of the actual percentage of water within a particular state[6].

These limitations seriously challenge the validity of Roberts and Northey's conclusions and probably account for the discrepancy between their results and those of Belfort *et al.*, who used the preferred pulse NMR techniques.

Yours faithfully,

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1 Roberts, N. K., and Northey, H. L. *Nature*, **237**, 144 (1972).
2 Belfort, G., *J. Colloid Interface, Sci.* (in the press).
3 Belfort, G., *Nature phys. Sci.*, **22**, 60 (1972).
4 Kaufman, S., Stein, J., and Gibbs, J. H., *Nature*, **225**, 743 (1970).
5 Pfeifer, H., *NMR, Basic Principles and Progress*, **5**, (edit. by Dahl, P., Fleich, E., and Kosfeld, R.,) 53 (Springer Verlag, 1972).
6 Woessner, D. E., *J chem. Phys.*, **35**, 41 (1961).

DR ROBERTS REPLIES: We acknowledge that Belfort's criticism might be valid had we simply recorded the NMR spectrum of water sorbed in the sintered glass. As pointed out in our article[1], however, the spectrum was recorded after distilled water had been drawn through the porous glass membrane for 30 h—the time normally required for the determination of a diffusion coefficient by the diaphragm cell method. The initial NMR signal of the water sorbed in the sintered glass was broadened compared with that of bulk water, and it might be argued that this broadening was simply a consequence of "field inhomogeneities produced by the glass matrix."

When water was drawn through the sintered glass for 30 h, however, the NMR signal of the occluded water became still broader, and an increase in hydrodynamic resistance also occurred (see also ref. 2). This increased broadening, which amounted to approximately 8 Hz at half-height, cannot be explained by invoking field inhomogeneities.

Belfort's work on porous glass[3] does not discuss the effect of prolonged movement of water through glass pores. In this connection the observation[2] that the conductivity across a sintered glass disk immersed in dilute potassium chloride does not alter when the solution is drawn through the disk over an extended period, whereas the hydrodynamic resistance increases, suggests that the hydrodynamic resistance is not a result of obstruction of the glass pores by air bubbles or solid particles.

The purpose of our article[1] was not to argue that water in glass pores (5–15 μm diameter) is structurally modified. Rather, we argued that it becomes modified on prolonged movement through the pores, with a resultant decrease in the hydrogen ion diffusion (and most probably the diffusion of the hydroxide ion) but with no effect on the diffusion of other ions.

It would be interesting to be able to calculate the degree of broadening of the NMR signal of water which is compatible with a reduction in the value of the diffusion ratio, D/D°, of the hydrogen ion, from 1.0 to approximately 0.9. These were the values obtained respectively from the polarographic and the diaphragm cell methods.

Our recent work[4] on deuterium ion mobility in heavy water solutions of electrolytes confirms our original finding that the diaphragm cell method gives low results for the limiting diffusion coefficient of the hydrogen ion.

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1 Roberts, N. K., and Northey, H. L., *Nature*, **237**, 144 (1972).
2 Mysels, K. J., and McBain, J. W., *J. Colloid Sci.*, **3**, 45 (1948).
3 Belfort, G., *Nature*, **237**, 60 (1972).
4 Roberts, N. K., and Northey, H. L., *J. chem. Soc., Faraday Trans. I*, **70**, 253 (1974).

IQ and race

SIR,—In her recent communication Tizard[1] showed that the effects of environment on IQ are great but that racial differences are not significant. In fact, her data on children of 4.5 yr divided into those still in institutions, those returned to their natural mothers, and those adopted, show that the non-whites have a consistently higher mean score than the whites. The racial differences within each of the three environmental classes are, indeed, not significant but the probabilities may be combined, since the classes are independent, giving $P=0.04$. Taken alone, this result might not mean much, but in Tizard's other study non-white children have higher scores in each of three IQ tests than white children, the difference being significant for one test ($P=0.02$). It seems that the non-white children have higher IQs than the whites.

Unfortunately, this result is open to several interpretations, at least two of which seem probable. Non-whites may be better endowed genetically with regard to intelligence than are whites. On the other hand, however, the children tested might not have been random samples of the racial groups to which they belong: British blacks are of recent immigrant stock and probably of above average socioeconomic status in their homelands. (Tizard found no significant differences between fathers of different races in ratio of manual to nonmanual occupations but this is a crude test and, in any case, blacks will do less well than whites of similar intelligence in job competition, because of colour prejudice and educational differences.)

The question of 'nature and nurture' with regard to IQ is politically sensitive: the extremists of both left and right are seeking support for equally silly and wicked beliefs. It is, therefore, important that the scientific examination of the question should be scrupulous. I hope that these comments will help the truth to emerge, whatever it may be and to whomever it may be unpalatable.

Yours faithfully,

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1 Tizard, B., *Nature*, **247**, 316 (1974).

DR TIZARD REPLIES: Greenwood correctly states that the non-white children in our studies had consistently higher mean test scores than the white children. As I pointed out in my letter no definite conclusion can be drawn from this finding. Greenwood's suggestion that selective immigration by IQ has occurred from the West Indies is of course possible, but if true would constitute a powerful argument in favour of environmental influences on development, as it is known that the mean IQ of the school-age children of West Indian immigrants living with their families in London is significantly lower than that of white school children. An alternative 'genetic' explanation would be that West Indian immigrants who place their children in long-term care are of higher IQ than the corresponding group of white parents. 'Environmental' explanations of the finding could also be advanced; for example, small black children are often found particularly appealing and may receive more attention from their nurses.

The main argument of my letter, however, was that within each environment inter-racial differences in test scores were small, but differences in test scores which we could relate to measured aspects of the environment were large and significant.

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