

annually killed, in carefully managed preserves, without injury".

This may be true in respect to a "carefully managed preserve", but the implication is, and surely the fact must be, that such a course cannot be taken anywhere else except in a "carefully managed preserve". A preserve can only support and accommodate a certain number, and if the natural increase tends to exceed that number, it is proper, and may indeed be necessary, to reduce the herd by the killing of females. If the learned counsel for Great Britain had indicated by what rules, regulations, limitations and restrictions this herd of seals, when on the seas, could be treated as a "carefully managed preserve", their observations might be more instructive.

3. It is further observed, on page 2 of the paper: "The argument that the killing of every breeding female decreases the herd *pro tanto* in a geometrical ratio, is obviously untenable, otherwise those "indiscriminate pelagic sealers" the killer whales and the native Indians, would have long since destroyed the herd."

These observations indicate great misapprehension. There is an enormous tendency to increase in all animal life; this tendency is moderated and diminished by the various enemies to which such life is subjected, and, in the case of seals, by such enemies as killer whales, deficiency of food and the killing by native Indians pursued long anterior to the discovery of the islands, and which is treated by the United States Commissioners, as it properly should have been, as one among the *natural causes* of diminution. Killing by the hand of man in the sea and upon the land are *additional causes* brought to operate upon the herd *after it had reached its normal condition of stability* under the operation of all other causes of diminution.

4. The residue of the paper seems designed to show that the annual taking of 100,000 young males in the manner practiced by the United States was too great a draft upon the herd, even in its condition before pelagic sealing was practiced. If there is any force in this view, it must be in the assertion, or suggestion, that the reduction in a hypothetical herd (numbering of all sexes and ages, 80,000), from 13,620 breeding bulls to 1980, brought about by a killing of young males in the manner and to the extent practiced on the islands, is fatally excessive, as impairing the virile power of the herd. It is enough to say, in answer to this, that the reduced number of 1980 gives one breeding bull to ten females, there being in this hypothetical herd 20,960 females. The known capacity of each breeding bull ranges, as the evidence shows, from 20 to 50 females.

5. It is observed in this paper (p. 5): "It is asserted by the United States Commissioners that the 1980 bulls left can fertilize the cows as effectively as 13,620: It seems hard to believe that, if this be so, Nature