

BIPATERNITY IN MICE

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Normal sexual reproduction involves the mating of a male with a female. At fertilization each new zygote is dependent upon the union of a single spermatozoon with each egg. Even though a female mouse may be polygamous, the young from each parturition are sired by only one father. It is common for mice to have five to ten offspring at each partus with all of the fertilizing sperm being produced by one male. When several males mate frequently with the same female, the relative stage of the estrus cycle, or "heat," strongly influences which mating will be the effective one. Selective fertilization may result from sperm competition if males mate with a female within a very short period of time (6 hours). The purpose of this report is to describe a case of bipaternity in the mouse, *Mus musculus*. This case violates the preceding principles and appears to be the first instance of bipaternity in mice.

During the summer of 1950 experimental crosses were being made between a vestigial-tailed stock which was homozygous for brown and a Brachyury stock which was homozygous for black (1). Brown vestigial female #660, *bb ++ vt vt* was born on April 22, 1950 and was the mother of the unusual litter. With other brown vestigial sisters she was kept with her brown vestigial brothers until June 20th, when she was transferred to another pen with black Brachyury male #22677 (Table 1). On July 5th, female #660 was isolated as pregnant. A litter of eight was born on July 9th, nineteen days after her transfer. The normal gestation period for mice is 19-20 days (2). All eight mice had abnormal tails. At birth the classification was five Brachyury and three with abnormal tails which were suspected as non-Brachyury. At approximately ten days of age it was recognized that the five mice which were classified as Brachyury were black; the other three mice were brown and had typical vestigial tails. At weaning, two females were brown vestigial, *bb ++ vt vt* (one vestigial female died in infancy); five females were black Brachyury, *Bb T+ + vt*.

TABLE 1. TIMETABLE FOR THE MOTHER OF THE BIPATERNAL LITTER

April 22	#660 born
April 22 to June 20	#660 with littermates
June 20	mated #660 to #22677
July 5	isolated #660 as pregnant
July 9	bipaternal litter born

tion of bipaternal litters by artificial means does make the likelihood of bipaternity for this reported case appear to be more feasible than the suggested haploid hypothesis.

SUMMARY

At her first parturition a mouse gave birth to five offspring from one male and three from another male. Three different gene loci, two controlling tail-type and one for color helped verify the hypothesis that bipaternity was involved. This 1950 occurrence constitutes the earliest report, for mice, of an extremely rare phenomenon.

LITERATURE CITED

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