

LORDOSIS INHIBITING INFLUENCE IN THE DORSAL RAPHE NUCLEUS IN MALE RATS: EFFECTS OF NEURAL TRANSECTIONS.

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To clarify lordosis inhibiting neural pathways from the dorsal raphe nucleus (DRN) in male rats, several types of cuts around DRN were performed and lordosis behavior was examined. Male rats were castrated and subjected to ventral-horizontal (VHC), dorsal-horizontal (DHC), anterior (AC) or posterior (PC) cut of DRN. Four weeks after, all animals were implanted with Silastic tubes containing estradiol, and then lordosis behavior was observed. Non-brain surgery control males showed low score of lordosis quotient (LQ). LQs in either DHC or PC males were also low, and was comparable to those in control males. In contrast, VHC males showed higher LQ value than control males. As well as VHC males, AC males displayed high LQ score. These results suggest that ventral and anterior outputs (and/or inputs) of the dorsal raphe nucleus are involved in the lordosis inhibiting system in male rat brain.

A Possible Existence of Non-Strial Pathway of Amygdala in Control of Male Rat Sexual Behavior.

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We have reported an importance of the medial amygdala, as well as the medial preoptic area, in regulation of male rat sexual behavior. Anatomical evidence shows that the medial amygdala innervates the medial preoptic area mainly through the stria terminalis (ST). In this experiment, neural transection of the ST (STC) was made in male rats which were previously castrated and received subcutaneous implantation of silastic tubes containing testosterone, and then behavioral tests were carried out. Next, the STC males received bilateral medial amygdala lesion (AMGL) followed by further behavioral tests.

In the tests after STC, although most of STC males showed male sexual behavior, mount and intromission frequencies were lower than those of sham-operated males. Ejaculation was eliminated after STC. On the tests after the second brain surgery, further decrease of copulatory activity was observed in males with both STC and AMGL. The results indicate a possibility of the pathway, other than the stria terminalis, of the amygdala in neural control of copulatory behavior in the rat.

HORMONAL AND BEHAVIORAL STUDIES OF WINTERING FLOCK OF PINTAILS (*Anas acuta*)

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Avian reproductive endocrinology has been mostly studied using poultry species such as chickens and turkeys or small passerine species in laboratories or in field. To understand mechanisms in avian seasonal breeding in each species, studies in different groups of birds which have different adaptational strategies are must. Fortunately we have a chance to collect blood samples from wild wintering population of pintails at Sin-hama duck-netting preserve owned by the Imperial Household. Samples were collected from male and female pintails once a month from November 1991 through January 1992 and twice in February 1992. Behavioral observation was carried out at Gyotoku Waterfowl preserve and Ueno Shinobazu Pond. Plasma concentration of luteinizing hormone (LH) in both sexes were low in November and December. Plasma concentrations of LH in males began to increase in January and became more than 1 ng/ml on February 12, but those in female were still low even on February 12. Male pintails showed courtship behavior in February but females did not respond it.

HORMONAL INDUCTION OF COURTSHIP BEHAVIOR IN THE NEWT, *CYNOPS PYRRHOGASTER*.

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In breeding season, the sexually matured male newt vibrates the tail in front of the female at an early stage of courtship. The vibration-behavior is elicited in sexually inert males by injection of prolactin (PRL) and/or gonadotropin (GTH). This effect of GTH was nullified by castration. In the castrated male receiving PRL, both testosterone propionate (TP) and dihydrotestosterone (DHT) were effective in eliciting the behavior, whereas estradiol was not effective. The male-like behavior was also observed in a considerable number of ovariectomized females with low frequencies. In these females, administration of PRL together with TP, but not with estradiol, was effective in increasing the frequency of the male-like behavior. The incidence and frequency were not affected by the difference in the sex of the partner.