

## EXPERIENCES IN BANDING BOAT-TAILED GRACKLES

By O. B. Kok

During the past few years, a comprehensive investigation of the breeding behaviour of the Boat-tailed Grackle (*Cassidix mexicanus*) has been conducted in the Austin area, Travis County, south-central Texas. An important phase of the study was to color-band the birds so that they could easily be recognized as individuals. Although various types of traps and trapping techniques are known, little of this information has been recorded in the literature. The purpose of this report is, therefore, to give some information on the trapping techniques that have been employed successfully during the course of the study. At the same time, an attempt is made to interpret the results of the different techniques in terms of the behavior of the species concerned.

When the banding efforts began, it proved to be rather difficult to catch large numbers of grackles in open terrain, areas which have been selected on the basis of their suitability for intensive and prolonged observation. At first only Japanese mist nets (1 1/4 inch mesh) were used. Since the nets operate by intercepting and entangling birds in flight, this method can only be used successfully if the birds fail to notice the net until it is too late to swerve aside. Such a situation is best fulfilled by setting the net against a dark and broken background, but owing to the lack of thickets and shrubbery in open areas, the nets are silhouetted against the light background of the sky or are highlighted by reflected sunlight. Slight breezes also cause considerable motion in unsheltered areas, so that the visibility is increased even more. At the same time the netting efficiency is reduced, because the wind causes the horizontal slack to bunch together at one end of the net, thereby leaving most of the netting stretched too tight for effective entanglement.

A further restriction placed on netting in the open is due to the fact that the top shelf-string should be no higher than a person can reach conveniently (approximately 7 feet), whereas the American elms, live oaks or cultivated cedars in which the grackles breed are usually high, so that there is no need for the birds to fly fairly low back and forth.

Nevertheless, six females and fifteen males were caught in this manner, nineteen of them during the latter part of March and in April. As the sex ratio at breeding colonies is strongly skewed in favour of females, the males being outnumbered approximately three to one (Selander, 1960; Skutch, 1954), the preponderance of males caught (even though the numbers are small) tend to indicate that they are more actively flying around at that time of the year. This is in full agreement with the findings of Selander and Hauser (1965) that adult males attain maximum sexual behaviour in April and that they are consequently very active in establishing and defending territories, and in obtaining matings.

Moderate success in capturing grackles in open areas was achieved by using funnel and pull traps of various shapes and sizes. Of these, the large funnel traps proved to be most efficient. Collapsible traps, approximately six feet long, three feet wide and three feet high, were made of hardware-cloth in the shape of an S. The inner curve on each side contained a funnel entrance. In contrast to the calm, docile behaviour of pigeons in traps, grackles will desperately try to get out once they "realise" that their freedom of movement has been restricted. In so doing they often injured their bills against the wire network. For this reason a larger, circular funnel trap, seven feet in diameter and four feet high was built with 1 x 2 inch welded wire and iron poles. For attraction, some traps were baited liberally with white bread and cracked corn, while female dummies, mounted in the copulatory posture, were used for others.

From March to June, 66 grackles were caught in this fashion. With two exceptions, all 36 males were caught during the latter part of March and in April, the period during which adult males attain maximum testes volume (Selander and Hauser, 1965). Only 12 of the 30 females, in contrast, were caught during the corresponding period of the year, the rest being captured in May and June when most females are feeding their young. At other times of the year, grackles are quite wary of traps, a fact which probably is the reason why "the boys of the streets say they cannot trap or catch him [*C. mexicanus*] in a snare" (Sennett, 1878).

While using the traps, it soon became apparent that grackles tend to avoid trapping areas where they have been disturbed or where flocking occurred. In this connection Gill and Gill (1954) remarked that Purple Grackles (*Q. quiscula*) "apparently remember the trap danger for more than 12 months" and that "they are difficult to catch more than once." Therefore, instead of catching birds which were breeding in the vicinity of the traps, unfamiliar birds from neighboring breeding colonies were attracted to the trapping sites and got caught. Eventually, the grackles got so used to the traps, that they were able to walk in and out of the funnel traps at will!

Attention was finally turned to the alpha isomer of chloralose as a means of increasing the output of banded birds in open terrain. Baits of cracked corn were prepared by mixing a cup of grain with colorless mineral oil and adding the appropriate weight of powdered alpha-chloralose. Although fresh bait was usually mixed on the day of intended use, it proved to be quite unnecessary, because alpha-chloralose is a stable compound (Williams, 1966) and was found to be effective even after three days of outdoor exposure.

As grackles often have breeding colonies within city limits, they are relatively tame and accustomed to feed on a wide variety of food provided by man. No pre-baiting was therefore necessary to attract them to intended capture sites. All baiting sessions were carried out at dawn when the possibility of disturbance by the public was most unlikely. At such times it could also be expected that the birds would not only feed more readily for not having

eaten throughout the night, but that the drug would also take effect more rapidly. Furthermore, enough time is left during the day for complete recovery, thereby effectively reducing the risk of predation on affected grackles that might have remained on the ground overnight. The baiting sites were kept under close observation at all times in order to chase away legally protected and other species whenever necessary. Since alpha-chloralose is a stable compound which poses a threat to many other grain eating animals, the bait was removed as soon as the first grackle showed symptoms of narcosis, when searching for drugged individuals began.

Within 15 minutes after having eaten the treated bait, grackles started to lose their sense of balance by staggering around and failing to perch properly. As was found in the case of Wood-pigeons (*Columba palumbus*), members of the same species were often attracted to drugged individuals which behaved in such an abnormal manner (Murton *et al.*, 1963). After a while the narcotized grackles would lie down in a hunched position with the eyes closed, mostly underneath trees or near protective vegetation. Except for flickering of the eyes and an occasional twitch of the wing or tail, the birds remained motionless and could be approached easily. When touched or handled, however, they either flew a short distance away or struggled violently. Flight appeared to be quite normal, though sluggish, but difficulties were experienced in the judgment of distances when landing or taking off. Apart from excessive dribbling, strongly stupefied birds showed no reaction. Most narcotized birds were found within 200 yards of the baiting site. All captured grackles were kept in darkened boxes (overnight when necessary) until they recovered sufficiently to be released in good condition.

Dosages of 1.5, 2.0 and 3.0 gram alpha-chloralose per cup of bait, with recovery periods ranging from 3 to 24 hours, were used for drugging purposes. Of these, the dosage of 1.5 gram proved to be the most efficient, giving an average time of 4.48 hours under narcosis as against the 5.42 and 10.00 hours of the two latter concentrations respectively. Heavier dosages of chloralose produced narcosis more rapidly, but the likelihood of dying was unfortunately increased at the same time. Sixteen percent of the maximum number of birds seen to feed during the study died from the effects of chloralose. The number of grains in a fully packed gizzard averaged 66. In comparable cases, the average number of grains that constitute a lethal dosage proved to be 49 for Feral Pigeons (*C. livia var*) and 74 for Wood-pigeons (*C. palumbus*) (Ridpath *et al.*, 1961, and Murton *et al.*, 1963, respectively).

Altogether 26 grackles, only three of which were females, were successfully captured with the use of alpha-chloralose. The small number of females caught could perhaps be attributed to the heightened aggressiveness of grackle males, which, in turn, is a consequence of their non-monogamous mating system (Selander, 1965; Selander and Dickerman, 1963). As a result, males are able to use their dominance at feeding sites, thereby preventing the

females from eating as much of the treated bait. The paucity of females could also be due to the fact that they are less conspicuous, and therefore more likely to be overlooked in the subsequent search for drugged individuals. Because of the relatively small number of birds involved, however, no general conclusions should be made until further work, which seems to hold promising possibilities, is done in this field.

Banders in the U. S. and Canada are reminded that permits do not authorize use of any chemical to take birds without special permission, in view of the need for tight controls over the conditions under which such experiments are to be conducted.

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