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FULL-DRESS STUDY ABOUT SHELDUCK THAT MIGRATE TO SOUTH IRAQ MARSHES

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ABSTRACT

The shelducks, genus *Tadorna*, are a group of large birds in the Tadorninae subfamily of the Anatidae, the biological family that includes the ducks and most duck-like waterfowl such as the geese and swans**.** A total of twenty bird shelduck (*Tadorna tadorna*) were used in this study. These birds were hunted out from the South Iraq marshes by use of catch drag (actuality ten males and ten females). They were reared for one week to investigate the morphology, anatomy, genetic and physiological parameters. The results showed that red blood cell count million/cm for male was 3.25 and 3.17 for female; the white blood cell count thousands/cm³ for male was 26.12 and 24.76 for female; the Hemoglobin level% for male was 48.98 and 44.96 for female; the packed cell volume% for male was 32.54 and 31.48 for female; the lymphocytes % for male was 27.43 and 27.17 for female; the monocytes % for male was 13.37 and 13.08 for female; the hetrophils % for male was 52.93 and 52.69 for female; the eosinophils % for male was 3.84 and 3.58 for female; the basophils% for male was 2.05 and 2.05 for female. The results showed that the first and second pair appeared as metacentric, the third pair was subtelocentric and the pairs no.4,6,7,8&9 were telocentric while pairs no.5,10,11,12&13 were acrocentrics. The chromosome Z was identified as a submetacentric with a size larger than that of the fourth pair and the chromosome W was small acrocentric and easily identified

INTRODUCTION

The Common Shelduck (*Tadorna tadorna*) is a waterfowl species shelduck genus *Tadorna*. It is widespread and common in Eurasia, mainly breeding in temperate and wintering in subtropical regions; in winter, it can also be found in the Maghreb. Its scientific name comes from Celtic roots and means pied waterfowl, essentially the same as the english shelduck (Kear, 2005). Most populations migrate to subtropical areas in winter, but this species is largely resident in westernmost Europe, apart from movements to favored moulting grounds, such as the Wadden Sea on the north German coast. The Common Shelduck is common around the coastline of Great Britain (where it is simply known as Shelduck), where it frequents salt marshes and estuaries. Sightings of this bird are rare in North America and are reported as infrequent visitors to the U.S. and Canada. (NARBA, 2012). The shelducks, genus *Tadorna*, are a group of large birds in the Tadorninae subfamily of the Anatidae, the biological family that includes the ducks and most duck-like waterfowl such as the geese and swans. The shelducks are a group of larger often semi-terrestrial waterfowl, which can be seen as intermediate between geese (*Anserinae*) and ducks. Their diet consists of small shore animals (winkles, crabs etc.) as well as grasses and other plants. They were originally known as sheldrakes, this remained the most common name until the late 19th century (Lockwood, 1984).

MATERIALS AND METHODS

A total of twenty bird shelduck (*Tadorna tadorna*) were used in this study. These live birds were hunted out from the South Iraq marshes by use of catch drag (actuality ten males and ten females). They were reared for one week to investigate the morphology, anatomy, genetic (Sugiyama, 1971) and physiology differences between them (Sturkie ,1957 and Haen, 1995,)

RESULTS AND DISCUSSION

The present study showed many aspects about shelduck (*Tadorna tadorna*) these aspects wobble among the morphology, some physiological parameters and genetics. The results fixed the cardinal features of both male and female shelduck. Both male and female shelduck have black eyes, dark greenish head, the neck divide into two regions, the upper green and lower white and the anterior chest is chestnut color. Also the study revealed that beak

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in male is curve shape, dark red with clear knob at the base of beak while in female the beak is less curve shape than male, orange without knob. Both male and female have good development olfactory organ, the upper jaw cavity surrounding with spick folds as a charger. The tongue is long and wide supply with good development spick in mid and posterior part. The vocal boxes of male consist from two chambers (right and left) supply with one vocal tendon at the end of chamber. The right chamber is biggest than left; while in female the vocal box is rudimentary appear as only two tendons. The color of male wing plumage is white supply with (8-10) black primaries remiges followed by (12-15) secondaries which are bright greenish feathers and (5-7) chestnut feathers at the base of wings. The under wings are almost white entirely, in female the color of wing plumage is white supply with (6-8) black primaries remiges followed by (9-11) secondaries bright greenish feathers and (3-5) chestnut feathers at the base of wings. Both male and female have feet appear as pink supply with wide good development inter digital membrane. (Table.1).The karyotype of this species is presented in figures (27&28). It was extremely difficult to determine the exact chromosome number because of the large number of micro-chromosomes. Attempts to Giemsa stain and RBG binding the result of this study showed that the first and second pair appeared as metacentric, the third pair was subtelocentric and the pairs no.4,6,7,8&9 were telocentric while pairs no.5,10,11,12&13 were acrocentrics. The chromosome Z was identified as a submetacentric with a size larger than that of the fourth pair and the chromosome W was small acrocentric and easily identified.

Most populations of this species are migratory and undertake extensive molt migrations to favored molting sites after breeding. These species breeds in single pairs or small groups, non-breeders usually remaining in flocks throughout the year. After breeding (between July and October) the species moults and becomes flightless for 25-31 days, during which it is highly gregarious and may aggregate into large flocks of up to 100,000 individuals or more. The species shows a preference for saline habitats and frequents mudflats and muddy or sandy estuaries in coastal regions, and occurs inland on saline and brackish lakes in steppe or semi-desert. Asiatic populations also occupy freshwater rivers or marshes and other populations utilize freshwater habitats on migration. Its diet consists predominantly of salt-water mollusks as well as other aquatic invertebrates e.g. insects, crustaceans and worms, small fish, fish spawn and plant material e.g. algae, seeds and agricultural grain. The nest is commonly positioned in a tree-hollow up to 8 m above the ground. Rarely nests may also be placed in the open or in dense vegetation up to 1 km from water. Management information Studies in Danish coastal wetlands found that the spatial restriction of shore-based shooting was more successful at maintaining waterfowl population sizes than was the temporal restriction of shooting, and therefore that wildfowl reserves should incorporate shooting-free refuges that include adjacent marshland in order to ensure high waterfowl species diversity (Gudmundsson, 1979; Bregnballe *et.al.*, 2004; Balmaki and Barati, 2006 and Burton, 2006). This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion (extent of occurrence <20,000 km2 combined with a declining or fluctuating range size, habitat extent/quality, or population size and a small number of locations or severe fragmentation. The population trend appears to be increasing, and hence the species does not approach the thresholds for Vulnerable under the population trend criterion >30% decline over ten years or three generations. The population size is very large, and hence does not approach the thresholds for Vulnerable under the population size criterion <10,000 mature individuals with a continuing decline estimated to be >10% in ten years or three generations, or with a specified population structure). For these reasons the species is evaluated as Least Concern (Bird Life International, 2009).

Figure.1

Figure.2

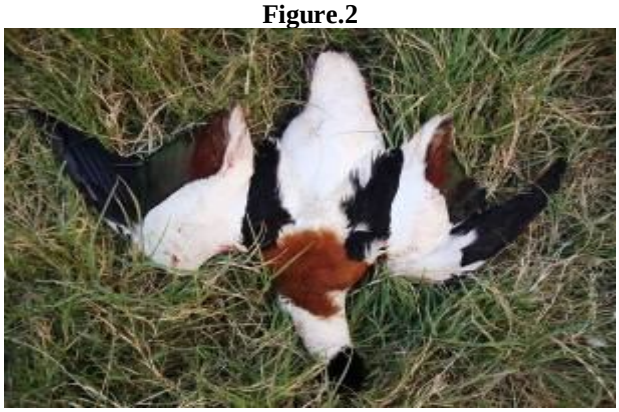

Figure.3

Figure.4

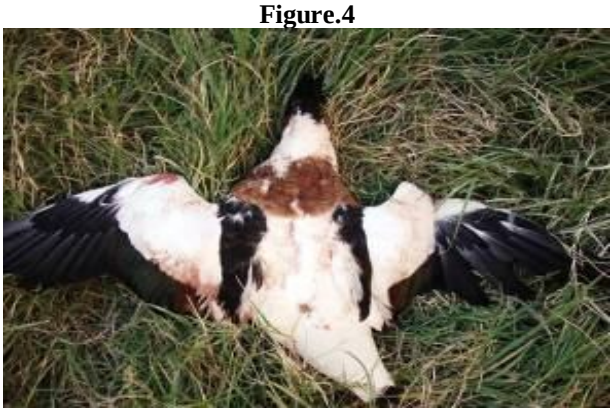

Figure.5

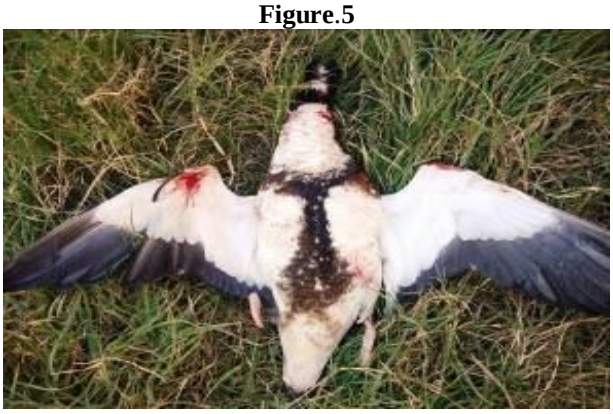

Figure.6

Figure.7

Figure.8

Figure.9

Figure.10

Figure.11

Figure.12

Figure.13

Figure.14

Figure.15

Figure.16

Figure.17

Figure.18

Figure.19

Table 1 Shows the morphology, anatomy, and physiology comparison between male and female of Shelduck (*Tadorna tadorna*)

Parameters	Male	Female
Eyes, head, neck and the anterior chest	Black eyes, head is dark green, the neck divide into two regions, the upper green and lower white color, the anterior chest is chestnut color (figure.1)	Black eyes, head is bright green color with white spots surrounding the beak, also the neck divide into two regions, the upper green and lower white color, the anterior chest is chestnut color with white spots (figure.2)
Beak, tongue and vocal box	The beak is curve shape, Dark red with clear knob at the base of beak. The olfactory organ is black and good development. The inner upper jaw is deep cavity surrounding with black spick folds as a charger. The tongue is long and wide supply with good development spick in mid and posterior part. The vocal box consist from two chambers (right and left) supply with one vocal tendon at the end of chamber. The right chamber is biggest than left. (figures.13,14, 15,16,18&20).	The beak is less curve shape than male, orange without knob at the base of beak. The olfactory organ is grayish in color simple development The inner upper jaw is mild in depth surrounding with whit spick folds as a charger. The tongue is short and narrowed compare with male and also supply with spick in mid and posterior part. The vocal box is rudi- mentary appear as only two tendons. (figures.13,14,15,17,19&20) .
Chest and back	The chest is white with large black spot extend from the anterior to the pelvic region that have chestnut color. The back is white and supply with two black lines at the base of wings. (figures.3&4)	The chest is white with interrupted black spots extend from the anterior to the pelvic region that appear white in color, also the back is white and supply with two black lines at the base of wings.(figures.5&6)
Wings	The color of wing plumage is white supply with (8-10) black primary remiges followed by (12-15) second- aries which are bright greenish feathers and (5-7) chestnut feathers at the base of wings. The under wings are almost entirely white (figures.7 &8).	The color of wing plumage is white supply with (6-8) black primary remiges followed by (9-11) second- aries bright greenish feathers and (3-5) chestnut feathers at the base of wings. The under wings are almost entirely white (figures.9&10)
Foot	The feet are shine pink supply with wide good development inter digital membrane. (figure. 11)	The feet are also appear as pink with wide and good development inter digital membrane. (figure.12)
Red blood cell count million /cm³(mean)	3.25	3.17
White blood cell count thousands/cm³(mean)	26.12	24.76
Hemoglobin level % (mean)	48.98	44.96
Packed cell volume % (mean)	32.54	31.48
Lymphocytes %(mean)	27.43	27.17
Monocytes %(mean)	13.37	13.08
Hetrophils %(mean)	52.93	52.69
Eosinophils %(mean)	3.84	3.58
Basophils %(mean)	2.05	2.05
Liver weight gr.	33.80	29.60
Proventriculus(empty) weight gr. mean)	15.50	13.50
Gizzard (empty) weight gr. (mean)	20.60	17.50
Gall bladder(fill) weight gr. (mean)	4.10	3.70
Kidney weight gr. (mean)	7.50	7.10
Alimentary canal length cm. (mean)	118.20	116.50
length cm. (mean)	50.10	47.50
weight gr. (mean)	10100	950

Figure.20

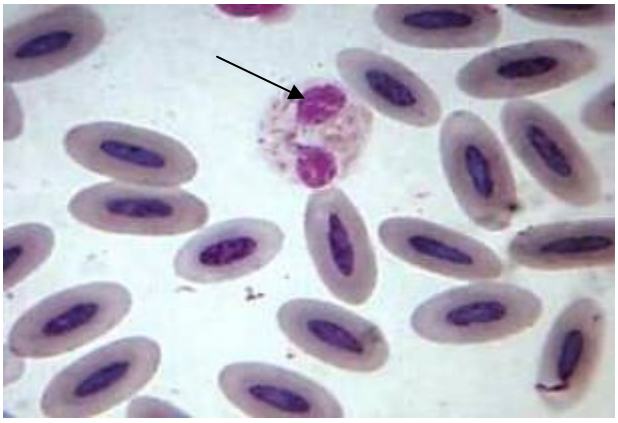

Figure.24.Hetrophil

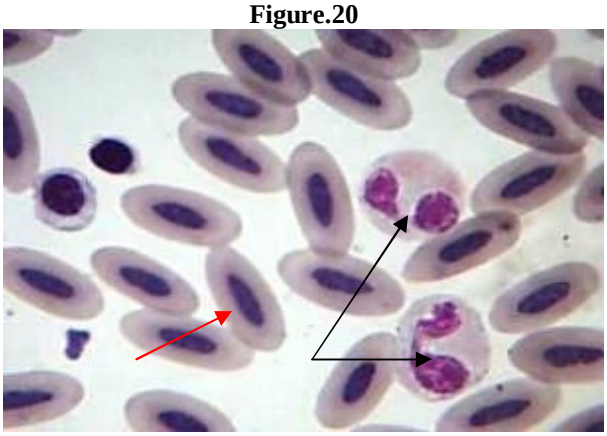

Figure.21 Red blood cells and eosinophil

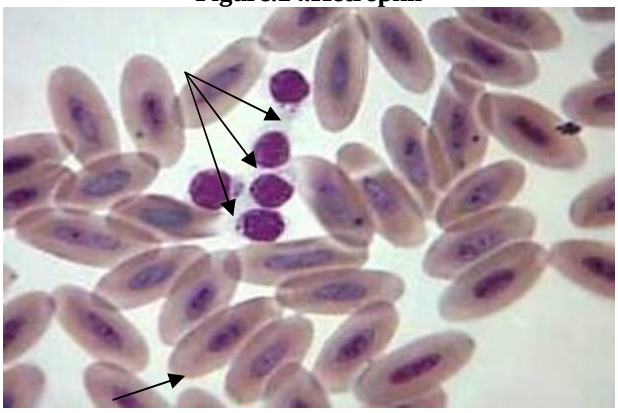

Figure.25.Larg and small lymphocyte

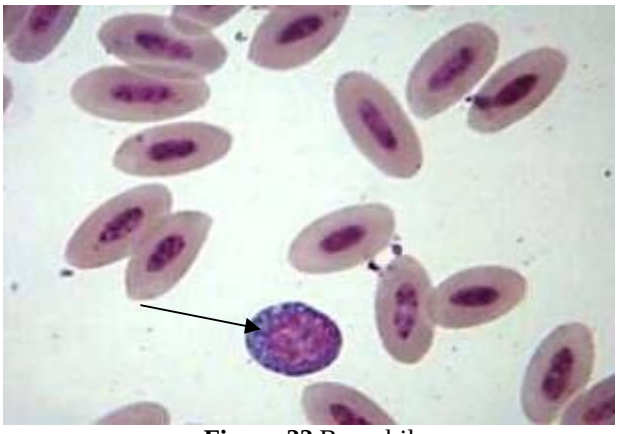

Figure 22 Basophil

Figure.26.Thrombocyte

Figure 23 Monocyte

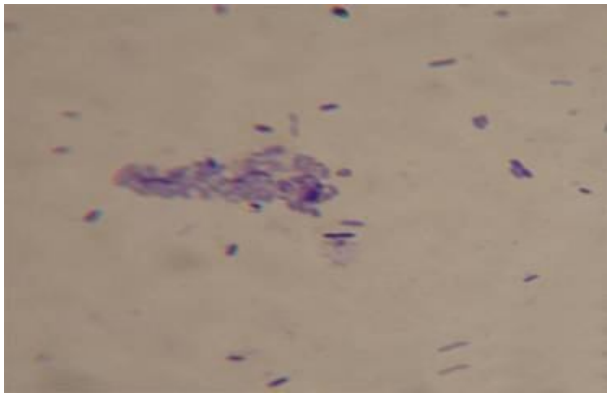

Figure.27.Chromosome in metaphase UK

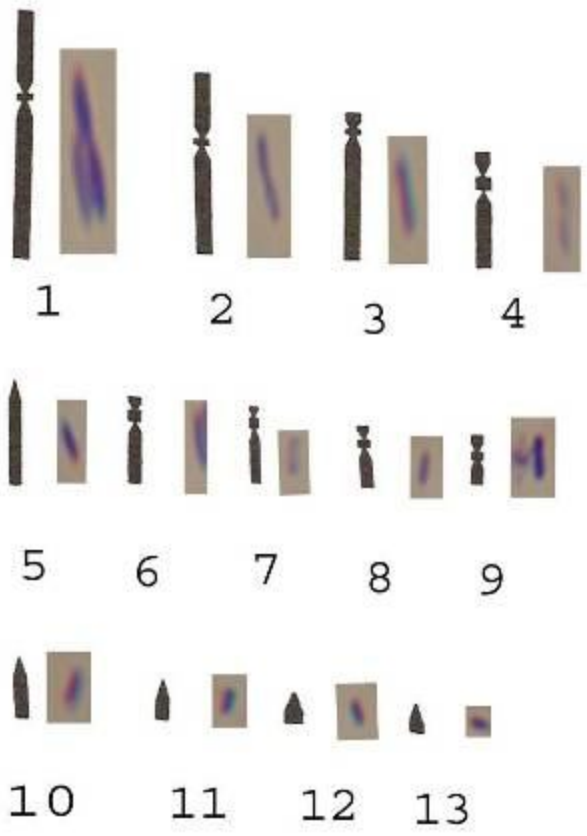

Figure.28.Idogram and karyogram of chromosomes

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