

COLOR VARIATION OF *STREPTOPELIA DECAOCTO*
(AVIS, COLUMBIDAE)
WITH SOME NOTES ON ENDOPARASITES

Saman R. Afrasiab* Azhar A. Al- Moussawi
and

Mohammad K. Mohammad

Iraq Natural History Research Center and Museum, University of Baghdad,
Baghdad, Iraq

*Corresponding author: s_lahony@yahoo.com

Received Date: 23 March 2017

Accepted Date :04 May 2017

ABSTRACT

The present paper includes a study of color variation in Iraqi Collared dove *Streptopelia decaocto*. Three different populations have been recognized: the southern population which belongs to the Indian race, the northern population to the Eurasian race; the dark and light color variation occurs in the Baghdad population because of hybridization between the two races, found infected with two cestodes, *Raillietina echinobothrida* found in most of our specimens, while the dark face found beside *R. echinobothrida* infected with *Idiogenes* sp. getting it probably from vertebrate sources. We believe that most of the Baghdad population was intermediate between north and south races.

Reduction of population density of this dove in Baghdad area was caused by diseases, hybridization and competition.

Key words: Collar dove, Indian race, Iraq, *Streptopelia decaocto*, Variation.

INTRODUCTION

Previously the doves recorded in Iraq were collared dove *Streptopelia decaocto* (Frisvaldsky), Turtle dove *S. turtur* L., Palm dove *S. senegalensis* (L.), *S. orientalis* (Latham) and nemaqua dove (long tailed) *Oena capensis* (Allous, 1962 ; Mahdi and Georg, 1969; Bunni, 1988; Lepage, 2014 ; Salim *et al.* 2006).

The bird is lilac for head and there is dun-brown narrow black collar encircles the side and back of the neck; the under parts are pinkish –mauve, rather blue on the abdomen; the tail is white below black at the base shoulder is blue-gray (Allouse, 1962).

Palm dove was a rare bird in Iraq, but now it is found all over the country (Lahony *et al.*, 2008); *S. orientalis* was recorded by Bunni (1988) depending on a single specimen of museum collection; it seems to be vagrant. Long tailed dove *Oena capensis* distribution range extends to Arabian peninsula, including Kuwait, so its distribution may reach the extreme south of Iraq (south of Basrah).

Collard dove, *S. decaocto* is one of the most common birds of Iraq, from north to the south. This dove was introduced into Iran and expanded westward to Iraq, Turkey, Balkan and Europe, and it's still spread (Vaurie, 1965). Now its distribution extends to north America.

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Baicich and Harrison, (1997) said that collard dove could breed many times in the year, and it had smooth white egg 30x23mm, incubation 14-16 day.

Nine cestode species were found in the alimentary canal of *Streptopelia decaocto* from Iraq: *Aporina delafondi*, *Aporina* sp., *Choanotania infundibulum*, *Cotugnia digonopora*, *Cotugnia* sp., *Raillietina echinobothrida*, *Raillietina tetragona*, *Raillietina* sp. *Retinometra serrata* (Al-Saffar, 2009; Shubber *et al.*, 2010; Al-Rammahi *et al.*, 2013).

Within the past 20 years some color variation appears in collared dove of Baghdad population, in this study we discuss the variation in Iraqi collared dove and give some notes on endoparasites.

MATERIALS AND METHODS

Seven bird specimens were collected from Baghdad, middle of Iraq; 4 were from the south, Diwaniyah province and 2 from the North of Iraq, Kurdistan region, Sulaymaniyah province for a systematic study and were immediately checked for their endoparasites, in addition to 4 specimens of the collection of the Iraq Natural History Research Center and Museum, University of Baghdad were used for comparisons. Cestodes were identified according to Wardle and Mcleod (1952).

RESULTS AND DISCUSSION

We divided the collared dove population of Iraq, according to the coloration into three main regions.

The North population: has light dorsal and ventral color.

Baghdad province: the population has two types of coloration, one with light dorsal and ventral, and the other one with dark dorsal and nearly black ventral.

The South population is smaller in size and little darker than that of northern population.

Table (1) gives the variation within the different populations.

Most of our specimens found infected with the cestode *Raillataena echinobothrida* and some of the dark face of the Baghdad population was infected with *Idiogena* sp. found beside to *R. echinobothrida*.

Table (1): Measurement of different *S. decaocto*., Tl=total length, W= wing, B= bile, T=tarsus.

	Baghdad Light face Male & female	Diwaniyah Male & female	Baghdad Dark face Male & female	Museum Collection, Baghdad	Museum Collection Sulaymaniyah
T. l. (cm)	31-32	29-29.5	29.5-29.9	30.0	32.0
W. (cm)	17.5-18	16.5-17.2	17.5-17.6	17.6	18.0
B. (mm)	17.0	14.0	17.0	15.0	17.0
T. (mm)	27.0	26.0	27.0	27.0	27.0
Tail (mm)	135.0	130.0	135.0	129.0	139.0

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The collared dove *Streptopelia decaocto* distributed all over the world, there is no marked variation between the different populations except for *S.d. intercedens* from India (Vaurie, 1965). In our collection of the Diwanayah, south of Iraq, they have a wing length of 16.5-17.5cm. and dorsal color little darker than that of the north; its description is given by Vaurie (1965) for Indian race, so it must be *S. d. intercedens*.

The prominent color variation will be seen in the Baghdad population, about a quarter of the Baghdad population has a dark dorsal with nearly black breast and ventral side and a gradation in the color, some are black and other with lighter coloration and the measurement of wing is between 17-18cm; this is found in the northern and southern population.

There is no identical color variation in any part of the world, White (2007) mentioned for breeding between domestic white ring neck dove and Eurasian collared dove; the result was white ringed, she said this new hybrid couldn't survive in the field. We believed that this was intermediate between northern and southern subspecies, this agrees with Mayr (1969).

It has an amazing parasite infection, beside of cestodes *Raillietina echinobothrida*, which is a common parasite of the Iraqi dove; it was isolated from the rock dove *Columba livia* (Al-Shaibany, 2008 and Al-Saffar, 2009), and found in the house sparrow, *Passer domesticus biblicus* (Mohammad and Al-Moussawi, 2013). We found that some of the dark face collared dove was infected also with the intestinal cestode *Idiogenes* sp.; this parasite is mostly found in birds of prey as goshawk, buzzards and sparrow hawk, all are carnivores and maybe our dark dove got infection by feeding on a vertebrate diet of rubbish and garbage, for instance some dead and decomposed rodent or birds beside its normal diet. There is no difference in behavior and reproduction if compared with other population.

The northern population color and measurements is the same as Eurasian population *Streptopelia decaocto decaocto* (Pl.1).

There are probabilities for this color variation :

- 1-Hybrids, but hybrid do not exist in the field, return back to the normal color.
- 2-Intermediate subspecies between northern and southern races.

The hybrid does not exist in the fields, return to the normal color or die (Mayr, 1969). We feel that in Iraq, the reduction in population density is a reality because of hybrid and also because of the impact of competition with recently distributed *Streptopelia senegalensis*, always we found dead collared dove in the gardens and also in the fields (Pl.2).

Mayr (1969) described this phenomena, and he said that intermediate subspecies in a narrow line occur between two different population, recognized by the gradation of the color and measurement some as (A) population and other as (B) population.

3-Effect of diseases and parasite infection.

4-They are exposed to some source of radiation.

We believe that the 2nd and 3rd are most likely to be in the same line.

Color Variation of *Streptopelia Decaecto*



Plate (1): Dead collared dove *Streptopelia decaecto* with normal color
(A) Dorsal view (B) Ventral view



Plate (2) : Color variation in *Streptopelia decaecto*, right; light face, left; dark face.

ACKNOWLEDGMENT

Special thanks are to Dr. Habeeb Shubber from Diwaniyah for his cooperation and supplying us with specimens we need.

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LITERATURE CITED

- Allouse, B. E. 1962. Birds of Iraq, vol. 3 (Passeriformes). Ar-Rabitta Press, Baghdad, 288pp. (in Arabic).
- Al-Rammahi, H.M., Al-Hasnawy, M.H. and Abbas, A.K. 2013. Concurrent infection of cestodes with Trichomoniasis in domestic and wild columbides birds in Babylon province. *The Iraqi Journal of Veterinary Medicine*, 37(2): 192-198.
- Al-Saffar, N.S.J. 2009. Diagnostic study of intestinal helminths of some kinds of columbidae in Baghdad city. M.Sc. Thesis, University of Baghdad, College of Veterinary Medicine, 111pp.
- Al-Shaibany, K.T. 2008. Isolation and identification of Ectoparasites and helminthes parasitic in digestive system of rock pigeon *Columba livia* (Gmelin 1789) in AL-Diwaniya city. Iraq. M.Sc. Thesis, College of Education, University of Al-Qadisiya, 160 pp.
- Baicich, P. J. and Harrison, C.J.O. 1997. A guide to the nests, eggs, and nestlings of North American birds. Second edition. Academic Press, San Diego, CA, 347 pp.
- Bunni M.K. 1988. First record of Rufous Turtle Dove., *Streptopelia orientalis* (Latham) for Iraq. *Bulletin of the Iraq Natural History Museum*, 8 (1): 131-134.
- Lahony, S.R., Mohammad, M. K. and Ali, H.A. 2008. A new record of gosh hawk (Baz) *Accipiter gentilis* L. (Aves-Falconiforms) with short notes on distribution of laughing dove., *Streptopelia senegalensis* (Aves, Columbiformes) in Iraq. *Bulletin of the Iraq Natural History Museum*, 10 (3): 45-47.
- Lepage, D. 2014. Avibase, the world bird database- Bird checklist of the world (Iraq). at: <http://avibase.bsc-eoc.org/checklist.jsp?region=iq&list=howardmoore> (Accessed 16 february 2017).
- Mahdi, N. and Georg, P.V. 1969. Systematic list of Iraqi vertebrates, Birds. *Bulletin of the Iraq Natural History Museum*, 26: 34-63.
- Mayr, E. 1969. Principles of systematic zoology. McGraw-Hill, New York, 428 pp.
- Mohammad, M. K., Al-Moussawi, A.A. 2013. *Raillietina echinobothrida* (Megnin, 1881) (Cestoda: Cyclophyllidae) from the house sparrow *Passer domesticus biblicus* Hartret, 1881 collected in Baghdad city, central Iraq. *Bulletin of the Iraq Natural History Museum*, 12 (3): 31-36.
- Salim, M.A., Porter, R.F., Christensen, S., Schiermacker-Hansen, P. and Aljboor, S. 2006. Field guide to the birds of Iraq. Nature Iraq and Birdlife international (Edit.), 284 pp. (in Arabic).
- Shubber, H. W. K., Al-Waali, A. B. and Al-Maihy, F. S. 2010. Study of the helminthes parasite of digestive tract of the bird (*Streptopelia decaocto*) in Al-Najaf city. *Journal of Al-Qadisiyah for pure science*, 15(40):1-7.

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- Vaurie, C. 1965. The Birds of Palearctic fauna. Non – Passeriformes. H. F. & G. Witherby, London, 763 pp.
- Wardle, R. A. and Mcleod, J. A. 1952. The zoology of tapeworms. Univ. Manitoba, Winnipeg, Canada, 779 pp.
- White, H. 2007. Eurasian collared dove, at: [http:// www.diamonddove.info/bird](http://www.diamonddove.info/bird). (Accessed 20 February 2017).

التغاير في لون الفاخنة المطوقة *Streptopelia decaocto* (رتبة الحماميات) مع بعض الملاحظات حول الطفيليات الداخلية

سامان روستم افراسياب، أزهار أحمد الموسوي و محمد كاظم محمد
مركز بحوث و متحف التاريخ الطبيعي العراقي، جامعة بغداد

تاريخ القبول: ٢٠١٧/٠٥/٠٤

تاريخ الاستلام: ٢٠١٧/٠٣/٢٣

الخلاصة

يتضمن هذا البحث دراسة تغاير اللون في الفاخنة المطوقة *Streptopelia decaocto* في العراق. تم التعرف على ثلاث تجمعات سكانية مختلفة؛ التجمع الجنوبي يعود إلى النوع الهندي و التجمع الشمالي إلى النوع الأوروبي و بينهما تجمع آخر في بغداد فيه تغاير في الألوان (الفتح و الغامق).

وجدت غالبية العينات في الدراسة الحالية مصابة بالدودة الشريطية من النوع *Raillietina echinobothrida* ، اما النوع الغامق فإنه مصابة بنوع اخر إضافة إلى النوع المذكور من الديدان الشريطية و المتمثل بطفيلي النوع *Idiogenes sp.* ، إذ يعتقد بأن الفاخنة المطوقة قد أصيبت بها نتيجة تناولها لغذاء حيواني.

ترجح النتائج التي توصلت إليها الدراسة الحالية بأن النوع الموجود في بغداد يحمل صفات وسطية بين النوعين الموجودين في شمال و جنوب العراق. و يعود الانخفاض السكاني له في منطقة بغداد إلى الإصابة بالأمراض و وجود الهجين و التنافس.