and immunotherapy (an attempt to assist natural defence) will be instituted without necessarily predicting the site and nature of the malignant growth.

Further work in this laboratory has not induced us to relinquish our tentative conclusion² that there may well be a common antigen appearing in all human malignant neoplasms. If this is indeed so we may be optimistic that an effective treatment of cancer (whatever its primary cause(s) may be) is a problem essentially soluble with methodology already developed.—We are, etc.,

E. J. FIELD
E. A. CASPARY
R. T. H. SHEPHERD

Newcastle General Hospital,
Newcastle upon Tyne

- 1 Field, E. J., and Caspary, E. A., *Lancet*, 1970, 2, 1337.
- 2 Caspary, E. A., and Field, E. J., *British Medical Journal*, 1971, 2, 613.
- 3 Field, E. J., and Caspary, E. A., *Lancet*, 1971, 2, 337.
- 4 Carnegie, P. R., Caspary, E. A., and Field, E. J., *Biochemical Journal*, 1972, 126, 5.
- 5 Mathé, G. et al., *Lancet*, 1969, 1, 697.
- 6 Field, E. J., and Caspary, E. A., *British Journal of Cancer*, 1972, 26, 164.
- 7 Field, E. J., Caspary, E. A., and Ball, E. J., *Lancet*, 1963, 1, 11.
- 8 Field, E. J., Caspary, E. A., and Carnegie, P. R., *Nature*, 1971, 233, 284.
- 9 Burnett, F. McF., *Immunological Surveillance*. Oxford, Pergamon Press, 1970.
- 10 Dumonde, D. C., and Maini, R. N., *Clinical Allergy*, 1971, 1, 123.

Ultrasound and Calcified Cardiac Valves

SIR,—Readers of the paper of Mr. A. Hedley Brown and Mr. Peter G. H. Davies, (29 July, p. 274) on the ultrasonic decalcification of calcified heart valves and annuli may be deterred from adopting this technique because they have read the work of Reeves and colleagues.¹ These workers, in Portland, Oregon, use a generator and transducer of my design to produce mitral stenosis artificially and have also produced atrial fibrillation. This provides an excellent means of research into the treatment of these conditions.

Such sequelae are obviously objectionable in cardiac surgery but it is possible to reassure those concerned. In Portland a collimated beam of ultrasound is transmitted through saline directly to the leaflet at an intensity of about 20 watts or more per cm² at 1 MHz. This is a true effect of ultrasound. The dental scaling machines operate at 25 to 40 kHz, and function more like a miniature pneumatic drill. The cutting edge is in contact for only about 10% of each cycle and hardly any energy passes into the tissues. Because the wavelength is long in relation to the area of contact, the energy dissipates in all directions very rapidly.

Professor M. Arslan, of Padua, who introduced the ultrasonic surgery of the labyrinth in the treatment of Ménière's disease also used a low frequency transducer of the dental scaler type in the removal of the footplate of the stapes.² Arslan stresses that it is possible to remove the bone without any damage to the adjacent structures.—I am, etc.,

DOUGLAS GORDON

Harrow,
Middlesex

- 1 Reeves, M. M., Dick H. L. H., and McCawley, E. L., *Medical Research Engineering*, 1969, 8, 16.
- 2 Arslan, M. Personal communication.

Growing Pains

SIR,—The leading article on growing pains (12 August, p. 365) is of interest in raising as well as settling a number of points.

The study of the subject between 1920 and 1939 was important because rheumatic heart disease with cardiac involvement was rife and a number of clinicians, believing that "growing pains" could be a manifestation of rheumatic fever, were condemning children to long periods of rest to no purpose while others, misdiagnosing mild rheumatic fever as growing pains, were allowing children to go their ways with incipient or active heart disease. The credit for pointing this out goes to Sir Wilfrid Sheldon.¹ Rheumatic fever is now a rare disease in Britain. Naish and Apley² gave 4.2% as the incidence of growing pains which, in spite of their stricter clinical definition, is still far below the 33.6% of 505 children examined in 1928³ and diagnosed on history taken from the mother, description of the site, severity, and nature, by the child, and a clinical examination.

The criterion "severe enough to interrupt normal activities" begs the question at what point a child's activities cease to be normal. If the activity is unwelcome, such as going to school, children are not above cashing in on pains in the legs in order to stay at home. At the age of 11 I escaped the unwelcome activity of compulsory association football for a whole season with the self-made diagnosis of "bad cold in the head, Sir." This observation (I must have been a psychopath), substituting coryza for growing pains, is in accord with Apley's consideration that growing pains are associated with emotional disturbance.⁴ Neustatter⁵ saw a link of this nature 35 years ago. Other associations with growing pains have been noted, such as allergic disorders by Bray.⁶

"Growing pains" is still a hunting ground for clinical investigation; those whom you have quoted have added considerably to its solution. This letter is based on rereading my article in the *B.M.J.* in 1939.³—I am, etc.,

J. C. HAWKLEY

Marlborough,
Wilts

- 1 Sheldon, W., *Diseases of Infancy and Childhood*. London, Blackiston, 1936.
- 2 Naish, J. M., and Apley, J., *Archives of Diseases in Childhood*, 1951, 26, 134.
- 3 Hawksley, J. C., *British Medical Journal*, 1939, 1, 155.
- 4 Apley, J., *Proceedings of the Royal Society of Medicine*, 1953, 51, 1023.
- 5 Neustatter, W. L., *Guy's Hospital Reports*, 1937, 87, 8.
- 6 Bray, G. W., *Recent Advances in Allergy*. London, Churchill, 1931.

SIR,—In your recent interesting leading article (12 August, p. 365) it is proposed that when considering the practical problems of the differential diagnosis of growing pains the number of possibilities is reduced by restricting the term to "intermittent limb pains recurring over a period and not specifically located to the joints." In addition, you emphasize the imprecision of the term subacute rheumatism. That the clinical use of these terms is likely to lead to diagnostic error has been made apparent to us in our recent experience with rachitic immigrant children.

During our survey (17 June, p. 677) we found that several of the subjects who had rickets had attended their general practi-

tioners complaining of pain in the lower limbs. Characteristically this was localized to the knee or ankle joints, varied in intensity, was produced or worsened by exercise, and resulted in considerable curtailment of physical activity. As the patients were well nourished and, with two exceptions, had no rachitic deformities, the diagnosis of growing pains or rheumatism was commonly made. The former term presumably seemed acceptable in view of the age group (8-16) of the patients, while the latter was probably made to appear somehow appropriate when considering an Asian suffering the vicissitudes of our damp and sun-starved climate. In addition, the readiness with which such misdiagnosis occurs is influenced, as you mention, by traditional misconceptions and, in these particular cases, by a lack of clinical awareness of the prevalence of rickets in Asian immigrant children when considering the differential diagnosis. However, in no case was biochemical investigation performed and simple analgesics were prescribed resulting in the patients having continued pain. This was in marked contrast to the dramatic amelioration of symptoms obtained by administering vitamin D and calcium supplements.

We trust that this account of our clinical experience will serve both to underline the urgent need for the restrictive definition of growing pains as given above and for a more critical approach when considering the differential diagnosis. In addition, we would concur that the term subacute rheumatism in children lends only to diagnostic confusion and should be discarded.—We are, etc.,

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Pulmonary Oedema of Mountains

SIR,—Your leading article (8 July, p. 65) rightly stresses that the true mechanism of this illness—met with in increasing frequency and often fatal—is still unknown. You do not mention the role of the kidney, and recent experience of mine supports the contention¹ that this may be a prime factor in causation.

I recently spent 14 days at a constant altitude of between 16,500 and 18,500 feet (5,016-5,624 m) in the Kulu area of the Central Himalayas. My companions were one European and four "Sherpas." Only the latter had been to such heights before. Our fluid intake, including food, was kept at approximately three litres daily. Within 1-2 days of ascending we all experienced the well known diuresis of high altitudes.¹ Measurements of specific gravity on many daily specimens showed that it remained between 1.002 and 1.005 during the first week and over each 24 hours. The specific gravity varied little with rest, strenuous climbing, or at night, nor was it altered by great heat, by the cold of intense blizzards, nor by water deprivation for 18 hours—though the amount of diuresis varied, naturally. Traces of albumin were sometimes found and occasionally of blood and glucose (Labstix), especially on climbing days. During the second week the diuresis tended to lessen and the specific gravity increased slightly, earlier in the Sherpas. On

the 14th day we descended precipitously—driven by blizzards—to 11,000 feet (3,344 m). The diuresis promptly ceased and the specific gravity returned at once to normal. I met two climbers who were in the early stages of pulmonary oedema: in both there was oliguria with a high specific gravity (1.025 and 1.030).

Singh and others¹ found that oliguria often heralds the onset of pulmonary oedema of mountains. Conversely, in those who seemed to be immune to the effects of altitude there is a diuresis on ascent.^{1,2} Urine osmolality and altitude are sometimes related and excretion of protein rises with altitude.³ In subacute mountain sickness a high specific gravity is sometimes found.⁴ Diuresis induced by frusemide is very effective prophylaxis of pulmonary oedema of mountains.¹ In subjects who are long acclimatized changes in specific gravity are in the normal range.²

Renal changes with altitude may not be due directly to hypoxia but to endocrine or possibly reflex atrial influences.¹ Hypoxia causes considerable water flux between extracellular and intracellular compartments at first,⁵ perhaps by increasing capillary permeability. If not excreted by the continuous 24-hour diuresis I have described water excess may be a prime factor in precipitating oedema of the lung. Among various other factors could be pulmonary vein constriction or left ventricular failure, both directly due to hypoxia.⁴ The physiological picture is of course vastly more complicated, but the above may serve as a simple working hypothesis.—I am, etc.,

A. PINES

Ware, Herts

¹ Singh, I., et al., *New England Journal of Medicine*, 1969, 280, 175.

² Pugh, L. G. C. E., *British Medical Journal*, 1962, 2, 621.

³ Rennie, I. D. B., and Joseph, B. J., *Lancet*, 1970, 1, 1247.

⁴ Hultgren, H. N., and Lundberg, E., in *Medicine and Sport Vol. 1. Exercise and Altitude*, ed. E. Joki, and P. Joki, p. 117. Basel, Karger, 1968.

⁵ Shields, J. L., et al., in *Biomedicine of High Terrestrial Elevations*, ed. A. H. Hegnauer, p. 24, U.S. Army Research Institute of Environmental Medicine, Natick, Mass. 1969.

College of Anaesthetists

SIR,—The excellent document of information circulated with the referendum on collegiate formation from the Association of Anaesthetists (see 19 August, p. 483, and 26 August, p. 528) was overtaken by events when describing national representation.

On 13 July the Central Committee for Hospital Medical Services decided that the B.M.A. Anaesthetists Group and its committee should be abolished at its own request (*Supplement*, 5 August, p. 129) and that there should be substituted a standing subcommittee consisting of those anaesthetists, both junior and senior, serving on the C.C.H.M.S., the B.M.A. Council, and the Central Manpower Committee, together with an equal number appointed by the Association of Anaesthetists, with certain groups, for example, juniors, represented as of right, while the seat on the C.C.H.M.S. formerly held by the B.M.A. group would be allocated to the subcommittee. These proposals were approved in principle by the B.M.A. Council on 22 July.

I believe that this standing committee will fulfil the criteria sought by Dr. D. W. Barron

and others (19 August, p. 468) in providing a single political voice for the specialty, without involving either the Faculty or a college. Indeed, a single autonomous body would, as Professor Cecil Gray so rightly points out (26 August, p. 528), lose its claim to charitable status if it were to embrace both academic and political functions. While Sir Paul Chambers in his report on the B.M.A. states "that, while there must be adequate provision for co-ordination at a higher level, separate fields"—for example, organization or conditions of service, "should be the subject of handling by separate committees . . . (with no common membership)."

I must again agree with Professor Gray on finance. The establishment of a separate college with even modest facilities for research, examinations, and organization would today cost perhaps a couple of million pounds, between say 20,000 Fellows. Many anaesthetists must wonder what the examination and membership fees would need to be?

In 1973 we shall enter the E.E.C., a community where anaesthesia as distinct from surgery is by no means as well established or represented as here. I cannot personally imagine a worse time to contemplate hiving off from an established college, which, as Sir Thomas Holmes Sellors says in his last presidential Newsletter, "can speak with an effective voice which must be both coherent and united."—I am, etc.,

E. B. LEWIS

Hythe, Kent

Pimozide

SIR,—Recently three of our patients had epileptiform seizures which were unexpected and difficult to explain. None had had fits previously and none was receiving known epileptogenic drugs. The one unusual feature they had in common was that they had recently been on pimozide and the dosage had been reduced or stopped. The intervals between reduction in dosage and the first fit were 31 days and 13 days. The interval between dose alteration and fit is long but the drug is claimed to have a prolonged action. There may be no direct causal relationship, but if there is it is one that may be missed because of the long interval.

The makers and the Committee on Safety of Medicines have been informed and fuller details furnished to the latter.—We are, etc.,

E. A. BURKITT

MICHAEL FAULKNER

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Darlington,
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Misleading Prospectuses

SIR,—On two occasions in the past week I have made very long and inconvenient journeys to be interviewed for some of the new consultant posts in accident departments. On each occasion the prospectus for the post appeared to be most attractive, with access to beds, intensive care units, and so on—in fact, posts which would be most satisfying to an enthusiastic doctor.

After the first interview we waited 1½ hours only to discover that the conditions of the job had been changed and that all the attractive aspects withdrawn. This made it quite unacceptable. The second inter-

viewing committee, which contained some of the same members as the first, at least decided before the interview that these opportunities would not be available, so we were only an hour late beginning and I was able to withdraw without wasting too much time. One of the communications describing the post stated: "An initial allocation has been made of these resources [that is, beds, theatres, and intensive therapy unit] as a concrete indication of the intention of the Management Committee and medical staff to make a success of this appointment."

I feel that I must write to warn people applying for some of these posts about this misdescription. Several of those interviewed were brought long distances unnecessarily. When one has been applying for senior medical posts for some time one gets used to rudeness from regional boards, and some do not even bother to reply to applications for consultant posts, but this is a new departure, in my experience, and unless such habits are publicised they will probably get worse rather than better.—I am, etc.,

W. B. S. LOOSMORE

Oldham,
Lancs

Overpopulation

SIR,—Your leading article discussing the fifth report from the Select Committee on Science and Technology (19 August, p. 432) ends thus: "When does a populated place become overpopulated? By what criteria is it judged to be so? These are questions that are rarely asked or answered in precise terms. A clear discussion of them from the medical profession is overdue." Surely, however, "clear discussion" of these questions has been in progress in the medical profession at least since 8 January when, as the result of a letter in the *B.M.J.* (8 January, p. 108) and in the *Lancet*, the Doctors and Overpopulation Group was formed. This now has over 1,500 members.

Such discussion can, I submit, be "clear" without the precision mentioned in the penultimate sentence quoted above. Inferring the population trends is indeed like "dodging after a hare"—there are too many uncontrolled variables for numerical precision in the estimates. But hair-splitting about exact numbers should not divert attention from the following incontrovertible facts: (1) No current estimate suggests a decrease in the population of the British Isles—all predict an increase of some millions. Only the precise number of millions is in doubt. (2) No previous estimate of stabilization or of a fall in U.K. numbers has ever been realized; there has been an annual increment, it seems, ever since the Black Death. (3) All other countries are likewise still increasing by variable amounts each year (though a very few are now approaching a net reproduction rate of unity). (4) The impact on the environment of each new birth (in excess of the replacement number) in developed countries such as this is many times greater than that in a country such as India—this because of a far higher rate of consumption of resources of all kinds and associated pollution. Harmful (non-recycling) technology and continued economic growth must also be controlled, as recently shown by the Club of Rome's computer study at the Massachusetts Institute of Technology.¹ But as doctors we must not let the responsibilities of industrialists and politicians blind us to our own in the area of birth control. (5) A three-week dock strike has recently served as a sharp reminder of our great