

mammal of United States concern except under permit granted by the US Department of Commerce (for cetaceans and all pinnipeds, except walrus) or by the US Department of the Interior (for walrus, Sea Otter, sirenians, and Polar Bear). The act is designed to protect endangered populations, to "preserve the health and stability of the marine ecosystem", and to curb certain practices held objectionable by many Americans, for example, the clubbing of new-born Harp Seals and the killing of several hundred thousand porpoises each year incidental to the tuna fishery.

The act provides for a Marine Mammal Commission. It was appointed on 14 May 1973, and it comprises Dr Victor B. Scheffer (Bellevue, Washington), Dr A. Starker Leopold (Berkeley, California), and Dr John H. Ryther (Woods Hole, Massachusetts). The commission, on 6 August 1973, appointed a nine-member Committee of Scientific Advisors. The commission's duties are to assist with, and to review, the permit system and to plan for better national and international conservation of marine mammals. Because the commission, an independent branch of the government, is expected to play a rather unusual role, its success or failure will be watched with interest by professionals in the field of resource management.

Besides provision for a commission, the act contains other novelties. (1) It identifies and emphasizes new uses for marine mammals, especially in research, education, and aesthetic appreciation. (Seals and whales have conventionally been managed as marine products of commerce for maximum sustainable yield.) (2) It introduces the concept of humaneness in the taking of wild animals. (3) By regulating the actions of all persons under the jurisdiction of the United States and by regulating imports, it applies to all marine mammals of the world ocean. (4) It transfers to the Federal Government primacy over the States in the management of marine mammals, a relationship hitherto legalized only with respect to migratory birds, Alaska Fur Seal, the larger whales, and certain fishes. (5) And it provides for citizen review of marine mammal conservation, thereby pleasing many champions of the act who had been complaining that management was in the hands of scientists insensitive to public taste.

Plans call for a headquarters for the commission in Washington, DC, and a programme office in Seattle, on the University of Washington campus. On 27 November 1973, the commission received its initial funding from the US Congress: \$412 000 for the fiscal year ending 30 June 1974. The act authorizes an outlay of \$1 million a year.

### **THE CAT POPULATION OF PÉNINSULE COURBET, ÎLES KERGUELEN: AN EXAMPLE OF THE FOUNDER EFFECT**

By Ph. Dreux\*

Two short visits to Îles Kerguelen, on 14 February 1969 (Dreux, 1970) and on 3 April 1972, enabled me, with the use of a helicopter, to study the numerous population of wild domestic cats on Péninsule Courbet. By flying low, it was possible to study 36 cats close enough to note the characteristics of their pelage. These characteristics have considerable interest from a genetic point of view, for the coloration of a cat's pelage is governed by a certain number of genes, the action of which is well known, very marked, and causes a polymorphism that is easily studied.

Of these 36 cats, 35 were black or black with white spots, and they correspond to the *aa* non-agouti genotype without or with the introduction of *S*, the gene of

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white spotting, the effect of which is still not perfectly understood. Only one cat was of a tabby phenotype, but its pattern could not be distinguished at a distance. This cat was near the base station, and more than likely it is the result of interbreeding with a pet recently brought to the station by the personnel there.

It is remarkable that the great majority of this cat population is of the *aa* genotype, whereas wild populations usually carry an important proportion of the *A* agouti allele. One can therefore be virtually positive that the whole of this population is descended from a very small initial number of black cats, which may have come to the island after a shipwreck or were perhaps abandoned there. It may have been a single pair or even a single female cat that had bred with an equally black male.

There is some doubtful evidence that these first cats were introduced in 1949, when the French established a station there. Whatever the case may be, it is a very clear example, and one that is bound to become a classic, of the founder effect. It is, in fact, most unlikely that this situation is due to a selection of the *aa* genotype, because polymorphism on the *A/a* locus is the rule in all known cat populations (Dreux, 1967a ; Searle, 1968).

Because of the difficulty in observing these cats, which are always seen at a distance, it has not been possible to determine the frequency of *e*, the gene of restricted white spotting (Dreux, 1967b). The estimate (Table 1) of the extent of irregular white spotting caused by the incompletely dominant *S* gene has been based on a scale in which the percentages indicate the approximate proportion of white body surface (Dreux, 1968). The estimate includes the unique tabby cat, and it suggests that gene *S* occurs with a frequency of about 40 per cent.

TABLE 1. Variagation among the wild domestic cats of Péninsule Courbet, Îles Kerguelen.

| Percentage of white spotted surface | 0  | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 |
|-------------------------------------|----|----|----|----|----|----|----|----|----|----|
| Number of individuals               | 14 | 0  | 3  | 8  | 1  | 4  | 1  | 1  | 1  | 3  |

The hypothesis that here is a case of the founder effect is strongly corroborated by the fact that, among the individuals observed, no other gene modifying the colour of pelage has been observed: genes *W\**, *O*, and *d* seem to be absent from the population. These observations have been made from too great a distance to notice the allele *c<sup>ch</sup>*, even if it is present.

Unfortunately, this study had to be limited to Péninsule Courbet. It would be interesting to see if cat populations of a different genetic constitution existed elsewhere in Îles Kerguelen. One could then be virtually certain that these populations had an origin independent of the cat population on Péninsule Courbet.

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