

The AKC and the Gene Pool

A closer look at the American Kennel Club's mission.

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On Sept. 17, 1884, a dozen men met in Philadelphia to form the American Kennel Club. In 1887, the AKC began to register dogs and maintain a stud book. In 1908, they declared as one of their official purposes, "generally to do everything to advance the study, breeding, exhibiting, running, and maintenance of the purity of thoroughbred dogs." By 1935 they had registered their 1 millionth dog. Now, millions of AKC registered dogs later, some breeders and geneticists are questioning whether the AKC's basic tenant of maintaining the purity of breeds may be at odds with maintaining the health of breeds.

The AKC has changed its registration criteria through the years. Initially, any dog that looked like a certain breed could be registered as that breed. Later, the AKC made the criteria for being accepted as a pure breed more stringent. In general, only dogs from AKC-registered parents, or registered with other kennel clubs with similarly stringent criteria, could be registered. The AKC guards the integrity of its stud book carefully, ensuring that pure breeds really are pure.

But this policy of genetic exclusion had some unforeseen effects. We now know that when any population is based on a handful of founders, then whatever genes chance to be present in those founders will be over-represented in their descendants compared to the gene frequency in the entire population. If these genes are for deleterious recessive traits, then in a closed population the descendants must eventually breed to one another, increasing the chance that their progeny will inherit recessive genes from both parents and thus develop a genetic disease. Such is the case with most dog breeds, the majority of which can trace their ancestry to fewer than 50 foundation animals—sometimes fewer than 10. The average dog is estimated to carry four to five such deleterious recessives, so it was almost a given that each breed would develop its own set of health problems.

Such genetic information wasn't available to the AKC a century ago, although some breeders voiced their concern about closed gene pools and inbreeding. In 1906, Lewis Strong wrote in the American Kennel Gazette: "In spite of the invigorating effects of several outcrosses, the Bloodhound remains one of the scarcest and perhaps most inbred of English dogs. I should hardly think they can survive another half-century of inbreeding as close as the past 50 years, and I think that, unless Bloodhound breeders take the subject strongly in hand, there is danger that the Bloodhound may in time become extinct, exterminated by inbreeding. The only remedy I can think of, besides refraining from inbreeding, is for breeders to boldly make outcrosses, so as to get a liberal infusion of new blood."