

BIOLOGY

School For Dogs

For centuries man has taught and trained dogs but now he is learning from them. Unique institution has nursery for puppies, record books to keep the students' marks.

See Front Cover

By JANE STAFFORD

► YOU AND I and other dog owners pride ourselves on how well we have trained and taught our dogs. Some dog owners have gone to school with their dogs to learn how best to teach the dogs manners, obedience, and whatever tricks or skills we want them to learn.

Now there is a new kind of school for dogs. In this school, the dogs are really the teachers. As they grow and romp and play, as they learn simple lessons and then more difficult ones, they are teaching a group of scientists facts about behavior that are expected ultimately to help us humans learn to live better with each other.

This unique school for dogs, where the dogs really are the teachers, is kept at the Roscoe B. Jackson Memorial Laboratory in Bar Harbor, Me. This same laboratory is world famous for research on cancer and genetics, and for its stocks of pure-bred mice of many different strains.

Dr. John L. Fuller of the Jackson Laboratory staff is shown on the cover of this week's SCIENCE NEWS LETTER holding a puppy still too young for school.

Environment Affects Behavior

The development of behavior, in mouse, man or dog, is partly a matter of hereditary genes and partly a matter of environment and training.

Everyone who has taken puppies to raise, just as every parent who raises children, knows that no two dogs are exactly alike, anymore than any two children are exactly alike. One will be gentle, docile, easy to teach. Another will be spunky, full of mischief, but still smart and quick to learn.

Dogs, like children, show their feelings differently. I know one dog who will quietly retire to her bed if she is hurt because we are petting another dog. But the second dog is more aggressive. If we pet the quiet one, he will try to nose her away or jump on us from the other side, or growl and fuss till he, also, is petted.

A good deal of the difference in people and in dogs comes from the wide differences in the life experience of each individual, whether dog or man. Does Mrs. A nag her husband and children because she inherited a bad disposition, as the neighbors may think, or is it because of the kind of home life she had as a child? Is Mr. B a successful, go-getting business man because he inherited an aggressive trait, or because of his early experiences at home, school and work?

Is one of our dogs quiet and gentle and the other spunky and mischievous because they are of different breeds, or because one lived all her life with the same owner and the other has had three homes in his short life?

Test Heredity's Influence

How to tell the part heredity plays in controlling behavior must be based on the study of individuals of different genetic background reared in exactly the same manner, scientists at Jackson Laboratory tell us. This is just what they are doing. At the dog colony at the laboratory's Hamilton Station, puppies are studied from birth to adulthood under conditions planned for the best social and physical development.

And because for centuries men have selected and bred their dogs for specialized activities, such as hunting, herding, transportation, protection and companionship, there are now pure breeds of dogs ready made for the study to answer the question: How much does heredity contribute to differences in social behavior, learning ability and emotional stability?

Here is what happens to a litter of puppies, from birth to one year of age, at the laboratory's unique school for dogs:

For 16 weeks the young dogs live in large, comfortable nursery rooms arranged for observation. Like human babies they are weighed regularly, and checked for normal health and development. At five weeks the toddler's responses to a human handler are rated in terms of timidity, aggressiveness and attention-seeking. At six weeks they undergo a simple intelligence test, learning how to find their way around a

wire screen which separates them from a desirable bit of food. Later tests involve a simple maze, learning how to get at a covered dish of food, and determining which of two pups wins out when there is only one bone for the pair.

The mother is separated from the pups at 10 weeks, and at 16 weeks the half-grown litter moves outdoors to running pens. Almost every day brings a period of training or testing involving such events as learning to walk on a leash, measurement of changes in heart rate and muscle tension when startled, learning to trail, climb, retrieve and to discriminate positive and negative, or do and don't signals. Each dog accumulates a series of marks in the record book of the school for dogs, and these are subjected to statistical analysis.

Some Results Reported

Headmasters, as it were, at this school for dogs are Drs. J. Paul Scott and John L. Fuller. They tell us that their school will have to be kept for some time before complete results of their studies will be available. Some important findings, however, have already been reported.

For example, centuries of selection under domestication do not appear to have added any new components to the dog's basically wolf-like behavior. There has been an obvious modification in the balance of traits in the dog, particularly a delay of maturation, or growing up, so that he is easily kept dependent, but the social patterns of dominance, submission, courtship, defense of territory and the like remain wolf-like.

Results on the formalized tests of behavior sometimes show striking differences between breed samples. Sometimes they do not. Wirehaired terriers rate higher in aggressiveness than beagles, and basenjis respond to the attention of a human by an accelerated heart rate, while cocker spaniels tend to have a reduced rate under exactly the same conditions. On the other hand, although individual dogs show marked differences in performance in the delayed response test, which measures immediate memory span, it appears doubtful that differences between breeds are significant.


In general, tests of social reactions and of responses to emotionally toned stimuli show inter-breed differences, while more purely mental differences between breeds have not been clearly demonstrated. This is in part due to the difficulty of measuring animal intelligence as an independent entity. But it may also reflect a uniform distribution of the factors of intelligence among the breeds being studied.

The influence of inherited patterns of behavior on social organization is shown by an analysis of the occasional misfits in the training program. One kind of misfit, the

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result of intra-litter strife, is the timid, abused "underdog" that is often undernourished because it is not allowed to feed. This type of maladjustment occurs almost exclusively in litters of wirehaired terriers. The victims often are removed to a less competitive group in order to give them a chance for normal development.

The other type of misfit fails to form a

strong attachment to humans, and does poorly in training procedures which involve cooperation between dogs and human beings. This is often encountered with Shetland sheep dogs, but it can be eliminated by giving the sheep dog more human contacts during the period of socialization from three to ten weeks of age.

Science News Letter, October 17, 1953

Encyclopedia of ABERRATIONS

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With a Foreword by ALEXANDRA ADLER, M.D.
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|-------------------------|-----------------------------|------------------------|
| Abasia | Ecstasy, artificial | Lesbianism |
| Ablutomania | Erotographomania | Logorrhoea |
| Abulia | Exhibitionism | Lying |
| Acalculia | Family tension | Malingering |
| Acataphasia | Fellatio | Masochism |
| Aggression | Fetishism | Menstrual anomalies |
| Alcoholism | Folie a deux | Mescaline intoxication |
| Amnesia | Frigidity | Murderer, mind of |
| Anal eroticism | Frottage | Mutism |
| Anancasm | Gambling | Mysophobia |
| Anti-Semitic attitudes | Gammacism | Narcolepsy |
| Anxiety, dental | Gelasmus | Necrophilia |
| Aphasia and linguistics | Gustatory sweating | Negotivism |
| Autism, infantile | Gynephobia | Nudism |
| Auto-punishment | Hair-plucking | Nymphomania |
| Benzedrine, addiction | Hallucinations | Ochlophobia |
| Bestiality | Haptodysporia | Onanism |
| Body image disturbances | Hashish, addiction | Opium, addiction |
| Boredom | Head banging | Pavor nocturnus |
| Brontophobia | Heroin, addiction | Pessimism |
| Cacodaemonomania | Heteralalia | Pethidine, addiction |
| Chloral delirium | Homosexuality | Phobias |
| Choreomania | Hysteria | Pornography |
| Clairvoyance | Icnolagny | Psychosis |
| Claustrophobia | Illusions | Puberty, aberrational |
| Cocaine, addiction | Inferiority feelings | Sadism |
| Crime, neurotic | Intellectual malfunctioning | Schizophrenia |
| Criminality | Kainotophobia | Somnambulism |
| Depression | Kakorrhaphiophobia | Sophomania |
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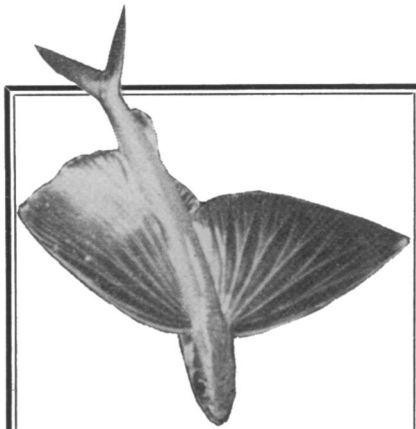
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