Conclusions. The injection of 100 r.u. of Antuitrin-S daily during the first 5 days of the lactation period caused no inhibition of lactation. Larger dosages and dosages over a longer period of time reduced the rate of growth of the young from 22 to 33%. It would appear, therefore, that one cannot markedly inhibit lactation in the rat by injecting Antuitrin-S if the lactation of the control rat is normal.

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Seasonal Changes in the Testes of the Passerine Bird, *Phainopepla nitens lepida.*

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This study was undertaken to determine the histological changes which take place in the testes of the Phainopepla during an entire year. It was hoped that such changes which were noted could be correlated in some way with the behavior of the birds.

The collection of Phainopeplas for this study was started on November 26, 1937, and has been carried on periodically up to the present time, December, 1938. The gonads were removed while still warm and fixed in Bouin's solution and then carried through the usual paraffin method. They were sectioned and stained, using Delafield's hematoxylin and eosin for some, and Heidenhain's iron hematoxylin for others.

The testes showed a gradual increase in size from a minimum of one mm on November 26, 1937, to their maximum size of 8 mm, which was recorded on May 14, 1938. While the general trend throughout the spring was upward in size some individual variations were noted.

The testes showed no rapid increase in size until March 24th, and few sperms appeared in the lumina of the tubules until May 12th. This is rather unusual for in most seasons on the desert breeding starts in February and is at its height by the end of March. Although the rains were late and it stayed cool much later than usual this year it does not seem that the reproductive cycle should have been slowed to such an extent. Yet this seemed to be the true condition, as it was further substantiated by extensive field excursions during that period.

In the winter testis (Fig. 1) the size was about 1 mm, the tunica albuginea was thick, as was also the tunica propria. The seminiferous tubules were small and there was an abundance of intertubular material, composed chiefly of connective tissue cells with possibly a

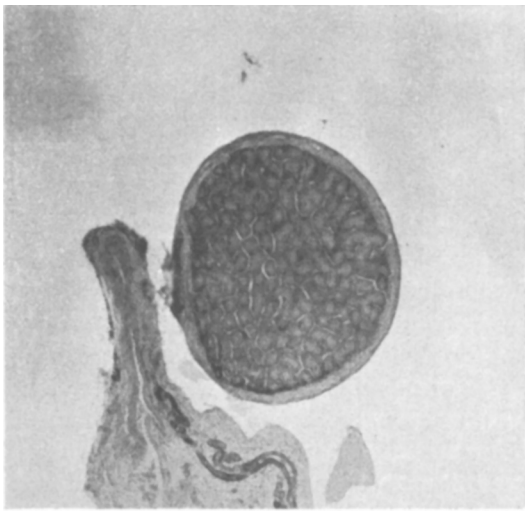

FIG. 1.
Testis of Phainopepla, winter condition. × 250. Tunica albuginea thick, lumina of tubules closed.

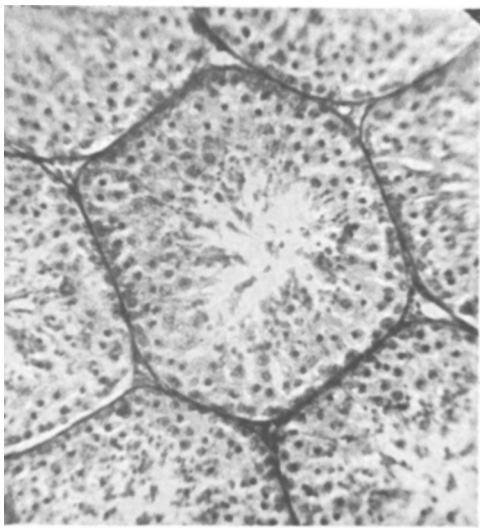

FIG. 2.
Testis of Phainopepla, intermediate condition. ×430. Tubules opening, spermatogenesis well under way.

few interstitial cells among them. The seminiferous tubules lacked lumina and there was a ring of spermatogonia along the basement membrane and a few larger nuclei just inside of these. Cell walls were not in evidence.

In Specimen 16 in the collection, taken Feb. 19, and 2 mm in length, the lumina were just opening in some of the tubules. The tunica albuginea was thinning as was also the tunica propria. Intertubular material was less abundant, but there were quite a few interstitial cells. The spermatogenic cells were more abundant.

Specimen 55 (Figs. 3 and 4) was that of an incubating bird taken June 6, 1938. It measured 6.5 mm in length. The tunica albuginea was very thin and shredding away. The tunica propria was also thin with few nuclei showing. All stages of spermatogenesis were shown in the tubules and clumps of mature sperms were present. There was little intertubular material present, only an occasional connective tissue cell or interstitial cell being apparent.

The first evidence of retrogression was seen in the vacuolation of some of the spermatogenic cells and the appearance of debris in the lumina of the tubules. This was apparent in Specimen 59, collected July 4, 1938. The specimen also showed the various stages of spermatogenesis and clumps of mature sperms arranged regularly about the lumina. Specimen 64, collected July 24, 1938, showed a further stage of regression. The size of the testis was considerably reduced, being only 4.5 mm, the tubules were reduced in proportion,

FIG. 3.
Testis of Phainopepla, active condition. × 250. Tunica albuginea thin, few nuclei in inter-tubular spaces, mature sperms in clumps around lumina of tubules.

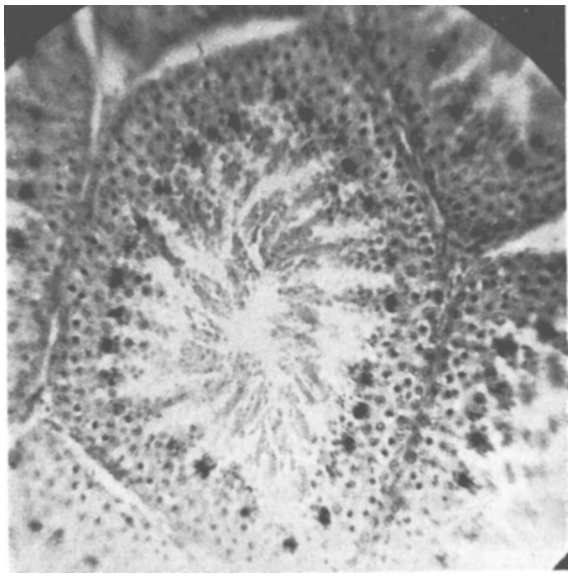

FIG. 4.
Same as Fig. 3 above. × 430.

and all stages of spermatogenesis were seen but they were scattered at random through the tubules. Complete disorganization seemed to have set in except for a regular ring of cells along the basement membrane. The tunica albuginea and tunica propria were thickening and intertubular elements were becoming prominent.

On July 30, 1938, a male was collected which was in the company of a female and 2 young. The testes of this bird measured about 2 mm in length. The tunica albuginea had reached about the thickness of the winter condition. The lumina of the tubules were almost eliminated, here and there being filled with rather large nuclei with an abundance of chromatin. The whole tubule contents was marked off by partitions or walls, and a ring of nuclei was present against the basement membrane. Intertubular elements were more abundant than in Specimen 64.

The above data on the testes of the Phainopepla bear out the studies of Rowan[1] on the Junco, and Bissonnette[2] on the English Starling.

1 Rowan, Wm., *Proc. Boston Soc. Nat. Hist.*, 1929, **39**, 151.
2 Bissonnette, T. H., *Am. J. Anat.*, 1930, **45**, 289.