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Factors Controlling the Diurnal Spermatogenic Cycle of the Male Sparrow (*Passer domesticus*)

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had developed into an ovary. Oviducts were enlarged and convoluted. In one instance the left ovary, not completely removed, had become testicular.

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FACTORS CONTROLLING THE DIURNAL SPERMATOGENIC CYCLE OF THE MALE SPARROW
(*PASSER DOMESTICUS*)

GARDNER M. RILEY (introduced by E. Witschi)

In the normal development of the sparrow testis, a daily period of active spermatogenesis is found between the hours of 2:00 A.M. and 4:00 A.M. This restriction to the hours of darkness appears all the more significant since an inversion of the light period results in the occurrence of mitotic figures during the afternoon hours.

A marked lowering of the body temperature of the sparrow during the night suggests a relationship between temperature and spermatogenesis. An average difference of more than 6 degrees exists between the temperature of the bird during the light period (109.8° F) and dark period (103.1° F). When the body temperature is lowered during the light period by clipping the feathers and exposing the bird to a low external temperature, some mitotic figures are found within 2 hours. On the other hand, if the bird is kept active during the night so that it maintains a temperature approximating that of the day, spermatogenesis is almost completely checked.

Testicular development during the inactive period was induced through injections of pregnant mare serum. A determination of the interval elapsing between the time of injection and the appearance of mitotic figures showed spermatogenesis occurring within five hours of the injection, whether it was made during the light or dark period. These observations indicate that the diurnal spermatogenic cycle is controlled by a sequence of environmental and internal factors. The dark period causes reduction of the body temperature which, in turn, appears necessary for the release of the gonadotropic hormone.

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