the risk of mutual interference between folic acid and anticonvulsants in the intestine.^{8,9}

If our interpretation of our findings is correct, then we have found a simple, harmless, and very cheap method for the treatment and prevention of folic acid deficiency in chronic epileptics, which would also remove the necessity for very large numbers of tedious time-consuming laboratory estimations of serum and red cell folate concentrations in such patients. This treatment might also have a place in the treatment of chronic psychiatric patients and geriatric patients admitted in a poor dietary state.—We are, etc.,

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Diagnosis of Cystic Fibrosis

SIR,—Your leading article (28 August, p. 489) regarding the diagnosis of cystic fibrosis mentions that a simple test of the albumin content of meconium may prove useful in screening for cystic fibrosis at birth.

If such a test is used it must be clearly understood that a proportion of patients with cystic fibrosis have no clinical evidence of malabsorption (approximately 10-15%) and that such cases may not show a positive meconium test.

We have recently seen one such false negative case. Meconium from the day old sister of a child with cystic fibrosis was tested according to the Green and Schwachman technique¹ and gave a normal result. Later sweat tests, however, showed elevated sodium and chloride and the infant was proved to have cystic fibrosis, but without significant malabsorption. She responded well to antibiotic and physiotherapy for any pulmonary problems but did not require pancreatic enzyme replacement.—We are, etc.,

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- 1 Green, M. N., and Schwachman, H., *Pediatrics*, 1968, 41, 989.

Predicting Fetal Maturity

SIR,—Mr. T. Lind (9 October, p. 116) implies that obstetricians cannot work out the gestational age of a fetus from a predicted expected date of confinement (E.D.C.). This is obviously untrue. Indeed, it is a fallacy to believe that it is possible to predict an E.D.C. for a fetus without first assessing its gestational age. Our reason for projecting forward from a maturity estimation to an E.D.C. was in an attempt to assess objectively the value of the predictions by each

of the methods used. Mr. Lind is surely mistaken if he believes that the Nile blue sulphate test is generally regarded as a "historical landmark" and there are recent publications to suggest otherwise.¹⁻³

Mr. Lind's point scoring system of estimating fetal maturity by cytological and biochemical means appeared in print after we had completed our study. If his initial results are confirmed by other workers then it will be a significant contribution towards solving this difficult obstetric problem. However, we are concerned that some of his maturity groupings are so large. For example, the fetal mortality from prematurity at 31 weeks is many times greater than at 34 weeks, but no distinction is made between these gestational ages by his scoring system. As shown by our paper, maturity estimations by ultrasonic cephalometry have an almost identical predictive accuracy to those made from optimal dates. Most obstetricians would settle for that at the present time.—We are, etc.,

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Solar Flares and the Concorde

SIR,—Your leading article on "Solar Flares and the Concorde" (16 October, p. 127) is rather inaccurate and misleading. I am rather surprised by some of the inaccuracies since the parameters of Concorde are by now well publicized.

May I begin by saying that the Americans (we have not got a manned space programme in this country) require, I believe, an altitude attainment of 200,000 ft (60,960 m) as part of the requirement to qualify as an astronaut. There is enormous difficulty for a supersonic passenger to get near this figure.

Primarily, I would remind you that Concorde will cruise at about 58,000 ft (17,678 m: atmospheric pressure, 80 g/cm²) not as stated in your leader, and considerable attention has been given to the question of solar flares as outlined in previous communications of mine.^{1,2} Recently the subject has been reviewed by the International Congress on Protection against Accelerator and Space Radiation, CERN, in April 1971, and Fuller and Day³ gave an authoritative review. Solar flares are now well recognized. Their forecasting, though improved, is still considered unreliable; their energy spectrum and quality are unpredictable. Your leader is wrong in saying we are at the end of a safe period; solar maximum was in 1969, a minimum will occur in about 1975. Let me add, however, that we have had a remarkably quiet solar maximum. Concorde's initial flights have been statistically in the worst period.

I presume your leader implies the general population when quoting 0.5 rem as an I.C.R.P.⁴ maximum permissible radiation dose. A classified worker can, of course, be exposed to 5 rem per year, but I hasten to

add that no one expects crew or passengers to approach anything like these doses. Representative forecasts⁹ are that Concorde crew on maximum flying hours will get a dose of 0.65 rem/year at high and 0.3 rem/year at low latitudes and that a well-travelled passenger (50,000 miles) will collect 0.041 and 0.018 rem/year. The occurrence of solar flares will be detected by an airborne radiation warning meter (A.W.R.M.), and with appropriate action on the part of the crew¹ a very tiny amount of extra radiation dose will be incurred. Later the leader acknowledges solar flares as rare events, and actual measurements are confirming our predictions. Concorde 002 is currently collecting less than 1 milli-rem/hr at high altitude, and this is almost identical to I.C.R.P.⁸ postulations.

Astronaut dose rates are very different in magnitude, and the problems have been surveyed by Janni and Holly,⁵ Pickering,⁶ and Berry.⁷ However, it would appear that even a very severe flare would not jeopardize safe return of the capsule from the moon surface, nor possibly in fact total mission attainment.

Finally, may I say that the leading article's 30° nose dive is frighteningly ludicrous. I have already indicated^{1,2} that should Concorde meet one of these rare solar events (pessimistically 1-2/year) then, following warning from the A.R.W.M., descent can occur from 56,000-58,000 ft (17,068-17,678 m) to 45,000 ft (13,716 m) in about 5 min, including crew appreciation time. One of the most violent solar flares recorded was in 1956, and this produced a calculated dose rate of 2 rad/hour at 60,000 ft (18,288 m), so that even if the build-up were instantaneous, then crew and passengers at this height would have only incurred a few millirems extra dose before being down to a shielded height.

For this rapid descent may I assure your readers that at no time will the cabin of Concorde change in elevation to below the horizon; deceleration will be about 0.2 g horizontal, with unnoticeable changes in cabin conditions. In fact, Concorde for this manoeuvre shows less cabin tip-down than, for instance, a DC8 (2°) or VC10 (4°). I do not think that we would ever contemplate marketing an aeroplane that needed to deposit its passengers' gin-and-tonics on the cabin roof as an operating procedure. Regrettably for your leader, Concorde is as sedate as present subsonic jets, and I hope you will agree that radiation hazards, though possibly present on rare occasions, are well catered for (A.R.W.M.) and readily and comfortably avoided.—I am, etc.,

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