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*Biological Survey, U. S. Dept. Agriculture,*  
*Washington, D. C.*

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## THE GRAY-HOODED QUAIL DOVE (*GALLICOLUMBA RUBESCENS*) OF THE MARQUESAS ISLANDS, IN CAPTIVITY.

BY E. W. GIFFORD.

### *Plate XIX.*

DR. ROBERT CUSHMAN MURPHY has recently published a description<sup>1</sup> of *Galllicolumba rubescens* which hitherto has been known to science only from Krusenstern's plate published in 1814.

In January, 1923, I received thirty-one of these birds from Mr. R. H. Beck. As they had been in a traveling cage for three months they were in an exceedingly dirty condition. I immediately turned them into a sunny outdoor aviary at my home in Oakland, California, where they rapidly regained their normal cleanliness. The backs and heads of many which had been partially denuded of feathers in the perpetual squabbling for weeks in the cage were soon again copiously clothed in feathers. Their natural pugnacity continued to be manifested, however, after they were placed in my aviaries. The same quarrelsome disposition manifests itself in their offspring.

Although sparring with the wings is frequent where a number of Gray-hooded Quail Doves are together no physical harm results, unless a single bird becomes the object of the attacks of many. This has rarely happened in my flock. When it has, the victim of such continual persecution has always been given more congenial companions in another aviary. Often the pugnacity of the attacker evaporates if the attacked bird stands its ground. At times a

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<sup>1</sup> Birds collected during the Whitney South Sea Expedition. I., American Museum Novitates, no. 115, pp. 10, 11, May 29, 1924.

third bird enters into a contest in which two are already engaged. Usually one of the original pair drops out so that the fight does not long remain three-cornered. Bluffing rather than fighting is the better way to characterize their combats. Hens seem very nearly as pugnacious as cocks, and I have seen them attack males.

Two birds feeding close together suddenly conceive a violent antipathy for one another. They pick at the ground, or at seed, very vigorously for a few seconds like a couple of fighting cocks; at the same time sidling up to one another. Then up goes the outside wing of each in a defensive posture. At the same instant one strikes the other a sharp blow with the inside wing. I speak of inside and outside wings because usually their sparring position is side to side, not face to face. Such contests last perhaps a minute or two, during which time there is more or less retreat and advance on the part of each combatant. Suddenly both lose interest in the match and resume their feeding, or one acknowledges himself defeated and scurries for cover or vents his spite on a bystander. The victor walks about for perhaps half a minute waving his wings in a blustery fashion and apparently seeking a new fight.

Feathers are seldom lost in such an encounter. They usually are pulled out in surprise attacks when an unwary bird is pounced upon by a treacherous neighbor without warning. Then neck or back feathers are seized by the attacker. The forward movement of the victim leaves the feathers in the mouth of the assailant. Then follows a fencing combat with the wings as described above.

Young birds in juvenal plumage are not attacked. An adult male sometimes rushes at one, which usually cowers and raises one or both wings high above its back. The apparently meditated attack is transformed into a half minute of very rough fondling on the part of the adult, who will vigorously run his bill in among the neck and back feathers of the squab, much as he would caress a female. The squab generally squirms and tries to escape this treatment.

When rushing to an attack, and after a fight, the wings are carried loose and drooping at the sides. In the former case the feathers along the middle of the back are slightly raised, though not to such an extent as in *Gallicolumba jobiensis*, in which they appear as a distinct ridge when elevated during a sparring contest.

Gray-hooded Quail Doves will battle as readily with the larger *Gallicolumba jobiensis* and *xanthonura* as with individuals of their own species, often putting the larger birds to flight. For the still larger *Gallicolumba stairi* on its own ground they have a wholesome respect; though if one of these intrudes upon their premises one or more will attack and drive out the trespasser. With *Gallicolumba luzonica* they seem not to quarrel. Perhaps the nervous, restless temperament of this species, which manifests itself in incessant, aimless walking, and its utter disregard of the smaller *rubescens* make it an uninteresting opponent for the fight-loving Marquesans.

*Gallicolumba rubescens* does not walk in the tippeting fashion of its relative *Gallicolumba luzonica*, the famous Bleeding-heart Dove. Neither does it have the peculiar display habit manifested by that species of leaning back and protruding the crop region, which in *G. luzonica* is colored a deep carmine.

Normally in walking *rubescens* carries its tail below its wing tips. Now and then an individual may walk with it above them and distinctly elevated so that the bird has somewhat the appearance of a small chicken. This type of tail carriage is frequent with *jobiensis* and particularly marked in *stairi*.

The Gray-hooded Quail Dove is the most active Dove with which I am acquainted. The hours of meditative perching which characterize other Doves are not true of this species. Individuals, if not incubating eggs, are continually up and doing during the day. Feeding at the regular feeding place, digging out choice tidbits in soil against walls and fences, examining the tidbits found by others, sunbathing, courting, paying addresses to a neighbor's wife, nest building, and investigating a neighbor's nesting arrangements (only to be promptly driven out) constitute the bulk of the daily activities of these energetic birds. Their energy appears usually to be directed toward an end and is not expended in futile and apparently aimless pedestrian activities as it is with *Gallicolumba luzonica*.

Gray-hooded Quail Doves impress me as having something ralline and galline in their actions on the ground, where they spend most of their time. Their interest in digging and turning over loose soil, leaves, and rubbish is never satiated. The result is a series of small holes all along the aviary walls having an

appearance at times alarmingly like rat and mouse holes, for often the excavation is not a mere depression in the surface but a small cavity made under a clod of earth or a stone. At no time have I seen the feet used for scratching; the bill is the only digging instrument. This eternal digging makes this species a bad one to keep with ground nesting doves like *Geophaps* and *Lophophaps*, as their nests are destroyed and their eggs rolled out of place or broken.

Although the plumage pattern of the Gray-hooded Quail Dove is harmonious and a fresh plumaged male is indeed a thing of beauty, the appearance of the birds on foot is much of the time slovenly, for the wings are often carried drooping. The result is that the characteristic white wing band is more or less displayed even when on foot. On the other hand if a person attempts to capture one of these birds the wings are drawn up and the appearance becomes much more graceful and sleek as the bird holds itself in readiness to escape human pursuit. The flight then is swifter than ordinarily. The ordinary flight of the species from perch to perch is slow and weak. The broad white wing band and the white base of the tail show very conspicuously when the bird is on the wing.

When held in the hand this species has the curious habit of repeatedly gaping in a fashion that leads one to think that it is about to expire.

No attempt to decoy a human intruder from a nest has been observed, but what appears rather to be a threat against the intruder has been noted, the male walking toward the intruder with wings half spread as when fighting another bird.

Sun-bathing is a favorite pastime; the hotter the day the more it is relished. The bird reclines on its side on one wing which is folded and either stretches the other downward so as to let the sun play on the exterior surface fully, or stretches it upward to allow the sun to play on its interior surface and the side of the body. After a few minutes the other wing is extended in like fashion. The body feathers are elevated to allow penetration of the rays to the skin. Not infrequently a bird sunning the under wing surface rolls over on its side so far that it requires a quick closing of the wing to keep from losing its balance and rolling on to its back.

Bathing in a pool of water is never indulged in, but a shower bath in the rain or from a garden hose is a source of endless delight. No matter how cold the weather the appearance of fine spray from a hose brings a complete cessation of all activities and an immediate assemblage in the spray and enjoyment of the bath. Nesting birds, however, resist the temptation and do not leave their charges. Each bird lies on its side and extends one wing upward so that the spray falls on the inner surface of the wing and against the body, the feathers of which are elevated to allow penetration of the spray to the skin. When the water is shut off a number usually linger in a reclining position in the hope of receiving more or catching stray drops that fall from the wire. Reluctantly they rise, shake themselves, and perhaps indulge in a bit of preening.

Within two months after receiving the Gray-hooded Quail Doves a pair nested and within four months four pairs were nesting. As I use fiber bowls as nests, in which the birds deposit twigs and stems, it is impossible to describe the true nest of the species. Judging from the handful of material deposit in each bowl, the nest in their native habitat is probably of the usual poor construction that characterizes Dove nests in general. The male gathers the nesting material and carries it to the waiting female at the nest site. Twigs are sometimes added haphazardly by the male for a day or two after the eggs are laid.

Nesting is preceded by display on the part of the male, and treading. After some fondling in the way of running their bills among each other's neck and back feathers, the female thrusts her bill in the male's mouth in customary pigeon style. This may be done three or four times before treading takes place or may not actually be succeeded by treading. Between the billing operations both cock and hen parade back and forth to their respective ends of the perch, the male resplendent in his sleek plumage which then shows to best advantage. There is no spreading of the wing or tail for display as with the Bronze-winged Doves, but the plumage of the neck is somewhat distended as in Domestic Pigeons. The actual billing is usually preceded by a bit of preening of back feathers on the part of each bird.

Eggs are two in number and white. The male incubates them

from about 9 A. M. to 4 P. M., the female the remainder of the twenty-four hours. Droppings of females made when they leave the nest in the morning are exceedingly large, indicating that they have been held unduly. The nest is never dirtied by either male or female. Sometimes both birds sit together on the eggs or squabs. Incubation lasts fourteen days, perhaps thirteen or fifteen in some cases. As the eggs are laid at least twenty-four hours apart, the hatching of the two squabs is separated by a like interval. As a result of this, perhaps, there is a considerable disparity in the size of the squabs as they develop. Unhappily the smaller one at times succumbs while in the nest. At the end of a week, when the squabs have become partially fledged, their parents begin to leave them uncovered for intervals, which as the days pass grow longer until time to leave the nest arrives. On the nest the Gray-hooded Quail Doves are fearless and will allow a person to thrust his face within a foot of the nest without leaving. Handling, however, puts them to flight. No attempt is made to buffet the investigator with the wings.

Usually thirteen or fourteen days elapse before the squabs leave the nest for the ground. At night they do not attempt to perch but huddle together in a corner. In this respect they differ from *Gallicolumba xanthonura*, the young of which take to perching immediately upon leaving the nest and appear much more capable of caring for themselves than the young *Gallicolumba rubescens*. The squabs have a high-pitched squeaky call when begging to be fed. Feeding is in the usual Dove fashion, by regurgitation. Often when being so fed one wing of the squab is placed over the parent's back. Feeding of squabs on the ground is preceded by much importunity on their part and more or less hesitancy about settling to the task on the part of the parent, which is apparently ready for the feeding operation but cannot bring itself to begin except after a bit of pacing back and forth in front of the squealing squab, which seeks as best it can to follow its parent's movements. Squabs shake their wings when importuning their parents for food. Although I do not know definitely, I should say that the squab begins to pick up food for itself before the end of a week after it has left the nest, but feeding by the parents may continue for half a week or even a week longer.

Before the squabs are out of the nest a new nest with eggs is usually being cared for by both parents. Apparently there is no neglect of the squabs in the first nest. In 1923 four and five clutches of eggs were laid by each of three of my breeding pairs, although by no means was I successful in rearing young from all of the eggs.

Breeding maturity is attained quickly by the young. A female hatched in April, 1923, was mated and laid eggs in October. Our winter appears to be their natural nesting season, and it is found necessary to separate the cocks and hens at that time as the young hatched do not survive the cold weather once their parents start leaving them alone in the nest for intervals.

During the winter of 1923-1924 the birds continued nesting, and probably as a result failed to nest during the spring and summer of 1924. In autumn 1924, nesting was resumed, but the birds were not allowed to nest in the winter because of the failure to rear squabs in cold weather. Now (March 1925), the males and females having been again put together, nesting has been resumed. It appears that our winter months may correspond with the nesting season in the Marquesas. The birds were in a traveling cage in the winter of 1922-1923 and could not breed at that time. Upon recovery from the effects of travel and denudation they nested from spring to winter in 1923, but rested from nesting in the spring and summer of 1924. The nesting resumed in the fall of 1924, would probably have continued through the winter of 1924-1925 if the males and females had not been separated. Separation of males and females during the winter when they desire to nest seems therefore to merely defer the breeding season rather than to cause it to be completely omitted.

The coo of the Gray-hooded Quail Dove is a peculiar, un-dove-like, rasping, snarling sound best characterized as a bark. It is given very infrequently, and then either in paying addresses to the female or to another male. With the shortage of females in my flock, I found males consorting and playing at nesting. Females coo, but apparently rarely.

The birds in my aviaries are fed hemp, yellow millet, paddy rice, canary seed, and white Egyptian corn, upon which they thrive. Meal worms are devoured with avidity, as they are also by *G.*



1. MALE *GALLICOLUMBA RUBESCENS* FEEDING.
2. MALE AND FEMALE ABOUT TO DISPUTE FEEDING RIGHTS; WING SPREAD PREPARATORY TO SPARRING.



*luzonica*. Seeds still attached to grass stalks are eaten. They reach or jump for leaning dry grass stalks, pull these to the ground with the bill, place one foot on the stem just below the head to hold it firmly, then proceed to pull the head to pieces in search of seeds. I one day saw a male jumping for a grass stem from the top of a low stone. He missed and fell to the ground after which he ceased his attempts for that particular stem.

Another interesting bit of behavior was noted. Now and then a bird gets a thread or other fibrous material entangled about its toes. Instead of struggling along as best it can without any effort to release itself as many Doves do, the Marquesan Dove pauses quietly and proceeds to minutely inspect its toes and if possible to pull off the thread with its bill.

Curiosity is strong in this species. A strange object, or someone sitting in or near the aviary, draws one or more inquisitive individuals into close range (within a yard), where with craned necks they eye the intruder for a half minute or so and then resume their normal activities.

Gray-hooded Quail Doves retire to their perches promptly as night settles and engage in none of the crepuscular roaming and feeding that characterizes Bronze-winged Doves (*Phaps chalcoptera*).

As with most doves and pigeons the Gray-hooded Quail Dove of the Marquesas takes kindly to captivity. There is perhaps no better proof of this than their readiness to breed. It is axiomatic that a nesting bird is a happy bird.

Without the intervention of the aviculturist and the perpetuation of the various species of *Gallicolumba* in aviaries it is obvious that a number of beautiful species of these essentially terrestrial birds are doomed to extinction in the near future by cats introduced into their native islands. For example: in the Tonga Group the indigenous species, *Gallicolumba stairi*, once widespread, is now limited to two or three outlying uninhabited islands. Let some thoughtless native leave a cat or two there when on a copra-gathering expedition and the species will shortly be extinct. The very bird we have been dealing with has become extinct on Nukuhiva Island, Marquesas Group, since Krusenstern's day, through the introduction of cats. Today it survives only on two small outlying islands.

The zoological gardens and private aviculturists can confer a great boon upon all bird lovers by perpetuating through breeding in captivity the various beautiful species of Quail Doves of the Oceanic genus *Gallicolumba*.

Exactly the same situation obtains in the great insular region of the New World, the West Indies, as in Oceania. The mongoose and the cat are fast making extinct the beautiful Quail Doves of the genera *Oreopeleia*, *Starnoenas*, and *Geotrygon*, all of which are terrestrial in habits. Only the zoological garden and the aviarist can save these beautiful species for posterity by breeding them in confinement where they are protected from the natural enemies introduced by modern man.

Examples of the Gray-hooded Quail Dove, the subject of this brief paper, may be seen in the zoological parks at New York, Washington, Milwaukee, and London.

*University of California,  
Berkeley, California.*

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## NOTES ON THE BREEDING HABITS OF SOME GEORGIA BIRDS.

BY THOS. D. BURLEIGH.

### **Blue Jay** (*Cyanocitta cristata*, *sub-species?*).

To one unfamiliar with southern bird life the habits of the Blue Jay, in Georgia at least, come as a distinct surprise. In the North it is a bird of the woods, with a natural curiosity in the ways of man but suspicious of any intimacy and during the breeding season shunning civilization as much as possible. In the South, however, it has apparently lost this shyness and is as much a bird of the towns and even cities as is the English Sparrow. In Athens, which lies in the northeastern corner of the State, the birds are common throughout the town, not only in the residential section but even in the business district, and as this town has a population of about 20,000, with street cars, several "skyscrapers" and other modern improvements, the confidence of these birds in man is easily realized. In many ways they replace the Robin which is