

On August 27 and 28 the automatic hopper was in Group X's cage all day. At intervals during the day when there was activity going on near the cages, the button was pressed several times. About 40 reinforcements were given in this way. The procedure was designed to adapt the chickens both to the sight and the sound of the hopper while they were in their own cage. It was not desired that the chickens secure enough grain to constitute an important addition to their ration. With 40 reinforcements to be divided among 4 chickens, only about 7.4 grams of grain was consumed by each chicken.

On August 29 each chicken was placed for about 15 minutes on an enclosed platform (30" x 60") with the automatic hopper. Each bird was given an opportunity to eat about 15 reinforcements, but only two birds were really conditioned to the sound of the hopper, that is, when the solenoid sounded they approached the hopper and ate readily. The other two were not sufficiently adapted.

On August 30 two of these preliminary training periods (10 reinforcements each) were given; by the second, emotional adaptation was completed in all 4 birds and all were conditioned to the sound of the hopper. At 8:30 P.M. August 30 the feed hoppers of both groups were covered, since a moderate drive for the pellets was desired for the following morning. The control group hopper was covered to ensure equal eating time for this group.

On the morning of August 31 the experimental chickens were placed one at a time on the platform with the automatic hopper. The chicken was first given 3 free reinforcements, then we attempted to elicit pellet eating as an operant. Hen size pellets were placed one at a time on the platform next to the feeder. Each time the chicken swallowed a pellet, it was reinforced with grain. After a few reinforcements, the chicken was required to swallow two pellets for each grain reinforcement, and on subsequent days this ratio will be pushed as high as possible. During the early stages of conditioning only small amounts of pellets will be consumed since we do not want the amount of grain consumed in the reinforcement process to be a large factor in the chicken's ration. It is not possible to push the ratio of pellets per reinforcement very rapidly since we must operate at fairly low drive levels.

All we can say at the present time about this experiment is that the pellet eating seems to have good operant characteristics. When each swallowing of a pellet was reinforced with grain the behavior appeared at a quite regular rate in all but one instance (this chicken appeared to have difficulty swallowing the large pellets and has gained only 2 ounces since the hen-size pellet schedule was begun). When the ratio of pellets per reinforcement was raised, the behavior showed the slight extinction characteristic of an operant when a fixed ratio of responses per reinforcement is first required. The rate slowed, competing behavior and approximate responses such as merely pecking at the pellet appeared. The rate and regularity picked up when the ratio was returned to one pellet per reinforcement.

The chickens obtained in this first experimental session on an average of slightly over 1/3 ounce of feed. They were then given free access to hen-size pellets for the rest of the day (as was the control group) and the hoppers were covered again at 8:30 P.M.