

# Pairing Display and Spring and Summer Flights of the Mallard

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Mallards are found in Saskatchewan during the larger part of the year. Their presence may first be noted late in March as they move in large flocks onto the grassland and parkland breeding grounds. Later in the season feeding groups of young and adults remain until continued freezing weather forces them out in November or December. This article is an attempt to describe the courtship postures and aerial flights which are so often seen during the relatively short breeding season.

Each year, starting in October and continuing through March of the following year, groups of Mallard drakes court females prior to pairing. Although much of this pairing occurs on the southern wintering areas of the United States, courting groups do occur in our province early in the fall, and again during spring migration. Such groups can be easily identified if one watches their general behaviour on the water. Courting groups are usually made up of from four to fifteen drakes and one to five hens. Usually, however, five or six drakes court one female.

Characteristically the following postures can be identified in the courting drakes (adapted after Lorenz, 1941). These are given in the order in which they usually occur as a group of drakes swim about an unmated hen.

**1. Mock preening** — A drake runs his bill quickly against the underside of his slightly lifted wing so that a loud "Rrr" sound can be heard.

**2. Preliminary shaking** — Each drake swims about nervously with his head and neck tucked into his body; no white neck ring can be seen. The head feathers are ruffled and the drake may then thrust his head upward and shake his entire body while partly lifting it out of the water. This shaking occurs regularly and with increased intensity. Following this one of the following three postures occur.

**3. Grunt Whistle** — The drake's bill is thrust down into the water

and then he moves his body while his head is still low, appearing to draw his bill upward along his breast. When the neck is strongly curved there is a loud sharp whistle followed by a deep grunt, the head straightens up again, and the body sinks back.

**4. Head-up Tail-up** — With a loud whistle the drake thrusts his head with indrawn chin backwards and upwards, and at the same time curves his rump upwards, so that the whole bird looks short and high. This posture is very brief. The head remains high and the bill is pointed toward a female in the group. Following this the drake swims swiftly over the surface of the water with head and neck held close to the surface. He then lifts his head and turns the back of it toward the female. The hen may follow a certain drake for a short distance away from the group.

**5. Down-up Movement** — A drake quickly thrusts his bill into the water and in the next movement jerks up his head without lifting his breast, which is still low in the water. When the head is highest a whistle is emitted and a small stream of water may follow the bill up. Following this, the drake gives a short harsh call, a nasal "raehb."

Hens invariably initiate a courting group by their actions. They swim nervously about with head and neck low over the water, occasionally giving short quacks. Hens continue this neck stretch and quacking through the previously described courting display of the males. In fact, should the hen suddenly stop these movements, the drakes also stop and do not complete all of the display postures. Hens may also swim after a drake for a short distance, moving their head and bill quickly backwards toward the sides, giving the "inciting call" best described as "queggege - ggeggegeggeg." This usually occurs after the head-up tail-up posture of the drake. Drakes occasionally "figh



while courting, one grasping the other's chest feathers and tugging. The whole courting group may also rise in the air, fly about for a minute and resettle a short distance away.

The entire sequence of the drake's postures may be given, at the height of courtship intensity, in a period of less than two minutes. However, postures are given over and over again. Courting groups break up after five or ten minutes of display but may regroup again at the end of a short rest period. After a number of such pairing displays a hen may tend to associate with a particular drake. This is the first indication of the formation of the pair bond, which probably strengthens through continued association. The pair remains together as a unit and later migrates north.

Prior to copulation a pair of Mallards will face each other and both pump their heads and necks up and down some ten times. Then the female stretches her neck and head down into the water and the male mounts. After the coition the drake flings back his head, gives a loud whistle and swims about the female in a half circle, with his head held low on the water.

During the spring and summer small flocks of Mallards are seen flying in the air in apparent migration, display or pursuit. If these flocks are watched closely one can see that their flying direction may not be consistent, that the number of males and females vary and that some flocks fly slowly while others move over the countryside in a very erratic manner. The following discussion attempts to classify and interpret some of these aerial flights.

#### **Migrating Flight**

With the coming of the first few spring days Mallards migrate north in flocks varying in size from a few pairs to several hundred birds. However, small groups of from eight to forty birds are characteristically seen. These migrating flocks fly in a northerly direction at varying distances above the ground, some as close as 200 feet and others well above 5,000 feet. They fly at night during the early morning and evening hours and less commonly through the day.

Most of the groups are made up of pairs, although small groups of unmated males may accompany the pairs. In any flock each female is invariably followed by a male. Individual pairs can easily be picked out for the drake and hen remain very close to each other in flight and on the ground. Occasionally Pintails and Baldpate mix with these flocks moving north.

After the flocks reach the breeding grounds individual pairs gradually drift away from the main body of birds. Each pair settles and remains on a small water area or portion of a marsh prior to nesting.

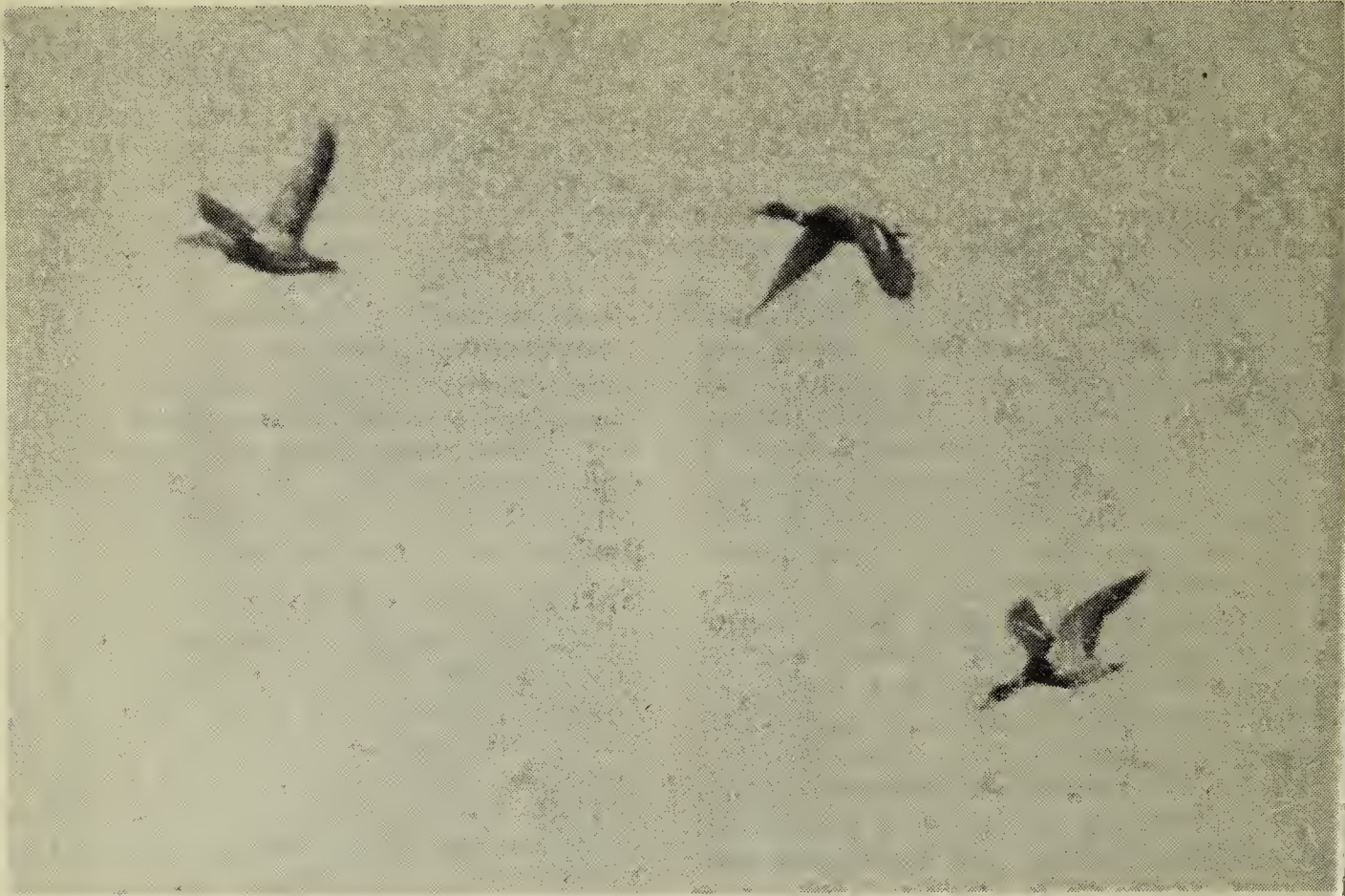
#### **Spring Courtship Flight**

Within resting migrating flocks, a few of the hens seem to be only loosely paired with their drakes and these females may initiate a so-called courting flight. A number of bachelor drakes crowd about the hen giving courting postures No. 2 and 3 (i.e. preliminary shaking and grunt whistle.) Often their persistent crowding forces the female to rise and the drakes follow. Some five to fifteen drakes may join in the chase after the single female. The group flies back and forth and up and down over the countryside in a very erratic manner for a period varying from five to ten minutes. Females occasionally give the "inciting call" during the chase. After a few minutes some of the drakes may break away, and later the remainder of the group settles in another pond. It has not yet been determined whether the female chooses another mate during these flights or whether she is merely trying to elude the persistent bachelors. These flights are usually seen from the first part of April to the middle of May.

#### **Continuous Call**

During quiet warm mornings and evenings in early April mated females start to give a single loud monotone call best described as "qua-qua-qua-qua" etc. About 16 to 20 calls are given per ten second period but length of the calling period is usually not very consistent. Apparently this is an indication of some inner restlessness in the bird and perhaps of a desire to begin laying eggs. While calling the female appears nervous, flying about the countryside from one water area to another or merely swimming or fly-





*Photo by F. W. Lahrman*

#### MALLARD TERRITORIAL PURSUIT

ing about a single slough. She may even visit nesting cover with her drake. Females give this call at sunrise and sunset but are sometimes heard through the day as well. The continuous call is usually heard after April 10th and a few females give it until the middle of May. Hens call most persistently during a short period prior to egg laying.

#### **Territorial Pursuit**

Until the time that mated females give the continuous calls pairs are relatively gregarious, that is, they still associate with each other without too much apparent friction. However, as soon as the female starts to call, the drake becomes aggressive and chases all pairs and females which attempt to land near him or his female. His attack is usually directed toward the intruding female of a pair and only rarely toward the male. In this way he keeps a small area of marsh or slough cleared of other Mallard pairs. Pairs of other species are rarely attacked. This protected area, known as a territory, is the area from which the female flies to her nest and upon which the drake awaits his female. The nest itself is not necessarily within the territory, but may be up to one-half mile away. (The whole problem of

Mallard territories is unduly complex because of some overlap of these protected areas. For a more complete but not necessarily correct discussion see Dzubin, 1955).

Drakes chase females of intruding pairs for distances up to 200 yards during the pre-nesting period and well over a half mile during the early incubation period. A typical flying territorial pursuit contains three birds. The territorial drake chases the female of the transgressing pair and both these birds turn and turn over the countryside. The drake of the female being chased follows some fifty feet behind the two birds. The female may give the inciting call of courtship or occasionally a "repulsion call" which will be described later. After the chase the territorial drake returns to his territory, the drake of the transgressing pair rejoins his female and they alight elsewhere. Occasionally two or three drakes may simultaneously launch territorial pursuits against the same female of a pair, especially if their territories are close to each other. Territorial pursuits are commonly seen from April 1st to the middle of July, most of them occurring in late April and early May.



As previously mentioned, females start to settle in nesting cover after starting the continuous call. After visiting nest cover for five or six days a nest site is chosen and the female starts to lay her eggs. Each morning, sometime between 5:00 to 7:00 a.m., the pair leaves the territory and flies low over the nest site, and the female drops into the cover near the nest site while the male returns to the territory or some other nearby water area. The female usually completes laying by noon and thereafter the pair feed and rest. Each morning another egg is laid until eight to thirteen eggs complete the clutch.

During the egg-laying period the male is always with the female when she is off the nest. When the female starts to incubate after the first egg is laid, her drake joins other drakes whose females are also incubating, and they form small groups who feed and rest most of the day. Each morning and evening the drake visits his territory and awaits the female. If she returns he remains alert while she feeds. Toward the end of the second week of incubation the drake's attachment to the female wanes and he spends more and more time with other males. Later these groups retire to lakes where the drakes moult. Practically no Mallard drake actually sees his own brood.

#### Group Chases

After the drakes gather into small groups during the early incubation period they regularly chase any incubating female flying off her nest, attempting to force her down and rape her. An incubating female set upon by a group of drakes gives a very harsh "repulsion call," a broken series of single "gaeck" sounds, sharply uttered like a cough (Lorenz, 1941). With this call the head and back feathers rise, the upper bill is bent upward, and the head is drawn deeply onto the neck. The

female may drop down onto the ground and make short hopping flights over the countryside, always pursued by the group of drakes. All such flights do not necessarily culminate in the successful rape of the duck by the drakes. Many drakes leave the group after a short chase, while others join in. Occasionally the female dives into heavy bush to escape her pursuers.

From three to twenty drakes may harry a single female. These flights are most commonly seen during May and June, and less commonly in July when the groups of drakes begin to leave the breeding grounds to moult.

#### Summer Courtship Flight

A chase which occurs during May and June and is similar to the one described above may be a courtship flight. From three to thirty males may follow a female slowly over the countryside. The female does not give the repulsion call but remains silent and occasionally hovers for a time low over the ground. It is thought that females who lose their clutches late in incubation and whose drakes have already left for the moulting lakes lead such flights. In order to re-nest these females may initiate courting parties to choose another mate. Females who lose their clutches to predators early in incubation are still associated with their drake and need not initiate a courtship flight. However, these hypotheses must be subject to further corroboration.

There is a definite chronological overlap of most of the aerial flights described. Two or more may occur over the same breeding habitat on the same day. This is due to the fact that not all pairs nest at the same time. However, each flight can be keyed if one watches the behaviour of the female and the accompanying drakes.

I would like to acknowledge with thanks the financial aid received from the National Research Council of Canada and the Wildlife Management Institute of Washington for a study on Mallard ecology in Manitoba from 1952 to 1955. The Canadian Wildlife Service has financed all my work in Saskatchewan. I would also like to thank my colleague, Mr. J. B. Gollop, for his help in criticizing the original manuscript.

#### LITERATURE CITED

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EDITOR'S NOTE: The most recent *Wilson Bulletin*, Dec. 1956, has a page of sketches of "The Mallard Duck Courtship Display" by E. Carey Kenny and an interesting article on "Seasonal patterns in the epigamic displays of some surface-feeding ducks" by A. Ogden Ramsay that supplement Mr. Dzubin's valuable observations.