NEW INFORMATION ON FELINE BEHAVIOR

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(Growing interest on the part of both academicians and practitioners has been occurring in the field of animal behavior. Little has been published on the "pet" species in this field in veterinary literature. Dr. Fox has a particular interest in this field, and has publshed both articles and a book on canine behavior.)

The history of domestication of the cat goes back several hundred years B.C. to Egypt where the cat was revered and made a deity in the name of Bastet, Goddess of Joy. From the Middle East, the cat was brought to Europe, but not until more recently did it become a widely acceptable pet.

Behavioral Abnormalities

Comparatively few spontaneous abnormalities in behavior have been described in the cat. This may be attributed to 2 factors: first it is allowed more freedom and secondly, relationship between cat and owner differs from the man-dog relationship. Abnormalities in behavior have been induced experimentally in cats; however, by using conditioned discrimination experiments, the following signs which were indicative of behavioral breakdown or "neurosis" developed: vomiting restlessness, aggression, anorexia, nervosa, and also autonomic disturbances affecting heart rate, respiration, and pupil size. Although the cat has been used extensively in neurological and behavioral studies, the variety of "neurotic" signs induced comprises a narrower spectrum than in the dog. This, in part, may be due to the fact that felines are neuro-phylogenetically at a lower level.

Veterinary clinicians often deal with feline patients in whom they are unable to demonstrate a specific cause at the organic level for the problem at hand. Under such circumstances they often conclude that there is something wrong with the animals' behavior. Such patients are usually treated with antibiotics to prevent latent bacterial infections, and with tranquilizers. Unfortunately, such behavioral disorders are not investigated more thoroughly.

Careful interrogation of the owner to assess the owner-pet relationship is crucial in establishing an initial diagnosis of the cause of abnormal behavior. The following criteria indicate abnormal behavior: (1) hyper-excitation or hypermotivation, (2) lack of escape response, (3) lack of adaptation, (4) genetic and individual susceptibility. Although the critical period of socialization has not been clearly established in the cat, there is strong evidence that experiences between 6 and 12 weeks of age determine the subsequent development of the social behavior of the domestic cat.

Because cats are apparently more independent than dogs, sudden alterations in the man-animal relationship or in the domestic environment affect the cat less. Nevertheless, behavioral abnormalities do occur.

Behavioral abnormalities which arise in their natural environment have been attributed to the increased number of neutered cats in the feline population. These individuals behave atypically and thus alter the usual territorial and hierarchical behavior of normal male

and female cats. Displacement activities may occur, including spraying, anorexia nervosa, excessive licking (with secondary skin lesions), and aggression. Castration of an adult male will not prevent roaming, spraying, and other sexual activities because these behavioral patterns have already matured prior to castration. Displacement activities are observed in zoo animals, notably fighting and overeating, which may be corrected by providing additional exercise or training.

A personality change in a Siamese followed its anesthetization; this extremely aggressive and unmanageable cat became quite docile. The animal was treated roughly during induction of anesthesia and it is presumed that the effect was due to reduction of a chronic adrenergic condition. On the other hand, extreme handling of sedated animals is an effective way of socializing those which are overly fearful or aggressive.

Psychosomatic states among animals have been described. Convulsive behavior of females in estrus has been related to the greater propensity of the female cat to have hystero-epileptic fits which may occur independent of the estrous cycle. Neurosis following severe trauma (physiologic or psychologic) may cause a variety of signs including anorexia, nausea, vomiting, tachycardia, pilo-erection, polypnea, and loss of hair. Bronchospasm resembling asthma has been described as a psychosomatic disorder in the cat. By changing the emotional climate in which cats live, alimentary disturbances including anorexia, constipaton, and pylorospasm may be prevented.

Occasonally, mobilization of cats' third eyelids is thought to reflect a vagal disorder, and a case has been reported in which persistent protusion of the nictitating membrane (even treatment with sympathomimetic drugs was ineffectual) was not corrected until the cat was separated from its owner. Intermittent states of paroxysmal hypotonia resembling cataplexy have also been recognized in the cat.

Pseudopregnancy is rare in the cat, but it does occur and causes marked changes in behavior. In such cases, displacement behavior and maternal attachment to inanimate objects have been observed. Fly chasing in cats following severe psychologic trauma has been reported. Anorexia, as a result of severe fear reaction resembling shell shock, has been observed in the cat. Similarly, sudden changes in the environment, as being boarded in a hospital, may cause anorexia.

Hyposexuality in females may be due to overfearful responses to strange males or to the mating environment. Breeding may, therefore, be impossible in its own environment or in a cat colony. Homosexuality, bisexual homosexuality, and autoerotic behavior are normal activities in the entire cat, and may be precipitated by frustration or arousal when normal sexual activities are not possible.

In summary, the cat may behave abnormally as a consequence of sudden traumatic stimuli or changes in the environment. Responses may be inhibitory (cataplexy, anorexia nervosa) or excitatory (overfearful reactions, aggression, polypnea); the inhibitory responses may actually be excitatory due to hyperactivity of inhibitory centers. The different effects of morphine in the dog and cat clearly demonstrate the functional differences in the type of nervous system of these 2 species. Psychogenically induced shock may be compensated for, but if these responses are maladaptive an irreversible state of psychogenic

shock may intervene and terminate in a fulminating viral or bacterial infection as a generalized septicemia, pneumonia, or enteritis.

Overreactivity and hyperadrenergic responses may be treated by tranquilization and cholinergic drugs. If the causal stimuli are repetitive, however, the cat may adapt to the situation by responding appropriately. If the adaptation is inadequate, the decompensation syndrome to stress may follow and the condition of the animal will decline rapidly. Compulsive eating is a common response to emotional stress. The differential diagnosis of such cases may be difficult, as encephalopathies involving the hypothalamus and pancreatic disease (a neuroendocrine disturbance) also cause compulsive eating.

Treatment

Generally, treatment of psychosomatic conditions is symptomatic. It involves fluid therapy and stomach tube feeding for anorexia, antibiotics to prevent infection, the use of sedatives and antihistamines, and administration of corticosteroids and cholinergic drugs to reduce hyperadrenal responses and allay adrenal exhaustion.

The owner should be counseled as to the correct rearing and management of cats. Usually, the free-roaming cat has little interaction with the owner, and is brought up as an independent and socially "distant" animal. Consequently, it is less likely to develop behavioral disorders. It has been my experience that if a cat is reared in a similar manner to the dog in that it is dominated and given limited training, it will become well socialized with humans and assume a subordinate hierarchical relationship with man. Early experience plays an important part in the socialization in any animal, and the cat is no exception to this rule.

Interpersonal Relations

Besides being a companion, an object for affection, a child substitute or symbol fulfilling the subconscious desires of the owner, the cat is one of several domesticated animals used in psychotherapy of withdrawn children. The cat is especially beneficial for introverted children. Certainly the joyful play of a young cat will attract most children, and the affection and attention given by the child may be redirected by the psychiatrist. The animal also provides a means by which a "common ground" may be established by the analyst to gain the confidence of his patient.

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