

HODGSON BIRDS OF INDIA VOLUME VI

Illustration Page 3

Otis Bengalensis

Major. Charaj.

Larger Indian Bustard Male

Large as Life

July 1830

Text Opposite Illustration on Page 3

mas. testes largish moult not begun exact appearance of feem, May 23 junior? mas. testes large big as biggest [sic] wheat grain, mature moult on, old dress that of feem, now shews [sic] on head, neck, breast & thighs & back black as in large species & the wing coverts white as in D[itt]o with some black ones, but the quills are variegated as in the feems & in winter dress of males also of latter fact can be no doubt, tho' in large species the mature male has one uniform appearance all the year saving the addition of hackles in Summer. Some of new plumes on breast of this are black on one vane white on other & some are black with white freckles: & some of wing coverts are white with black bases or partial freckles of white or $\frac{1}{2}$ black & half white. This is probably the transition of colours as in the male of large species. Both have WORD scapulars & lower upper tail coverts & some of tail feathers alike varied. Probably mas. of small sort coloured entirely like mas of large save [great]? Quills wh. seem in small one, to be variegated, as in feem. This spec. Is tolerably plump, but not fat. Intest. 19 inches caeca $3\frac{1}{4}$ to $\frac{1}{2}$ St. $\frac{1}{4}$ inch in greatest thickness not much thiner [sic] anywhere soft on the whole tho' muscular bottom of esoph enlarged & of a granular glandlike structure.

Spec. of May 25 feem moult scarcely visible. Spec. Of May 26 Valley feem 1lb 4oz thinish [sic] $19\frac{1}{2}$ by 33 plumes full but moult scarcely traceable, eggs tiny 3.45 per subeq. largest 1 & 2 very little gradated. The test. plus prim. WORD tail 16 rounded convex above erigible & expansile bill to head as in 2 to $1\frac{1}{4}$ conico [depressed]? with tip only comp., soft towards gape WORD big & nares & tomice [scaped]? & trenchant, tip of WORD longer & inclined greatly over lower with vague notch of lower straight obtuse & WORD nasal fossae nearly to middle of bill. Wide memb. nude in forward half, aperture long, ellipse, narrow longit upper edge swollen & membranous. Intest. 24 caeca $6\frac{1}{2}$ each. St. large mus. outer coat of small subeq., the

2.

inner tough, not grooved grilli & beetles only, bottom of a soft dilated with thick glandular walls & papillated lining, the tip of each papilla being a palpable excreting pore.

MEASUREMENT TABLE FOLLOWS, THE CENTRAL PANEL IS VERY FAINT AND SOME PARTS HAVE BEEN OMITTED

Male		Feem			
x	Q				
1.5 1/2	1.50	Tip bill to tip tail	1.7 1/2	1.7 1/2.	1.7 1/4 1.7.0 1.7 1/2
0.2 1/16		Bill length.	2 1/16	0.2 3/16	
		Basal ?	4 1/2	0.0 1/2	
0.4.0				at gape 13/16	
2.5 1/2	2.4.0			0.4 3/5	
				2.7 1/4 2.10.0 2.7.0 2.7 1/2	
0.4 1/8				0.4 1/16	
0.1 5/8				0.1 9/16	
1lb 2oz	13 oz Junior			1lb 6oz very thin	1.4oz 1lb
3oz					

June 4 female, bill to head as $2\frac{2}{16}$ to $1\frac{5}{8}$ Tongue fleshy tip bifid
 May 24 feem moult far on, bill to head as $2\frac{1}{16}$ to $1\frac{1}{2}$ [con(siderably)] ?
 depressed except towards tip where mod(erately) comp. soft as far as nares,
 hard beyond them rounded above and below straight with up m. subarched
 towards tip & tip itself greatly inclined over tip of l. m. & notched tip straight
 & [lintiel]? tomiae trenchant & interlocked nasal grooves large memb(ranou)s
 clad in soft plumes directed backwards beyond posterior angle of nares wh.
 are narrow, long, ovate, free, lateral & shaded above by a full-edged nude
 process of the general membrane, no arched [scale]? as in Gallus etc, ridge
 of up. m. prominent between nasal fossae, tongue fleshy, flat, tiny subbifid
 cast tip, wings $1\frac{1}{2}$ inch less tail, primaries hard & narrow 3 first cons.
 emarginated on inner vane, near tips 4th longest, 3 nearly equal, 5 & 2 equal,
 rather less 3. 1 is $\frac{3}{4}$ inch less 4, test. soft, wide compressed equal to
 primaries, tail moderate soft rounded. Tibia $\frac{1}{2}$ nude & like tarsi uniformly
 reticulated (hexagons) toes short unequal full round, soles basally WORD
 outer more than inner, nails short obtuse solid there being no excavation
below Blot Body full, neck long & slender. Intest $18\frac{1}{2}$ inches $4\frac{1}{2}$ less
 anal end of caeca of $4\frac{1}{2}$ each. St. musc. of **Blot** sub equal thickness

not much of gizzard style, inner coat mod. tough with large full long concentric WORD grilli only. Eggs in ovary swelling some as big as sesamun seeds.

Transcriber's note This page may have been trimmed at lower edge and some text lost

Illustration Page 4

Charaj mas ablac feem

Bo'or in plains from Kartic till Bysakh. does not breed there. In dry plains grassy.

In Terai 6 months or more, ornamental plumes in Asian & till [Aghan]?

Otis Bengalensis major mas

Larger Indian Bustard. The Charaj

Large as life.

2. Head of young cock Aug 1

Female the same

Otis Himalayanus! Gould

No further text

Illustration Page 5

3 studies of Sypheotides Bengalensis (unfinished)

completed illus of 3 eggs

2 further detailed drawings

nest?

Text opposite illustration on page 5

Bettiah Baju writes that Charaj is a Tarai bird near back of hills & there breeds but no one seen young or eggs.

Jan(uar)y 20 Terai feem pl. full & rich, legs dirty straw like, small species, but duller bill dusky blue above, blue grey below, fleshy brown towards gape iris pale hazel or yellow like legs. Tail 16 slightly rounded to $1 \frac{1}{8}$ inch in extreme laterals. Wings about $1 \frac{1}{2}$ inch less tail, ample tertials plus primes broad & soft 3 or 4 prime & longest 1 & 2 not much narrowed or sharpened this slight emargination on both webs remote from tips. Legs very long $\frac{1}{2}$ tibia nearly is nude, toes short stout, full soled & rough below central much longest outer plus the inner, nails short broad above, flat below & solid. Tongue $\frac{2}{3}$ length of bill simple, flat above subbifid at tip furnished at base with [subc----] recurved spines bill & head depressed, gape nearly [toeze]? & soft maxilla plus half cut out by membraneous & plumed nareal fosse. Nares long ellipse & oblig. longit lateral above & below by plumed membrane & closed wing $13 \frac{3}{4}$ inch long.

Pencilled note No gular sac.

xx Two hens [Bisoulish]?

Jan(uar)y 20 mature, full plumes just like the Likh hen in colours

Cock

3lb. 12oz

Hens

3lb 8oz 2.7 long & 3.6 wide

3. 12

3 -

4. 4

August 4 A young cock, head & neck as in small species but richer dyed & most of wing coverts D[itt]o moulting, rest of plumage as in mature male but more black on back of wings the first & last 4 & 5 are mostly black & those next them have a broad black margin down outside of one, web not white inner covert black.

Measurements

X	X	(2)	2. 0. 0	2. 3. 0	bill to tail	(1)	2. 0 1/2
2.3.0.	2. 2 3/4.		0. 2 1/4	0. 2 3/8	bill length		2 1/2
	- 1/2		0. 3 1/2	3/8 -	do. - basal height		0. 0 1/2
	- 0 less 7/8		8	7/8 -	do. - breadth of		- 1 -
	7 1/4		0. 5 7/8	0. 7 1/8	tail		-7 -
4.1 1/2	4. 1. 0		3. 5. 0	4. 0. 0	exp. wings		
3.9. -							
	6 3/4		0. 6 1/2	6 1/4	tarsi		6 3/4
	2 -		0. 2 1/8	2 1/8	C. toe & nail.		- 2 -

4lb 3oz 4lb 2oz
(1) & (2) males Bettiah juniores ?

(2)Bill rather larger than bird & cleft to eye,considerably depressed towards base & at base as broad as high, forwards rather compressed softish & WORD towards base, hard towards tip rounded above & below base produced among frontal plumes, cutting edges obtuse except near tip

Note written in pencil 'wh is inclined not notched'

straight obtuse up.m carinated between nostrils very slightly inclined especially towards the tip, tip inclined & notched as in the side near it low m straight subimarg. near tip. Palate produced near to cutting edge of up. m & striated towards tip of bill. Tongue mod flat tip bifid. Nostrils large

& open subbasal placed in a broad basal membraneous semi-plumed groove oblique oblong orbits sub WORD all feathers of head more or less elongated & narrow WORD composed those of hind head considerably so & forming a gracefully curved drooping crest, crest 4 inches. Plumes of dorsal surface of whole neck also slightly elongated. Pectoral surface of neck from bill to ~~bottom~~ of chest furnished with a quantity of long narrow [composed]? & slender square pointed plumes wh. wave to WORD with every motion of bird. They are applied to the skin usually & do not seem capable of being ruffled out. Legs long & stout & reticulate on all sides tibia $\frac{1}{2}$ naked tarsi elevated, toes & nails short basal membranes of toes very small: acropodia scaled, central toe much larger than laterals wh. are nearly equal. Wings ample reaching to, or nearly to end of tail.

Note written in pencil 'Tertials broad ample equal primes'

last quills exceeding the first. Tail shortish, rounded, the coverts above extending to its tip almost. Walks with neck erect & straight body not much *inclined.

Note written in pencil above *inclined [raised]?

... from horizontally & legs very little bent, gait stately, flies with neck extended & legs tucked up. When excited raises & spreads its tail like turkey almost, & crest plumes also a little elevated but not noticeably - its cry is Click Click, 3 or 4 times repeated shrilly, yet plaintively, seldom speaks when not much alarmed, food is grilli & other terrune insects, mustard sprouts & those of sundry flavoursome wild plants, little or no grain. Head & neck entirely of a black deep & glossy, back scapulars & the several wing flags falling into the [line] of scapulars, purplish dark brown mottled & streaked all over with yellow red or red yellow { back darkest, least variegated } the markings disposed into vague crossbars on the larger flags. Tail coverts above the basal but darker grounded & the marks more obviously bar wide. Tail feathers black with a purplish or violet gloss & the laterals immaculate & [centrals]? crossed with 3 mottled bars of incandescent white, wing coverts above white with here & there visible indications of the black existing at the base of each plume - wings white with black shafts & purple black bases, the purple black extending more & more down the inner webs of the secondaries as they near the body & unite with the coloured & mottled tertiaries already noted as falling into line of scapulars the 2 or 3 first primaries also black throughout outer webs & at tips: entire body below & inner coverts of wings & tail purple black immaculate bill plumbeous with culmen darkened, iris *brown

Note written above *brown in pencil 'hazel'

...Legs dull bluish overlaid with 'dirty grey brown' A bird of Augt 15 moult nearly complete

Illustration Page 6

Full page illustration of standing bird
 Oticulus No.6 Sp Auritus Neenon Fulvus Auct.
 Home with rest Aug/37

Otis Bengalensis - Lesser Indian Florican
 or Likh female in Winter dress?

(large as life)
 Valley April - June
 X1 451

	Measurements		Male juniores(sic)
	Seems.	-	
Bill to tail	2. 3.0	2. 2.0	2. 2. 0
Expanse	3.10.0	3. 7.0	3. 7. 0
Bill to gape	0. 2 ½	0. 2 ½	0. 2. ½
Bill to brow	0. 1 ⅝	0. 1 ½	0. 1 ⅝
A Wing [Word.	1. 2 ¾	1. 2. 0	1. 1 ½
Tail	0. 7 ½	0. 7 ¼	0. 7 ¼
Tibia	0. 6 ⅞	0. 6 ¾	0. 6. ¾
Tarse	0. 6 ⅜	0. 6.0	0. 6. 0
Central toe & nail	0. 2 ⅛	0. 2 ⅛	0. 2. ⅛
Weight	3 ½lb	3 ¼ lb	3 ¾ lb

Siligori Sikim Tarai January 15

Seven shot, all females or young 'tho full grown 6 months old. Born in June-July. Young just born found by a peasant there. Plumage full but males changing vestment ground colour. They have the black body & white wings of maturity but the mottled heads & necks of the female save one which has the black plumes protruding fast & by moult, tongue longish flat cartilaginous with tip slightly bifid. Intestines vary in length from 2 ½ to 3 feet caeca about 8 inches from anal end vary from 7 ½ to 8 inches.

Illustration Page 7

Standing figure of bird
 Written below Oticulus Auritus Mihi type

Note R.H. side below

Even in plains not migratory takes black colours & in [asar]? & loses in [aghan]? gradually both

In pencil below

aghan. to asar & 9 months rains away

Likh mas. not separate sp. In plains in cold season *only* & *manners of charaj*.
The Likh male moulting June 7th No.3 of the description on back of old
drawing

Note L.H. Side below

Oticulus Nob. Auritus Neenon Fulvus auct.

Home Aug/37 with mas et feem full plumed

Text opposite illustration on page 7

2 & 6 below are a very fine couple killed June 3. Plumage here & there frayed but no one decisive sign of moult. They are pretty clearly a pair & a mature pair & prove (1) to have been a young bird unless indeed there be two species one lesser with ear ornaments & black neck & breast of wh. Sort (1) is a specimen with immature plumage & young, the other species larger & void of ear appendages or black plumes, art 3 for future observation 2 & 6 are, I conclude, a pair because killed in company & because whilst plumage of both is in the identical state (of fullness or the inverse) that one has just that sort of superior darkness in the tints wh. belongs to males. His quills too have that extreme pointedness wh. before noted as extreme in males, less noticeable in females, quills particularly darker & 2 or 3 first all black whereas in female buff with black bars like the rest. On looking closer I see moult in the quills & cannot ascertain their [fixed]? length & tertials very acutely pointed, secondaries wedged at tips.

3. Here is one of the smaller birds with the extremely acute quills & the [aigrettes]? half developed. Another the same day June 7 under full moult but not far advanced on belly or thighs, neck & head black plumes rapidly developing themselves & white one on the wing covets as if this bird would when moult complete assume the colour of the large species, we shall see! Scapulars & tail a l'ordinaire only darker & richer these parts doubtless having an (sic) uniform appearance always [aigrettes]? in both species half out. N.B. Likhs moult begins with June or rather before.

June 14 Killed one 16 ½ long & 1lb 2oz of the sort drawn or that I take to be the hen has hardly begun its moult late as the time is not least symptoms of the peculiar plumage of [egrets]? wh. I ascribe to males. Wings seem full & have where longest not one, all dark.

Dissected for discovery of sac but failed. Stomach full of grilli, thin coated small beetles, fireflies & gorgeous gadflies.

May 30 1832

First Likh killed Wt. 14oz; 1.7.0 long & 2.7.0 wide, tail 16 feathers. wings minus tail $\frac{3}{4}$ inch, tertials exceeding primaries by $\frac{1}{4}$ inch. 3rd primary long 2 & 4 equal & very [near]?

3rd [1st]? $\frac{3}{16}$ only shorter than 3rd, first primaries moderately acuminate save distinctly emarginated on inner web. The emargination being very gradual from high up. Plumage worn, but colours rich & no sign of moult. bill to head as 2 to 1 $\frac{3}{8}$ soft depressed & feeble for $\frac{2}{3}$ from gape & above, cut out by a broad memb. grooved terminal $\frac{1}{3}$ head & (compressed)? & course above & below. Straight but [open]? somewhat inclined in its terminal $\frac{1}{3}$, cutting edges obtuse & soft towards base, trenchant towards tip then upon sub notched towards tip l.m. intire. Nostrils in centre of groove, aperture oblong, longitudinal, lateral, the up. margin swollen & closing the nostril above. Head large with broad flat crown, eye large & soft, a female by dis. eggs very small size of pin's head & not one in the least augmented the breeding season therefore is not too far off.

Intestines 23 in, long capacious & uniform as far as caeca, below them small caeca 5 in long, flacid 4 inches from end stomach capacious, outer coat moderately & equally thickened & muscular no app. of gizzard from inner coat tough longit[udinal]ly striated contents, large grilli inclusively no gravel. Bottom of esoph. mod[erately] dilated. N.B. 1st primary has buff bars on outer web quills, olivaceous buff with broad transverse bars above, numberless, close zigzags & mottles towards tips, save in long primaries wh. are there plain dusky lining of wings dull black

May 29

A cock dis. testes small & long 18in long & 1 lb 2 oz Wt.fat. 4 first quills dark & nearly immaculate 4th longest, others slightly & uniformly gradated up WORD moult begun, aigrettes 1 inch long, thighs varied with black breast ls unchanged.

May 30

Two from Bettiah 18 long by 30 wide, a female no sign of moult, all primaries barred & little alternated eggs, very small

June 1 another from ditto female by dis. eggs small, just legs to dilate 10 $\frac{1}{2}$ inches long by 32 wide. Moult begun but colours high 3rd quill longest primaries moderately acuminate. 2 first unbarred, chin pure white. Stomach full of large black beetles, clear then that this bird, essentially insectivorous. here nothing but grilli, in plains nothing but scarabae.

May 24 Valley feem Just arrived 20 by 31 $\frac{1}{2}$ 1lb 3oz very thin, feem plumes

very dull, moult just beginning. Intest. 21, caeca. 4 from end of each 5 1/2 St. musc. subeq, musc. coat of med. th. 3/8 utmost muscle pale & soft as compared with fowls, inner coat leathery & long [grooved]? WORD stomach glandular with soft papillar lining, each papilla clearly showing the excretory duct.

Table of Measurements

	Males			Feems		
	1).	(2).	(3).	(4)	(5)	(6)
Tip Bill to ditto tail	1.4 1/2	1.7 1/4	1.4 3/4	1.6 1/2.	1.7.0	1.6 1/2
Bill length of less.	0.2.0.	0.2 1/16	Less 2	0.2 1/16	0.2 1/8	0.2.0
Bill basal depth of.	0.3 1/2	0.0 3/8	0.3 1/2	0.0 3/8.	plus 3/8	0.3 1/2
" " breadth of	8		8			8
Tail.	0. 0 7/8	0.0 6/8	0.0 6/8	0.0 3/4.	less 7/8.	0.0 7/8
Exp. wings.	0. 3 1/2.	0.4 1/2.	0.4. 0.	0.4 1/8	0.4 3/8	0.4 1/4
Tarsi	2.2.0.	2.7.0.	2.3 1/2.	2.7.0	2.8.0	2.7.0
C. toe & nail.	0.3 7/8	0.4.0.	0.3 7/8	0.3 7/8	0.4 1/8.	0.4.0
Weight.	0.1 1/2	0.1 5/8.	0.1 5/8	0.1 1/2	0.1 5/8	0.1 5/8
	15 oz.	1lb 4oz	1lb 1oz	1lb 2oz	1lb 4oz	1lb 6oz
				(thin)		

Note to the side of the table

Tongue subcast, soft pointed, sub bifid. In stomach black beetles fruits-grains & gravel

(3) the lesser bird & as tumid. Male May 22 plumage frayed & dull but moult not begun save in the ear ornaments wh. are just visible budding & a black feather here & there on belly & thighs. Bill rather longer than head & cleft to foreangle of eye. Straight with the tip WORD m inclined up m [sub.....ed..]towards tip & notched too WORD depressed considerably except near tip where compressed at base & as broad as high up. m overlaying lower outside that tip, lower m straight & intire above ridged and WORD carinated to fore angles of nares full & rounded towards tip. Nostrils basal, oblong open placed in a broad membraneous basal groove, the up. margin prominent, legs long with the fleshy part of the thigh very full & round tibia more than half naked & reticulated, like tarsi on all sides tarsi long, toes short connected by basal membrane & [cutillated] nails short obtuse. Wings supra-mod flags simple and much longer than quills & wedged at tips, (quills in males especially) extremely narrowed & acuminated towards tips very acute strongly emarginated on inner web x 3 to 4 longest & equal gradation

of rest both ways very moderate & angular none of them equal. Tail sub.mod rounded [18]? feathers. Tongue pointed fleshy the very tip [cartilag.] & forked. Body full & round, neck long & slender clothed (in winter) with short downy plumes. Head & eye large, forehead flat. Comes here as the wheat ripens in April & May & goes away as heavy rains set in in July when Valley flooded, resides in ripe corn & green dry rice, eats grilli chiefly & a few aromatic weed tips & sesamum buds.

(4) May 24 plumage frayed but no distinct signs of moult, no black plumes below.

(5) A well grown bird in moderate [case]? only so that a fat one must weigh 1 1/2 to 1 3/4 lb moult begun or began but no signs of [aigrettes]? or black plumes on inferior surface both wh. I guess are obviously males. Great quills sub.olive but blackened towards tip, rest of quills rich full buff with numberless dark transverse & oblique linear freckles towards tips especially - a few above also tail feathers rich buff marked as [flags]? Both wings & tail crossed with 4 clear black or blackish bars.

Illustration Page 8

India House November [1852]?

With two eggs No 115

Two birds, one on ground, the other standing

Sanscrit notes below & pencilled note 839 Sypheotidis Bengalensis

Text opposite Page 8

Table of Measurements

Expanse.	2. 3 1/2
Tip Bill to tip tail.	1. 5 1/4
Bill length	2 1/2
Bill bas height	1/2
Bill -ditto- width.	3/4
Tail	4/8
Tarsus	- 4 -
C toe	1 15/16
Outer	14/16
Inner	11/16

Page 11

Sec. Beng sp. May. Dec/36
 Otis Aurita Ind. Orn Likh WORD Chulla Charaj Takdar
 Nehla Nemalia Majoor Hindoos Our Bustard Florican. Lesser Florican
 [Passarage] Bustard [Flerchin] Black Florican of Deccan appears here about
 middle of May disappears middle of June when comes has the exact
 plumage of female, moult presently shows itself & then the tendency is to the
 colours of the male of the large species. Deliciosa of Hardwicke-
 Hemalayanus of Gould. Aurita & Fulva are I am sure the same species. But
where is Aurita seen in full fig? & does it assume its peculiar WORD plumage
 only in breeding season. If the dark & peculiar plumage be at all permanent,
 why not seen in a single specimen here & another measured above valley
 June 25 moult seemingly [closed] & coloured thus, head, neck & body
 below with long coverts of primes black WORD chin junction of neck &
 shoulders above, all of shoulders & continuous line thence to long coverts of
 tertiaries while quills & cap, back & tail as in Winter. L in feem is mas & testes
 big. Intest. 18 ½ Caeca 4 ½ & ditto from end of St. subgiz suspended from
 two prom orifaces of elliptic shaped coleoptera & grains. Bill to head as
 2 to 1 ½ cleft to eye wh. is large & mild. Ears also large & bill & head much
 depressed. Nares long ellipse lat. & vert fossed open shaded by small
 [subment]? edge above. Wings 1 ¾ less tail. 4th longest 1st but ~~¾ inch~~
~~less all sharp as needles~~. Tert. ½ inch plus pr. & scap. 1 ¾ less tertials
 Tail [18]? medial erigible pent just like Hen of Galius fan shaped. Toes
 stout compressed full soled. Central long outer plus inner, both WORD
 memb. but the inner more so.

Illustration Page 9

Partly finished study of two Birds one on ground, the other standing.
 No Caption in English, Sanscit writing below

No text on opposite page

Illustration Page 10

2 birds?

Study of three birds all standing - grass in the background Number 839
 Written below

Oticulus Nob. O Auritus

Neenon Fulvus Aurit

WORD ½ Nat. Size

Male and Female in full dress & male moulting

Transcriber's note

There are some very faint pencilled notes below & Nos. 116-117