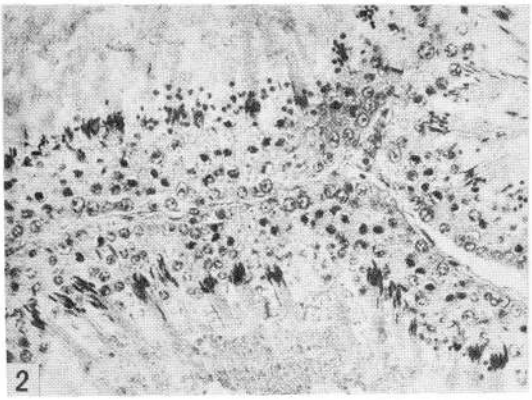
al and Saxena, 1964; Thapliyal and Tewary, 1964). These experiments were started in November, 1963 and were concluded in December 1964. The difference in temperature between the bird boxes for artificial illumination and the bird-room containing them was never more than 1.7°C. During the course of these experiments all birds received similar husbandry and remained healthy.

Results

Short-photoperiods: Gonads of birds subjected to 8 or 9 hrs. of constant daily photoperiod started increasing practically immediately. During the period of January and February, however, the gonadal volume changed very little. Gonads continued to develop, and after attaining a maximal volume in April (8 hrs.) and May (9 hrs.) followed a plateau (Fig. 1). Microscopic examination showed that by January, that is within two months of the start of the light treatment, gonads of the short-day birds had acquired full activity (Figs. 2, 3).

Long-photoperiod: During the first month the mean gonadal volume of the 15-hr. photoperiod birds declined significantly. The reduced volume was not different from that of the controls (Fig. 1). The mean gonadal volume remained unchanged until February when it started increasing rapidly and followed a plateau after reaching a maximum in June (Fig. 1). Spermatozoa appeared in March, when gonads of control birds were still small and inactive (Figs. 4, 5).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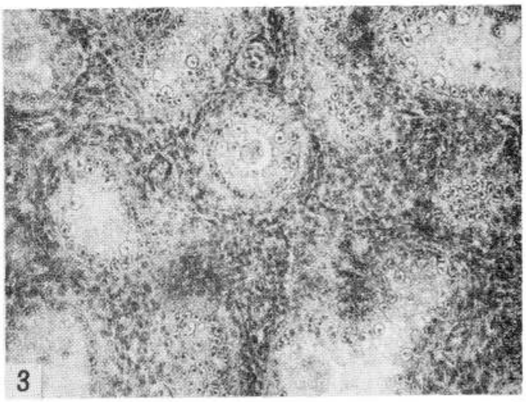
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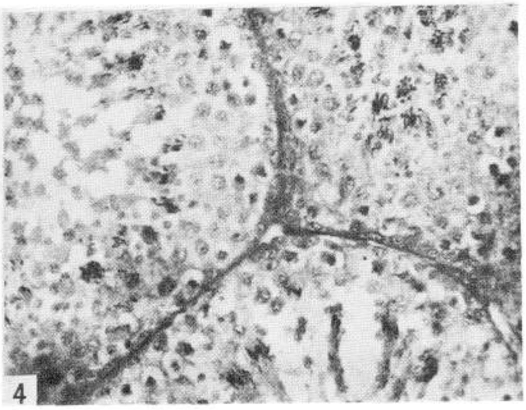
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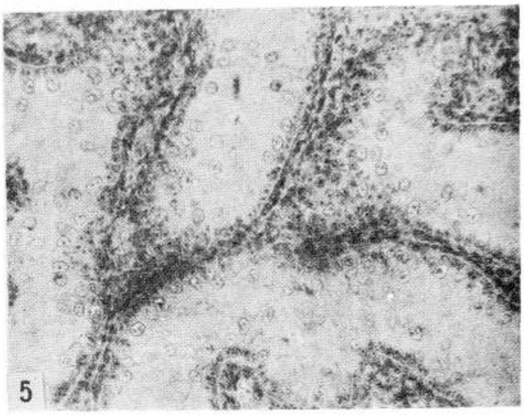
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Fig. 2 Full development of the testis of a black-headed Munia under short (8 or 9 hours) photoperiod. January, ×1000; Fig. 3. Completely inactive testis of a bird receiving natural photoperiod. January, ×1000; Fig. 4. Presence of bunched spermatozoa in the testis of a bird subjected to constant 15-hour photoperiod. March, ×10000; Fig. 5. An inactive testis of a control bird. March. ×1000