To Nicholas Blampied in response to your 11 February 2007 questions on 'JERSEY"S GENETIC ISOLATION'.

In the past, importation of genetic material (via semen, eggs or embryos) has been threatened by the required concomitant importation of milk products. This was acknowledged by Bichard in his July 2003 report, as *'- - - genetic imports might benefit the breed but put the industry at risk if they undermined the case for continuing to exclude milk imports.'* However, this would no longer seem to be a threat in so far that you say that the proposed importation of semen is supported by the *'Dairy Milk marketing Board led by Andrew le Gallais.'* We must acknowledge further that, according to Bichard, *'Milking cows owned by registered producers on Council or the JMMB plus those cows owned by people who have written to EDC requesting the importation of semen represent over 50% of the total in the Island today.'*

When I proposed the YBPS in 1983 I hoped, and indeed expected, that **all** 3500 cows would be involved in the scheme. It transpired, however, that **barely half** this number of cows was made available for mating with young bulls on test – and this was in spite of generous payments for completed first lactation records by the daughters resulting from such mating. This lack of co-operation undermined the expected effectiveness of the YBPS. I would indeed be interested to know whether those who were unwilling to contribute to the 'within house' effort to improve the Island herd are the same ones who are looking for a 'quick fix' by means of imported semen. I do not include Stewart Mourant in this criticism – he was breeding very effectively in a large herd of his own and was 'up front' in saying he was determined to continue in that way. I respect him for that.

I have felt and still feel that the Jersey Island animals as an independent national herd may have genes (e.g. for resistance to some or other disease) that could have been lost from other national herds. I feel this because virtually all other national herds have been hanging on to the coat tails of the American breeding by importing the semen from the **top** proven American sires. Who is willing to take **second** best?

The Americans have been remarkably successful in improving total milk yield per lactation and this has been a product of selecting bulls on the basis of their progeny test results. Most national Jersey herds have imported semen from these top American sires and this has been done to the extent

that all the national herds have most of their genes in common. Do they have the genes for resistance to some new disease or to some old disease that has not been around for some time? Plant breeders have followed a similar pattern of concentrating on outstandingly successful but genetically identical crops. Unfortunately some genes for disease resistance were lost and this occasioned a number of catastrophic crop losses. This has led to the development of 'Catastrophe research' by plant breeding institutes in an effort to avoid such future losses.

In my original research in the Island I found the level of inbreeding to be surprisingly low – in the region of only 6%. This was apparently the result of the large number of young bulls in use at any given time. Each bull was represented by so few daughter records that one really had no idea whether any were worth using further or not. BLUP (Best Linear Unbiased Prediction – of breeding value) was not at that time available to the Island. The raw records in the pedigrees were therefore unreliable as information on which to base the selection of young bulls. I therefore opted for a small-scale progeny testing of a limited number of young bulls each year. The idea was to get a reasonable number of first lactation records of daughters from each bull so that, in time, the breeders could decide which to, and which not to, use to breed further cows and young bulls for testing in their turn, i.e. selection on progeny test results. However, as we know, many breeders were unwilling to co-operate.

Bichard found that in the 12 months (2002/3) calves were registered by 128 sires! The two advantages arising from this are the maintenance of genetic variation in any and all characteristics of the animals and the maintenance of a low level of inbreeding. On the other hand, the procedure says **there has not been any selection for any characteristic**. The best linear unbiased prediction (BLUP) of the breeding value of each animal has been available for some years now and the modern approach, especially for relatively small breeding populations, is to use this information in selecting and using the most promising young bulls as early as possible and to replace them with their most promising young sons as soon as possible i.e. a quick rate of generation turnover. But 128 bulls used in one year! **This is not breeding with any purpose at all. It is merely random multiplication**. Are people who do this likely to make meaningful use of imported semen – especially if as Bichard suggests as his preferred option to the effect that '**individual** herd owners be allowed to purchase semen from **any** bulls which meet their improvement goals'.

I find it difficult to understand that breeders who are **unwilling** to attempt to exploit the existing genetic variation in the Island herd in a positive way are **willing**, on the other hand to forfeit the precious distinction of genetic individuality built up by generations of dedicated forebears, for the sake of a relatively limited improvement in milk yield and to become like all other national herds.

Yours sincerely,
Jim Allan.