

Science Remakes



A prize-winning Sealyham, one of the smaller breeds of dogs that lately have won popularity

DOGS are getting smaller. Subject to style trends, the same as clothing, automobiles, and houses, they are adapting themselves—or, rather, being adapted—to the changed conditions of modern life.

People today are demanding dogs that can live in small homes or apartments, and ride in automobiles, without crowding out their human companions; dogs that can keep fit with a minimum of exercise; smart, good-natured dogs, and—an important consideration, sometimes—dogs that will not eat their masters out of house and home.

To meet these new requirements, breeders are applying scientific principles of heredity in bringing out the desired qualities. Already, the appearance and character of the nation's dog population show the effects of their work—a modern version of the unceasing process which, in the past, has had such amazing consequences as the refinement of the popular Airedale terrier from a mongrel, the conversion of the strain of wolflike spitz into the little toy Pomeranian, and the development of the bulldog into an animal vastly unlike his bulldog ancestors of a century ago.

Largely as a result of the demand for smaller dogs, the Boston terrier, one of the only three breeds actually originated in the United States, today leads all others in American Kennel Club registrations. Next come three other small breeds, the cocker spaniel, the wire-haired fox terrier, and the Scottish terrier. As recently as 1926, the German shepherd, often loosely called a "police dog," ranked first; but it is now in twentieth place, possibly because the depression made owners more conscious of the cost of dog food.

Through selective breeding, experts have been meeting the demands for smaller dogs, dogs which eat less and can be kept more economically; dogs which need less exercise, and therefore retain better health in cramped quarters. The motor age has restricted the exercise of dogs even more than that of men. It has created a need for breeds which remain in good physical condition when they are walked only on a leash, or

at best in close company of their owners, instead of being allowed to run free. Thousands of motorists want dogs adapted to riding in cars instead of to loping for miles alongside horse-drawn coaches.

These changes, occurring now among pedigreed dogs, are by no means limited to that select group. Within a few years they will be reflected by the general dog population of the country. It is estimated that there are in the United States between 500,000 and 1,000,000 pure-bred dogs, and 15,000,000 or more mongrels; and nearly all their owners are affected by similar conditions.

The mongrels themselves gradually show effects of crossing with whatever pure breeds happen to be most numerous. Look around, and you will see that the "average" dogs today ex-

hibit definite marks of the German shepherd or the Airedale, whose popularity swept the country in recent years. There are numerous inheritances too, from the collie and the bull terrier, while the bird-dog influence is especially strong in the smaller communities. Early in the century, there were widespread traces of the fawn-colored, looptailed pug, but most of them have been lost in the engulfing tide of other blood.

IMAGINE HIM IN AN APARTMENT!

Big dogs, like this Irish wolfhound, are out of place in the modern world. This fellow is nearly eight feet tall standing on his hind legs as shown



A new dog, the affenpinscher or "monkey dog"



the DOG

*How Breeders Are Changing
The Appearance and Nature
Of Our Canine Population
To Bring Out the Qualities
That Are Made Desirable
By Modern Living Conditions*

By

JESSE F. GELDERS

Being no snob in the matter of dogs myself, and having an equal fondness for pure-breeds and others, I inquired of Kennel Club officials why every cross-bred is termed a mongrel. The distinction, I learned, is based not on snobbery, but on scientific fact.

When pure-bred dogs of the same breed are mated, the puppies are like the parents. But when two different breeds are crossed, even though both dogs are of the purest strains, the characteristics of the puppies cannot accurately be foretold.

A breeder told me of the chance mating of a Scottish terrier and a hound, from which five pups were born, with ears like hounds and bodies like Scotties. What their puppies would be like, nobody could guess. For when mongrels are mated, even two mongrels of exactly the same appearance, their pups may be entirely different, taking a new combination of characteristics from their ancestors. Once there is a mixture, only long, careful breeding can sift out and stabilize any definite type.

Heredity is so certain to play pranks, that kennel clubs refuse to register any dog as a pure-bred unless its ancestors are known for

A blue-ribbon cocker spaniel. Originally a hunting dog, the cocker was bred smaller to make him a good pet



Blue bloods of dogdom—three-month-old Boston terriers. This breed now leads all others in American Kennel Club registrations

three generations. On the rare occasions when a new breed is to be recognized, proof is required that there has been no variation from the proper type, either in three generations of direct ancestors, or in any pup born in the same litter with any of them.

Breeders seeking dogs of new types for definite new purposes usually have a choice of two procedures. They may cross breeds, as a chemist compounds elements to obtain a new material, but this is a long and uncertain task. On the other hand, they may "refine" an already existing breed, taking dogs which are a little closer than the average to the type they want, and continuing the selection until the entire strain takes on the new, desired qualities.

By such processes, the Scottie has changed his appearance in the last twenty years, developing a more profuse coat, a squarer head, and a shorter body.



The wire-haired fox terrier, left, has come into his own with the vogue for small dogs. Below, the bulldog's gentle nature belies his cultivated ugliness



The cocker spaniel, originally a hunting dog and one of the first breeds in the American colonies, has since been bred smaller as a pet, and is now being guided back to greater size again, to be used for hunting.

The bench-show setters, bred for their looks, have changed so greatly that they almost have the appearance of a different breed from the field-trial setters, developed for speed and good noses.

Even before the principles of heredity were studied scientifically, breeders unconsciously made use of them, by patiently selecting dogs with the traits they desired to reproduce.

There was the case of Polaris, the North Greenland Eskimo dog, whose sled-pulling ancestry gave him such an aptitude for the work that on his first

introduction to the harness he pulled a heavy sled three miles through deep snow.

The breeder of sheep-herding collies developed such intelligence in the animals that a dog could go alone and select his master's sheep from the others grazing in the hills, bring them home, and separate the rams from the ewes and lambs before driving them to their quarters.

The short-legged Welsh corgi was bred to do a job of a different sort. He scattered his master's cattle on the public grazing ground by nipping at their hocks, and when they kicked he had to dodge. In this risky work, his low stature often saved his life. With intelligence specially cultivated for (Continued on page 126)



The Pomeranian, a favorite in the toy class

INVENTORS PATENT YOUR IDEAS

Get this FREE Book

Protect the future profits from your idea by securing a U. S. Patent. Delays are often dangerous. I give prompt and PERSONAL attention to your case—nothing is entrusted to unskilled assistants. The Patent Office itself urges you to select a Competent Registered Patent Attorney in order to protect your interests properly. Therefore, before doing anything else, send for my NEW FREE BOOK and get the full facts, and with it will send you my FREE "Record of Invention" form. All correspondence strictly confidential. Mail coupon TODAY.



L. EDWARD FLAHERTY
REGISTERED PATENT ATTORNEY

71-D International Building, WASHINGTON, D. C.
Please send immediately your FREE book and Record of Invention Form.

Name

Address

City State

There's Quicker, Bigger MONEY for YOU in POULTRY

Earn \$1,000 to \$2,500 a Year or Have a Business of Your Own!

Whether you want a job at good pay or a highly profitable business of your own—the Poultry Industry offers you more than any other. There's a shortage of poultry meat and eggs—a shortage of trained poultrymen. I'll train you quickly at home—to fill a good job in Poultry—and our FREE STUDENTS' Employment Dept. will help you get one!

FREE Book Shows Way to BIG PROFIT
Mail coupon below TODAY—for my Big New FREE Book, "How to Raise Poultry for Profit." My forty years of experience are yours. The Poultry Industry needs YOU. You need my book. Get it—and get in line for the BIG MONEY that's waiting for you in POULTRY.

Spare Time or Full Time—You Can Cash In
No matter where you live—city, town or country—what you do now, my proved methods will assure your success right from the start. I'll help you make from \$1,000 to \$2,500 a year and up! And, if you choose to start your own business, I'll show you how to make your tiny investment multiply itself automatically. What I've done for thousands of others—I can do for you.

Mail this now

Harry M. Lamson, President National Poultry Institute
Dept. 211-A, Adams Center, N. Y.

Dear Mr. Lamson: Send me your FREE Book, "How to Raise Poultry for Profit." I want to know more about my opportunity to make \$1,000 to \$2,500 a year spare or full time.

Name

Address

INVENTORS PATENT YOUR IDEAS SEND FOR FREE BOOK

HOW TO OBTAIN A PATENT, written by a Former Member of the Examining Corps (1922-24) of the U. S. Patent Office. If you want to profit by your idea, you should take steps to apply for a U. S. Patent at once. Your first step is to get this Free Book. This interesting illustrated book contains valuable information you should have. It tells you fully how to obtain a patent on your idea in the quickest way. With this Free Book you will also receive a "Record of Invention" form on which you can easily record your idea, Personal and Confidential Service: Your case will be personally handled only by a Registered Patent Attorney who is also a Former Member of the Examining Corps of the U. S. Patent Office. All communications will be strictly confidential.

MAIL COUPON TODAY for FREE PATENT BOOK and RECORD OF INVENTION Form.

CARL MILLER
REGISTERED PATENT ATTORNEY
FORMER MEMBER EXAMINING CORPS U. S. PATENT OFFICE

1638 Woolworth Bldg., Dept. 116-C, New York
MILLER BUILDING, DEPT. 116-C, WASHINGTON, D. C.

Please send me your Free Book, "How to Obtain a Patent," and "Record of Invention Form."

NAME

ADDRESS

SCIENCE REMAKES THE DOG

(Continued from page 43)

his task, he knew when to go into action and when to stop, by the tone of his master's whistle.

Among the strangest characteristics cultivated for particular jobs, are those of the Afghan hound, brought to America a few years ago, but used for many centuries as a hunting dog in the mountains of Afghanistan. While he is not so fast as many other hounds on level ground, he has developed high, wide-set hips which fit him especially for running on hills, and for leaping over obstacles. And because he frequently hunted in dense thickets, he has been bred to carry his tail high, like a flag, which his master could see above the concealing brush.

Even more fascinating than the shaping of traits in individual breeds of dogs, has been the creation of new breeds by crossing, for special purposes. Tremendous care was required, to select offspring with just the right inheritances from each stock.

BREEDERS of Chesapeake Bay retrievers, desiring to improve their scent, crossed them with hounds, but were able to preserve the chief characteristics which they had inherited from their other ancestors, supposedly curly-coated retrievers which had been mated with two Newfoundland dogs taken from a wrecked ship. Their stamina and their rough, almost waterproof coats enable them to withstand severe storms and work in water chilled by floating ice.

The Chesapeakes share with American foxhounds and Boston terriers the distinction of being the only breeds originated in the United States. The foxhounds were said to have been developed by George Washington, who, to obtain a faster breed, crossed English foxhounds with French hounds given him by General Lafayette.

Boston terriers represent another success of breeders in obtaining just the desired characteristics from a parent stock, this time the English bulldog. Crossing it with the white English terrier, they obtained the bulldog type of head on a dog smaller and more agile than the bulldog. By that time the bulldog had been cultivated into a good-natured though still courageous animal, and those qualities were preserved.

Strangely, a somewhat similar set of ancestors produced the bull terrier, a very different dog. This time, the breeders wanted a fighter, so they chose the bulldog. They crossed him first with large black-and-tan terriers and white English terriers, producing a heavy-set, short-legged, fawn-colored dog. By careful selection they eliminated the short head and nearly all the other old bulldog qualities except the courage. Then the dog was crossed again with white terriers, and the white color, a recessive characteristic, was fixed, so that the dog became essentially the bull terrier we know today.

THE bulldog himself was the result of careful breeding of dogs for the barbarous sport of bull baiting. The bulls which were to be killed were roped to stakes, so the dog did not require real hunting ability, but only ferocity. The heavy, powerful mastiff was crossed with other breeds, among them probably the pug, for a peculiar reason. The bulldog's chief requirement was to hang on, when he caught hold, and the pug's short nose enabled him to breathe without letting go.

With the passing of bull baiting, the bulldog began to be cultivated with two oddly contrasting aims. The ferocity was bred out, until he became a really kindly beast, but at the same time, his ugliness of appearance was encouraged to such an exaggerated extent that it often interfered with his health. Breathing frequently was an effort for him,

even in repose; and his lower jaw protruded so far that he often had trouble chewing his food, making him a prize example of unwisely directed heredity.

Like the bulldog, the Airedale terrier had his origin in a questionable pursuit. Not only was he for a considerable time a mongrel, but he served as the helper of poachers on forbidden game preserves. The poachers worked at night, and wanted dark-colored dogs which would not be conspicuous, and which hunted without baying. They crossed old English terriers and other hounds first, then Irish terriers and bull terriers, until finally the present type was evolved and stabilized.

CHANGES in the occupations of other dogs, as strange as the reformation of the Airedale and bulldog, have been effected by skillful crossing. The pointer, today's widely used bird dog, was employed 300 years ago in England for finding rabbits to be chased by greyhounds, which hunt by sight.

Breeders crossed the English pointer with Spanish dogs, to get the superior "pointing" ability of the latter, but they bred out the foreign dog's other characteristics, as inferior to the native's. The original pointer stock is believed to have descended from "setting spaniels," greyhounds, foxhounds, and bloodhounds. Later, to produce a kindlier disposition, the dogs were crossed with setters.

The English setter's ancestry, quite curiously, includes the Spanish pointer, along with several types of spaniels. The setter himself had started work as a hunting dog long before the advent of firearms; he located birds and crouched while nets were drawn over them.

The English sportsmen's desire for a dog to chase the fox out of his hole, resulted in the mingling of an amazing array of dog-talent, to produce the popular smooth-coated fox-terrier. Many experts believe the little animal carries the blood of black-and-tan terriers, beagles, greyhounds and bull terriers, with important heritages in alertness, scent, speed, or courage from each.

Another little dog, descended from different stock, became the wire-haired fox terrier. It was crossed with the smooth terrier, to get symmetry and white coloring, but the breeders were careful to retain the rough coat.

Almost as frequently as new breeds have been created, old ones have disappeared or suffered serious declines. The Irish wolfhound, one of the most famous breeds in history and perhaps the largest, degenerated and almost became extinct with the passing of conditions which had made it useful. But an English sportsman, wishing to restore it, crossed the remaining dogs with deerhounds, which he thought were of the same breed. Then he crossed them with Great Danes and Russian wolfhounds, until once again the Irish wolfhound became the tallest known dog, standing as high as thirty-six inches at the shoulder.

MANY other dogs which have become extinct, or almost so, are represented by new breeds in the making of which they had a part. The black-and-tan, or "rat terrier," for example, whose unreliable temper cost him many friends, still flourishes today in a transformed and reformed state, as a part of the Boston, the bull terrier, the fox terrier, the striking and intelligent Dobermann Pinscher (first bred by a German dog catcher) and in many other popular breeds.

Changing tastes and living conditions which so often decree the end of a dog as a type, frequently make a new place for a part of him—and it is the job of the skillful breeder to see that the right part is saved.