faithfully,

Jan. 10th, 1913.

F.R.C.S.

THE EXAMINATION FOR THE DEGREE OF M.S. LONDON.

To the Editor of THE LANCET.

SIR,—Ex-Examiner's letter to THE LANCET of Jan. 4th with reference to the M.S. Lond. degree is interesting in these days when statements are so freely made as to the standard of London degrees compared with the diplomas of the Colleges and even of the Apothecaries' Hall. Presumably one may take it that a candidate for the M.S. who already has the F.R.C.S. Eng. considers the former the harder examination, and also worth obtaining. If that were not the case it would be as reasonable to expect Fellows of the College sitting for the examination of Licentiate of the Apothecaries' Hall. Certainly one would not expect them to expose themselves to the risk of losing money in paying the exorbitant examination fees of the London University. Under these circumstances, if the University prefers to maintain a high standard not only for the M.S. but also for the M.D. degree, such a policy should be amply justified. Neither in social prestige nor in the glamour of ancient foundations can London compare with Oxford or Cambridge, and it is certainly to be hoped that its chief attraction will not be that anyone and everyone who so desires can get a degree for the mere payment of a sum of money. In these days of multitudinous universities scattered all over the country there should be no hint of attracting students—as I am afraid there is—to this or that centre by a lowering of standards. The maintenance of a high standard will always pay in the long run.

With apologies for encroaching on your valuable space,

I am, Sir, yours faithfully,

Jan. 8th, 1913.

A LONDON GRADUATE.

To the Editor of THE LANCET.

SIR,—Permit me to assure your correspondents and the examiners that I intended my criticism to apply to the standard of the examination, not to the examiners. A standard is handed on and tends gradually to rise, and it