from the upper limit of normal at 4.2 μ /ml to 20 μ /ml. The term subclinical hypothyroidism implies a low level of circulating thyroid hormone when, in fact, the levels are probably normal as a result of the increased TSH. Premyxoedema is a non-committal term and preferable for a condition characterized by a raised TSH level.

TSH is known to have a "lipolytic" effect on isolated human adipose tissue cells.² Serum triglyceride levels rose when TSH was given to a myxoedematous patient already treated with full replacement doses of L-thyroxine (unpublished). In 1963, a Russian, L. A. Lushnikova,³ found high TSH levels and hypercholesterolaemia in patients with angina but normal levels in those who had sustained myocardial infarctions. This important observation was erroneously interpreted by her as evidence for subclinical thyroid over-activity, and I can find no further reference to her work on this subject. Twenty-six (52%) of 50 patients with premyxoedema that we described⁴ had degenerative arterial disease. I believe that the high incidence of coronary artery disease in A.I.T. may be due to an altered lipoprotein pattern of which hypercholesterolaemia is only a crude inconstant indication. Bastenie and his colleagues⁵ suggest the association of coronary artery disease and A.I.T. may be genetically determined.

Clofibrate is effective in lowering the serum cholesterol in premyxoedema, and on this drug a number of patients have progressed to myxoedema. One patient with overt myxoedema, but wrongly diagnosed as familial hypercholesterolaemia, had been treated with clofibrate for five years. The serum cholesterol was initially 445 mg/100 ml and has been kept normal on clofibrate. Clofibrate may act by liberating thyroxine in the liver. It may be especially those patients with coronary artery disease associated with raised serum TSH levels that are effectively treated by clofibrate. Workers with the skill accurately to assay TSH and the initiative to apply these skills such as Professor R. Hall and his colleagues at Newcastle should be given support to survey the incidence of coronary artery disease with raised TSH levels in the general population. It is relevant that coronary artery disease rarely develops *de novo* after two years of adequate treatment for myxoedema.—I am, etc.,

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1 Fowler, P. B. S., and Swale, J., *Lancet*, 1967, 1, 1077.

2 Burns, T. W., Hales, C. N., and Hartree, A. S., *Lancet*, 1966, 2, 1111.

3 Lushnikova, L. A., *Terapevticheskiĭ Archiv*, 1963, 35, 28.

4 Fowler, P. B. S., Swale, J., and Andrews, H., *Lancet*, 1970, 2, 488.

5 Bastenie, P. A., Vanhaelest, L., Bonnyns, M., Neve, P., and Staquet, M., *Lancet*, 1971, 1, 203.

Leukaemia on Myeloma

SIR,—At the suggestion of Dr. Judith A. W. Webb and others (23 October 1971, p. 231) we would like to report another case of acute leukemia following melphalan therapy for multiple myeloma.

A 68-year-old woman presented in December 1964 with a four-day history of severe pain over the thoracic spine. Haemoglobin was 9.9 g/100 ml, W.B.C. 4.500/mm³, sedimentation rate 122 mm/hr, and the peripheral smear

showed rouleaux formation. X-ray examination of the thoracic spine revealed generalized demineralization, and a skeletal survey showed similar findings without evidence of osteolytic lesions. The bone marrow showed an increase in early and mature forms of plasma cells with good preservation of erythroid and myeloid series. Total serum protein was 11.75 g/100 ml with 48.5% gammaglobulin. Immunoelectrophoresis showed an IgA paraprotein ($\alpha 2$ K2) and Kappa L-chains were present in the urine. She was treated with melphalan, 68 mg over four days, followed by intermittent four-day courses, 40 mg at four- to six-week intervals. She received a total of 628 mg of melphalan over 22 months. During this time she developed various painful osteolytic lesions which were palliated by the following doses of local radiotherapy: left posterior pelvis 2,400 rads, right posterior pelvis 1,000 rads, right femur 2,000 rads, right upper thigh 3,000 rads, right thigh 2,400 rads, lumbosacral spine 3,000 rads, and sacrum and right posterior pelvis 2,400 rads concurrently.

In July 1965 the patient developed a basal-cell carcinoma on the chin at the site of previous radiation epilation. This was treated with 2,000 rads. In October 1965 the total protein was 8.81 g/100 ml with 2.33 g/100 ml paraprotein and 0.3 g/100 ml gammaglobulin. In December 1966 she developed pancytopenia (Hb 5 g/100 ml, W.B.C. 1,500/mm³, platelets 50,000/mm³). She was given transfusions, and in March 1967 was started on prednisone 30 mg daily. After two weeks the white blood count began to rise without significant change in the haemoglobin or platelets. In May 1967 night sweats, weakness, and ulceration of the nasal mucosa developed. At that time the Hb was 4.9 g/100 ml, platelets 32,000/mm³, and W.B.C.s 29,000/mm³ with 59% blasts, 22% neutrophils, 10% myelocytes, 7% metamyelocytes, 1% promyelocytes, and 3% nucleated red blood cells. The bone marrow showed a marked increase in large blasts with multiple nucleoli and abundant cytoplasm containing occasional Auer rods and eosinophilic granules. The urine did not contain myeloid bodies. The total protein was 6.44 g/100 ml with 0.94 g/100 ml paraprotein and 0.48 g/100 ml gammaglobulin. After treatment with cyclophosphamide there was some decrease in the number of blast cells and transient subjective improvement. She gradually became confused and on the day of her death fell out of bed, fracturing her right femur.

The postmortem findings were (1) the bone marrow contained a mixture of plasma cells and myeloid leukemic cells, (2) bilateral bronchopneumonia, (3) acute bilateral pyelonephritis, (4) supracondylar fracture of the right femur, and (5) right subdural hematoma.

This is another case of myeloma treated with melphalan and developing terminal myeloblastic leukemia.—We are, etc.,

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Latex Agglutination Test for Australia Antigen

SIR,—As chairman of the private meeting to which Dr. J. E. Banatvala and others refer in their letter (25 December, p. 814), I feel compelled to reply to some of the implications which it contains.

Firstly, the paper by Mr. J. M. Leach and Mr. B. J. Ruck (4 December 1971, p. 597) was published as a preliminary communication, and the statement that the latex agglutination test was rapid and reliable appeared in the summary not in the text of the paper. That the test is rapid cannot be

questioned; its reliability is a function of the antiserum used to coat the latex particles.

Those who were actually present at the meeting, and indeed all who had received samples of the material, were aware that this was an experimental batch and that the purpose of the meeting was to discuss results and suggestions for any necessary changes to the test, which was at that time at a development stage.

In so far as safety is concerned, any test involving the use of potentially infected material carries a level of operator risk, and we feel that the use of the latex agglutination test as a screening test for blood donors is no more hazardous than typing or cross-matching procedures. Additional material has now been prepared which we believe largely meets the objections raised to the first experimental batch of reagent. This will, of course, be subjected to further evaluation by independent investigators before being made generally available.—I am, etc.,

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Urinary Meatal Stenosis

SIR,—I would like to report an unusual presentation of a case of urinary meatal stenosis in a 13-month-old boy.

The history was of sudden, momentary screams often evoked by lifting the creeping child by catching him around the tummy. The child sometimes drew up his knees and screamed, at other times without any obvious cause.

On examination the urine and abdomen were normal, but the child micturated and screamed simultaneously while the lower abdomen was being palpated. A pin-hole meatal stenosis was present, and after meotomy symptoms did not recur. Pressure on the abdomen presumably caused reflex micturition with pain.—I am, etc.,

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Truncal Vagotomy and Pyloroplasty

SIR,—The review of the results of vagotomy and pyloroplasty for duodenal ulcer by Professor J. C. Goligher and others (1 January, p. 7) is both stimulating and rather disturbing. It will come as a surprise to most gastric surgeons that vagotomy and pyloroplasty appears to come bottom in the league of gastric operations currently in favour.

There is one point in the Tables recording the fate of the bad results of all four forms of gastric operations which could perhaps be clarified. Six of the patients who were re-explored after vagotomy and pyloroplasty had re-vagotomy carried out. The patients who were re-explored after vagotomy and gastroenterostomy or vagotomy and antrectomy never had re-vagotomy. It would be interesting to know if the original operations in all this series were carried out by the same surgeons or whether a disproportionate number of the vagotomy and pyloroplasty series were carried out by less experienced men. At re-vagotomy was a sizeable trunk found or was it a matter of dividing only fibrils?