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Daily Light Ration and Gonadal Activity in the English Sparrow, *Passer domesticus*

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We are now studying a plant which operates as follows: the raw waste is first passed through a cutting machine which cuts the solids fine enough to pass through a $\frac{1}{8}$ inch hole. Such equipment is standard in sewage treatment practice, and is not expensive to operate. The waste then flows directly on a tile filter, at a rate of 20 million gallons per acre per day, and into a final settling tank. The solids collecting in this tank are dewatered either on a sand bed or in a suction filter after being passed through the filter several times so as to stabilize them by aerobic oxidation. In this particular plant, we have cut the cost of construction to approximately $\frac{1}{3}$ of the cost of an old type plant. By duplicating the old type plant in all respects except in the filter, it is possible to cut the cost of construction about 40%, chiefly by cutting the size of the filter to about 1/10th that considered essential in earlier practice.

It is our conviction that the cost of treatment plants using the trickling filter can be decreased at least 40% over prevailing costs, and if the plant now under observation proves successful, we will be able to decrease the cost still further.

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DAILY LIGHT RATION AND GONADAL ACTIVITY IN THE ENGLISH SPARROW, *PASSER DOMESTICUS*

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Full spermatogenetic activity may be induced in male English sparrows by artificially lengthening the days (exposure to 60 or 100 watt incandescent bulb) during the fall and winter.

In the present study male birds were capped during the exposure period to determine the importance of ocular stimulation in testicular hypertrophy. The experiment was begun on November 5th. After a 6-week period it was found that the gonads of 6 out of 9 capped birds were spermatogenically inactive. The testes of 3 contained spermatocytes, but no sperms. 13 out of 15 uncapped birds showed testicular enlargement, 11 of these gonads containing mature spermatozoa. 9 caged controls and 2 controls from nature had quiescent testes.

Female birds require a longer period of light stimulation (70 or more days if experiment is begun in early November) before significant enlargement of ovary (and oviduct) takes place. The oviduct enlarges under the influence of secretion by the ovary of theelin or a theelin-like substance. Injections of theelin during January and early February induce precocious oviduct hypertrophy. The ovaries of such birds are small compared to the enlarged ovaries of light-treated birds.