



MORPHOMETRIC VARIATION OF HOUBARA BUSTARD

Muhammad Sajid Nadeem, Shahid Kamal, Muhammad Asif, Haroon Rashid

Abstract. Morphometric of 235 Houbara (Male 136, Females 99) was studied. Means, standard deviations and ranges of 11 characters separately of males, females and pooled sexes were calculated. The pattern of character variability was almost similar in males and females. Body weight was the most variable character in both males, females and in pooled sexes, followed by wing and tail. Beak width and beak length were the least variable characters in both males, females and in pooled sexes.

Key words: morphometric, Houbara, *Chlamydotis undulata macqueenii*, Pakistan, variation.

Address: M.S. Nadeem, Zoology Department, New Campus, Punjab University, Lahore, Pakistan;
e-mail: sajidnm@hotmail.com.

Вариация морфометрических параметров джека. - М.С. Надим, Ш. Камал, М. Асиф, Г. Рашид. - Беркут. 12 (1-2). 2003. - Измерены морфометрические параметры 235 джеков (136 самцов и 99 самок). Вариация параметров была сходной у самцов и самок. Наиболее варибельной у обоих полов была масса тела. Наименее варибельными оказались длина и ширина клюва.

INTRODUCTION

Pakistan is believed to have the largest migratory population of Houbara (*Chlamydotis undulata macqueenii*) in the world. During an international symposium at Peshawar in 1983, the experts estimated Pakistan's Houbara population between twenty and twenty five thousand birds (Weaver, 1992). Houbara Bustard is trapped (illegally) during their migration to wintering areas. They are smuggled to the Middle Eastern States, where falcons are trained utilizing the Houbara as quarry. This harvest is thought to an extent of 4 000 to 7 000 birds per year (Goriup, 1997). The trappers and transporters being not fully trained in handling these birds, often cause the death of Houbara. The operation being illegal, the Government functionaries confiscate such illegal consignments. The birds, thus caught due to crowded conditions, poor husbandry and insufficient food supply are usually sick and diseased. To rehabilitate such birds Houbara Foundation International Pakistan (HFIP) established a Houbara Research and Rehabilitation Center (HRRC) in 1996. The main Objectives of HRRC are: To provide medical treatment, rehabilitate the birds that is not a health risk for free living populations, monitor the survival ratio of the released birds.

Very limited studies of morphometric are available on Houbara. The present study (1999–2001) was preliminary to describe the morphometric variations in Houbara Bustard arrived at HRRC, first time in Pakistan.

MATERIALS AND METHODS

Morphometric variations were recorded on 235 Houbara (136 males and 99 females) on their arrival at HRRC. The following eleven characters were recorded: (1) body weight (2) tarsus: measured diagonally from the posterior aspect of the joint between the tibiotarsus and tarsometatarsus to the joint of the base of the middle toe, (3) sternum (4) tail: measured from point of emergence of two central rectrices to the tip of the longest rectrix (5) toe – claw: middle toe without nail (6) toe + claw: middle toe with nail (7) beak: from the tip of upper mandible to its junction with the skull (8) beak width at mid-nostril (9) beak length from nostril (10) skull and (11) wing length: from carpal flexure to the tip of longest primary. All the measurements were made with vernier caliper except tail and wings (Tail was measured with scale while wings with tape). All measurements were made by one person to avoid the personal differences.

Difference in mean value of each charac-

Morphometric analysis regarding different parameters of Houbara Bustard
 Морфометрический анализ различных параметров джека

Character	Pooled sexes (n = 235)	Males (n = 136)	Females (n = 99)	Value of T-Test
Body weight (g)	1161.21 ± 259.46 ^a (700 – 1900) ^b	1281.87 ± 257.84 (900 – 1900)	995.35 ± 145.62 (700 – 1290)	4.00**
Tarsus (mm)	88.70 ± 7.67 (71 – 105.6)	91.96 ± 7.19 (71.2 – 105.6)	84.18 ± 5.88 (71 – 96.8)	4.38**
Sternum (mm)	95.50 ± 7.52 (69 – 115.9)	99.86 ± 5.68 (85.4 – 115.9)	89.51 ± 5.28 (69 – 100)	2.32*
Toe – claw (mm)	37.95 ± 4.07 (23.9 – 49.7)	39.80 ± 3.79 (28.6 – 49.7)	35.41 ± 2.90 (23.9 – 43.2)	6.24**
Toe + claw (mm)	48.13 ± 4.39 (33.5 – 60)	49.69 ± 3.59 (37.5 – 58.9)	45.98 ± 4.51 (33.5 – 60)	1.79 N. S.
Beak (mm)	53.60 ± 4.16 (38 – 64.4)	55.39 ± 3.48 (46.4 – 64.4)	51.14 ± 3.74 (38 – 60)	4.92**
Beak width at nostril	12.69 ± 1.02 (9.1 – 15.5)	13.07 ± 0.96 (10.6 – 15.5)	12.18 ± 0.88 (9.1 – 14.2)	7.45**
Beak length from nostril	22.92 ± 1.58 (16 – 27.9)	23.57 ± 1.40 (18 – 27.9)	22.04 ± 1.38 (16 – 24.6)	1.58 N. S.
Skull (mm)	98.50 ± 5.80 (78 – 110.8)	101.95 ± 4.37 (90.9 – 110.8)	93.76 ± 3.85 (78 – 100.4)	2.69**
Tail (mm)	193.75 ± 22.19 (105 – 240)	202.62 ± 19.27 (120 – 240)	181.56 ± 20.13 (105 – 230)	6.12**
Wing (mm)	359.29 ± 30.38 (290 – 430)	377.46 ± 22.03 (310 – 430)	334.34 ± 21.19 (290 – 390)	8.9**

^a – Mean ± standard deviation, ^b – range, * – P < 0.01, ** – P < 0.0005, N. S. – Non-significant.

ter of males and females was tested with student T-test (Davis, Goldsmith, 1984).

RESULTS

Means, standard deviations and ranges of 11 characters separately of males, females and pooled sexes are presented in Table.

Comparison of sexes suggested that there was non-significant difference between toe + claw and beak length from nostril of males and females while all other characters differ significantly in both sexes. Males were found significantly larger in overall body size.

The pattern of character variability was almost similar in males and females. Body weight was the most variable character in both males, females and in pooled sexes, followed by wing and tail. Beak width and beak length were the least variable characters in both males, females and in pooled sexes.

DISCUSSION

Morphometric of Houbara revealed that body weight, tarsus, sternum, toe – claw, beak width, skull, tail and wings of males were different from that of females. Cramp and Simmons (1987), Roberts (1991) also describe the difference between male and female in wing, tail, beak, tarsus, toe and body weight. No other comparable data about Houbara Morphometry is available. Further studies of morphometrics are required on different sub populations of Houbara bustards as such studies could be useful in eco-morphology and species characterization and identification in ornithological handbooks.

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РЯБИННИК – НОВЫЙ ГНЕЗДЯЩИЙСЯ ВИД ПРИДНЕСТРОВЬЯ

А.А. Тищенко

Fieldfare is a new breeding species for Dniester Region. - A.A. Tischenkov. - Berkut. 12 (1-2). 2003. - The Fieldfare was formerly only wintering and migrating species in the Dniester Moldavian Republic. Colonies (3 pairs) of this species was discovered within the small town Kamenka in May 2003. [Russian].

Key words: Fieldfare, *Turdus pilaris*, the Dniester Region, breeding, nest.

Address: A.A. Tischenkov, T.G. Shevchenko Dniester State University, 25 October str. 128, 3300 Tiraspol, DMR, Moldova; e-mail: tdbirds@rambler.ru.

Дрозд-рябинник (*Turdus pilaris*) – представитель бореального фаунистического комплекса (Белик, 2000), расширяющий гнездовой ареал в Восточной Европе в юго-западном и южном направлениях (Белик, 1998; Луговой, Луговой, 1986; Талпош, 1996; Чаплыгина, Кривицкий, 1996; Чаплыгина, Фурсова, 1996 и др.).

Ранее на территории Молдавии, в том числе в Приднестровье, рябинник регулярно встречался в периоды миграций и на зимовке (Аверин и др., 1971, 1981; Тищенко, 2001). Первые встречи этого вида датируются началом октября (2.10.1991 г.), самые поздние сроки отлета рябинника из Приднестровской Молдавской Республики (ПМР) приходятся на начало апреля (5.04.1996 г.).

О.Г. Манторов (в печати) упоминает о появлении этого вида в 1998 г. на гнездовании в окрестностях с. Унгры (Окницкий район Молдовы), которое расположено в 10–15 км южнее г. Могилев-Подольский (Винницкая область Украины, около 82 км по прямой от г. Каменки), где этот дрозд

регулярно гнездится с 1991 г. В сквере г. Тульчин (Винницкая область Украины, около 73 км по прямой от г. Каменки) в 1995 г. также была обнаружена колония рябинника (Містрюкова, 1996). Вероятно, и в других населенных пунктах юга Винницкой области (Ямполь, Вапнярка и др.) имеются поселения этой птицы.

22.05.2002 г. в период проведения учетов птиц в маленьком городе Каменка, расположенном на севере ПМР (48°012 N 28°432 E) нами была обнаружена микроколония (3 пары) рябинника. Располагалась она среди деревьев (*Ulmus sp.*, *Populus alba*, *Salix alba* и др.), растущих по берегам р. Каменки, протекающей через селитебную зону города (усадебная застройка). Одно гнездо было сооружено на высоте около 5 м на вязе (*Ulmus sp.*) в пересечении тонкой и толстой боковых ветвей. Оно было хорошо скрыто листвой. Приблизительно в 50 м от гнезда проходила оживленная автотрасса Тирасполь – Каменка, а в 6 м от дерева – местная дорога. Гнездо представляло собой довольно крупную кон-