

# CORRESPONDENCE

## Full-time Parents

SIR,—The letter of Charles F. Louis (*Nature*, 230, 605; 1971) raises an interesting point; we have an experiment of sorts. The current generation of young adults is the first in the history of Western culture of which a substantial fraction were raised without at least one full-time parent. Is it a coincidence that this is also the first generation who in large numbers find our culture so stale, flat and unprofitable that they retire from it, who crave affection so that they indulge in "sensitivity training", "love-ins" and will copulate with anyone in sight, and who, according to some psychologists, are so insecure that they cannot be confident of their identities when not in a crowd?

Granted there are no controls, I submit that the weight of the evidence from this observation, from history and from current experiments with primates, is that children require *X* years of a full-time parent to provide guidance, protection and affection. The quality of affection may be important, but so is the quantity. To call this "sexual blackmail" is to obscure the issue. It is no more blackmail to say the price of an emotionally healthy child is five years of full-time effort by someone (mommy, daddy or nanny) than to say the price of this automobile is \$3,000. In our present culture few men would be willing to take the job, but that has nothing to do with biology. I have known a few families where it was the husband who kept house, and it seemed to work all right.

In our present situation of over-population, it would be as well if people were convinced this price exists and that they should not procreate unless they are prepared to invest enough successfully to complete the project.

Yours faithfully,

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## Energy for Meat

SIR,—Biologist Moore's reaction (*Nature*, 230, 133; 1971) to my suggestion of tissue culture as a source of food, although intended as professional discouragement, offers no real objections to the idea. To quote the present cost per pound of culturing tissue is of course misleading—scaling up and industrializing any process reduces costs dramatically (would anyone care to buy a television set completely handmade by an electronics engineer?). The objection that the tissue growth rate is too low cannot be valid—the meat we eat at present is also grown (on the animal, as it were), and at presumably the same rate; yet we find it worthwhile waiting for it. In fact, I would assume that the different tissues of one animal have different growth rates and, for culture purposes, we would probably choose fast-growing tissues. Possibly we could accelerate the process

somehow. The question of taste is not too important; we pork and beef-eaters might find mouse tissue or compressed lymph cells of *Chlorella* objectionable, but food preference is very much a function of experience—German kids are crazy about "Salmiakpastillen", little black and salty tablets; a Chinese will smile with delight at the mention of bitter melon; and few but Americans enjoy maple syrup poured over sausages...

A perhaps more serious objection, which Dr Moore missed, is the amount of energy required. In nature, the energy we get from a pound of meat ultimately derives from the Sun shining on some area where plants grow. If we culture animal (or plant) tissue in a building, we must supply the same energy in some other way. I am perhaps overly optimistic, but I believe that we are at present moving into an era of practically unlimited energy supply (what with the developments in reactor and plasma physics) and I think that our eventual problem will lie in not supply but efficiency of usage: the amount of heat dissipated into the environment by low conversion efficiency will be a limiting factor. We don't know when this point will be reached—I suspect we are a long way from it. In the meantime, let us think about food production. Some constructive thought by experts like Dr Moore is needed.

Yours faithfully,

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## Announcements

### University News

The following appointments in the University of London have been announced: Dr I. Butterworth, to the chair of physics at Imperial College; Dr M. H. Lessof, to the chair of medicine at Guy's Hospital Medical School; Dr D. E. N. Davies, to the chair of electrical engineering at University College; Dr P. M. Rattansi, to the chair of history and philosophy of science at University College; Mr I. McColl, to the chair of surgery at Guy's Hospital Medical School; Dr P. J. Peterson, to the chair of botany at Westfield College; Dr C. W. Turner, to the Siemens chair of electrical engineering at King's College. The title of professor of oral immunology has been conferred on

Dr T. Lehner, in respect of his post at Guy's Hospital Medical School; that of professor of biology on Mr B. B. Boycott, in respect of his post at King's College; and that of professor of child dental health on Dr D. S. Berman, in respect of his post at the London Hospital Medical College.

Dr D. F. Jackson has been appointed professor and head of the Department of Physics in the University of Surrey.

### Appointments

Dr R. H. Hedley has been appointed to the new post of deputy director of the British Museum (Natural History). Dr J. G. Sheals has been appointed keeper of zoology in succession to Dr J. P. Harding, and Dr G. B. Corbet has been appointed deputy keeper in zoology.

### Miscellaneous

Sir Martin Ryle, director of the Mullard Radio Astronomy Laboratory, has been awarded the Martin N. Liebman award of the Institute of Electrical and Electronics Engineers. The Institute has presented a scholarship to Mr F. A. Huntley, University of Southampton, to visit manufacturers of semiconductors in the United States. Dr Elizabeth Laverick, technical director of Elliott Automation Radar Systems Ltd, has been elected a fellow of the Institute.

Mr S. D. Davies, technical director of Dowty Rotol Ltd, took office on May 13 as president of the Royal Aeronautical Society, in succession to Air Commodore J. R. Morgan. The following prizes were awarded at that time: George Taylor (of Australia) prize, to Professor J. H. Argyris, Imperial College; Simms prize, to K. G. Wilkinson, British European