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## **MATERIALS ON THE BIOLOGY OF STREPTOPELIA DECAOCTO FRIV 1838 IN BUKHARA REGION**

**Boymurod Normurotovich Doniyorov\***

\*Lecturer,  
Bukhara State University,  
UZBEKISTAN

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### **ABSTRACT**

*The article describes the features of collared dove in Bukhara region in contrast to other pigeons, meeting places, behavioral reactions, nest location, nest building, nest components and morph metric dimensions, breeding care during egg laying and heating, hatching, biological properties and importance of the species, such as size, nutrition and nutrient diversity.*

**KEYWORDS:** *Egg, Nest, Chick, Bird, Biology, Ecology, Areal, Agrobiogeocenosis, Morphometric, Unsanitary.*

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### **INTRODUCTION**

It is important to study the distribution, biology and ecology of bird species in the habitat, which are an important component of biological diversity, their involvement in agrobiogeocenoses, rural and urban areas, to identify conservation measures.

Collared dove is a rapidly expanding species in Central Asia, including Uzbekistan (Nazarov, 1990; Bakaev, Salimov, 1990; Lanavenko, 1993; Ametov, 1994; Ametov, 2008, etc.). The collared dove was first recorded in Bukhara Province on March 1, 1988, while looking for food with blue pigeons in a city park. For more than 30 years, this bird has been widespread throughout the districts, cities, villages and agrobiogeocenoses of the region. However, the biology of this bird is still poorly understood (Bakaev, Kholboev, 1994). With this in mind, in this article we present our views, based on the observations made in the biology of collared dove in 2007-2020, the collected data.

## RESEARCH METHODOLOGY

In doing so, G.A. Novikov (1953), A.V. Mixeev (1984), A.S. Malchevsky (1959, 1981) methods were used. 348 nests of Collared dove were found, 59 eggs, 31 chelpers were studied. Several other observations were also made.

### Main part

To study the biology and economic significance of collared dove in Bukhara region to make recommendations on the relationship between humans and collared dove, their importance, ways of attraction, protection, identification.

## RESULTS AND DISCUSSIONS

Collared dove is a sedentary bird common in Uzbekistan, including Bukhara region. This bird is close to a rock dove in appearance, much larger than a laughing dove. The character is much more complex and is expanding its range. Not only the slightly larger size of the body but also the semi-circular black band around the neck play a big role in distinguishing the collared dove from other pigeons, especially the turtle dove. Because of this, it can be recognized quickly from a great distance. During the year we met this bird in the villages and towns of Bukhara region, in the trees along the roads, in agrocenoses. The fertility rate (number) of collared dove varies considerably in urban, rural, agrobiogeocenoses. For example, the number of collared doves at the main stations in Bukhara varies throughout the year, the average number per 10 hectare ranges from 1.3 to 25.0. The average number of collared doves in the old city is 3.0, in small areas - 3.6, in green areas - 25.0, in ruderal plots - 6.5, in industrial centers - 9.4 and in cemeteries - 1.3. Even in rural areas, the number of collared doves per unit area varies at different stations: 17.0 in wheat fields, 4.7 in cotton fields, 10.7 in corn fields, 19.3 in millet fields, 3.8 in lucerne fields, 7.5 in vineyards, 4.4 in apple fields. 1.6 in apricot orchards and 1.1 in plowed lands.

The song of this bird has three syllables - "gu-guu-guuv" can be heard in almost all months of the year. The abundance of collared doves that just sing will be more from March to August, and from September to February their sound can be heard less. In 2008, when the winter was severe, the singing mode of collared doves changed significantly. During the winter months, they stopped singing. The first round was held on the first of March (01.03.2006; 09.03.2007; 06.03.2009; 02.03.2010; 03.03.2011; 10.03.2012; 05.03.2013; 04.03.2014; 08.03.2015; 06.03.2016; 08.03.2017; 06.03.2018; 05.03.2019; 29.02.2020). Collared doves form a pair just like other species before nesting. During this time, they chase each other, sometimes touching each other's beaks, making a distinctive sound of "gurgling, gurgling," flapping their wings, clapping, and soaring up into the air. skillfully demonstrates character. In different conditions, we found and studied its 348 nests. Information on their location is given in Table 1. Most nests are in *Fraxinus excelsior* (69), *Morus alba* (52), *Malus domestica* (47), *Platanus orientalis* (40), very few (1) *Purus communis*, *Pinus sievestris*, *Elaeagnus angustifolia*, *Spiraea trilobata* was found to be placed. Different buildings choose less to build nests.

**TABLE 1 COLLARED DOVE CELL LOCATION INFORMATION (N = 348)**

T / r	The tree in which the nest is located, object name	The height of the hive from the ground, m	Measured slots soni (n)	Observed nests soni (n)
1	<i>Armeniaca vulgaris</i> Lam.	4,62 (2,2-10,0)	10	23
2	<i>Juniperus virginiana</i> L.	4,35 (2,2-5,5)	8	9
3	<i>Ulmus pumila</i> L.	6,64 (5,0-8,0)	7	22
4	<i>Malus domestica</i> Mill.	3,73 (2,5-10,0)	20	47
5	<i>Salix alba</i> L.	7,75 (4,0-16,0)	4	4
6	<i>Cerasus vulgaris</i> Mill.	3,3	1	5
7	<i>Cydonia oblonga</i> Mill.	2,66 (2,64-2,67)	2	2
8	<i>Sophora japonica</i> L.	5,52 (3,6-7,0)	5	6
9	<i>Fraxinus excelsior</i> L.	6,24 (2,66-12,0)	57	69
10	<i>Populus alba</i> L.	7,5 (5,0-10,0)	2	10
11	<i>Morus alba</i> L.	6,83 (2,5-13,0)	33	52
12	<i>Platanus orientalis</i> L.	9,6 (5,0-16,0)	33	40
13	<i>Prunus cerasus</i> L.	5,0 (5,0)	2	3
14	<i>Gleditsia triacanthos</i> L.	8,42 (5,0-13,0)	6	10
15	<i>Acer platanoides</i> L.	11,97 (4,0-18,0)	7	10
16	<i>Populus balsamifera</i> L.	14,75 (5,0-18,0)	4	5
17	<i>Pinus sievestris</i> L.	5,5	1	3
18	<i>Purus communis</i> L.	-	-	1
19	<i>Maclura aurantiaca</i> Nutt.	6,75 (6,5-7,0)	2	2
20	<i>Biota orientalis</i> L.	4,88 (2,0-7,0)	4	7
21	<i>Elaeagnus angustifolia</i> L.	2,1	1	1
22	<i>Spiraea trilobata</i> L.	3,3	1	1
23	Magpie slot	10,0 (8,0-12,0)	2	5
24	Between the advertising grid	5,0	1	3
25	In buildings (porch, barn, chimney)	8,12 (1,85-30,0)	5	8
Total			218	348

In the Bukhara region, collared doves build their nests mainly on 22 species of trees (332), partly in various man-made buildings (11) and in the old nests of magpieni (5). When Magpie uses older nests, species such as magpie (if the nest is well preserved) and common myna, partly pale scops owl, and rock dove compete with the collared dove. Due to natural conditions, in this interspecific competition, collared doves sometimes win, sometimes lose. Sometimes collared doves reuse their nests that have been used for years or more.

Both sexes are involved in the construction of the nest collared doves. The construction period sometimes takes an average of 6 days, from 3 days to 10 days, depending on the time of spring arrival, depending on the weather. In a tree, a pair of usually collared doves build nests. Sometimes two pairs, up to four pairs of collared doves build and use a nest in a bush if the tree is well branched from time to time, another convenient place to place the nest is lacking, the amount of food is large and the human impact is low. For example, on 06.05.2009, four nests of

collared dove were recorded in the mulberry grove of school No. 10 in Bukhara. In this case, the birds exhibit a number of inter-species relationship elements, such as stealing nest material from each other, obstructing nest construction, attempting to squeeze each other out, and drowning. Collared doves nests also use various parts of the surrounding vegetation, mostly thin, colored wires (in 3 nests) in a radius of 50 meters. The nest is characterized by flatness, porosity, lack of nest material. Plate-shaped. Sometimes you can see the eggs in the nest from below. The nests are placed on the branches of tree trunks, or on the side horns. Collared dove uses vegetative parts of various plants and a very small amount of anthropogenic material in the construction of the nest (Table 2).

**TABLE 2 INFORMATION ON THE COMPONENTS OF THE COLLARED DOVE NEST**

Components	Slots					On average, weight, g
	1	2	3	4	5	
Streptopelia decaoctane feces	34,50	13,40	13,10	16,70	-	15,54
Pairs of Streptopelia decaoctane	1,00	2,50	0,40	-	-	0,78
Malus body parts (leaves, delicate branches)	0,53	-	-	-	-	0,12
Zygophyllum oxlianum root	2,80	0,90	-	0,60	-	0,86
Chenopodium body parts	23,50	9,40	18,20	11,90	10,10	14,62
Cynodon dactylon body parts	1,60	0,30	1,70	1,30	0,10	1,00
Wheat straw	0,30	-	-	-	-	0,06
Prunus cerasus branches	5,80	10,50	-	-	-	3,26
Alhagi is a thorny branch	5,00	3,20	1,50	0,80	0,10	2,12
Grape-vines	-	0,30	-	-	-	0,06
Medicago sativa body parts (root, stem)	-	-	3,00	-	-	0,60
Armeniaca vulgaris body parts (root, branch)	-	-	8,10	-	-	1,62
Convolvulus arvensis stems	-	-	0,10	-	-	0,02
Tamarix branch	-	-	-	2,00	0,10	0,42
Other components	-	-	0,90	1,20	29,80	6,38
Total	75,03	40,50	47,00	34,50	40,20	3,164

The raw material of the Collared dove nest and their size, weight varies depending on the conditions and the season, the nesting period. The morphometric dimensions of the collared dove nest are given in Table 3.

**TABLE 3 MORPH METRIC DIMENSIONS OF THE COLLARED DOVE NEST**

T / r	Measured area	n	Awake				Information source
			height, mm	width, mm	weight, g	height from the ground, m	
1	Bukhara city	6	86,0 (70,0-115,0)	210,0 (85,0-230,0)	39,0 (34,0-48,0)	5,1	Kholboev, Baqoey, 1994

2	Olot district	3	79,0 (67,0-91,0)	200,0 (190,0-210,0)	32,0 (29,0-35,0)	5,7	Kholboev, Baqoev, 1994
3	Nukus and his surroundings	25	82,1 (56,0-150,0)	156,2 (80,0-270,0)	-	4,3 (2,1-7,5)	Ametov, 2008
4	Bukhara region	39	97,4 (66,0-137)	154,3 (92,9-216,0)	47,9 (29,2-76,5)	4,2 (2,2-10,0)	Our data

As the data in Table 3 show, there are also local, individual variables in nest sizes. When the nest is finished, it lays white eggs on it. Eggs are laid once a day, sometimes for a day. The number of eggs in the nests is 2. Data on the morphometry of collared dove eggs are as follows: egg (n = 59) length 31.20 (28.6-34.9) mm., Width 23.59 (21.4-25.0) mm., Weight (n = 88) 9.01 (7.1-11.0) g. Eggs are pressed, heated by the female collared dove. When the eggs are weighed, the mother swells the collared dove, writes down the rudder feathers, shows off her large body, flaps her wings, spreads her wings like butterfly wings on the back of the trunk, and makes a "proud" noise. Egg-laying female collared dove body dimensions are as follows: beak length 18.6 mm, nostril length 11.4 mm, beak height 5.9 mm, wing length 180.0 mm, two wings spread 530.0 mm, body length 325.0 mm, diameter 30.6 mm, tail length 144.0 mm, weight 173.4 gr. The male, on the other hand, protects the female at a distance of 8.43 (0.4–40.0) m from the nest (n = 24) and connects it to the surrounding situation. When the sun goes down, it comes close to its nest. During the egg-laying process, the female collared dove allows the man to come closer to her, even to touch her, to photograph her. This case may indicate that the care of the offspring of *Streptopelia decaocto* is strong. The process of laying eggs takes 15–17 days. Egg-pressing density of female collared dove was observed (n = 3). On the second day of the procedure, the egg-laying density was much higher - 96.0%, on the eleventh day - 94.0%, and on the fourteenth day - slightly lower - 88.6%. During daylight hours (from 7:00 to 20:00 in the morning) the average duration of one egg laying is 115.4 min. (78.0-205.0), and in subsequent observations - 187.8 min. (55.0–329.0), and 212.6 min. (47.0-412.0). As the duration of the nest emptying of the eggs increases each time from the beginning to the end of the process (i.e., 4.5 min; 12.2 min; and 27.3 min.). On days 12-15 of this period, cracks appear in the egg shells. This phenomenon may indicate that the chicks are moving to hatch from the eggs. During egg laying, the weight of eggs decreases by 0.2-0.3 g per day (n = 88). On the day of hatching, the weight of the chick (n = 6) is 8.82 (7.40-9.60) g. The weight on the eve of leaving the hive was 108.7 g. This means that the chicks grow and develop rapidly. Their initial weight increased by 11.7 times. The average daily body weight is 6.7 g. increases from. The appearance, appearance, color of the chicks will change. Initially, the tip of their beak and fingertips are white. On the surface of the body there are yellow and bright yellow embryonic tufts, and in some places: around the eyes, ears, beak, paws, lower neck, along the abdomen. The eyes of the chicks are weak, the ear holes are closed. In 3-4 days after they hatch, feather growths appear on the whiskers, wings and tail of dark-colored patches around the eyes and ears. Later, at 5-6 days, the auditory canal and eyes are opened. The chicks begin to respond to external influences, i.e., squealing, littering, trembling, throwing themselves backwards, squealing with their beaks, trying to fly and dive, squeezing their paws, trying to walk fast, breathing frequently, can grab the nests in the hive, move the head, paws, beak. Now the tips of the feathers on the wing, the tail feathers, crack and swell,

forming tufts reminiscent of a brush. The color of the beak, legs, nails becomes brown, thickens. The chicks spread their wings slowly, keep their head upright, and breathe often. By 7–8 days of life, white feathers emerge from both ends of the tail feathers of the chicks. The wings have been shown solely to give a sense of proportion. Because the contour feathers are well developed along the surface of the body, the body is well covered with feathers, at 10-12 days they still cannot fly, but are much more mobile. Later, when the chicks are 14-15 days old, they become like their parents, trying to fly out of the hive. But for another 3–4 days they will be in the shelter of their parents in the hive. Then they leave the hive. Below are images of the reproductive cycle of collared dove.



A



B



C



D



E



F



G



H



### Pictures of the reproductive cycle of collared dove

**Note:** A. The collared dove family, which exhibits reproductive movements;

- B. A nest ready to lay eggs;
- C. D. The first and second eggs laid in the nest;
- E. Breeding care of egg-laying collared dove;
- F. The collared dove hatched from the egg and its egg;
- G. 3-4 day old chicks;
- H. 7-8 day old chicks;
- I. 11–12-day-old chicks;
- J. Adult but not reproduced collared dove;

But for a few more days the bird will depend on the nest of the children, rest, spend the night, and so on. Thus, in the Bukhara region, the nesting nests of collared dove can be found from the second decade of March to November. Depending on the weather, they sometimes show mowing movements either in the fall or early spring.

From late June to early July, new generations of collared doves are grouped into groups of 13 to 50 individuals. By the end of August, the number of individuals in the association will increase to 500. In trees such as *Juniperus virginiana* and *Biota orientalis*, *Salix alba*, *Armeniaca vulgaris*, *Morus alba*, *Populus alba*, *Fraxinus excelsior*, *Ulmus pumila*, *Malus domestica*, *Platanus orientalis*, the soil ( $n = 8$ ) to 5.5 (3.0-7.5) meters high ( $n = 15$ ) with 72.7 (2.0-500.0) collared doves. The number and branching of trees, bird's body size, character, natural features of the place, the presence of food are important at night, *Corvus frugilegus*, *Corvus cornix*, *Acridotheres tristis*, *Pica pica*, *Turdus merula*, *Streptopelia senegalensis*, *Passer montanis*, *Parus bokharensis*, *Sturnus vulgaris* Birds such as *Corvus monedula* are adjacent to *Streptopelia*



decaocto from late evening to early morning. In this case, *Corvus frugilegus*, *Acridotheres tristis* are numerous and also cause strong noise. Collared dove is mainly a bird of prey. However, in the seasons of the year, their nutrient spectrum, location may change. For example, in the spring, summer Bezostaya 1, Zeya Mays, seeds of weeds, partly insects, in autumn and winter they are food debris, seeds of *Juniperus virginiana* and eastern sauri, cotton, wheat, corn, beans, moss, peas, millet, rice, fields planted with sunflowers, rye, grapes, apples, apricots, quinces, walnuts, markets, cemeteries, barns, crows tickle the birds in the shelter, find grain in the settlements, garbage dumps, nurseries. It sometimes swallows pieces of stone, glass, iron to improve the process of consuming solid foods. In the diet were recorded *Columba livia*, *Streptopelia senegalensis*, *Passer montanis*, *Acridotheres tristis*, *Sturnus vulgaris*, *Parus bokharensis*, *Corvus monedula*, *Corvus cornix*, *Pica pica*, domestic birds, livestock and in rare cases *Larus ridibundo* around Buraus decibrepti, *Burhinus oct.*

## CONCLUSION

Collared dove feeds on grains and grasses of cultivated plants, encounters around food stalls in markets, on benches in parks, in homes, and sometimes causes unsanitary problems. The use of our cultural monuments for the night, for reproduction, will cause their erosion. The transport of ectoparasites in the body causes them to spread. It is a partner in the feeding of domestic poultry and livestock. The waste feeds on food debris and performs a sanitary function. Important in the food chain. During the breeding season, the chicks feed on pests and benefit agriculture. Garbage is rich in phosphorus, which mixes with the soil and affects fertility. It uses the body parts of weeds to build a nest and limits their spread.

In recent times, shaping trees, cutting them down, has been influenced by the number of collared doves by children, kittens and magpies. The Collared dove is a cute, beautiful bird with a distinctive voice-singing. It has its place in different corners, constantly keeping an eye on nature. Therefore, it is advisable to protect it, to feed them in unfavorable weather conditions during the winter. During the study of Collared dove biology, it was found that this bird feeds on various grains, seeds of foreign plants, sometimes in densely populated areas (markets, alleys, parks), as well as in the creation of unsanitary conditions in cultural and historical monuments, transportation and spread of various ectoparasites. can participate. It consumes various wastes, food scraps, and feeds its chicks with pests during the breeding season. Manure is rich in phosphorus, enriches the soil with minerals. It plays a positive role in human ecology at various stations with these characteristics.

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