

SCIENTIFIC PROCEEDINGS

ABSTRACTS OF COMMUNICATIONS.

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46 (1628)

Comparative study of ethanol, caffeine and nicotine on behavior of albino rats.

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The effects of ethanol, caffeine and nicotine tartrate were studied on albino rats in the circular maze. The rats were first trained to solve the maze problem perfectly, that is to find their way to the center of the maze by the shortest route, without making any errors and in the shortest period of time. They were then injected subcutaneously or intraperitoneally respectively with solutions of the above drugs, and the effects of the drugs on behavior were noted. Controls were made by injecting rats with solutions of sodium chloride and with distilled water. No improvement in the running time of the animals was noted after small doses of the drugs. All of the drugs when given in sufficient quantity produced depression of the animals, as manifested by slower movements, neuromuscular incoordination, loss of memory-habit, and number of errors committed. It was found that the smallest dose of caffeine required to produce depression, that is to impair the efficiency of the rats' behavior in the maze, was 10 mgs. for a rat weighing on an average 150 grams. The smallest dose of nicotine tartrate to produce depression was 0.02 mg. (equivalent to 0.007 mgs. of nicotine). The smallest dose of

ethanol to produce depression, when injected in the form of 4 per cent. solution was about 80 mgs. by weight.

47 (1629)

The effect of prostatectomy on the behavior and learning of albino rats.

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The prostate gland of the rat is proportionately to the size of the animal much larger than that of man. It can also be completely extirpated with comparative ease. These facts render rats especially suitable as subjects for the inquiry into the question of the internal secretion of that gland. In the present investigation an attempt was made to throw light on the relationship between prostatectomy and mental efficiency, the existence of which seems to be supported by some clinical evidence.

Two series of experiments were conducted on white rats in the circular maze. In the first series of experiments a number of rats were trained to solve the maze problem by finding the way to the center of the maze, by the shortest route, without any errors, and in the shortest period of time. They were then prostatectomized under ether anesthesia, allowed to recover, and their behavior was studied subsequently. Control experiments were made on other rats of the same series and same ages, which were also anesthetized and on which laparotomy was performed but without removal of the prostate.

In the second series of experiments, young adult male rats were prostatectomized without previous training in the maze, and control laparotomies were also made as before. The animals were allowed to recover and were kept in their cages for periods ranging from 5 to 9 weeks. Then they were trained in the maze and a comparison was made between the learning time of the prostatectomized and control rats.

An analysis of all the data obtained in the two series of experi-