1,000), where virtually everyone goes to hospital, should remind the latter that universal hospitalization is no panacea and that a bad hospital can kill a baby as efficiently as a bad home. Both of these evils need to be tackled vigorously. Meanwhile the family doctor can be safely left in peace to do his difficult job conscientiously and well.—I am, etc.,

Petersburg, Virginia,
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T. ALUN PHILLIPS.

Sickle-cell Anaemia in Infants

SIR,—In his memorandum on sickle-cell anaemia at the age of 7 weeks, Dr. W. M. Russell (December 8, p. 1517) has drawn attention to the view that the incidence of sickle-cell anaemia below the age of 6 months has only rarely been recorded. In a paper¹ reviewing the causes of severe anaemia in African children admitted to hospital in Dar es Salaam we showed that out of 145 severely anaemic children, five below the age of 1 year were suffering from sickle-cell anaemia. Distribution was as follows:

No.	Age in Months
1	3-4
1	5-6
1	6-7
1	7-8
1	11-12

It is quite likely that the reason why this has not been more widely recognized is that the diagnosis has not been considered because of the old statement that it was unlikely to occur.—I am, etc.,

Institute of Child Health,
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London W.C.1.

J. S. MEREDITH.

REFERENCE

- ¹ Meredith, J. S., and Eyekuze, V. M., *E. Afr. med. J.*, 1962, **39**, 250.

Vitamin B₁₂ in Serum

SIR,—In the report of the Clinicopathological Conference on a case of hepatic cirrhosis (December 15, p. 1597), Dr. D. L. Mollin is reported as saying that high serum B₁₂ levels occur in two groups of conditions: the first, excessive granulocytic proliferation and the second liver disease. He mentions the value of differentiating between "free" and "bound" vitamin B₁₂.

Possibly rather obvious but nevertheless worth bearing in mind is the fact that some patients come to hospital after receiving treatment with vitamin B₁₂ by injection. This surely will give a high level of "free" vitamin B₁₂ in the blood, especially in the "therapeutic" doses usually employed.

A fourth condition in which I have noted high serum B₁₂ levels is diabetes when associated with neuropathy. This, of course, may be a reflection of some liver dysfunction although the cases in which the B₁₂ was high had "normal liver function tests."—I am, etc.,

Pathology Department,
Killearn Hospital,
Killearn, Stirlingshire.

RICHARD C. R. CONNOR.

Emergency Resuscitation

SIR,—I read with interest "Emergency Resuscitation" by Professor G. M. Wyant and his colleagues (December 15, p. 1564).

The suggestion that mouth-to-mouth ventilation should be continued for two to three minutes without response from the patient before beginning external cardiac massage was surprising. If neurological damage

has not already occurred and is to be avoided, this is too long to wait. If no response to ventilation is obtained after 30 seconds, massage should begin; if arrest is probable, artificial ventilation and massage should be used together initially.—I am, etc.,

Yeovil, Somerset.

S. W. KEMP.

Treatment of Ménière's Disease

SIR,—Mr. J. Angell James's paper (November 24, p. 1343) is of the high standard one now expects of his department in Bristol. Under proper surveillance the ultrasonic method appears to be the one of choice for destruction of the labyrinth if the hearing is fairly good, as afterwards the hearing is in many cases maintained, though the evidence that hearing is improved by this technique is not convincing. Many of us find that a very large proportion of cases with Ménière's disease respond well to reassurance and medical treatment and that surgery is seldom called for. It has long been appreciated that salt and fluid restriction is of value in these cases, but this regime is unpleasant and we consider the basis of this treatment is to keep the body electrolytes at a reasonably constant level and have found this can be attained equally well by giving the patient additional sodium and potassium so that the actual dietary intake is not so important. Usually we start patients on equal amounts of sodium chloride and potassium chloride (0.5 g.) and work up the dosage, depending upon the patients' reaction, and continue varying the amounts until the patient feels very much better. It may be some months before complete stabilization is obtained. There remains the difficult case of bilateral disease in which one labyrinth is severely affected with hearing almost absent and in which the hearing on the other side continues to fail whatever conservative treatment is used. Here we find that cervico-dorsal sympathectomy offers almost the only hope of arresting the decline in hearing.—I am, etc.,

M. E. SPENCER HARRISON.
L. NAFTALIN.

Market Rasen, Lincs.

Myasthenia Gravis

SIR,—Sir MacFarlane Burnet's paper, "Role of the Thymus and Related Organs in Immunity" (September 29, p. 807), should have cited Strauss *et al.*¹ for the description of an antibody to muscle associated with myasthenia gravis. Sir MacFarlane has described myasthenia gravis as "an autoimmune disease characterized by the presence of an incomplete antibody in the circulation which can be shown to react with skeletal and cardiac muscle." As to the "incomplete" character of the antibody, we see no justification for its description as incomplete if this is taken to mean a univalent or non-precipitating antibody. It is true, however, that the globulin or globulins in question have not been studied in precipitating systems; this remains to be done. Unpublished experiments in our laboratory indicate that the globulin which binds to the A band of skeletal muscle resides in the 7S or γ_2 fraction of γ -globulin and at this point there is nothing to indicate that this is an incomplete antibody globulin.

Myasthenia gravis may be termed an autoimmune disease if the sense is that it is associated with autoimmune phenomena. No evidence has, however, yet appeared directly to support the point of view that myasthenia gravis represents an autoimmune disease in

the sense that it has an autoimmune aetiology or pathogenesis. If one applies Witebsky's postulates suggested as criteria for relating pathological changes to the demonstration of autoimmune phenomena, it is not yet possible to conclude that myasthenia gravis is an autoimmune disease. Witebsky has suggested²:

(1) It should be possible to demonstrate either circulating antibodies active at body temperature in the serum of patients suffering from the disease, or cell-bound antibodies by indirect means; (2) the antigen against which the antibody is directed should be characterized or even isolated; (3) antibodies should be produced against the same antigen in experimental animals; (4) pathological changes should appear in the corresponding tissue of an actively sensitized animal that are similar or identical to those seen in the human disease. Most investigations have centred on attempts at demonstrating circulating antibodies directed against tissues or organs in myasthenia. White and Marshall³ have demonstrated anti-nuclear factor by immunofluorescence technique in some patients with myasthenia gravis. As to the antigen or antigens involved in these apparent immune systems, only inferences can be made at this point that in the case of the muscle-binding antibody this appears to be directed against a contractile protein localized in the A band. As to the anti-nuclear factor demonstrable in myasthenic serum, it is not clear with which nuclear constituent it reacts.

Not only have the antigens not been characterized fully, but so far experimentally produced auto-antibodies specifically directed against them have not been produced. Beni Horvath and I have made an attempt to produce an experimental model of an autoimmune muscle disease by immunizing NIH Strain 2 guinea-pigs with intrain crude muscle, actin, and tropomyosin incorporated in Freund's adjuvant and administered according to protocols similar to those used to produce experimental allergic encephalomyelitis and experimental autoimmune thyroiditis. We have been unable to produce precipitating antibodies, nor have we produced any evidence of symptomatic or histopathologic muscle disease using autologous or almost autologous muscle protein. (Heterologous muscle proteins are antigenic, but there are no reports of successful production of muscle disease resulting from immunization with heterologous material.) These experiments do not rule out the possibility that alternative means of autoimmunization are available and that the situation with respect to humans with myasthenia gravis might be different. But until such data are reported it seems premature to conclude that myasthenia gravis is an autoimmune disease.—I am, etc.,

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ARTHUR J. L. STRAUSS.

REFERENCES

- ¹ Strauss, A. J. L., Seegal, B. C., Hsu, K. C., Burkholder, P. M., Nastuk, W. L., and Osserman, K. E., *Proc. Soc. exp. Biol. (N.Y.)*, 1960, **105**, 184.
- ² Witebsky, E., in *Immunopathology*, 1958, First International Symposium, edited by Pierre Grabar and Peter Miescher. Benno Schwabe, Basel and Stuttgart.
- ³ White, R. G., and Marshall, A. H. E., *Lancet*, 1962, **2**, 120.

School Medical Examinations

SIR,—To-day my 6-year-old daughter brought home from school a printed notice informing me that the school medical officer would be at her school at a certain date and time and proposed to examine her, and inviting

me to be present. There was no suggestion of asking my consent for this examination. On objecting to the office of the county medical officer of health that I did not want my daughter examined by a school medical officer, I was told that this examination is compulsory under the authority of the Education Act and that there is no opportunity for me to object.

I wonder how many of our profession or the public in general are aware of this state of affairs? I had previously considered that an examination without consent constituted an assault, but it appears that this examination can be made not only without my consent but directly against my wishes. I can think of very few other instances in this country in which a person can be so forced to undergo an examination. I would not here suggest that these school medical examinations should be abolished. They may sometimes serve a useful purpose. But to what purpose is the compulsion, which is more appropriate to a totalitarian State than a democracy? My daughter is not thought to have any disease or defect. There is no suspicion that she is neglected or deprived in any way. And after the child has been examined I am at complete liberty to ignore any advice given or refuse any treatment which may be suggested or offered. If it is suggested that the examination may reveal some unsuspected defect, why may I not nominate who shall make the examination? If the examination is of such vital importance that compulsory powers are available to have it made, why is it that these examinations are so often done by a doctor not long qualified and with little clinical experience?

In this country we are in general against compulsion and are careful to preserve the liberty of the individual. National Service has been abolished. The Mental Health Act contains only remnants of the compulsory powers of former years. An argument made against a State salaried health service is that the individual must have free choice of doctor. But in this matter of school medical examinations there is no place for the objector and no use of free will.

I suggest that the only reason for the existence of these compulsory powers is that too few people are aware of their existence, and I trust that many other doctors will join me in this protest against the intrusion of officialdom into the liberty of the individual.—I am, etc.,

Heanor, Derbyshire.

R. G. NEWTON.

Hyperparathyroidism

SIR,—In his article "Some Problems of Hyperparathyroidism" (December 1, p. 1419) Professor C. E. Dent remarked, "Many patients, especially for some curious reason in Belfast (McGeown and Morrison¹), are being reported with variable levels of total calcium. . . ." There is a simple explanation for the high prevalence of variable levels of the serum calcium in patients with hyperparathyroidism in Belfast. Since 1953 I have held a renal stone clinic, at which each patient has had the serum calcium estimated many times. In most of the patients the serum calcium is estimated at least four times during the first year and less frequently thereafter. This policy has led to the discovery of parathyroid tumours in a number of patients in whom earlier tests did not suggest this condition.

A notable example was one lady who on four occasions in 1953 and 1954 was normocalcaemic, and