release has been recognized as an important cause of growth failure."

The Bristol report showed that stunting of physical growth is commonly associated with a low and/or inappropriate intake of food over a long period (starvation in the midst of plenty). It went on to suggest that this reflects impaired family relationships, especially between the child and his mother. The thorough and systematic Newcastle study of growth retardation, which you deservedly review in some detail, clearly demonstrates how rare is asymptomatic organic disease and how common is a defective home environment.

There is therefore a combination of stunted physical growth, deficient food intake, and impaired family relationships. In this context to call them "normal short children" is illogical. To do so is likely to block attempts by parents or doctors to understand and help affected children to attain, both physically and mentally, their true potential stature.—We are, etc.,

J. APLEY
D. RUSSELL DAVIS

The Bristol Royal Hospital for Sick Children, Bristol

1 Lacey, K. A., and Parkin, J. M., *Lancet*, 1974, 1. 42.
2 Apley, J., *et al.*, *Proceedings of the Royal Society of Medicine*, 1971, **64**. 135.
3 Powell, G. F., Brasel, J. A., and Blizzard, R. M., *New England Journal of Medicine*, 1967, **276**, 1271.

Pseudomonas Septicaemia Following Superficial Colonization

SIR,—Recently my colleagues and I reported (23 November, p. 440) four patients with leukaemia or lymphoma, neutropenia, and apparently trivial infections of the skin or conjunctiva from which *Pseudomonas aeruginosa* was isolated. All four later developed septicaemia and the same organism was isolated from cultures of peripheral blood: three patients died. It was suggested that the isolation of pseudomonads from apparently localized lesions in patients with compromised antibacterial defences is an indication for systemic antibiotic therapy. Since that communication was submitted for publication two further instances have been observed of colonization by pseudomonads in neutropenic patients. In each case, septicaemia due to the same organism rapidly ensued.

Case 5.—An 8-year-old boy with acute promyelocytic leukaemia became neutropenic (neutrophils 100/µl) during initial chemotherapy with doxorubicin and cytarabine. Though he was febrile on admission, repeated swabs and blood cultures disclosed no pathogens. When he developed pharyngitis attributed to the antileukaemic drugs a throat swab grew *Ps. aeruginosa*. Three days later his pyrexia increased and the same organism was isolated from blood cultures. Because the bacteriological findings on the throat swab were already known, treatment with gentamicin and carbenicillin was begun when the blood cultures were taken and he improved rapidly with these antibiotics supplemented by granulocyte transfusions.

Case 6.—A 17-year-old youth with acute undifferentiated leukaemia in relapse was treated intensively with doxorubicin and cytarabine and his peripheral blood neutrophil count fell to 10/µl. *Ps. aeruginosa* was isolated from routine swabs taken from the axillary and inguinal skin; no cutaneous lesion was present at either site. Two days later he became febrile and unwell and *Ps. aeruginosa* was isolated from blood cultures. Gentamicin and carbenicillin were begun at the time of blood culture and granulocyte transfusions were given, and the patient recovered.

Knowledge that pseudomonads have previously been isolated from an inappropriate site, such as the pharynx in case 5, should affect the initial choice of antibiotics for a subsequent febrile episode in a neutropenic patient. In case 6 the occurrence of septicaemia after a positive skin swab but in the absence of any cutaneous lesion suggests that the mere presence of *Ps. aeruginosa* on the skin of a neutropenic patient may be an indication for systemic antibiotic therapy as well as the local use of antiseptics. Isolation of pseudomonads from a cutaneous lesion, however minor, is an even stronger indication for systemic treatment.—I am, etc.,

A. S. D. SPIERS

M.R.C. Leukaemia Unit,
Royal Postgraduate Medical School,
London W.12

Prevention of Exercise-induced Asthma by Indoramin

SIR,—I write on behalf of Professor S. Bianco and others in reply to the letters from Dr. K. N. V. Palmer and his colleagues (16 November, p. 409) and from Dr. S. Godfrey (23 November, p. 469).

We are, of course, aware of Dr. Palmer's interest in the possible applications of alpha-adrenoceptor blockade in asthmatic patients and look forward to seeing his data on the effects of these drugs on response to beta-adrenergic agonists. We published[1] some casual observations on this subject in relation to the action of thymoxamine. It would seem that Dr. Palmer's more extensive data may be clinically important. I may say at this point that six of our patients remarked upon the improvement in symptoms after dosage with indoramin.

Dr. Godfrey's letter deals specifically with our article (5 October, p. 18). He gives an alternative interpretation of the data which we published, taking exception to the use of the word "prevent" in describing the effects of indoramin on the response to exercise in patients with exercise-induced asthma (E.I.A.). Clearly his criticism has substance, since the general shape of the response in time, in terms of specific airways conductance (SGaw) and FEV_1, is broadly similar after administration of the drug to that before. This is a direct result of the initial bronchodilatation which occurs after indoramin and can be interpreted to indicate that the drug is not preventing the unusual response at all. I suspect that larger doses of the drug could have completely swamped the response to exercise but this possibility does not affect the general line of this argument. We were most careful not to claim that our observations *proved* an abnormal activity of alpha-receptors as the cause of E.I.A. but merely that they were consistent with this hypothesis.

This is not the place to deal with the details in the contents of the third paragraph of Dr. Godfrey's letter except to state that the random errors of estimations of SGaw and the other measurements were minimized so far as possible by replication and suitable statistical assessment of the raw data. We consider that the effect of the small increase in dose of indoramin in the one subject who was tested at two dose levels might well have been due either to a variation in absorption of the drug, which was given by mouth, or to the known variability of E.I.A. itself. We are grateful for the reference to Sly *et al.*,[2] which had escaped our notice.—I am, etc.,

F. J. PRIME

Cardiothoracic Institute,
London S.W.3

1 Griffin, J. P., *et al.*, *Lancet*, 1972, **1**. 1288.
2 Sly, R. M., *et al.*, *Journal of Allergy*, 1967, **40**, 93.

SIR,—The observations of Dr. S. Godfrey (23 November, p. 469) on the paper by Professor S. Bianco and others (5 October, p. 18) reporting the prevention of exercise-induced asthma by indoramin deserve comment. Dr. Godfrey stated that the fall in specific airway conductance after exercise, expressed as a percentage of the post-indoramin value, ranged from 0 to 69% and in the control tests from 38 to 81% (presumably calculated from the five-minute post-exercise time point). However, it seems to us from the evidence presented by Professor Bianco and his colleagues that these post-drug conductance values in fact ranged between an increase of 25% (case 4) and a decrease of 69% (case 10). In comparison with control 10 of the patients after indoramin treatment had less exercise-induced bronchoconstriction and only in case 5 was it worse (excluding the low dose result in case 9). In fact, taking the group as a whole and examining the differences between the post-indoramin and control responses to exercise by both the paired *t* test and the Wilcoxon matched pairs signed ranks test, indoramin highly significantly reduced the degree of bronchoconstriction at all time points (see table).

While agreeing with Dr. Godfrey that the work of Professor Bianco and his colleagues might have been improved by the inclusion of placebo control and a note on the variability of the response to exercise, he is not strictly correct in stating that the authors did not provide data on the reproducibility of their tests. Inherent in their table of results are comparisons between two control values on the first day 90 minutes apart and a further pretreatment control on the second day. Despite the fact that in eight of the 11 patients the baseline conductance was lower on the second day the mean change (± S.E. of mean) for the group of $0{\cdot}33 \pm 0{\cdot}19$ $kP_a^{-1}s^{-1}$ was not statistically significant. There was also no difference between the control values taken at 90-minute intervals on the first day.

Mean Change (±S.E.M.) of Specific Airway Conductance induced by Exercise expressed as % 90-minute Control or 90-minute Post-indoramin Values in 11 Patients studied by Bianco et al.

	Time after Exercise		
	Immediate	5 min	10 min
Control (untreated) group	−46·4±6·9	−51·8±5·3	−55·2±5·9
Indoramin group	−2·5±15·7	−21·7±9·8	−16·5±7·4
Difference (% control group)	94·6	58·1	70·1
P (paired *t* test)	0·05-0·02	0·01-0·001	<0·001
P (Wilcoxon)	0·026	0·016	0·006