

University
Southern
Library



of 1870
for 1875



THE LIBRARY
OF
THE UNIVERSITY
OF CALIFORNIA
LOS ANGELES





SAVAGE SUDAN

ABEL CHAPMAN'S WORKS

BIRD-LIFE OF THE BORDERS 1889
WILD SPAIN* 1893
WILD NORWAY 1897
ART OF WILDFOWLING 1896
BIRD-LIFE OF THE BORDERS (REWRITTEN) 1907
ON SAFARI IN BRITISH EAST AFRICA . . . 1908
UNEXPLORED SPAIN* 1910
SAVAGE SUDAN 1921

* Jointly with WALTER J. BUCK.

IN PREPARATION

THE BORDERS AND BEYOND
ARCTIC—CHEVIOT—TROPIC



SAVAGE SUDAN

ITS WILD TRIBES, BIG-GAME
AND BIRD-LIFE

BY

ABEL CHAPMAN

AUTHOR OF

"ON SAFARI IN BRITISH EAST AFRICA," "WILD SPAIN,"
"WILD NORWAY," ETC.

WITH 248 ILLUSTRATIONS, CHIEFLY FROM
ROUGH SKETCHES BY THE AUTHOR

GURNEY AND JACKSON
LONDON: 33 PATERNOSTER ROW
EDINBURGH: TWEEDDALE COURT

1921



Digitized by the Internet Archive
in 2007 with funding from
Microsoft Corporation

SK
255
S9C3

INSCRIBED
WITH REVERENCE AND AFFECTION
TO THE MEMORY OF A LIFELONG FRIEND
FREDERICK COURTENAY SELOUS
D.S.O.
WHO FELL IN ACTION IN AFRICA
4TH JANUARY 1917
IN HIS SIXTY-SEVENTH YEAR

P R E F A C E

THE Anglo-Egyptian Sudan has been under British administration upwards of twenty years; yet during that period there has lacked any attempt to describe our great Dependency (in popular sense) from the standpoint of the Hunter-Naturalist. Sir Samuel Baker's classic works of sixty years ago remain our only guides—and Baker professed no technical knowledge as a naturalist.

My own ambition in essaying to fill the gap may be over-exalted; but that is no fatal fault. The work has suffered various drawbacks. First the interruption of War severely curtailed my original programme of exploration: then several of those with whom I was associated in the Sudan and upon whose assistance I was relying, have since made the Supreme Sacrifice for their country: while my two colleagues of 1913-14—Captain H. Lynes, C.B., C.M.G., and Mr Willoughby Lowe, field-naturalists of the first flight—are presently engaged on a joint expedition in Darfur. Hence I have lost their aid in passing this book through the Press. On the other hand most gratefully do I acknowledge the generous help of Mr A. L. Butler, whose long residence in the Sudan and unrivalled acquaintance with its Fauna, great and small alike, place him in a unique position. That long experience he has most liberally and ungrudgingly placed at my disposal, to the great advantage of this work. Sir Frederick Jackson, K.C.M.G., lately Governor of Uganda, has also most kindly revised several chapters while yet in manuscript.

My ambition may briefly be defined thus:—That ere the reader has completed his perusal, he will feel satisfied that he has been “personally conducted” through-out savage Sudan and afforded an insight into both the physical features and the wild Fauna of the country—an insight that, in the nature of things, cannot be comprehensive, but at least is accurate so far as it goes and as the Author interprets the ways and the workings of wild Nature.

In depending so largely for illustrations on my own rough sketches, I risk testing the confidence of readers. These crude efforts have, however, been so kindly received during thirty years past, that I may fairly ask both critics and the public to share *some* of the responsibility. The only merit in the sketches, if any, is that they have been drawn on the spot and from the Life. In the present case it is probable that many of the creatures so depicted—however unskilfully—have never before been sketched in their haunts. But the aim remains to-day identically the same as defined in my first Preface (December 17th, 1888)—“to serve as character-sketches rather than as portraits and without pretension either to scientific accuracy or to artistic merit.” Mr E. Caldwell has, however, furnished several beautiful drawings of Big-Game and Mr J. G. Millais most kindly helped me with a Crocodile—“struck stiff.” For numerous photographs illustrative both of typical scenery and of many details in bird-life, I am indebted to my gallant colleague Captain Lynes.

To my friends Dr W. Eagle Clarke, I.S.O. (Past President of the British Ornithologists’ Union) and to Mr George Bolam (among the first of our field-naturalists) my hearty thanks are due—to both for frequent advice and assistance: to the latter also for the kindly compilation of an all-inclusive index.

The crowning glory of the Sudan lies in its virgin Savagery; no appreciable area has yet been filched from

its primæval possessors—whether wild men or wild beasts. Twenty years ago a similar remark applied to British East—or the Kenya Colony as we must now call it. To-day, though splendid hunting-fields therein remain untouched, yet the Uganda railway has opened those healthier highlands to white settlers and colonists—fortunate, that, for Civilisation and the Empire. Such, however, can hardly occur in the Sudan, which, although capable of infinite development, will never become a “White Man’s Land.”

Over all South Africa, over hunting-fields where within a century, Cornwallis Harris, Gordon-Cumming, Baldwin, Oswell, and—within my own day—SELOUS achieved exploits that can never be repeated, flaunts that sinister writing on the wall, *Ichabod*. In my Sudan, primæval conditions continue absolutely unchanged; and grateful indeed is the Author that to him it has been granted, both there and in Equatoria, to witness those glorious scenes during seven strenuous expeditions to the Heart of Africa.

In conclusion, may I add that these Sudan expeditions complete a tale of fifty-four overseas ventures carried out during half a century—1869-1921—all inspired primarily, and many exclusively, by innate love of this Study of Wild Nature and by a ceaseless ambition to perfect personal acquaintance with ever more and more of her creatures—always, for choice, with those whose natures—savage, shy, or reclusive—render them the most intolerant of human prying into their secret lives. May this book serve to stimulate and to reinvigorate this, the grandest (yet the most neglected) of field-pursuits—**THE STUDY OF WILD NATURE on living lines.**

ABEL CHAPMAN.

HOUXTY, WARK,

NORTHUMBERLAND, *May 23, 1921.*

CONTENTS

CHAPTER I

	PAGE
INTRODUCTORY	I

CHAPTER II

THE DESERTS	20
(I) The Eastern Gateway of Sudan ; (II) The Interior Deserts— Stalking the Desert-Gazelle ; Three Typical Examples from Diary.	

CHAPTER III

VOYAGE UP WHITE NILE	36
Khartoum to Uganda—A General Survey ; (I) "The Desert-Stretch"— A Gale on White Nile.	

CHAPTER IV

VOYAGE UP WHITE NILE—(<i>continued</i>)	55
(II) The Forest-Region—First Days in Forests of Kordofan—A Misadventure—Grivet Monkey—The Seroot-Fly—A Lion Note.	

CHAPTER V

TIANG	80
Tiang-stalking—(I) Sobat River ; (II) An Oft-obstructed Stalk ; (III) Penultimate ; (IV) Final. Hartebeests of the Sudan (True Hartebeests).	

CHAPTER VI

THE ROAN ANTELOPE	95
Stalking Roan Antelope—(I) Meshra-el-Zeraf, White Nile ; (II) Kor- dofan—Postscript.	

CONTENTS

	PAGE
CHAPTER VII	
THE FORESTS OF KORDOFAN	108
Sketches of Bird-Life in the "Ethiopian Region" (Two Typical Days)— The Two Jebels of White Nile.	
CHAPTER VIII	
WATERBUCK	125
CHAPTER IX	
VOYAGE UP WHITE NILE—(<i>continued</i>)	135
(111) The Western Bend (Open Steppe)—A Sketch of Bird-Life on the Western Bend.	
CHAPTER X	
A FIRST PRIZE OF SUDAN	149
The Saddle-backed, or Nile Lechwi—A Memorable Afternoon with Saddleback—A Note on Nomenclature, with Special Reference to the Nile Lechwi.	
CHAPTER XI	
THE WHITE-EARED COB	164
CHAPTER XII	
BUFFALO	178
CHAPTER XIII	
HIPPOPOTAMUS	193
CHAPTER XIV	
OSTRICH	205
CHAPTER XV	
WILD MEN AND WILD BEASTS	209
CHAPTER XVI	
THE SHILLUK'S CONCEPTION OF GOD AND OF CREATION	217

CONTENTS

xiii

CHAPTER XVII

	PAGE
NILE ANGLING	223

CHAPTER XVIII

VOYAGE UP WHITE NILE—(<i>continued</i>)	226
The Western Bend (by the Zeraf River): (I) A Morning in a Marsh; (II) Khor Attar; (III) Elephants and Buffalo.	

CHAPTER XIX

LAKE NO	247
-------------------	-----

CHAPTER XX

THE SUDD	259
--------------------	-----

CHAPTER XXI

BEYOND THE SUDD	273
(I) A Stronghold of the African Elephant; (II) Mongalla; (III) Bird-Life; (IV) Rejaf; (V) "Hell's Gate"; (VI) Homeward-Bound.	

CHAPTER XXII

KHARTOUM AND OMDURMAN	299
---------------------------------	-----

CHAPTER XXIII

BLUE NILE AND DINDER RIVER	311
(I) Blue Nile—Eneikliba; (II) Dinder River—The Arab Tribes of the Blue Nile and Dinder—Big-Game of Blue Nile and Dinder.	

CHAPTER XXIV

THE WHITE ANT	330
-------------------------	-----

CHAPTER XXV

THE MINOR ANTELOPES AND GAZELLES OF SUDAN	335
(I) The Reedbuck; (II) Būshbuck; (III) Oribi; (IV) Gazelles in the Sudan.	

	PAGE
CHAPTER XXVI	
THE RED SEA HILLS	347
CHAPTER XXVII	
AN AFTERNOON WITH ARIEL AND IBEX	361
CHAPTER XXVIII	
THE RED SEA HILLS—(<i>continued</i>)	366
CHAPTER XXIX	
ERKOWIT	375
CHAPTER XXX	
AFRIC'S CORAL STRAND	385
(i) "Big-Game Fishing"; (ii) Bird-Life on the Red Sea Coast; (iii) The Coral Islands of the Red Sea.	
CHAPTER XXXI	
THE NORTHERN GATEWAY OF SUDAN	400
APPENDICES	
A.—THE GIANT ELAND AND WHITE RHINOCEROS	405
B.—COLOUR-PROTECTION IN RELATION TO WILD BEASTS AND BIRDS OF THE SUDAN	410
C.—COLOUR-PROTECTION IN RELATION TO BIRDS	427
INDEX	439

ILLUSTRATIONS

FULL-PAGE

	FACE PAGE
Map of the Sudan	<i>Frontispiece</i>
Young Tawny Eagle in Nest—Fashoda	10
Nest of Lanner-Falcon—Fashoda	10
Baggára Women and Children—White Nile	14
Baggára—The Nomadic Cattle-Owning Arabs of White Nile	14
Among the Red Sea Hills	20
Typical Vegetation among the Red Sea Hills	22
Typical Hard Stony Desert	26
On the Summit of a Koppie in the Desert	26
<i>Isis</i> —My Gyassa of 1913—The Start	38
Sandstorm at Khartoum	38
<i>Candace</i> at Khartoum	40
Our Triumvirate of 1913-14	40
Ruddy Sheld-Ducks	48
Our Staff aboard <i>Candace</i> , 1914	54
Our Crew aboard <i>Candace</i> , 1914	54
Roan Antelope—Noontide (Kordofan)	96
A Weird Hunting Scene—Waterbuck	128
Grass-Fire on White Nile	134
Wildfowl on White Nile	134
Eagle-Owl	134
Animal-Sympathy (Saddle-backed Lechwi)	158
White-eared Cob	176
<i>Candace</i> near "Buffalo-Bight"	188
White Nile—A Lateral Creek	188
Hippopotamus—Hauled Ashore by Shilluks	200
A Hippo's Landing-Place	200
Shilluks on River-Bank alongside <i>Candace</i>	212
A Hunting-Party of Shilluks	212
A Colony of Glossy Starlings	226
On White Nile near Renk	226
Two Lion-Cubs	248
Shilluk in Ambatch Canoe—Lake No	248

	FACE PAGE
Battlefield of Omdurman, 1919	310
On the Battlefield of Omdurman—Graves of Dervish Emirs	310
Between Sinkat and Sarrowit	348
On the Plateau of Sarrowit	348
Dragon-Tree and Caraib, near Sarrowit	350
Balanced Boulder, near Sarrowit	350
The Red Sea Hills	352
Amongst the Red Sea Hills	354
Heads of Ariel	354
No. 1—Nest of Desert-Lark, Sarrowit	356
No. 2—Nest of Desert-Lark, on Coast	356
No. 3—Nest of Desert-Sandlark	358
No. 4—Nest-Cranny of Desert-Sandlark	358
One of the "Khors" near Sarrowit	360
Raven's Eyrie near Sarrowit	360
Our Camelry trekking towards Erkowit	360
In the Hills near Erkowit	360
On the Way to Erkowit	376
Euphorbias, near Erkowit	376
Giant Eland	408

IN TEXT

	PAGE
"Thorns"	3
White-eared Cob	8
"Shall I Go?" (Crocodile)	19
Desert-Gazelles at Home	25
Bifasciated Desert-Lark	28
Cricket-Warbler	28
Addra Gazelle	30
Nile Geese	42
Demoiselle Cranes	43
Egyptian Geese	44
Crowned Cranes	45
Heads of Spur-winged and Comb Geese	47
Sunset on White Nile—Glossy Ibis	49
In the Twilight—Cranes	51
Goliath Heron	52
"Gorged" (Crocodile)	54
Sacred Ibis	56
In the Riverside Trees (Egrets and Darters)	58
Hagedash Ibis	59
A Spook-like Apparition (Openbill Stork)	59

ILLUSTRATIONS

xvii

	PAGE
Glossy Ibis	60
Egret Hunting	61
Spoonbills	61
Hornbills	62
Egrets and Heron	63
Pied Kingfisher	65
"A Row of Brilliant Bee-eaters"	66
"Flutter, Flop, and Tumble" (Hornbills)	67
Red-fronted Gazelle	68
Stone-Curlews	70
Black-headed Heron	70
Grivet Monkey	77
Seroot	78
Tiang on Gaze	81
Heads of (a) Tiang, (b) Jackson's Hartebeest	82
Tiang at Midday	83
Tiang at Play	85
Giraffe on the Zeraf River	85
Coming to the Kill (Marabou)	90
"Room for Three" (Giraffes)	92
"Marabou Over"	94
Harnessed Bushbuck	102
Roan Antelope	104
"Strolled sleepily across our Front" (Roan Antelope)	105
Little Bittern	109
Darters	111
Saddle-billed Jabiru	112
Goliath Heron	113
Bishop-Stork	115
Bishop-Storks	116
Wood-Hoopoe	118
Banded Goshawk	118
Wart-hog Boar	119
Rock-Rabbits	123
Two Waterbuck Bulls	126
Waterbuck Bull—Warned by Wives	131
Saddle-billed Jabiru on Wing	134
"Whistling Teal"	136
A Passing Flight of "Whistling Teal"	137
Grey Heron	139
Goliath Heron	139
"The Bolshevik" (Pied Crow)	140
White-headed Vultures	141
River-Eagle	143
Swallow-tailed Kites	145

	PAGE
The Sobat Bush-Lark	146
Sobat Bush-Lark	147
Our New Bush-Lark	148
Nile Lechwi, or Saddleback, chased by Shilluk Dogs	150
Hoofs of Situtunga	152
Hoofs of Cob ; Situtunga ; and Lechwi	152
Nile Lechwi, or Saddleback, in Normal Attitude	153
Aiming with Telescope-Sight	156
Hoofs of Lechwi and Hartebeest	161
Do. " Rubber-Tyred "	161
" In the Neck " (Crocodile)	163
White-eared Cob	166
White-eared Cob	167
" Suspicion " (White-eared Cob)	174
" Treading on his Tail " (Spotted Hyena)	180
" Face to Face " (Bull- Buffalo)	181
" With Enormous Corrugated Bosses "	183
Buffalo-Bulls Right-and-Left	186
Horns of Two Old Buffalo-Bulls, showing Divergent Types	191
Demoiselle Crane	192
Hippos Afloat—Bull and Cow	194
Shilluk Harpoon for Hippopotamus	198
Shilluk Chief	199
Landing a Bull-Hippopotamus	201
Behemoth in Death	204
Silurus-like Fish—Caught at Lake No	225
Huts of the Nuer Tribe	228
An Egret	228
Tchagra, or Red-winged Bush-Shrike	229
My Shilluk Belle	230
Giraffes near Jebel Zeraf	231
Two Sudan Secretaries (Unpaid)	232
Wart-Hog Boar	232
Sacred and Hagedash Ibis	233
" Murderous Mandibles " (Saddle-Billed Jabiru and Stilt)	235
" Stands Statuesque " (Wood Ibis)	236
" Crop-Full "—Mid-day. (Wood-Ibis at Khor Attar)	238
" Spread out to Dry "—Darter	239
Darter on Wing	239
Darters	240
Whistling Teal	241
Whistling Teal	242
The Illusion	244
Two of the Herd—Elephant Bull and Cow	245
Two Jacanas and Night Heron	246

ILLUSTRATIONS

xix

	PAGE
A Family Feud—Fiscal Shrikes	250
Scissor-Bill	251
Openbill	251
“A Certain Liveliness” (Serpent-Eagle)	254
“Expectant” (Pied Crows)	256
African Cormorants and Jacana	258
Goliath Heron on Wing	262
In the Sudd—Night Herons	266
<i>Microparra capensis</i>	266
Abdim's Stork	267
Whale-headed Stork	268
Night-Herons (immature)—Midday	269
Elephants in the Sudd. A.—“Stroke jauntily past”	270
Do. do. B.—“Somnolent”	271
Do. do. C.—“Explosive”	272
“Disturbed but not Dismayed” (Elephants)	276
Bull Elephant—200 lb. Ivory	277
Elephant Cow and Calf, near Sheikh Tombé	278
Striped Hyena, shot near Gondokoro	279
Elephant Cow tearing up Cane-Grass	281
Grey Hornbill	284
Dhurra-Finch in Summer Dress	284
Head of Grey Hornbill	285
Black-shouldered Kite	287
Instinct at Fault—“Kite Over” (Bush-Cuckoo)	288
Asleep in Cane-Jungle (do.)	289
In act of “Bubbling” (do.)	289
Crested Hawk-Eagle	292
“Balancing”—(Marabou)	294
Abdim's Stork	297
“Taking the Morning Sun”—Wood-Ibis	298
Silverbills Sunning	300
Colies on the Erythrina	301
Silverbills Courting	302
Long-tailed Doves on our Erythrina	303
Sunbirds—On Blossom of Erythrina	305
The Barbaric Beauty (Sunbird)	307
Doves in the Dusk	315
White-tailed Lapwing	315
Paradise Whydah-Finch	317
Grivets Reconnoitring	319
Grivets Drinking	319
Bush-Cuckoo	320
Grivets Drinking—Dinder River	322
Bridled Bee-eater	323

	PAGE
Paradise Whydah-Finches	323
Red-wattled Lapwings	324
Crested Hawk-Eagle—Soaring	326
Booted Eagle— do.	326
Bateleur Eagles— do.	329
Horns of Reedbucks	336
Isabelline Gazelle—Horns of Young Male	338
Oribi Browsing	340
"Caught Napping"—Oribi	341
Gazelle on Zeraf River	342
Ariel	346
Ariel—The Midday Siesta	351
Heads of Ariel	352
Raven on Head of Ariel—Sarrowit	359
Pied Crow—Sarrowit	360
Ariel	362
"As he Fell" (Ariel)	363
Section-Sketch of Nest of Ant-Chat	365
Among the Crags by Sarrowit—(Gazelles)	367
Arab Snare for catching Gazelles	370
Garganey	374
Broad-winged Ravens at Erkowit	380
Erkowit Kite perched on Head of Isabelline Gazelle	381
Head of Erkowit Kite	382
Nests of White-eye (<i>Zosterops</i>)	384
White-eyed Gull—Immature	389
White-eyed Gull—Adult	390
Tropic-Bird, Gulf of Suez	391
Foot of Tropic-Bird	392
A Colony of Watch-tower Crabs	394
Gulls in the Red Sea	395
Openbill Stork	399
Colour and Light (Zebras)	404
White Rhinoceros	409
Squacco Herons	430
"Rippling Plumes" (Heron)	432
Finch-Larks	433
"Protection that fails to Protect" (Finch-Lark)	434
"Am I Invisible?" (Purple Heron)	436
Colour and Shade (Giraffes)	437
Squacco Heron Fly-Catching	452

S A V A G E S U D A N

CHAPTER I

INTRODUCTORY

THE SUDAN comprises one-fifth of the African Continent. Leaving exact measurements to the text-books, its area approximates to a million square miles—roughly speaking, tenfold greater than that of our British Islands—and, of that million, only a paltry two thousand are cultivated. It follows that practically the Anglo-Egyptian Sudan remains to-day an “unspoilt wilderness”—abandoned to wild men and wild beasts—and that vocal fact symbolises its attraction to the author.

A second outstanding character lies in the fact that the Sudan is divided physically and geologically into two distinct and approximately equal halves. The northern half (600 miles) is all desert—that is, Sahara: the southern, largely alluvial plains.

THE NORTHERN DESERTS are simply the eastern terminus of the Great Sahara which, commencing somewhere beyond Timbuctoo, traverses the entire continent, thence to the Red Sea. In depth extending to 600 miles, these Deserts actually enclose Khartoum itself; and the whole of this area (whether the sandy plains of the interior or the barren mountain-ranges that fringe the Red Sea littoral) is virtually useless save only to nomad Arab tribes.

THE SOUTHERN PLAINS commence where Sahara ends, 100 miles south of Khartoum (or, say, about the 13th or 14th degree of North latitude). Thence for a

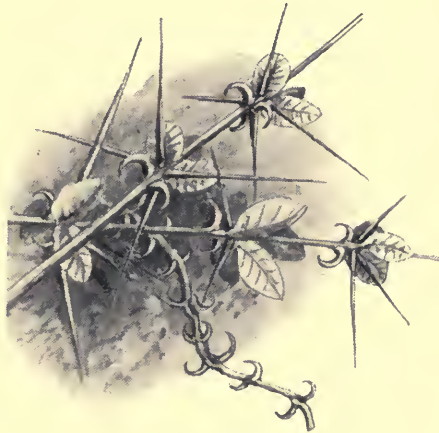
thousand miles southward (excepting the interruption of the Sudd) fertile plains border the Nile, every mile of them deep black "cotton-soil," the alluvial deposit of age-long Nile-floods, and all capable—*subject to irrigation*—of producing perennial crops of grain, cotton, and coffee. These introduced products, supplemented by the natural yields from rubber, fibre, gum, and other indigenous tropical plants, will in the years to come reinforce the resources of the British Empire. At present the fat years must remain a dream of the future; meanwhile the big-game hunter may enjoy his passing day.

The human inhabitants of these vast southern regions are exclusively the aboriginal black tribes, still absolutely and delightfully "savage," since Arab colonisation (as distinguished from mere slave-raiding) never penetrated beyond the southern fringe of the Deserts.

To the hunter-naturalist the facts set forth convey a forceful appeal; for to him they imply nothing less than the survival of a Terrestrial Paradise and, in my case, a preliminary survey promptly proved that the presumption was correct. As a hunting-field, Sudan stands—not first, but certainly among the foremost of those still extant, and in some respects, unique; while for the study of bird-life the basin of Upper Nile forms a focal point hardly to be excelled. Even the Deserts possess a fascination of their own, though to my regret the interruption of the War has prevented a more complete exploration of their further recesses. But I have no desire to make extravagant claims for the Sudan, and later in this chapter have drawn up a careful comparative analysis of its advantages and disadvantages in relation to other regions of Africa and elsewhere.

There is, of course, an obverse to every picture. Enthusiasm may be content to ignore the fact, but that is hardly ingenuous. Africa possesses minor drawbacks in infinite variety. Everything is *hard*: whatever you touch is apt to hurt, to pierce and lacerate. Twenty-

odd years ago the first advice given me was, "If ever you touch anything soft, *clear*." Next day my mentor, suddenly springing backwards, landed with iron heel upon my instep. He had stepped on "something soft." It was a puff-adder! Passing over snakes and scorpions, tsetse and seroots, with the whole tribe of flying terrors, we have Baker's testimony that "every bush and herb in Africa is armed with lances and swords, daggers, bayonets, fish-hooks, hay-forks, and harpoons." His banter is, in fact, almost too mild, since many plants are doubly and trebly armed not only with penetrative spears, spores, and spicules, but with subtle re-curved thorns more prehensile than barbed wire; while in some species each series of man-traps is cunningly concealed beneath twin pairs of leaves springing from the identical point. The ubiquitous



"THORNS."

kitteir (Arabic, *kittr*) is a masterpiece of vicious malevolence, and two thousand years ago during the Punic Wars the allied caltrop-thorn suggested an instrument modelled in its own similitude that brought charging cavalry to a standstill.

A certain monotony of landscape may be accounted a disadvantage to Sudan. For 1500 miles or more the waterways of Nile and White Nile traverse dead-level plains with never a hill to vary the endless vistas of sandy desert, of grass-prairie, or of grey-green forest: and then the Sudd! a hundred leagues of dismal papyrus. Such transient beauty as a Sudan landscape may display

is oft illusory; those soft attractive hues are but the deception of tropical sunlight akin to the mirage of the desert. Scenes which more powerfully impress—though not by their beauty, unless there be a beauty in appalling desolation—are the Northern Deserts, the Deserts of Nubia, stretching for 500 miles to the northward from Khartoum. It was across these that in 1897 Lord Kitchener drove his strategic railway. Nowadays one surveys the whole (and better realises his difficulties) from the comfort of a “tropical train” running thrice a week!

But though, on the Nile, contours may weary, yet colours oft offer compensation. So intense in these vast spaces is the element of light, with contrasted shade in equal ratio, that the brilliance of colour-effects at dawn and dusk transcends anything I have seen elsewhere, and tenfold more the power of words to portray. Such things no wise man will attempt—possibly even this bald inference exceeds the limit:—

“What skilful limner e'er would choose
To paint the rainbow's varying hues,
Unless to mortal it were given
To dip his brush in dyes of heaven?”

—*Marmion*.

It has, however, been charged against writers on Africa's wilder aspects that they have no eye for Nature's beauties beyond the big-game. The reproach may be deserved; but it is fair to reply that, by the nature of their avocation, both big-game hunter and wildfowler witness that spectacle of the sun “rising over the rim” (as the poetic define the phenomenon) some six times a week, and so frequent a repetition of sonorous epithets would surely pall. A shy suspicion even suggests itself that some home critics in their normal lives are but little habituated to enjoy these matutinal scenes. In Africa the habit is— or ought to be—rigid as the laws of Medes and Persians. In those first few hours of daylight is concentrated the

cream of the whole—more delicious than all the twenty forbye, not only in physical comfort but in opportunity for observation of wild-life, great or small. Even from the regular mail-steamers of the Sudan Government on White Nile many a striking spectacle may almost daily be witnessed. Travellers of the globe-trotter type doubt this. Why? Because they never turn out before “breakfast at nine” . . . and, after that, play whisky-poker.

BIG-GAME.—The Sudan must rank as one of the more important of Afric’s varied hunting-fields. Its game-list is quite long and intrinsically interesting. Probably no other area to-day holds more elephants, nor heavier ivory; but—more important—the Sudan can claim a virtual monopoly in no less than eight distinct species of game-animals, including two of the biggest beasts yet extant here on earth. These two are the Giant Eland and the White Rhinoceros, both still fairly numerous though restricted within dangerously narrow limits in the Bahr-el-Ghazal and Lado Enclave.¹ Besides these two in the extreme south, six other species are practically endemic to Sudan. These six include (on the alluvial plains) the Tiang and White-eared Cob; on the marshes, the rare Saddle-backed Lechwi (*Onotragus megaceros*, Heller); while on the Saharan Deserts of Northern Sudan roam three strangely specialised desert-forms, to wit—the sabre-horned Oryx leucoryx, the Addra gazelle, and the Addax, most reclusive of all.

In claiming these eight animals exclusively for Sudan, I am of course aware that wide-ranging nomads of their type disregard purely political boundaries—such as often serve in Africa, merely, for example, degrees of latitude or longitude, the Equator, and similar intangible conventions. Desert creatures wander afar beyond such precise geographical limitations; but the point is that the Sudan is the place to get these prizes.

¹ The white rhinoceros has since been placed on the Protected List—that is, none may now be shot. One giant eland is allowed.

Besides these "exclusive creations," the Sudan shares with other African areas quite an extensive game-list, including particularly lion and leopard, buffalo and giraffe, roan antelope, koodoo, waterbuck, various hartebeests, bushbuck and reedbuck, ibex, ariel, and a variety of gazelles, together with wart-hog and many minor kinds of game.¹

This imposing array notwithstanding, it is right nevertheless to add that neither in quantity nor in variety of game does Sudan equal the great hunting-fields farther south. This employment of a comparison is in no proper sense derogatory. The modern hunter has no use for quantity: his object is ever the *aliquid novi*—some new acquaintance or trophy. The object is to suggest that for those who have time and opportunity for both, it would be advisable to take Central and Equatorial Africa first, leaving the Sudan for a subsequent effort. But on no account should the latter be omitted by one who desires a comprehensive insight of the greater African fauna.

To cite my own case, a preliminary expedition in South Africa proved disappointing—that field (in 1899) was already played out. Then, after various other ventures, the opening of the Uganda railway led me to British East Africa, and its teeming wealth of wild-life came as a revelation. To that region I am indebted for memories as glorious as hunter-naturalist may ever realise—or even dream of. Lastly came the Sudan, and I bless the guiding star that directed my final steps thither.

If it be permissible to carry the personal retrospect further, another comparison would be appropriate. Namely, that between our present subject of African hunting and my own antecedent period in Europe, when strenuous days and even weeks were spent—say in Spain or in Norway—in almost desperate efforts to secure an

¹ *Oryx beisa* strays over the mountain-plateaux that adjoin the boundaries of Eritrea, and in the same region is also found the greater koodoo on the Settite and Atbara rivers, and in the hill country along the Abyssinian frontier—as well as in Western Kordofan.

odd head or two of big-game, efforts that ofttimes resulted blank. In such European lands there would be, as a rule, but a single species in any given area, and scarce—even problematic—at that. A whole week's hard hunting might fail to produce even so much as a distant sight of game. Thus in Scandinavia my average during several seasons worked out at over nine days' work for every bull-elk shot in the northern forests; while, on the "high fjeld," each reindeer represented some six and a half days of supreme labour and rock-scrambling. How different is the case in Africa! In that favoured continent it is not unusual to have scores and even hundreds of head of big-game (including many different species) within view at once. In East Africa I have counted ten species from one standpoint (*On Safari*, p. 224), and in Sudan, on the Zeraf River, as many as seven. In each instance the aggregate numbers would run into many hundreds.

But, after all, that hard initial apprenticeship in Europe remains a cherished memory; and besides, the contrast enables one to appreciate so much the more fully and keenly the abounding joys of Africa.

In Sudan, the far-flung flats, innocent of hill or hollow, the reed-clad marsh and morass, and open forests seem to suggest that such should be a difficult stalking-country, since the stalker's art is always easier in a rugged and broken region. That, however, is not in fact the case. Sudan game is rather less difficult of access than that of most other hunting-grounds within my own experience. Like all plain-dwellers, these Sudan animals possess the very keenest of vision, yet hardly avail themselves to the full of that faculty. True, the game is ceaselessly harassed, in season and out, by the savage tribes—Shilluk, Dinka, and Nuer—yet hitherto it has not been so fully introduced to the long-range rifle as have its congeners further south. Hence the game's conception of its true danger-zone is, as yet, too narrow, and in that pristine simplicity undue risks are accepted. Other

writers, on the contrary, have described Sudan game as excessively wild. I can only give my own comparative experience. The immense numbers of huge ant-hills scattered over the open prairies may sometimes aid the stalker to approach single animals or small groups; though for big herds, widely extended, such relatively small objects as ant-hills obviously serve no such useful purpose. The



WHITE-EARED COB.

forest-stalking, moreover, is often greatly facilitated not only by the heavy growth of grass and bush between the open trees, but also by the wreckage created partly by windfalls but largely by elephants. Everywhere lie trees uprooted and prostrate, the fallen boughs all interlaced with jungle-grass and a variety of prehensile plants that afford the best of cover. Given a reasonable degree of field-craft, the less vigilant animals—such, for example, as waterbuck, oribi, reedbuck, cob, sometimes tiang, and even the lofty giraffe—may on occasion be approached

within half-gunshot ; in proof whereof I have sketched all these and even the roan (shockingly badly, it is true), close at hand, yet wholly unconscious of my presence.

New countries present new sensations. The hunter at first is beset with surprises. Much of the big-game of Sudan is associated in his mind with the co-existence of several other kindred species ; but here the latter are lacking. In vain his eye scans Nilotic plain for the shaggy figure of the brindled gnu, or for its customary pal the zebra. Why are they absent? Again, in these forests of Sudan he might reasonably expect to find the noble sable, with impala on their outskirts. But no ; for some inscrutable reason the four familiar friends just named all elect to stop short, somewhere down by the Equator. The Sudan they utterly eschew, though its forests and veld appear precisely adapted to their requirements, and just such country as they love further south.

Geographical distribution presents a series of enigmas, and the principles that govern it are steeped in mystery. Certain animal-forms persist practically throughout the length of Africa. Others, though of precisely similar tastes, arbitrarily limit their range within rigid bounds, though neither palpable cause nor physical barrier exists. In those regions where the range of the two groups coincide, both sets live alongside and even herd together. Obviously they are not antagonistic, socially or economically. Their habits and requirements agree. Why do their ranges differ? The total absence from the Sudan of several species which logically ought to inhabit it is striking—almost speechful. Witness the four cited—the gnu, impala, sable, and zebra ; and many more might be mentioned.

A majority of the African game-animals (especially the antelopes) unquestionably affect the Southern Hemisphere and presumably sprang therefrom, though many have extended their range northwards till stopped in mid-Sudan by the barrier of Sahara. On the other hand,

there are genera conspicuously indigenous to the northern half of the continent. Gazelles, for example, begin at the Mediterranean, abound most in Ethiopia, but peter out shortly after passing the Equator. The Cob family also (*Adenota*), together with the little dikdiks, seem typically though not quite exclusively Ethiopian.

While yet busy with these chapters, I find that Darwin long ago summed up this matter thus (*Origin of Species*, 3rd ed., p. 5):—"Who can explain why one species ranges widely and is very numerous, while another allied species has a narrow range and is rare?" Again, at p. 411:—"We cannot hope to explain such facts, until we can say why . . . one species ranges twice or thrice as far, and is twice or thrice as common as another species within their own home."

Surely after that no more need be said on the subject, save only that while fresh material has been accumulating during seventy or eighty years, no fresh light has been thrown on the problems that puzzled Darwin.

BIRD-LIFE in detail is described throughout this book. The outstanding feature in Sudanese ornithology is that the sequence of bird-life throughout the year yet remains unascertained—more so, probably, than that of any other explored region on earth. No fault attaches to ornithologists: the cause lies in local climatic conditions, and in those physical obstacles which forbid exploration of the interior during spring, summer, and early autumn.

Those periods, needless to say, normally form the seasons of chiefest interest; for it is during their *breeding-time* that birds reveal their secrets and when ornithologists garner harvests. In the Sudan no such harvests are possible. Nature forbids. In winter we can travel afar throughout the country and can see all there is to be seen without difficulty. But no sooner has spring come than torrential rains and the swollen Nile—quadrupled in volume by Abyssinian floods—transform the lower levels into one vast swamp, submerged and impassable



YOUNG TAWNY EAGLE IN NEST—FASHODA, March 6th.



NEST OF LANNER-FALCON—FASHODA, March 6th, 1914.
(In a heglig tree.)

[To face page 10.]

to man; while simultaneously a corresponding outburst of furious tropical plant-growth chokes the land with an impervious cane-jungle. Behind an impenetrable veil Nature proceeds with secret schemes.¹

When, or at what season birds breed in the Sudan it is virtually impossible to ascertain. What can be stated with certainty is that the breeding-season is a chaotic jumble of dates. Some species or some genera are found nesting at all seasons. Thus in mid-winter we discovered various eagles and vultures, falcons, owls, certain weaver-finches, shrikes, sunbirds, silver-bills, larks, hammer-head and many more, all with eggs; while others, though congeneric, were living under purely winter conditions.

No better example of this topsyturvydom can be adduced than the Nile geese (*Chenalopex ægyptiaca*). These we found in mid-winter in precisely that condition which is common to all European wild-geese at a similar season—that is, they were strong, wild, and watchful in the extreme, virtually inaccessible. Closer acquaintance, however, revealed the singular fact that amidst their mandefying flotillas swam others that were absolutely incapable of flight—the adults because, being in full summer moult, they had cast all their quills; the goslings because, owing to their youth, they had not yet acquired theirs. Now this is the physical condition in which one finds the wild-geese of northern regions during the month of August. Here in the Sudan it was in January and February. Obviously these flightless geese had hatched their broods in late autumn—November or December; whereas the wild-flying majority must have followed more normal habits and bred during spring and summer.

Presumably the bulk of Sudan-breeding birds (both

¹ The exact period of the breeding-season with birds is necessarily regulated by the degree of latitude. Thus in the Arctic with its short and sharply defined summer, the period is rigidly restricted to six or seven weeks. In sub-tropical regions—even in Spain—it extends to as many months; in the Sudan, throughout the year!

as species and individuals) select the spring for that purpose; but a considerable proportion certainly nest in autumn, while others—possibly individually—are quite irregular, disregard seasons altogether, and nest whenever instinct so impels. It was the moulting-condition of many birds shot in mid-winter (along with the case of the geese just mentioned) that first gave a clue to this amazing confusion of seasons. At that period (December and January) birds should normally be in their most perfect plumage: in Europe they all are; yet in Sudan many were heavily in moult, some disreputably ragged—pointing to such birds having bred in autumn. I find in my note-book this query:—Do African birds, like African savages, never possess a decent dress? or do they compromise with their torrid clime by wearing but half the usual allowance of feathers?

THE SAVAGES OF SUDAN.—The human race having ever interested the author rather less than those of lower order, I refrained in previous works from touching upon the subject. To describe peoples whose language the critic hardly knows—or knows not at all—seemed an impertinence. So stark and savage, however, are the aboriginal tribes of Sudan, so little elevated above the “lower orders” aforesaid, that mere language matters little. The main traits and character of these wild children of Nature are at least as transparent as those of beast and bird with which this book is chiefly concerned. My own contact with the pure-bred savage of the Sudan (and equally of Equatoria) leaves nothing but pleasant memories and a confidence in their ultimate development under British guidance and dominion; also, I may add, in their intrinsic value to us. Personally, I liked these savages all; because, though savage to the core, they are true to Nature’s type; idle if you like, but friendly, simple, and unsophisticated—though that last epithet excludes neither cunning nor deceit. Immensely tall and muscular—typical athletes, trained to

strenuous exercises—the savage tribes (especially Shilluk, Dinka, and Nuer) form, in the Sudan, a distinct asset of Empire. They represent magnificent human material—to-day, it is true, the rawest of raw material, which will need lengthened processes of manufacture. But, in British crucible, that material is worth the work, however long. The Sudan, not being a “white man’s land,” can never be “developed” except by aid of its own developed aborigines. Luckily the aborigines are there. By the fanatic wars of the Mahdi and the Kalipha, and the subsequent ravages of disease, they had been reduced, at the time of the reconquest, to one-third of their original numbers; still there survived some two or three millions of stalwart human beings, quite amenable to cultivation, and physically capable of anything. Moreover, under the *Pax Britannica*, their numbers are now increasing by leaps and bounds.¹

ARABS.—The Sudan is not entirely inhabited by pure savages. One must travel 300 miles south of Khartoum before first encountering these wild seven-foot(?) blacks. All the northern half, stretching across to the Red Sea, is occupied by the adventitious Arab who in bygone age came as a conqueror and still remains the dominant race, boasting a relatively far higher civilisation. In the south, the degree of Arab civilisation tends to fall back. Thus in Kordofan, the Baggára tribe—once the

¹ Lord Cromer in *Modern Egypt* (p. 889) put the population of the Sudan in pre-Mahdi days at $8\frac{1}{2}$ millions. Of these, $3\frac{1}{4}$ millions were killed in battle; while other $3\frac{1}{2}$ millions were swept away by famine and disease—chiefly smallpox—all directly attributable to Mahdiism. He estimated the existing population in 1911 at 2 millions.

Beyond all question the wild tribes of the Upper Sudan are “savages” in the fullest interpretation of that term. I have so called them throughout this book; but always with a sort of subconscious sense of thereby doing a certain measure of injustice to these stark and long-limbed fellow-subjects. The last five years, however, have invested the term “savage” with a new value, never anticipated. A great European nation has proved guilty of deliberate and cold-blooded acts of savagery—of bestial savagery—from which, I am convinced, Nature’s own untutored “savages” of the Sudan would shrink in loathing and disgust.

Kalipha's most truculent warriors, and the southernmost Arab outpost—appeared to me, although absolutely friendly, to include many who were but little elevated above their purely savage neighbours, the Shilluks.

On the other hand, the Arab tribes among whom we sojourned on the Blue Nile and Dinder rivers were a markedly superior race, not to be reckoned as savages at all, but courteous—not to say courtly—the bulk of them Nature's gentlemen. The civilities we daily received from these Arab peasants, along with their respectful yet self-respecting bearing, formed a constant and agreeable surprise. It was among these that Baker, fifty years earlier, had formed such firm friendship with the "sword-hunters," or *Aggageers*, of the Hamram tribe—dashing horsemen who, armed only with cold steel, faced both elephant, rhinoceros, and other dangerous game. Modern rifles have shelved that profession of sword-hunting; though even to-day a pathetic relict of veteran *Aggageers* (most of them sorely crippled in eye or limb) still survive on the classic banks of Settite and Atbara. One cannot but regret that the world of sport should have suffered by the supersession of this—one of the most dashing and dangerous forms of chase ever practised.

Thus the great majority of our new fellow-subjects of the Sudan—whether savage or Arab—proved good and congenial neighbours and promise to develop later into valuable material. But—at least in a personal sense—an exception must be made in respect of the Hadendowa Arabs of the Red Sea hills. These are, of course, the redoubtable fighters, the "Fuzzy-Wuzzies" who broke our squares at El Teb and Tamai, and who, in the supreme struggle at Omdurman (under Osman Digna), ambushed the 21st Lancers. For such notable exploits one must respect them; nevertheless a more unlovable lot of stolid Bœotian churls I never met. Surly and silent, irresponsive to kindness, and devoid of all trace of human sympathy (and even less of intelligence), the



BAGGÁRA WOMEN AND CHILDREN—WHITE NILE.



BAGGÁRA—THE NOMADIC CATTLE-OWNING ARABS OF WHITE NILE.

companionship of a dog was preferable. Physically a big and muscular race, I frankly detest the lot.

CLIMATE AND HEALTH.—Seeing that the Sudan lies wholly within the Tropic of Cancer and largely within the Torrid Zone, its climate is necessarily sultry—to put it mildly. We can have at home no conception of such degrees of heat. Yet one reads extravaganzas eulogising the winter climate of Sudan as comparable with that of an English summer. Such pretensions can only lead to misconception and disappointment. When at recurring intervals the thermometer in London rises for a day or two a trifle above 80° , the newspapers go into hysterics; but such a temperature in the Sudan would be welcomed as coolness itself! In Khartoum the shade-temperature, even in winter, must average nearer 100° , while 90° is regarded as comfortable.¹

In the highlands of British East Africa, though they lie actually under the Equator, I never once remember a shade-temperature of 100° , whether in summer or winter. Those highlands, however, have an altitude ranging from 5000 to 8000 feet and upwards above sea-level; whereas Khartoum and the whole Nilotic plain only claim an elevation of some 1250 feet. This explains the greater relative heat—a heat so dry that a slice of bread turns into toast ere you have time to eat it.

In tropical Africa intense heat should of course be taken without saying; but it would be idle to ignore it, or the many other minor inconveniences incidental to the Torrid Zone. None of these things—neither heat nor the rest—weigh with me one grain in the balance as against the countervailing joys; and equally the collateral benefits derived from each African sojourn. That latter

¹ Doubtless thermometrical readings have been registered with meticulous precision and quite probably may contradict these figures. But I have not studied them, for, in my view, they afford no really sound criterion of the actual suffering endured. All sorts of influences such as sun-glare, “actinic rays,” and the like (of which I know nothing), combine to affect the issue far more than the mere degrees of Fahrenheit.

definition refers to health. It is nothing less than Afric's due that I should place on record the fact that after each strenuous expedition (alike in Equatoria and the Sudan) I have returned home invigorated and rejuvenated. I deprecate this remark being construed as purely personal—much less egotistic. It is written in no such sense. Health and strength (to say nothing of a renewal of youth!) are objects of prime importance to all: hence this experience of mine may have a value to others. That it is no mere passing fancy but a verdict based on years of personal experience, will be demonstrated by a reference to my *On Şafari*, p. 7, wherein, a dozen years ago, I expressed the identical opinion as regards East Africa which I now confirm respecting the Sudan.

Merely to hang about the verandah of some hotel at Khartoum or Nairobi, imbibing iced drinks, would certainly fail to produce the results specified. But a good hard winter's work on the outer veld is, in my case, equivalent to adding, shall I say? a couple more years to "Life on the First Letter." Now, after that advertisement, the Sudan Government may well "buck up" and present the author with the freedom of their country for life!

Appropriately may here be mentioned an incidental advantage that the Sudan offers to those already past the meridian of life. The Upper Nile can be exploited *by sail* for upwards of 1200 miles, with far less strenuous physical labour than is demanded by every other African hunting-field. The traveller lives afloat aboard his gyassa (a sort of sailing house-boat), taking along all necessaries—luxuries, too, if required—and from this mobile base commands the bulk of the game-country—since in the dry season all animal-life is dependent upon the river itself. To this extent the Sudan practically prolongs the period of life available for African hunting. Personally, I was well within the seventh decade ere setting foot therein.

Wild Flowers—(*An Impression on White Nile*).—Nature is chary of ornament on these sun-scorched and desiccated plains. Away from actual touch of water there can neither exist flowers nor any conspicuous variety of plant-life beyond the universal halfa-grass, mimosa, and other starveling shrub. How could it be otherwise when every winter the hungry earth with all its productions is devastated by fire? Nothing but sapless die-hards such as those named can survive the ordeal. Canes and papyrus, deep-rooted in "the water that is under the earth," may endure; but for all the less prehistoric flora, the annual veld-burning spells a death-warrant, and with the absence of flowers there follows naturally that of butterflies.

The blackened desolation left after this grass-burning presents to British eye a melancholy—not to say a hideous monotony; yet it is marvellous how rapidly the new growth springs away from soil sun-parched to cast-iron consistency. Such, moreover, is the ferocious fecundity of summer, and its densely massed vegetation, that whole clumps here and there defy even fire; everywhere sporadic patches of half-charred skeletons still stand upright—welcome aids, these, to the stalker!

The rapid renewal of growth under such conditions is eloquent of the richness of the soil and prophetic of the results that would attend irrigation.

Butterflies—(*An Impression*).—To an inexperienced eye the Sudan furnishes nothing like the beauty-display which, further south, delights one's sight; nor are its types so markedly dissimilar from those of Europe—or better, of the Palæarctic region (which sounds more scientific). Most noticeable are their obvious affinities with our own swallowtails, clouded yellows, orange-tips, painted ladies, and brimstones, besides innumerable small blues and coppers, just such as one may see at home. True, that gaudy beauty, *Danais*, occasionally flaunts its tropical splendour—so conspicuous and yet so careless of danger—because—so we are taught, though I doubt the deduction—it is "protected" by malodorous effluvia; and, more rarely, I have recognised the pansy-like gem *Junonia* (probably *J. orithiya*), that is ubiquitous from the Equator southwards. Apart from these two—and both are rare—nothing specially strikes the passing traveller as being extra-Palæarctic.

Moisture in arid Africa, however exiguous, forms a veritable lodestone to the insect-world—as to every other. Wherever the tiniest tricklet provides moistened margins, thereat will be found assembled swarms of bright-winged butterflies—small blues and brimstones chiefly—which rise at one's feet in clouds; though elsewhere never another will be seen in a long day's march. Even blood appeals. It is striking—not to say revolting—when some big beast is being “gralloched,” to watch these delicate beauties assembling to revel in gore.

Many butterflies assimilate in marvellous degree with the surfaces upon which they habitually alight. There is in Africa a speckled brown species, not unlike our wood-argus (*Hipparchia ægeria*) but “mud-coloured” on *both* surfaces to perfection, and it invariably settles on bare mud! Still more accentuated is this assimilation in the *under*-surfaces of very many butterflies. These facts are patent even to superficial observation; but the deduction that assigns their origin to “colour-protection” is probably no less superficial. Against what enemies are butterflies assumed to be “protected”?

In his *African Nature Notes* (1908), SELOUS first pointed out that birds, as a rule, do not prey on butterflies—or, to be more precise, that during his lifelong experience in Africa he had never seen a bird attack a butterfly. Upon first reading this statement, while yet in manuscript—(parenthetically I may record the pride I now feel that my dear old friend should have asked me to revise these chapters ere yet they had appeared in print)—it at once struck me as startling; yet casting back in mental retrospect, I could then only recall a single exception to the rule stated. During more than a decade which has since elapsed I have paid special attention to the point both at home and abroad, with the result that, while in Northumberland, I have *thrice* seen birds attack butterflies, or simulate an attack—no such occurrence has ever come under observation in Africa. Butterflies, in that continent, are practically immune from attack by birds.

The mantis habitually preys on butterflies, and so do lizards. The former (which is itself admirably assimilated to its environment) succeeds solely by patient statuesque immobility—awaiting the arrival of a victim by some attractive bloom:

the lizard by speed. Colour, in either case, is immaterial. No bird—none, that is, within my circle of acquaintance—troubles the *Rhopalocera*. The specific reason of their specialised colours and colour-patterns (if any) must be sought in some direction other than “protection.” Such quests, however, should be rigorously eclectic, else the only certain result will be yet further to multiply the existing mass of superficial theories and unproven deduction.

The above impressions were derived solely from the winter months. Of summer in the Sudan I know nothing, but Mr A. L. Butler (being recalled by the War) wrote me September 16th, 1914:—“The whole country is steaming—greener and more tropical than ever I have known it. Even the desert is quite green with little weeds that have sprung up all over it, and the place is alive with butterflies and hawk-moths.”

Hawk-moths, by the way, are a notable feature of the winter season. Dining in the open air, dozens of these huge insects hover around the electric lights, or flop promiscuously on the table-cloth—or on the back of one's neck! disconcerting to the nervous, but apt to set a British entomologist wild when he sees half-a-dozen magnificent creatures such as the Oleander hawk-moth (one of the rarest prizes at home) calmly alighting on a chandelier!



“SHALL I Go?”

(No: stop and be sketched. Can't waste cartridges on 10-footers.)

CHAPTER II

THE DESERTS

(I) THE EASTERN GATEWAY OF SUDAN

THE Sudan, from whichever direction it is approached, lies beset by deserts—by 100-league deserts. Should the traveller elect to ascend the Nile from Egypt, he finds himself confronted at the frontier by 500 miles of Sahara, to be traversed ere he reaches Khartoum. This is the Nubian Desert—"Devastation, Desolation, Damnation," is Steevens's terse trilogy thereof, and no more apt description need be sought. For this Nubian Desert, lying wholly north of tropical rainfalls, is absolutely waterless, and all who have witnessed its appalling sterility will agree with Steevens's anathema.¹

These Nubian Deserts I have endeavoured to describe in a subsequent chapter—"the Northern Gateway of Sudan"—so will here turn to the alternative route by way of the Red Sea, or what I call "the Eastern Gateway." A short ten days' voyage from Marseilles (or seventeen days by long-sea from London) lands the traveller at our magnificent new British harbour of Port Sudan, with its mile-long quays and modern equipment calculated to handle even the expanding exports from Sudan for many a year to come. Still even here, he is separated from Khartoum by 575 miles of sterile mountain ranges and Saharan wastes—once a serious obstacle; but to-day British enterprise has provided a desert-railway, with

¹ *With Kitchener to Khartoum*, by G. W. Steevens.



AMONG THE RED SEA HILLS.
The Home of Ibex and Ariel.

[To face page 20.]

trains de luxe that mock distance and traverse the wilderness in *hours* where our pioneers—such as Baker—spent *weeks* of laborious trekking.

From the moment of quitting Red Sea shores, the Sudan leaves one in no manner of doubt that we are back in Africa—*Africa et præterea nihil*—attractive as ever in its appalling (yet entrancing) sterility. Scarce have the coral-built quays and warehouses of Port Sudan, with the red funnels of our good ship *Gaika*, sunk behind the dunes, than we are plunged *in medias res*—into a desolation of sand, stunted scrub, and scraggy thorn.

Quickly traversing the narrow maritime plain and entering the hills, the railway climbs out for 100 miles to its culminating point at “Summit,” 3014 feet above sea-level, the gradient averaging 1 in 100, and never a “level” save only at the stations.

No prospect can well be more bleak and barren than that of these great black naked hills that overlook the Red Sea—a chaos of crags, shale-slopes, and disintegrated lava, upon which it would appear incredible that even an ibex could find pasturage. Their barrenness, however, is more apparent than real; for these hills are dew-drenched each night by the mists that sweep in from the sea, and the moisture thus distributed fosters a scant and lowly plant-life, largely mossy and cryptogamic, yet sufficient to maintain herds of ariel, gazelles, and ibex—one of the latter we actually descried from the railway, silhouetted on a sky-line 2000 yards away. The climatic facts just stated we only discovered later, during a delightful expedition among these hills in March and April, as described in subsequent chapters.

The higher peaks exceed 5000 feet and are largely of pyramidal contour, but include precipitous faces, crags, and great fang-like pinnacles that give fantastic skylines, recalling Pringle's South-African lines :—

“Sterile mountains, rough and steep,
 That bound abrupt the valley deep,
 Heaving to the clear blue sky
 Their ribs of granite, bare and dry ;
 And ridges by the torrents worn,
 Thinly streaked with scraggy thorn,
 Which fringes Nature’s savage dress
 Yet scarce relieves her nakedness.”

THOMAS PRINGLE, *Ephemerides*.

The force and fury of these torrents are attested all along by the succession of retaining-walls and breakwaters constructed to safeguard the line ; while in the beds of the *khors*—all stone-dry at this season—wild lines of boulders, strung out in chaotic processions, bespeak the power of summer floods.

Dawn reveals the fact that during the night our train has cleared the hill-country and entered the desert—typical desert that stretches away for a thousand miles westward. Having covered two hundred of those miles, we reach the Atbara, once both classic and romantic. To-day all romance is dead, for “Atbara” is a mere humdrum railway-junction.

Early that morning our train had stopped at some nameless station to replenish its water-supply—such water, be it observed, having been brought 100 miles, since none exists nearer. At a little puddle caused by leakage of the precious fluid from its tank, assembled a throng of thirsty birds—all of strangely blanched hues assimilated to their desert environment. Thereat drank crested larks of ghostly pallor ; and there were desert-wheatears, doves, and finch-larks, all likewise arrayed in those washed-out achromatic drabs and greys that are beloved of the Quaker sect ; even the local sparrow had assumed a sand-coloured tone. One of the throng, nevertheless, disdained the fancy-dress of the desert. That one exception was a cosmopolitan—no mere “Ethiopian” he, but a world-wide wanderer over both hemispheres, to wit, the white wagtail (*Motacilla alba*). One recognises him



TYPICAL VEGETATION AMONG THE RED SEA HILLS.

[To face page 22.

as an old friend—the constant companion of the salmon-fisher in Iceland, or in subarctic Norway; yet equally at home here in scorching tropic. No “creations” of costumier could conceivably fit in with each and every pre-requisite of an environment so widely varied. The white wagtail recognises that fact, and has selected a single modest dress which serves equally for all parts and purposes.

Beyond Atbara lies another 200 miles of flat and featureless desert; but during that afternoon we cross Blue Nile and steam into Khartoum—twenty-two hours’ run from the Red Sea. Such is the Eastern Gateway. There exists no other access to the Sudan, save, as it were, by a “back-door”—through British East, the Victoria Nyanza, Uganda, and the Nile sources.

(II) THE INTERIOR DESERTS

The average traveller who, from saloon-window, has surveyed those hundreds of miles of desert which cut off Khartoum from the outer world, devoutly prays that never again may his sight be shocked by scenes of the like desolation. Deliberately to undertake an expedition beyond the fringe, he would regard as madness. Different impulses actuate the field-naturalist. These spring from no mere idle curiosity but from an instinct to ascertain *something* of what may lie in the unknown beyond, even though the external aspect be abhorrent. Our own modest expeditions—alike in the Red Sea hills and here on the eastern verge of Sahara—revealed unsuspected charms and leave nothing but pleasant memories.

After all, there are deserts and deserts. Those of the north (Nubia), as already indicated, lie wholly beyond the area of rainfall, and for their unredeemed hideousness I offer no apology. Further south, however, the deserts that I here desire to picture do share in some degree the seasonal rainfalls that refresh the regions around

Khartoum, Kassala, and Kordofan; and naturally that climatic favour is reflected in the relative fauna and flora. Trifling, admittedly, is the difference: it may be diagnosed as representing that between a minus quantity and a minimum.

There suggests itself a sort of weird grandeur in the very immensity of these vast voids—even a tinge of romance as horizon after horizon reveals a changeless panorama to eyes that ache with the glare of sun-blistered sand. From sunrise to sunset there may come no very palpable change in aspect, no relief nor hope of relief that is not merely the mocking deceit of the mirage. That is the Sahara. But examine these deserts in closer detail and it will be found that separate landscapes, however arid, may display distinct individualities, since there are “qualities” which differentiate even the sternest sterility.

To describe on paper the beauties of a more or less featureless void would certainly stretch-out the resource even of a master of words. I will only risk these half-dozen lines which I scribbled down on the summit of one of the rocky “jebels”—or koppies—which, like islets in an ocean, stud the desert plains:—“From this 100-foot elevation we command a wide sweep of typical wilderness. The colour-effects alone, combined with ‘distances’ that are Turneresque (but not to be expressed in terms), forbid any unqualified verdict of condemnation. Low sand-ridges radiate afar in irregular curves like rollers in the Atlantic, their crests spangled with black volcanic debris strewn in ordered disarray. Save a few stunted mimosas and tufts of starveling grass that show up even paler than the sand itself, no vestige of vegetation can be discerned, and the wide intervals are often carpeted with stones. One of the nearer stone-flats being composed of the dark volcanic lava aforesaid—but embedded amidst yellow gravel—gives (under the tropical sun) the illusory effect of a stretch of purple heather! Another

provides a second deceit. Its component stones are more 'civilised'—or less archaic—flat discs, circular or sub-rounded, suggestive of wave-action. In the glancing sunlight, these flat grey stones resemble a sheet of rippling water! Hardly can one recognise what is full in view."

Presently one's eye, ranging afar, rests on objects that *are* definite—a troop of desert-gazelles, lovely



DESERT-GAZELLES AT HOME—March 29th, 1919.
Day-dawn at the "Fangs of Jebel Eina."

creatures, grazing apparently on comminuted lava! Of these, in northern Sudan, the Dorcas and Isabelline gazelles are the most familiar forms; Dorcas on starkest desert, Isabella by preference on the rockier region, though neither entirely eschews the chosen haunt of the other.

Nor are these desert beauties unworthy of the hunter's craft. Quite the reverse: their combination of open haunts with ceaseless vigilance will test both strategy and tactics. Then their diminutive size (24 to 26 inches

at shoulder) demands fairly accurate rifle-practice. Both these gazelles, moreover, carry relatively handsome trophies (and the same applies to Heuglin's gazelle, which replaces this pair to the east and south, by Kassala and Gedaref¹) which, in master-bucks, seem almost disproportionate to the sylph-like contours of their owners. The best Dorcas heads exceed 13 inches in length, those of Isabella reach nearly 11 inches—our own best tape 12 and 10 $\frac{5}{8}$ inches respectively.

On open desert, where hunter and hunted are mutually conspicuous, *direct* access is obviously impossible. To secure a few first-rate heads of the desert-gazelles, the one essential precept is patience—meaning that, while the stalker keeps within distant touch of his game, he must patiently await the psychological moment when its distribution—or preoccupation—or a more favouring terrain, shall promise a chance of approach. This axiom I endeavour to demonstrate at the end of this chapter.

The waiting interval will not be wasted, since it affords glimpses of the home-life of some of the most graceful animal-forms on earth. Strange indeed it is, with such, to witness their innate pugnacity, their frequent quarrels and sham-fights—*tantæne animis cœlestibus iræ?* The main grazing of these gazelles is upon the humble herbage of the desert—often at spots where not even the telescope will reveal a vestige of vegetation; but both Dorcas and Isabella (as well as Heuglin's and the addra gazelle—the latter being specially partial to a big broom-like shrub, the "marakh"—*Leptadenia spartium*) also *browse* on the frondage of desert-shrubs, such as kitteir-thorn and mimosa, sapless and desiccated as such forage appears to our senses.

¹ Heuglin's gazelle is a very distinct species, having (what no desert-gazelle of Sudan possesses) the strikingly conspicuous *black lateral band* from shoulder to flank that characterises Thomson's gazelle—the familiar "Tommy" of East Africa—but which is lacking in the rest of its genus. Heuglin's, however, is much more of a bush-gazelle.



TYPICAL HARD STONY DESERT.



ON THE SUMMIT OF A KOPPIE IN THE DESERT.

Nor are gazelles the sole denizens of the desert. Those barren tracts they share with quite a select little coterie, both of birds and beasts. There are hares of two species,¹ jackals (*Canis anthus*), and foxes that closely resemble our British reynard. The single specimen secured, however (and presumably all the rest), belonged to the greyer, longer-limbed and long-eared desert-fox, *Vulpes famelicus*; and we also met with that pretty miniature fox, the fennec (*Vulpes zerda*),² besides jerbilles and jerboas and sundry small creatures whose presence one only learns, in the first instance, by noting delicate traceries of tiny foot-prints on the sand. These subterraneans are hardly less difficult to secure than are the fleet-footed gazelles of the open desert; a few, nevertheless, found their way to the national collection at South Kensington, and Mr Oldfield Thomas tells us that one species at least is new to science. The larger beasts of prey are necessarily absent upon these waterless wastes, though where rocky jebels outcrop one may see the heavy spoor of hyena.

Bird-life on the desert—scant indeed, yet altogether a charming relief to the austerity of these regions—I happen to have described elsewhere in this book: hence need not here enter into detail. But, in brief, the outmost wilderness is beautified in the main by exotic chats and larks—not exactly our familiar *Saxicolæ* and *Alaudæ*, but of the corresponding Ethiopian genera of *Certhilauda*, *Pyrrhulauda*, and *Ammomanes*—even the non-observant

¹ A discussion in *The Field* (August 9th, 1919) revealed the fact that the hares of North Africa have been subdivided into no less than thirty species, or “subspecies.” The Editor comments:—“It would seem that almost every big-game hunter who takes the trouble to shoot and send home a hare for identification, has had it named after him. There are at least ten of these African hares named after different individuals and the utmost confusion results.” The above represents a modern instance of the sophistication of zoological science. When “system” is driven to such insane extremities, naught save ultimate chaos can ensue.

² Fennec (*Vulpes zerda*).—Since Mr Butler has never met with this species in the Sudan, it is probable that these little beasties (which we dug out of a hole near Jebel Gerein) belonged to the creamy-white long-eared fox known as *Vulpes pallidus*.

must recognise the relationship at a glance. But there are others. From a skeleton-bush far out on the blazing sand, a sweet yet unknown song—somewhat insect-like—



BIFASCIATED DESERT-LARK (*Certhilauda*).

strikes your ear. Its author is a feathered gem yclept *Spiloptila clamans*; but since its scientific sponsors ignore



CRICKET-WARBLER (*Spiloptila clamans*)

their own tongue, I will christen it the Cricket-warbler—portrait annexed. Then, high overhead, at sun-up, pass croaking files of sandgrouse bound for the distant Nile—from how far within the recesses of Sahara they have

come, one may not know ; but, one hour later, they return westward—a journey, maybe, of hundreds of miles with the reward of a three-seconds' sip of water !

To return for a moment to the varying characters of the Desert itself. There are, besides those above described, two types which should hardly be passed unmentioned. There is the uncompromising type of hard brown sand—incipient sandstone—innocent of vegetation and flat as a floor, the sort that rejects all Nature's kindly offices to alleviate its ugliness or soften a barren asperity : over such, a motor-car could be driven at top speed from horizon to horizon, all unrelieved by a single object, animate or inanimate, or even by pleasing play of colour. Such an atrocity of creation surely represents Afric's last word in the consummation of desolation. The Arabs have a proverb that "Allah laughed when He made the Sudan."

Then there occur stretches where, league beyond league, the thirsty sands are clad waist-deep in thorn-scrub and stunted mimosa that wearies the sight. How do they survive? Therein occurs an anomaly, since plant-life (we are told) depends for its existence upon moisture : here there is no moisture, whether in heaven or in earth, or for 50 feet beneath the earth ; none, at least that (local) human intelligence or industry has yet discovered or exploited. Therein we humans seem to come in a bad second to sapless mimosa, or to Nature. She, science avers, runs in the desert a secret laboratory wherein, by subtle chemical combination, *something* is evolved that, though not quite water, is fluid enough to make good the deficiency of that element as it relates to plant-life. The mimosa can live where the human (and even the camel) dies of thirst. As for the desert animals of the rainless zone—addax, oryx, addra, and other gazelles—they neither drink nor need to do so (in our sense of the word) from year's end to year's end.

Upon these bush-clad deserts the mimosa-scrub may

average 3 feet in height, while sparse thorns rise to double that. Each of these loftier thorns is occupied by stick-built birds' nests which, in winter, are all empty. They belong to one of that numerous Ethiopian genus, the glossy starling (*Spreo pulcher*), which possesses the mother-wit to breed only in the season of rains. The more typical desert-forms, on the other hand, nest right through the most arid winter; for we found the crested



ADDRA GAZELLE.
(Photo from life.)

lark, finch-lark, and certhilauda busily incubating from January onwards, while the sand-larks (*Am-momanes*) delayed commencing till April—as more fully detailed elsewhere; but on February 13th the nest of a small grey shrike (*Lanius leuconotus*) contained two eggs. This merely to illustrate the topsyturvydom of Ethiopia.

Besides the trio of small gazelles already mentioned, the interior desert claims other and larger game. First to be met with comes that pair of handsome cousins, the Ariel and Addra gazelles. The habitat of these two is definitely separated by the Nile. The ariel, occupying the eastern area, is described in our chapters on the Red Sea region, while the addra—or locally *Ril*—roams far away westward into Sahara.

Still further away in the western deserts—beyond the limits which age and the crucial years lost through war (1914-1918) have set to the author's desert wanderings—are found two other splendid types of the big African mammalia, both highly specialised, but whose personal acquaintance has, by the above causes, been denied him. These two are the sabre-horned Oryx leucoryx, whose

back-bent horns easily exceed 40 inches in length; and, in the Deserts of Dongola only, the Addax.¹ So reclusive is addax that he places a waterless zone of some 200 miles beyond the outmost wells and his Saharan retreat—in other words, not his keenest admirer can hope for an interview within less than ten to twelve days' camelry; or say, a fortnight's journey west of Dongola. There, in sterile desert where rainfall is unknown and where the atmosphere scorches like the breath of a furnace, this coy creature abides stationary—that is, he is guilty of no considerable seasonal migration. The addax carries a fine trophy, his koodoo-like horns exceeding a yard in length; but, though desert-hued, is not otherwise markedly specialised for so inhospitable an environment, save for his immensely broadened hoofs, adapted for traversing soft sands. Somewhat mild and demure of aspect—rather recalling the reindeer in slouching gait and low-held head—the addax hardly bewrays the milder traits which his personal appearances suggest. Once his remote retreat is reached, his capture presents a less formidable problem than does that of leucoryx farther south. It is not to be inferred that addax surrenders at discretion—far from that; yet it may be presumed that the man who has set at naught the antecedent trials will hardly fail in the final.

To physical and geographical obstacles a charming element of uncertainty is added by the liability of this No-Man's-Land to raids by nomads from the borders of Cyrenaiaca and Tripoli, as well as by the local Bedaiats, whose ideals of universal brotherhood manifest themselves in fly-away massacres of military outposts or unguarded camps. The industry of these philanthropists periodically

¹ An apology is due for inserting even brief and condensed notes upon two animals which I have not seen in their haunts. My sole excuse is that both are very little known—entire strangers, it is probable, to the bulk of my readers; while the notes themselves are based on most careful inquiry made in anticipation of completing that personal acquaintance which circumstances beyond my control have since frustrated.

results in the whole desert-region being "closed" to the wandering rifleman.

By comparison the pursuit of *Oryx leucoryx* in western Kordofan may be reckoned almost a minor enterprise, since the nearest haunts of that superb antelope can be reached in no more than four or five days' desert march from "rail-head" at El Obeid. Nevertheless, this latter is no venture to be lightly undertaken. The oryx has a seasonal migration. Previous to the rains—say in March or April—herds of these antelopes move southwards from the deserts of Dongola (where their range overlaps that of addax) to those of Kordofan, down to about 13° North latitude. At that period the Baggára spearmen of Kordofan are wont to hunt these immigrant herds, and on their fleet ponies are reputed to "ride out" a troop—or, at least, the heavy old bulls thereof—within a spin of six to eight miles' hard riding. When thus overhauled, these old bulls (being still unwounded) are reputed "savage and dangerous"; and from what we know of the useful style in which roan and sable antelopes can employ their scimitar-shaped horns when held-up, the definition is likely enough to be correct—that is, to an Arab spearman going in to close quarters.

The above dates indicate that for an expedition into the deserts of Kordofan (the oryx representing the chief prize, with addra and Dorcas gazelles, and possibly the korrigum hartebeest as minor objectives), the most favourable season is during the months of March and April. Later, when the rains commence, the oryx return northwards, usually in May.

Two other desert-animals demand passing notice. On the isolated jebels and rock-ranges that dot the inner recesses of Sahara, is found the big Barbary sheep, or aoudad (*Ovis lervia*), always, it appears, scarce and local. We never saw it or were ever near its probable limits; though it used to exist—and may do so yet—on the Shabluka hills only 50 miles north of Khartoum, where

the best recorded Sudan head was killed by Mr A. L. Butler, who now gives me the following most interesting note :—

“The villagers at the Shabluka Gorge told me that when, in 1898, the Emir Mahmud passed the Shabluka on his march down the river to meet and give battle to Lord Kitchener's advancing force, he spread out his army of some 10,000 men right across these hills and ‘drove’ them from the southern to the northern end (about 12 miles), with the special object of rounding-up the wild-sheep that inhabited them. In the massacre that ensued at the northern limit of the range, forty-eight sheep were speared, a few only breaking back. A visit to the scene of slaughter resulted in my finding, after some search, a single horn of a good ram which I still keep as a trophy of Mahmud's last hunt.” (A few weeks later, on April 8th, 1898, the Dervish army was annihilated on the Atbara and Mahmud made a prisoner of war.)

Mr Butler adds that on the same occasion he spent two days in searching for any sheep that might survive. On the afternoon of the second day he fell in with a herd of thirteen, all small with the exception of a single old ram, which he shot. Its horns measured 26 inches on the curve, 13 inches in circumference at base, and 24 inches in spread.

These wild-sheep at Shabluka are very considerably south of any previously recorded range.

Then, on the eastern desert-plateaux, towards the Red Sea littoral, roam little bands of the Nubian wild-ass, commencing from near Sarrowit where we saw them, but becoming more plentiful further south, in Eritrea, etc.—big upstanding beasts, French-grey in colour, with stiff black manes, a conspicuous white muzzle and black shoulder-stripe. Wild-asses can hardly be counted as “game,” and are entirely protected by law: at the same time I should have liked to handle one specimen.

STALKING THE DESERT-GAZELLE

THREE TYPICAL EXAMPLES FROM DIARY

(i) *Fieldcraft comes in a Bad Second.*—Have been in touch of game all day. Three separate troops have we courted—one of them twice; yet sundown finds us empty-handed. True, the desert here is desperately flat; still after each failure a lurking suspicion—at first latent—finally enforced acceptance. The fault was mine, the old fault of impatience. On each crucial occasion we had essayed to “get in” too early, that is, before the psychological moment had arrived.

Luckily, after the final failure, I still lay flat, “pumped out,” indulging in posthumous wisdom and untimely regret. Right then, luck stepped in where fieldcraft and foresight had failed. Close by the disc of the half-sunk sun a figure breaks the horizon . . . a tall camel, surmounted by an Arab . . . and there moves something between? The afterglow obliterates detail, but soon that something resolves itself into a little string of disturbed gazelles. As the phantoms emerge in the clearer light to southward, I see there are six, all does; then, 100 yards behind, follows a good buck. The light being faint for a moving shot, I whistled. Instantly the seven fairy forms became transfixed into images of bronze. The six leaders half-wheel, facing; but the one prize remains full broadside, taking his cue from his consorts: distance 120 yards. . . . Yes, quite a nice head, 10¼ inches.

(ii) *The Lesson Learnt.*—Shortly after dawn sighted a dozen gazelle. The ground *appeared* open, but an hour's watching revealed the fact that the game were feeding into a very slight undulation not before noticed. I now realised that this tiny dip ran straight ahead for a mile or so; also that, parallel with it and 200 yards to the right, ran another low ridge crowned with scrub—a clear “advantage.” Sheltered by this, I had more than half

accomplished the approach, when—*O, Di inferi!*—from close ahead there jumped a single gazelle—a fawn, of course (since no adult is ever surprised thus, napping in daylight). The incident necessarily signalled an alarm; but it was not deep-seated, for presently our troop had recommenced grazing, half a mile ahead. Remembering the earlier lesson, I waited and watched, and reaped the reward. One hour later my friends were slowly grazing back towards their original stance. Presently the interrupted stalk was resumed on precisely the original lines, but a few hundred yards beyond the first-intended point of contact. Either stalk involved a final crawl, serpent-wise, across glowing sand that burnt the hand; but success repays all that. Yesterday's success was due solely to luck. To-day, though "luck" at first had ebbed, yet patience triumphed. We had learnt the lesson; still "it's dogged as does it."

(iii) *A Winning Hazard*.—The rocky jebels of the desert produce no nutriment, nothing but black plutonic lava. Yet on such forage grazed a group of gazelle. Access from the crest above would be feasible, even easy, provided the stalker were equipped with the noiseless pads of a leopard, but otherwise impossible. An underfeature—a cluster of rocks 500 yards beyond—suggested an alternative scheme, namely, that the game might conceivably be "moved" thereto. In any case, in so vast a country, such manœuvre could only succeed by the veriest fluke; and it failed through lack of co-ordination between joint efforts where *tongues* differ. Of my two Arab boys, one, too fleet of foot, passed beyond the "wind." We then tried a second koppie. Here the rifle commanded two possible salients. That on his right, however, was altogether too wide to promise any reasonable prospect. The *other* . . . well, by supreme good luck, no gazelles took the broad and straight road that led to safety; but *three* elected to come in by "the other."

CHAPTER III

VOYAGE UP WHITE NILE

KHARTOUM TO UGANDA—1200 MILES

A GENERAL SURVEY

THE joy of journeying under sail is a lost sensation. The modern traveller has neither the desire for it nor even the opportunity. On the oceans of the world the sailing-ship is extinct—at least as a passenger conveyance. It is chiefly on archaic byways, such as Nile, that sail survives; and even Nile voyagers oft set forth on palatial stern-wheelers—chartered at £25 a day. True, they “save time,” and many of them proceed to waste the time thus dearly bought. In me that old-time joy survives unalloyed: no regret at being outpaced disturbs. On the contrary, I rejoice when, aboard a humble gyassa (costing one-twentieth the amount and a hundredfold better adapted to my purpose), the lateen-sails are sheeted home and, with the unbought wind, we set forth to explore at will the thousand arcana of this unknown waterway.

A gyassa is a two-masted felucca-rigged sailing-vessel of the type common on the Nile during ages, and which in larger and more luxurious development is termed a diabiyah. The *Isis*, the gyassa which I chartered for my first prospecting voyage, measured 45 feet in length, with a beam of 15 feet, and carried a crew of six hands, including the *rais* (captain). My dragoman was Mahomed Maghazi, half Egyptian, half Sudani; and my

gunbearer, an ebony-black Nubian, Abdul Halim, both of whom accompanied me on my subsequent voyage on board *Candace*, in 1913-14.¹ A cabin-boy, or *sufragi*, made up a total of ten hands all told. A notable personage on my second voyage in *Candace* was my Arab shikari, Baraka, a Baggára of the Selim tribe, hailing from near Renk, and a skilled hunter and tracker.

The general appearance of both vessels will be gathered from the photographs. In *Isis*, the white erection forward was the kitchen; the deckhouse aft was fitted in the style of a miniature liner—first a dining-room, 14 by 10 feet, whence a corridor led aft to two tiny sleeping-bunks and a bathroom. The poop-deck above afforded a promenade and look-out; but was rendered untenable at midday by the sun, and after sundown (save when we had a breeze) by mosquitoes.

Both these drawbacks we remedied on our second voyage by bringing out a movable mosquito-netted framework, big enough to dine and sleep in, which could be erected on the poop; and by having an awning stretched overhead. The former we had constructed in London for about sixty shillings; the latter would cost about as many pence.

The local climatic feature which renders a 1200-mile Nile voyage *by sail* not only feasible but delightful, is the permanent North Wind which, during the winter months, blows steadily up-river, constant by day; frequent, though intermittent, by night. That blessed breeze, tempering the fierce sun-rays, renders up-stream sailing fast and reliable, at least as far as the Sobat River (530 miles from Khartoum). Beyond that point, White Nile takes its great westerly bend of 100 miles to Lake No. The wind on that latter stretch being abeam is necessarily less favourable to a gyassa, since these keelless craft sail

¹ Again in 1919 faithful Mahomed Maghazi attended my brother and self through the Sudan. He had meanwhile put in three years' service with the camel-transport in Palestine, and had just returned from Beyrout.

best with the breeze right astern, or at least on the quarter. Often on that section we have to undergo the laborious work of towing from the bank, or warping to windward by kedges.

Beyond Lake No (627 miles) the main Nile resumes its southerly direction; but at this point commences the region of "Sudd," and here, for upwards of 300 miles, the irregular course of the stream, winding through papyrus-barriers, precludes navigation by sail. The "Sudd" can only be negotiated by aid of towage. Once, however, its southern limit has been reached, there opens out another beautiful stretch of some 200 miles which is navigable by sail. This brings the voyager not only to the limits of the Anglo-Egyptian Sudan, but also to those of all Nile navigation; since above Rejaf (1200 miles south of Khartoum) cataracts forbid further progress afloat.

It remains to add that the North Wind, so favourable when voyaging southwards, absolutely precludes all hope of returning by *sail*. From whatever point the traveller may have reached, he must rely upon *steam* to find his way back—that is, in winter.

Such, in bare outline, is the itinerary of a voyage on White Nile. It was on December 18th, 1862, that Sir Samuel Baker set sail from Khartoum on his memorable voyage of discovery. Exactly half a century later, from the same spot, our little gyassa cast off her moorings to follow in his wake. But how changed were all the conditions! The Sudan, as Baker found it, was a vortex of savagery; and that savagery accentuated by the corrupt and hypocritical power that then held it in thrall—a power more loathsome than savagery itself. Slave-raiding, rapine, murder—those were the staple industries of an Egyptian Sudan. Baker's masterly undertaking seemed to inaugurate the dawn of happier days. His foundations were well and truly laid—fore-



"Isis"—MY GYASSA OF 1913 - THE START.
Towing down Blue Nile at Khartoum.



SANDSTORM AT KHARTOUM.

[To face page 35.]

doomed, nevertheless, to failure by Ismail Pasha's double-dyed duplicity—and finally to be overthrown by a savagery greater and yet more cruel, that of Mahdiism. For nearly a score of years the Sudan vanished from view—submerged.

Then in 1898, the dark epoch closed on the stricken field of Omdurman. To-day even a solitary traveller may go where he will throughout the Sudan and navigate the Nile as safely as the Ganges or Guadalquivir.

The total length of White Nile, from Khartoum where it ends, to Lake No where it begins, is 627 miles; this may zoologically be subdivided into three distinct regions of approximately equal extents, to wit:—

(i) THE DESERT-STRETCH, extending from Khartoum to Kosti, broad and shallow, with low-lying littoral and innumerable islands great and small, tenanted by almost incredible aggregations of wildfowl.

(ii) THE FOREST-REGION, commencing beyond Kosti and extending almost to Fashoda.

(iii) THE OPEN STEPPES of cane-brake and swamp that thence stretch continuously to Lake No. These two latter form the big-game country.

(I) "THE DESERT-STRETCH"

(*Khartoum to Kosti*)

White Nile above Khartoum is immensely broad, its actual limits often undefinable in featureless distance, or lost in the deceptive mirage of the desert. For nearly a couple of hundred miles no "scenery" exists. True, the mirage aforesaid daily mocks one's sight with visions of mountain-range, koppie, or crag-girt loch, where nought, in fact, exists save immeasurable desert. Such monotony may weary the average traveller, yet to the eye of a naturalist presents features that compensate in quite other directions. For that very absence of concrete "scenery" is, in fact, almost a pre-requisite of existence to many of

wild Nature's creations. Thus to the tribe of true wild-fowl, "scenery" is anathema—repellent as the pavements of Pall Mall to a Bedouin, or as sunlight to bat and owl. For the study of some of these the "desert-stretch" of White Nile affords an exhaustless field of research.

Hardly has the voyager rounded Mogrem point—where, on the outskirts of Khartoum, Gordon's old fort commanded the junction of Blue and White Niles—than he is confronted with panoramas of wild bird-life worth a far journey to see, and which continue in increasing variety for a couple of hundred miles beyond. No sense of monotony in mere landscape need obtrude.

Amidst such multitudes—apt at first sight to bewilder—it is natural that a British ornithologist should first recognise his own familiar friends, even though (as is patent enough) those friends constitute but a trifling minority amidst hosts essentially Ethiopian. Thus, among the first to catch our eyes on White Nile, we counted six species of British ducks—pintails by the thousand, wigeon, shoveller, garganey, teal, and tufted duck. It is always pleasant to meet old friends; but even more so when one feels a stranger amongst strangers; half-lost among totally new forms of life, some weird almost to fantasy, others colossal, all novel and unknown. With each and all by degrees a fuller acquaintance is established, and possibly some of the author's rude sketches may help to introduce the personality of these strangers. To convey adequately an idea of their numbers—as seen in mid-winter—is more difficult. Neither cold numerals nor strings of selected superlatives would serve; save possibly to convey a suspicion of exaggeration. It has been my good fortune to encounter, in various waste spots of this world, similar aggregations—and my ill-fortune to have to describe them! Thus even on our British coasts there occur exceptional winters when—(the last Continental waters being closed by ice)—there resort hither massed multitudes of wildfowl such as none



"CANDACE" AT KHARTOUM.

(Another Photograph at p. 188.)



OUR TRIUMVIRATE OF 1913-14.

Mr Willoughby Lowe. The Author. Capt. H. Lynes, R.N.

[To face page 40.]

who have not seen them would credit. Then in southern Spain, we have winter wildfowl in quantities that defy verbal description. A forceful idea I remember being conveyed in two words by our trusted Spanish gamekeeper, Vasquez. That old friend we had sent to reconnoitre a ten-mile marsh, and the verdict he delivered that evening was "*Vi cuatro*" (= I saw four)—an example of that exaggeration of paradox to which the Spanish tongue lends itself. Well we knew that during his twenty-mile ride Vasquez must that day have seen nearer *four millions* than four units! Yet his two words—almost asphyxiating in their terseness—told us precisely what we wanted to know, and I won't stop to explain.

Such aggregations as these may best be visualised by means of comparison. Incomputable as are their numbers—whether on the White Nile, Guadalquivir, or elsewhere—they are nevertheless surpassed by those of the myriad rockfowl (*Alcidæ*) that for six short weeks each summer throng the "loomeries" of Spitsbergen and its Arctic archipelago. I cite these expressly to call as witness one of our very best and most cautious of British ornithologists, the late Professor Alfred Newton. In one of those classic articles that characterised the earlier *Ibis*, Newton recorded the deliberate opinion that in Spitsbergen a spectacle of *four million* auks—all on wing and all in sight together—was no mere fanciful exaggeration (*Ibis*, 1865, p. 6). Such testimony corroborates the boldest of my own estimates and computations. It is, however, a far digression from Tropic to Arctic.

The lower White Nile, as just stated, is immensely broad and its stream intercepted by low islands and sand-banks divided one from another by shallows, oozes, and backwaters. At intervals these natural sanctuaries are so completely carpeted with water-fowl as to present an appearance of being, as it were, *tessellated* with living creatures, and that over a space of perhaps half a mile and sometimes more. These feathered armies are composed

not only of ducks and geese but also of tall cranes, herons, and storks, marshalled rank beyond rank in semblance of squadrons of cavalry. The following is a careful analysis of the component elements of five of these feathered army-corps, examined consecutively through telescope and prism-binoculars—all five during one short forenoon.

January 22nd.—Second Day Out.

(i) 9.45 A.M.—Ahead lies an island that looks a mile in length, but scarce a scrap of its surface is visible by reason



NILE GEESE (*Chenalopex*)—General Appearance on the Wing.

of the birds that cover it. The central ridge, all cranes (common, crowned, and demoiselle), surrounded rank beyond rank by big black spurwing geese; nearer still, mixed mobs of Egyptian geese and shelducks carpet not only the whole foreshore but extend far out into the open water, where their fringes join up with acres and acres of ducks beyond all count, but including pintail in thousands, wigeon, teal, garganey, shoveller, with straggled bunches of tufted ducks diving in the deeper channel outside. All along these shallows the masses of ducks and geese are punctuated with moving forms of dark ibises and openbills, herons both grey and white—the latter in assorted sizes—and spoonbills, all these last stalking about amidst their somnolent neighbours, probing, scuppering, dredging, and fishing. Add to these, waders in all sizes and incalculable numbers—curlews, whimbrels, godwits, ruffs and

reeves, plovers, lapwings (*Vanellus leucurus*), sandpipers, and stints—what a spectacle!

(ii) 10.15 A.M.—Another huge concentration, in composition practically the same as No. 1, except that it is dominated by a concourse of great pink pelicans.

(iii) 10.35 A.M.—The feature of this group was the amazing mass of game-ducks (chiefly pintails and garganey), due to the great extent of shallows between semi-detached islands. Besides these, all the aforementioned water-fowl were present in equal numbers.



DEMOISELLE CRANES.

(iv) 10.55 A.M.—Mob of a million (?) crowned cranes.

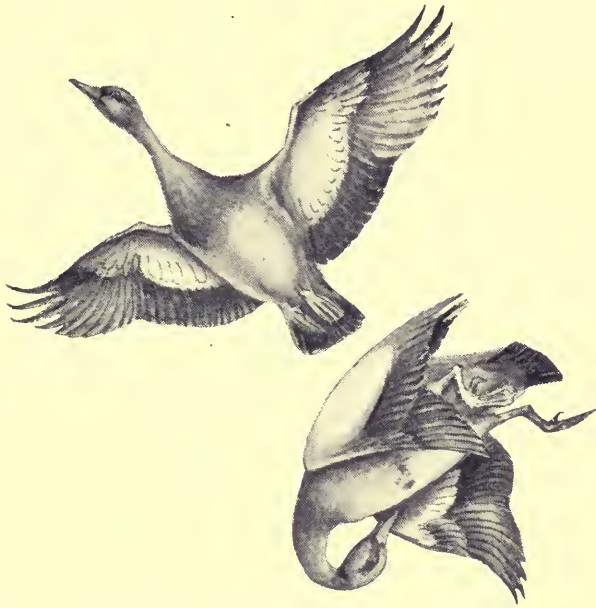
(v) 11.15 A.M.—Another vast concentration a mile long that I will not further describe beyond mentioning that a string of darters stood spread-eagled alongshore, and three great vultures shared their siesta.

In addition, my diary that morning includes seeing marabou, spur-winged and Egyptian plovers or pluvians, greenshank, curlew-sandpiper, dunlin, white-tailed lapwing, Caspian and gull-billed terns, with two smaller terns, cormorants, and two or three small marsh-gulls of unknown identity (probably *Larus minutus*).

Among conspicuous absentees that one might expect to see in such congenial resort, should be mentioned the flamingo and the avocet.

Nile navigation is aided by no marks or buoys ; none are needed. Where these mobs of water-fowl assemble clearly indicates the position of shoals and shallows.

At first I spent delightful days cruising among these hosts, content to study the fowl, endeavouring to establish a census of their species, without troubling to think of the gun at all. Then the spirit of the wildfowler awoke.

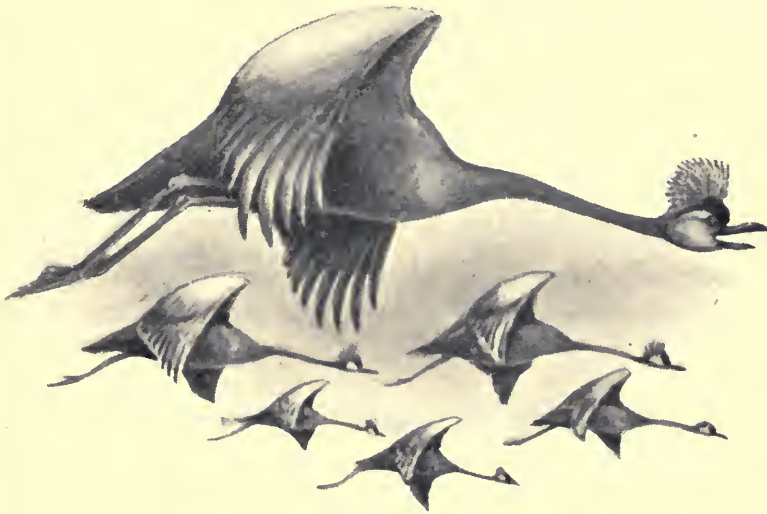


EGYPTIAN GEESE—First Shot on White Nile.

I remember my first shot on White Nile. Five geese swept indiscreetly across our bows and two fell. Ere the second had reached the water, I heard a splash behind. One of my Arab crew—clothes and all (or what there pass for clothes)—had dived from the deck. He swam with curious overhand action and retrieved both geese.

Some smart flight-shooting is obtainable both at dusk and dawn by taking post either on islands or at salient points alongshore where the fowl have been observed to pass. Away from the actual river itself, no “fighting”

takes place. That is not surprising seeing that on both sides the Nile is flanked by barren desert. One is apt to wonder how such masses of wildfowl can find a daily subsistence at all; but the problem is solved by watching them attentively. There, for example, in midstream, swim a thousand pintail with two fathoms' water beneath them. Though the sun is well up, the binoculars show that half the flotilla is "up-ended," the rest tugging and guzzling. Clearly they are all a-feed on drift-weed and



CROWNED CRANES—Flying.

floatage. On examining the mud-charged waters (and also the crops of ducks shot), both will be found full of drift-grass and water-weed. The Nile itself, in short, is surcharged with floating vegetation and thus brings to the ducks their daily bread. Geese have yet another resource, for on the grassy islands their knife-edged mandibles can graze where a low growth is too short to be cropped by ducks.

When one of these bigger islands, say a mile or two long, is seen to be fairly stocked with geese—all scattered about, feeding—then some exciting sport can be enjoyed

by taking cover (if need be, by digging a hole), and sending the pinnace on an encircling cruise to drive the geese in. In less than an hour I have secured eight geese thus. Towards dusk, again, incoming shots may be had by lying in wait at the spots where geese are wont to pass the night. These spots, however, are apt to be more or less awash, so that this evening-fighting may prove a wet and dirty job. Nevertheless, the wondrous scenes it reveals, when the whole western after-glow is amove with a welter of converging hosts, and when vespertinal silences are shocked by the crash of an anserine chorus from ten thousand throats—these things alone are a sufficing reward.

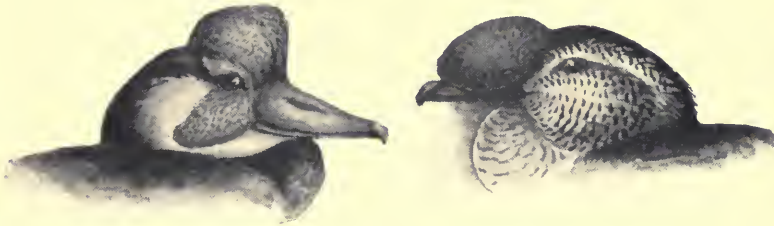
Frequently the battalions of geese are accompanied by long-drawn files of cranes—equally strident. The two denominations, however, maintain strictly separate camps.

Most of the geese shot thus are of the Egyptian species (*Chenalopex*). An old gander exceeds 6 lb. in weight: the females average $4\frac{1}{2}$ lb. The spur-winged geese are more than twice this size and prefer to roost dry-foot. One evening, having noticed a well-frequented roosting-place, by taking post just before sundown, I shot three of these big geese in half an hour's vigil: one enormous gander (whose head I sketch) weighed $13\frac{1}{2}$ lb. good, a second $12\frac{1}{4}$ lb., while a goose fell slightly below 12 lb. These weights far exceed those of any European wild-geese.

The spurwing (like all the goose-tribe) normally feed by day, grazing on the scantiest herbage, and roost by night (usually on the drier islands and on firmer ground than the oozes preferred by *Chenalopex*). But exceptionally, and during full moon only, these geese also fly far afield by night, as, on one occasion, we learnt thus. We had missed our way back to the river, and while rambling, half-lost, in the woods, a pack of geese came winging right overhead in the gloaming. Upon seeing

us beneath them, the geese all bunched together with a curious whistling chorus, and a rifle-bullet, chanced "through the brown," brought one to earth—weight, 13 lb.

None of these geese are good eating, though a young *Chenalopex* may be passable. Of course, the fierce heat of Sudan which necessitates everything being cooked *at once*, gives neither bird nor beast a fair chance; and here it may be remarked that an absolutely indispensable adjunct to the outfit is a "mincing machine," which reduces all flesh to one common denominator—mince! Characterless it is, but, after all, *food*—and that is all one should require.



HEADS OF SPUR-WINGED AND COMB GEES.

No British wildfowler—habituated to the trim and smart figures of our European Anatidæ, spick and span one and all—but must be painfully impressed by the different and degenerate aspect of their Ethiopian congeners. All these Nilotic wildfowl present to his eye contours and carriage that by comparison can only be characterised as clumsy and ungainly—almost slovenly. The great spur-winged goose, for example, squats on a sand-bank more untidy than Sarah Jane the scullion, its long scapulars and tertiaries sticking up at sixes and sevens; while its slouching gait and unsightly headgear recall that grotesque creature, the Muscovy duck.¹ Nor has the comb-geese (*Sarciordornis melanonota*, shortly to come under notice) any greater claim to elegance, whether

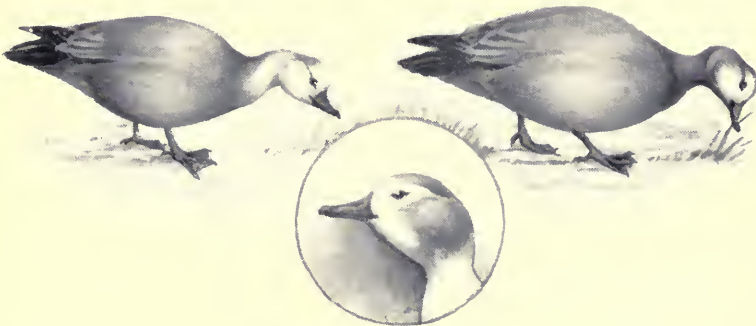
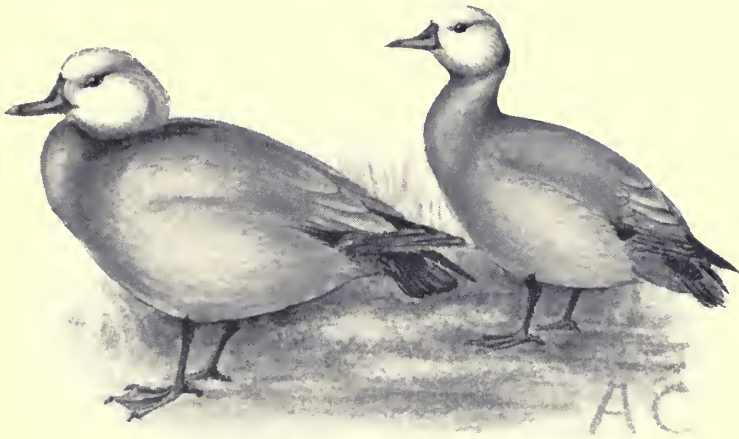
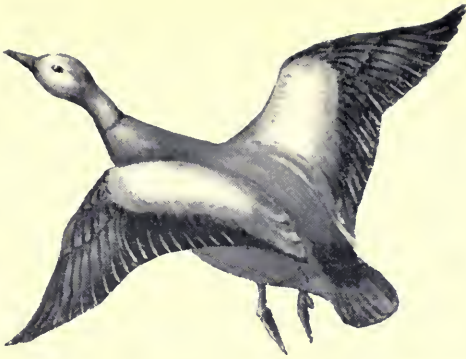
¹ The simile is corroborated by the fact that in South Africa the Boer name for the spurwing goose is *Wilde Macaau*, signifying Wild Muscovy.

on wing or water—his flight laboured and lumbering, with neck stuck out rigidly straight and an ugly excrescence on the beak. Even the Egyptian goose, despite a handsome coloration, lacks smartness in carriage and all pride of race. His plumage is loose and dowdy; his flopping flight, almost cormorant-like, harsh corvine croak, and drooping stern anything but anserine. Whole troops of all these three lie unkempt and ragged, slumbering the hours away, and never a sentry to be seen. By comparison, in fifty years' wildfowling at home, never once have I detected a brent-geese asleep, or wild-geese of any kind unprotected by sentinels.

Should the theory of the Polar origin of life be acceptable, it would appear, in this case, that those forms which have selected the Equator as a residence have deteriorated most. Perhaps the deduction may have a wider bearing than upon wild-geese alone.

The ruddy sheldrakes, constant companions of the geese, closely resemble them both in character and habit. Squatting flat on the russet sand, these goose-like ducks assimilate in marvellous degree with their environment. They are, of course, detected at once by an eye that is looking for them and knows what to look for; still it is a startling transformation-scene when they rise on wing, and objects hitherto of a dead monotone suddenly resolve into splashes of the boldest contrasted colours. In *rest*, the ruddy sheldrake conceals these striking features; hence nearly all illustrations (and equally mounted specimens) convey a wrong impression of the bird in life. It is, of course, manifestly indecorous (and inconsiderate to artists) that birds should thus conceal their beauty-spots from view—as a lady might hide some exquisite Parisian “creation” beneath a worsted dressing-gown—but when it is Nature's way, we should be constrained faithfully to follow.

In mid-winter, these Nile geese—as would naturally be expected—proved wild in the extreme, almost inacces-



Ruddy Sheld-Ducks.

1. On the Wing. 2. When at rest, or (3) Feeding, conceal their
"beauty spots." (Inset, Head of Female.)

[To face page 48.]

sible. Hence it was with no small surprise that we found (as already described at p. 11), that among their flotillas was included a considerable proportion totally incapable of flight. These comprised both goslings that had not yet attained the flying stage, and their parents which had moulted their quills—a singular state of affairs in mid-winter? Still, it merely emphasised the fact above stated that, in Ethiopia, birds recognise no rule as to the breeding-season.



SUNSET ON WHITE NILE—GLOSSY IBIS.

Under such conditions, it might be concluded that these helpless geese were entirely at our mercy. That was not, in fact, the case. Nature had foreseen the danger and provided against it. Their temporary helplessness was safeguarded by a temporary development in diving powers that was nothing short of marvellous. These heavy geese dived as smartly as grebes or goosanders. A whole company, old and young, would submerge close at hand to reappear, all scattered, a full hundred yards away! From a lifetime's experience of wild-geese, I would never have believed such a performance possible. Moreover, this faculty was purely a temporary

gift—designed to tide over the danger-period—since none of the full-winged geese (those that *could* fly) possessed any such powers. When in full feather and condition, the Egyptian geese—like all other wild-geese—are very poor hands at diving; even when merely wing-tipped, wounded geese could always be secured without difficulty. But the twin facts afford a double object-lesson in natural history.¹

A biological fact in connection with the duck-tribe previously observed on Guadalquivir and recorded in *Unexplored Spain* (p. 110), was corroborated on White Nile. That is that certain species, once they have reached full maturity, pair faithfully for life. When from a passing flight an adult female happens to be shot, an adult male will accompany her fall to the very surface of the water (leading the gunner to believe he has killed two with one shot), and will usually return a few minutes later, circling round, piping or quacking disconsolately as though calling to his lost consort. It is the drakes only that exhibit such constancy; a bereaved duck will continue her flight unheeding. This applies specially to wigeon and pintail, though in Spain we have observed the habit in other species. It certainly indicates that these ducks, *when once mature*, pair for life and remain mated all winter, though then forming component units amid hundreds, or thousands, of others. Since many of the duck-tribe do not attain maturity until their second or third year, it follows that these great winter-packs must contain a large proportion of "bachelors" of both sexes. As to the precise manner and methods of mating among these (as well as certain other life-habits), ornithologists who possess *Unexplored Spain* will find several little sheaves of facts garnered in the chapter entitled "Los Corros," at p. 377.

¹ The circumstance of having one wing broken, may, it is obvious, prove a greater handicap in diving than having no wings at all—like trying to row a boat with a single oar!

Negative evidence has a value, and the absence of bird-forms which might reasonably be expected here is worth passing note. Thus our British mallard stops short at the Sahara; while its South African representatives, the yellow-bill, *Anas undulata*, and *A. sparsa* halt about the Equator.¹ For the gadwall, and for pochards also, I had looked in vain till, on my last voyage, I detected a group of four white-eyed pochards, associated with a dozen garganey-drakes. This was near the Iron Gates, March



IN THE TWILIGHT—CRANES.

(Instead of Three, picture Three Thousand.)

15th, 1919. Mr Butler tells me he *once* shot a white-eyed pochard near Khartoum—a sufficient proof of its rarity. Possibly these and others may yet be found when a more comprehensive census shall have been taken. Amidst huge aggregations, chance units may easily be overlooked on casual surveys such as mine. But one conspicuous absentee could not be overlooked—that

¹ Captain F. Burges tells me that during many years' experience of duck-shooting near Khartoum he only once killed a mallard on White Nile, and saw another shot the same season near Shendi, 50 miles north therefrom. Mr Butler's experience corresponds.

is the flamingo. Seeing that it abounds both in Egypt and in Equatoria, one would naturally expect it in so congenial a resort as White Nile; yet in six voyages up and down that waterway we never saw but a few odd stragglers—save once, on March 16th, 1919, when we passed a pack of eighty together: nor have we ever noticed an avocet on White Nile.



GOLIATH HERON—Weight 13 lb.

Within the space of a chapter scarcely can the skeleton of such a subject be framed. Already upon the geese and ducks alone its allotted limits are exhausted and no room remains for the rest—that is for all that “Ethiopian” crowd that is found, even here, associated with our true wildfowl, including cranes and strange stork-like forms, ibises, huge herons, egrets, darters, and a heterogeneous multitude beside. The main habitat of these “Ethiopians”

lies further south. Hence their omission here is not altogether inappropriate, since the “desert-stretch” is essentially characterised by what I call “true wildfowl”; while its neglected denizens will receive full treatment later in the chapters which treat of the more tropical regions wherein they become more and more conspicuous.

It is in mid-winter that the wildfowl described are seen to best advantage. As spring advances they gradually withdraw northwards and their massed formations daily decrease. At that season (March-April), as the volume of Nile falls lower and lower, the Arabs move down into

the river-bed, and one sees them industriously cultivating the mud-banks and islands as, yard by yard, each is laid bare by the receding river. Here they erect temporary shelters, and presently strings of camels, horses, and donkeys are carrying down loads of timber, straw, and reeds wherewith regular villages, or "dry-season camps," are established at spots over which, a week or two earlier, the river had flowed. Then one sees packs of geese feeding within gunshot of natives all busy hoeing and ploughing; and it amuses to watch other geese grazing right under the "scarecrows" which the said natives have erected to warn the fowl off their seeds!

The industry of these Arab folk, and its corollary—wealth in herds of cattle, camels, sheep, goats, donkeys—are apt to amaze so soon after the Mahdist extirpation. Everywhere one sees them busy tilling, irrigating, drawing water, and tending herds. Possibly within measurable years the Sudan may be supplying not only cotton to Manchester but beef to Smithfield.

There are, moreover, other "fearful wildfowl" in the Sudan. One hot noontide I recollect seeing on the apex of a pinnacled sand-dune, a single black figure wildly gesticulating and brandishing a spear from which fluttered a black flag. Around on the glowing sand squatted a dusky audience, while others came flocking to the rendezvous, some on camels or donkeys, others by boat or on foot. This was a minor Mahdi of sorts. Such gentry are still a not uncommon by-product of this stronghold of paganism and superstition. Luckily they are harmless. Their power for mischief was broken for ever at Omdurman. Still that gesticulating fanatic formed a characteristic spectacle.

A GALE ON WHITE NILE

Voyaging on White Nile is not all summer sailing, as this extract from diary shows:—"Awakened at midnight

by *Candace* running hard aground—this is quite an ordinary mishap, but badly aggravated to-night by a heavy gale and driving sand. It was ten next morning ere, by laying out kedges and hours of tremendous exertion—all hands overboard, shoulder-deep—we got afloat and proceeded. During that afternoon, carried away the outmost boom of our mainyard—these huge spars being ‘fished’ together in several lengths, spliced like a Castle Connel salmon-rod. The rais wanted to stop at El Duem to fit a new spar—this we disallowed, having ill memories of that spot; so, being full moon, we drove ahead under bare poles. Under stress of wind and wave, *Candace* rolled and shivered, the howl of the gale through her rigging and breaking seas under her counter recalling rather a winter’s wildfowling venture in Northumberland than a trip on tropical Nile. By 10 P.M., the hurricane increasing and a blinding sandstorm shutting out all view ahead, we anchored till dawn, when we limped into Kawa. Here the Mudir most kindly sent men to help repair our broken yard-arm.”



“GORGED.”

Contained two sets of wire bangles, as worn by native women. Possibly the late owners were also inside, though not identifiable.

Galáp. Mahomed Abdul Mahomed Abdullah.
Abass. Hamil. Maghazi.



OUR STAFF ABOARD "CANDACE," 1914.



OUR CREW ABOARD "CANDACE," 1914. (The "Rais" in White Turban.)

[To face page 54.]

CHAPTER IV

VOYAGE UP WHITE NILE—*Continued*

(II) THE FOREST-REGION

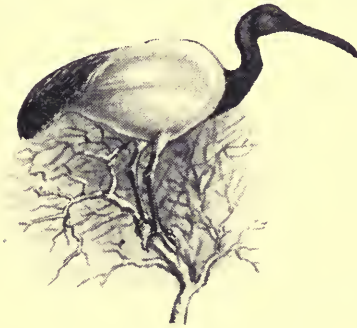
(*Kordofan*)

ROUGHLY speaking, it is at a point about 150 miles south of Khartoum that the last vestiges of the Eastern Sahara gradually peter out; we enter a new geological region and the Nile assumes a totally fresh character. Instead of a broad shallow stream as hitherto, flowing through desert and low islands, devoid of distinctive bounds, the river is now restricted to a fixed and narrower channel with solid banks fringed and beautified by abounding tropical vegetation. The scene has changed.

At once the traveller is confronted with many new things. I will specify four:—the papyrus, with its million mosquitoes; the seroot-fly, and the sacred ibis in its true home. By these indices the traveller may know that here he is entering upon a new “zoological zone.” The Palæarctic region he is leaving behind: in front lies that of Ethiopia.

A fifth object can never be passed unnamed by any who feels the pride of British race—that wondrous railway bridge, a tracery of latticed girders, that here spans White Nile, no whit less a world's wonder than the Barrage of Assouan, and surrounded by nothing but Afric's starkest wilderness. The bridge itself is all the passing voyager sees; yet it is a symbol, a single link in the chain of tremendous works that British enterprise in its silent,

solid way is building up throughout the length and breadth of the Dark Continent, for the development of the Empire, which connotes that of world-wide civilisation. This particular section, starting from our brand-new British harbour of Port Sudan (700 miles away), and linking up at Atbara with the Egyptian lines, already connects London directly with Khartoum, and even with remote Kordofan. There lack to-day but a few leagues to join up with our Uganda railway and the Indian Ocean at Mombasa—to say nothing of a final extension to the Cape.



SACRED IBIS.

If blood be the price of Admiralty, assuredly labour and high emprise are the responsibility of Empire, and we are paying both in full measure. Yet, gazing on these works, one wonders what percentage of the folks at home know even the bald names of the places just mentioned; or of the services

being rendered by hundreds of gallant Britishers, exiled beyond the fringe of the known world?

For, equally important with this binding-up of the African Continent in terms of iron and steel, comes the simultaneous binding of its savage peoples in bonds of sympathy and goodwill. That process is simultaneously being effectuated by fair-dealing and friendship, by firmness and example. Even the humblest hunter or pioneer can do his bit. Each is an advance-guard of civilisation, and each can help to establish confidence and to set agoing the long latent faculties of his dark fellow-subjects.

As above indicated, the river here completely changes its character. Low foreshores and level littorals give place to deeper and narrower channels, winding (in places)

through intricate archipelagos of islands, some wooded, all heavily fringed with papyrus and giant sedges 15 or 20 feet in height, together with other strange aquatic plants. Here, along with the papyrus, commences the mosquito-scurge. No longer, after sundown, can one enjoy the luxury of dining or smoking on the open deck. Nets must be rigged and knee-boots of supple pliant leather donned at dusk.

Such narrow riverside cultivation as exists is now flanked by what looks like real "big-game veld"—that is, plains of sere halfa-grass, waist-deep, interspersed with the open mimosa-forest and scrub, so typical of Africa. We, however, did no serious hunting at this point. The hunting-veld is only assumed—and we assented to that assumption—to begin further south, by Jebelein (238 miles); though the range of cob, gazelle, and other antelopes, such as tiang and waterbuck, extends as far north as scrub grows.

Here we first meet with hippopotamus; and crocodiles become numerous, lying wherever a mud-islet or foreshore affords convenient resting-place. Silently we sailed past many, fast asleep, within 50 yards, and I shot several. A .375 dum-dum bullet placed either full on shoulder or close behind the eye knocks them stiff. When shot in brain or vertebræ of neck (either, of course, causing instant death), such is the terrific muscular power of these great reptiles that, in a final convulsion, they will throw themselves bolt upright, with jaws agape and claws wide outspread—or even turn a back-somersault—ere totally collapsing. In their slime-clad armour crocs are not always easy to see on a slimy bed. When disturbed—it surprised me to observe this—a crocodile first raises itself to the full height of its short legs, looks around, and then *walks*—like a dog—rather than waddles to the water. At a pinch, however, their activity and speed in gaining that refuge is amazing. The biggest actually measured

taped rather over 14 feet; but further south I saw monsters that must have approached 20 feet in length with the girth of a porpoise.

Naturally the altered surroundings introduced entirely new forms in bird-life. The dense swamp-jungles alongside of which we cruised swarmed with coucals, or bush-cuckoo (*Centropus monachus*), with purple and black-headed herons, with reclusive rails and chestnut jacanas,



IN THE RIVERSIDE TREES—Egrets and Darters.

unknown warblers and weaver-finches in a variety that defied any hasty analysis. Wherever firmer ground afforded root-hold for riverside trees, these were crowded with herons of varied species, as well as with sacred, glossy, and hagedash ibis, white egrets in three sizes, buff-backed and squacco herons, openbill storks, darters, and cormorants—literally in thousands. Each

big tamarind-tree was often not only covered externally but filled inside with birds; for closer examination revealed scores of reclusive night-herons and little bitterns hidden in its inmost depths of foliage. It was odd to watch long-legged herons and egrets perching like steeple-jacks on the very topmost and thinnest sprays—so thin as to sway for yards beneath the burden, necessitating much careful balancing. The low-growing ambatch-trees by the water's edge formed favourite perches for cormorants (the small white-breasted African species) and for snake-like darters (*Plotus*), many of which sat "spread-eagled," drying their wings in the

sun. Among wildfowl, we here first come in contact with mobs of the white-faced tree-duck, miscalled throughout Africa (and India, too) the "whistling-teal"—for it is not a teal, though it *does* whistle!—and the comb-goose, of which two anon.

Amidst such varied multitudes, many new to the eye of a British ornithologist, the singular divergence in design adopted by Nature in fashioning creatures clearly closely allied, and destined to seek their livelihood by practically identical methods, must compel attention. Thus—to take a single example—the extreme difference



HAGEDASH IBIS—Compare with figure of Glossy Ibis overleaf.



A SPOOK-LIKE APPARITION.
"Openbill Over."

in general outline of the ibises is remarkable. There are four members of the genus, yet no two of them agree. The glossy ibis, long of leg, is trim and smart in build as a curlew; whereas his cousin the hagedash ibis displays such broadly rounded wings and tail—as it were like a crinoline¹—as entirely to conceal the outstretched legs when flying. The other pair of the quartette of ibises—though all live alike—are equally divergent from the two named. The comparative

¹ The only other bird, within my experience, in which this "crinoline" dress is so fully developed is a raven known as *Corvus affinis*, which we met with among the Red Sea hills (see sketch, p. 380.) It also, like the ibises, has a local analogue in the one other type of raven found in the same hills and living in the same way, *Corvus unbrinus*, which is entirely devoid of these extraordinary appendages. Perhaps the bush-larks (*Mirafra*) should also be cited.

appearances of each are roughly shown in various diagrams *passim*. Then take the fish-catching birds. Both darter and cormorant capture their prey by fair chase under water; yet while one needs a strongly hooked beak, the other dispenses with a hook but substitutes, in lieu thereof, serrated mandibles. The herons are no less adepts but need neither hook nor serration, though the rim is slightly roughened. The question, however, is too big to discuss here—mergansers, grebes, gannets would all have to be called as witnesses. All are built for a similar



GLOSSY IBIS.

object; yet, while all differ in armament and equipment, all equally succeed. It may be held there are causes assignable to every effect, a reason for each fact; if so, in these cases the predisposing factors lie far beyond the range of our finite vision.

Of the egrets I write in diary:—"The great white egret of Nile is bigger than any seen in Spain. It is *Herodias alba*, and has a yellow beak and black legs. The middle-sized egret (*H. brachyrhynchus*) has black beak and yellow legs, while in the little egret (*H. garzetta*) both beak and legs are black. Why? Their style of fishing differs from that of the herons. The latter stand statuesque as though carved in granite, awaiting the approach of prey, and make but a single spear-thrust. Patience is their policy; whereas the egrets are ever hunting actively about the shallows, and frequently put in a short run, followed by several consecutive strokes, quick as lightning.

"A flight of weaver-finches sweep down to the river's edge for a drink, alighting close by a big white egret. Him the thirsty crowd suspect not. Suddenly, with three

sharp strides and a lightning stroke, the innocent-looking egret has attacked . . . a fluttering victim hangs from his beak! But the captor also lacks prescience. Unless he bolts his prey at once (which is not his way), a regular *mêlée* ensues. Every heron, stork, and ibis within sight joins in the hue and cry, and finally the prize is pouched by some more powerful pirate."

Spoonbills when feeding keep revolving on their own axis, "scuppering" the while among the ooze as children go shrimping on a sea-beach, except that at intervals the birds cease dredging in order to scoop up their disturbed victims—water-insects, laryæ, and animalculæ. And in



EGRET HUNTING.



SPOONBILLS.

close attendance upon each group of spoonbills swims a shoveller-duck or two, eager to exploit the chance of "fishing in troubled waters."

On the riverside black-and-white kingfishers, spurwing plovers, and chestnut jacanas are conspicuous—the latter running over the lily-leaves and floating water-weed; but it is impossible to catalogue all the abounding water-fowl.

In the forests droves of doves of various species dart through the maze of branches or come down to drink at dawn and dusk. Hornbills, hoopoes, and green parrots, with brilliant rollers and bee-eaters, lend flashes of colour to the scene, while birds of prey become conspicuous. Great white-headed river-eagles take post on a lofty tree, and at intervals rend the air with wild vociferations.

Buzzards of two kinds—the dark steppe-buzzard (*Buteo desertorum*) and the handsome *Butastor rufipennis*, rich tawny, finely barred—hunted the drier plain; also pallid harriers, ghostly in their pale French-grey. Marsh-harriers (many showing a development of the blue secondaries beyond anything to be seen in Europe) quartered each nook and corner of the swamp. It was curious to notice how the larger water-fowl, such as herons



HORNBILLS (*Lophoceros erythrorhynchus*).

and ibis, absolutely ignored this robber, even when sweeping close overhead. Buffbacks, however, plovers, and even egrets were much more nervous, rising in alarm though the hawk made no attempt to seize them. Eventually he made a determined dash at a crowd of thirsty doves on the shore, and cleverly clawed one which in panic had fluttered into an entanglement of reeds.

One morning I noticed an eagle stoop headlong into some low bush. A pack of guinea-fowl fluttered up in fright, but lit again. I expected the eagle had seized one,

but on my approach he rose from a newly-killed hare, its head torn off and body partly eaten—quick work in less than five minutes? The eagle was *Aquila rapax*. Presently Abdul knocked on the head a crouching guinea-fowl close by, and the whole pack, we then found, lay terror-stricken in the deep grass. A curious incident occurred with another eagle. Willoughby Lowe had shot one of the little black sparrow-hawks (*Melierax gabar*) when a white-headed eagle swept down from behind, clutched the dead hawk and carried it off in triumph! On one occasion, Butler saw a pair of tawny eagles attack a big cane-rat (*Thryonomys*, a rare beast) not 100 yards away. Within brief seconds B. was at the spot, but the rat was already so mutilated as to be beyond patching up as a specimen.



EGRETS AND HERON—White Nile.

FIRST DAYS IN FORESTS OF KORDOFAN

(North of *Jebel Ahmed Agha*)

Dawn of January 27th revealed both banks densely wooded—the usual table-topped mimosa being here abundantly interspersed with great evergreen forest-trees, chiefly tamarinds, regular mountains of foliage. I was keen to disembark, but the belts of swamp-jungle that fringe the main shore presented the accustomed difficulty. In search of a landing-place we cruised along, brushing the outmost sedges and disturbing red-legged water-rails, squacco, and night-herons; when, within a narrow inlet, I observed slight ripples circling outwards. Next moment, as we “opened” the creek, I was face to face, within 30 yards, of a lovely leopard! So low did he crouch, lapping, that the shoulder-blades stood out prominently above the line of his back, and the cruel green eyes for an instant gazed straight up into mine. I had in hand the Paradox gun but, alas! loaded with No. 6 and not a ball-cartridge handy. Thus, for a second time in life (see *On Safari*, p. 27), I was constrained helplessly to watch the great spangled cat slowly bound from view.

Two initial attempts to land were repulsed by hidden “khors”—though the forest was but 200 yards away—and the sun had long passed the meridian ere we finally overcame resistance and reached firm ground.

Now since these “khors” became a perpetual menace and obstruction throughout all our White Nile expeditions, it may be as well to start by describing, once for all, what that word locally imports. (Among the mountain-regions it has a totally different significance, being there the equivalent of *donga* or ravine.)

A *khor*, then, is one of the innumerable shallow depressions or channels forged in these dead-levels by the flood-water on its course riverwards. At this season

—that is, in the dry season—the “khors” are simply broad stagnant ditches, from a foot or so to . . . I know not what maximum depth. Traversing blind cane-jungles 8 or 10 feet high, neither their depth nor extent can be foreseen. You first realise the presence of a “khor” by finding yourself sinking in bog: you may push ahead and get through the first easily; the next is knee-deep; a third comes. The canes, meeting overhead, are here taller and stronger; the mephitic morass is waist-deep, yet there is no indication of its ending. A criss-cross of fallen canes, both above and below the surface, arrests every step. An elephant or a buffalo passes such places with ease; an average man cannot. Personally I retire when the morass reaches much over my knees.

This morning (January 28th) we won through, despite the darkness before dawn. Then in the gloom appeared two savages, great stalwart blacks, practically naked, and each bearing a spear with a head like a coal-shovel—I afterwards measured one of these murderous lance-heads, 15 by 5½ inches. The strangers seemed friendly and joined us uninvited. “Abdul whispered “Bad Arab—Baggára”; but whatever sentiments may have occupied my own mind—whether of suspicion, doubt, or resent-



PIED KINGFISHER.

ment at their intrusion—were speedily dissolved when, a few minutes later, one Baggára dropped quickly and pointing ahead with his spear, hissed “Assad!” (= Lion). Barely 200 yards in front a glorious tawny-maned lion was slowly strolling from the riverside reeds towards the forest inland, the north wind blowing masses of golden hair over his ears. The lion presented a slow-moving shot—not difficult, but with room to miss. On his front lay patches



“A ROW OF BRILLIANT BEE-EATERS” (*Merops pusilla*).

of thick scrub, and something in his demeanour convinced me that he would “lay up” in one or other of these. He passed through the first, hesitated in the second, and disappeared from view in the third. The spoor, however, showed that he had held his course, and I saw him no more. The chance was gone. I had selected, as events proved, a wrong choice—possibly from undue deliberation, though none could tell in advance. Still to have had offered, on consecutive mornings, fair chances at both leopard and lion, and to have availed neither, must leave an unspeakable sense of chagrin deep down in one’s breast. None can afford to waste opportunities.

A few minutes later the sun arose. In his early rays a thousand mimosa-trunks gleamed crimson-red against massed green and golden foliage; a pair of hornbills (special favourites of mine) fluttered, flopped, and tumbled in eccentric flight; a row of brilliant bee-eaters posed along a bough; the murmurations of doves filled the still air, and a pair of the lovely spot-winged species almost brushed my face in wanton play—all Nature was gay, and my spirits revived.

Of course we followed the lion's spoor for miles, the

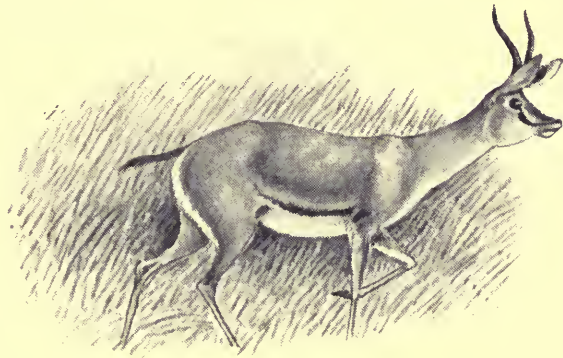


"FLUTTER, FLOP, AND TUMBLE."

Hornbills in Kordofan—January 28th, 1913.

Baggára proving wondrous apt at tracking. Slowly he had moved forward into a region of dense bush bordered beyond by lagoons white with pelicans. Soon all trace was lost. It was while following the lion-spoor this morning that we noticed the curious fact (more particularly referred to later) that close by where the beast of prey had passed only a few minutes before, groups of gazelles still grazed undisturbed. Incidentally we ascertained (on this and other occasions) that these Kordofan forests are, in places, of no great depth interiorly—rather they consist of a series of broad riverain belts of wood, expanding locally into double or treble zones, intercepted with strips of marsh or prairie. These forests abound

with red-fronted gazelle, seen here for the first time. Handsome trophies, too, they carry, their annulated horns reaching well over a foot in length.¹ In a bright yellow coat, with bold lateral bar and snow-white underside, the red-front is a conspicuous object so soon as within sight. These gazelles are not gregarious, but found either singly or in small parties up to half a dozen. Though always alert and vigilant, yet they cannot be called difficult of access, owing to the "advantages" (overthrown trees, ant-hills, clumps of bush



RED-FRONTED GAZELLE.—Kordofan, January 29th, 1913.

and the like) afforded to the still-hunter. I have never myself noticed these forest-gazelles browse on bush or scrub as the desert-gazelles habitually do; nor do they show up on the riverside—presumably they drink after dark or before dawn. That they do drink regularly is evidenced by the number of traps and spring-snares devised by the Shilluks to capture them (together with oribi and other small buck), and which are set by every likely waterhole or stream-head. One habit of theirs is

¹ Both sexes carry horns, but those of the females are short and thin, only slightly curved and lacking the annulations of their lords. Thrice during January and February I found new-born fawns concealed in the deep grass, but never saw them accompanying their mothers at that season. Probably these gazelles habitually leave their young alone thus—as waterbuck also do—only visiting them once or twice a day, or by night.

fixed and regular. They draw together into little groups for the midday siesta and lie down, often a dozen together, under the leafiest shade-tree available. They place no sentries and all go to sleep in careless security.

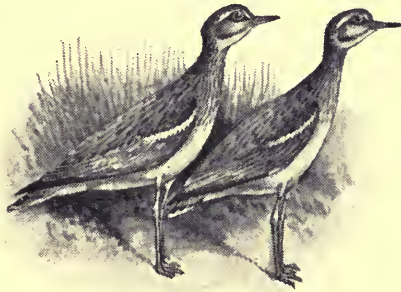
Besides these minor beauties, there were waterbucks—"Sing-sing," precisely similar to those already shot in British East Africa; also roan. Here I enjoyed my first interview at close quarters with two of these latter antelopes, and their bulk and imposing carriage left a deep impression. The trophies carried by this particular pair, however, were completely below my standard and I left them unmolested. Another day, in an open glade amidst scattered trees, my eye picked up three big red beasts and, in fervent hope that they might be tiang—a species I had not then seen—I manœuvred to approach. The three presumed strangers, however, proved to be old friends, Jackson's hartebeest or its Sudan equivalent. By a curious coincidence this trio happened to be the only occurrence of Jackson's hartebeest that I met with in life that year north of the Sudd.¹

The particular forests which I happened first to explore comprised great areas of closely growing saplings standing so thickly as to stunt undergrowth. Such conditions imply "difficult stalking"—not only from the absence of ground-covert, but by reason of a multitude of obstructive stems right in the line of fire. This initial experience led me to form what subsequently proved an exaggerated estimate of the difficulties of forest-stalking in the Sudan. The present chapter, however, is not specially concerned with the bigger game. They will be fully described later, each species separately.

Large bustards (*Eupodotis arabs*) frequented these woods—apparently they were picking gum off the trunks

¹ Externally, I am unable to recognise either in Jackson's hartebeest or in the roan antelope of Sudan, any visible characteristic sufficiently outstanding as to justify—much less to necessitate—their specific differentiation from their cousins further south. All these races in both cases are practically identical—each a continuing form of the other.

of mimosas ; also some of a smaller kind, Lovat's bustard, of which we shot several. A bird which puzzled me for long, and one of the last one would expect in arid wood-



STONE-CURLEWS.

lands, was a stone-curlew (the big speckled species, *Ædicnemus affinis*) ; when half-seen, flying low beneath spreading boughs, with their white-spangled wings, they looked more like big nightjars till I succeeded in shooting a pair. | Subsequently we found them regularly fre-

quentering the most arid thickets far from water. Those by the riverside belonged to a smaller species, striped rather than spotted like these, and also noisier. The scientific title of these latter is, I think, *Æ. senegalensis*. Another odd bird to find in the dry thorn-jungles is the black-headed heron. The swarming beetles explain the presence of both birds in such incongruous surroundings. Guinea-fowl of course abounded, the same species, the Abyssinian helmeted guinea-fowl (*Numida ptilorhyncha*), as we had first shot at Lake Baringo. On our way back to the ship I killed several, and was amused to see our Baggára friends retrieve winged birds after a course of hundreds of yards through deep grass and scrub ; when we overtook them, they were busy cutting the throats of the game with their enormous spears. They also



BLACK-HEADED HERON.

attacked a hare with throwing-knobsticks. Whether these weapons actually struck the animal or not, I could not be sure ; but at any rate a lurcher-dog of theirs gave

chase and presently returned with the hare in its jaws! The Baggára know a thing or two about (pot-) hunting. I visited their camp under some umbrella-topped thorn-trees. It consisted merely of a wind-screen, 6 feet high, under the lee of which stood their *angarebs*, or bedsteads, devoid of roof or of any protection, though the place was only a few minutes' walk from where we had seen the lion that morning.

On reaching the ship, I gave each savage a beaker of lemonade. It was laughable to watch the gleam of sudden suspicion that shot from their keen eyes as the fizzy stuff tickled unaccustomed throats! Laden with half an oribi-buck and a bunch of guinea-fowls, they departed fast friends.

These Baggára of Kordofan mark the southernmost outpost of Arab penetration into the Sudan. Beyond this point it is exclusively the "Country of the Blacks"—that is, of the aboriginal savage tribes, Dinkas, Shilluks, Nuers and, beyond the Bahr-el-Ghazal, of the amiable cannibals known as Nyam-Nyams. The Baggára are reputed enterprising and skilled herdsmen; yet here, in their habits and manner of living they appear to be but little, if at all, raised above the level of their purely savage neighbours, the Shilluks. They are one and all stark barbarians—a singular contrast with the burnoused and comparatively gentle Arabs of the Blue Nile, only a few days' march to the eastward.

January 31.—Aboard *Isis*, in 10°35' North latitude. How delicious to be at a nameless spot in space, only definable by the symbol of its latitude and longitude! It was 5.35 this morning when the watch on deck sent me the word *Gamoos* (=buffalo). The darkness was still intense, hardly relieved by an expiring moon or by the Southern Cross. The wind had dropped dead and *Isis* was slowly drifting down-stream towards the eastern bank. On all sides the silence of night was broken by the sonorous grunts, blowings, and wallowings of schools

of hippopotami, exuberant after their nocturnal foray ashore, and by the weird wail of a hyena afar; also, at intervals, by the swish of vibrating pinions as some trip of wildfowl passed in the pall overhead. Presently the low bellowing calls, snorts, and splashings of buffalo became distinguishable, and soon, as light waxed, we descried three, girth-deep in the river; while a dozen more, including some calves, stood on the open foreshore, others, barely visible, among the trees on the bank beyond. It was the latter who first detected danger; for with sharp nasal grunts (quite distinct from their previous conversational tones) they vanished in the forest, and the rest promptly took the cue. Beyond, by the water's edge, a dozen shaggy waterbuck (with never a horn among them) stood drinking, and in an open glade I descried a sounder of wart-hog making their way inland. We were obliged to drop anchor, to avoid drifting ashore; and the sullen splash spoilt an entrancing tropical scene. On two other occasions I met with buffalo thus, just before the dawn; and several times struck brand-new spoor within the forest, though at this point we never succeeded in overhauling the beasts.

It was near this latitude that, on a dark night about ten o'clock, the *Isis* came into violent collision with a hippopotamus in mid-river. The incident, however, is related in the chapter descriptive of our great amphibian neighbour.



A MISADVENTURE.

During one of those delightful days in the forests of Kordofan, a disagreeable misadventure befell. After a six-hours' ramble among wild beasts and birds, I had returned to the ship about noon, and while having a bath, observed through the open scuttle a curious spectacle. A big tree on the east bank was crowded with monkeys, obviously in a state of great excitement, and performing extraordinary acrobatic evolutions. Many kept leaping from branch to branch; others scampered and climbed to the outermost boughs, from whence they jumped into the scrub far beneath. On bringing the glass to bear, I perceived two other monkeys, much larger, sitting together, huddled up against the main trunk. At once I sent word to the *rais* to close with the bank, in order to investigate this phenomenon, meanwhile taking careful marks and bearings. By the time I was ready, the *Isis* was berthed alongshore, but a full mile beyond the spot. That mile I proceeded to walk back. The sun-heat at high noon was something unspeakable, though the wild-life around made some amend. When close up to my marks, suddenly a few bees seemed to become aggressive, buzzing angrily under my helmet. At first I thought nothing about this but, a second later, felt myself stung—stung badly again and again, on face and ears, then on wrist and arms, soon all over. Clearly the attack was serious; so I cleared the trees and plunged into the jungle of deep cane-grass that lay inland, thinking therein to escape the enemy. In vain! By now, many thousands of bees had joined in the assault and the swarms increased momentarily, stinging hundreds to the minute, and particularly at the more tender points—such as eyelids and brows, nostrils, in and behind ears, as well as on arms and chest (my shirt being, as usual, open). Through unyielding cane-jungle I rushed away in a sort of frenzy,

scarce able to see for the living cloud of furious insects around my face, and stumbling every second step into some hidden hippo-track, a foot deep and more. Thicker and thicker swarmed the bees on me till the buzz in my ears sounded like a shrill scream rising and falling in varying cadence; while masses of them settled on face, ears, neck, hands, and arms. I tried to rig a pugaree under my helmet—useless anyway; the only result was that an extra crowd got inside and stung me all over the scalp. Luckily I had wit enough left to leave them there.

Now the sting of a bee is not in itself a serious matter; but the cumulative effect of thousands delivered simultaneously can come fairly near being fatal. Between the physical pain and the labour of forcing a way through tough canes under a tropical sun, I soon became pretty well demented. I remember trying to bury my head in a hippo-hole among the grass-roots. No good; the exasperated legions followed in and I had to fly again. Mahomed Maghazi joined me. We tried to light a fire; but I realised at once that ere we could get green grass to burn I should be stung to death, so continued my flight alone.

The next thing of which I have a definite recollection was the appearance of a native savage—whence and how Heaven knows—who seized me in his arms, threw me on the ground, and belaboured me with something. I remember those blows, but not much else till I found myself being carried shoulder-high by Abdul Hamil and my own crew; they had wrapped me in their burnouses and bore me to the gyassa, a mile away. The kindness and devotion of these wild Africans passes belief; had they been brothers they could have done no more. Though being severely stung themselves, they bore me along, rolled in their own clothes; four bearers, two others driving off the enemy, the seventh shielding my head from the sun. Splendid

fellows!¹ The infuriated swarms followed all the way, actually penetrating right into my bunk aboard ship. Never have I suffered a more agonised hour.

At once my faithful Arabs set to work with pliers, extracting the thousands of "stings" from my flesh—eyes, ears, hair, everywhere. Even from inside the cavities of ears and nostrils were bees in person hauled out. They seemed smaller than our British honey-bee and had yellowish bodies, but I admit I gave them scant attention.

The first extraneous effect was an attack of violent nausea, like sea-sickness, followed by colic. These, I imagine, were kindly Nature's own remedies for the expulsion of the terrible dose of blood-poisoning that had filled my system; but the first relief from actual pain I owed to a bath of ammonia . . . but I leave those sufferings unwritten.

It was three hours ere Mahomed Maghazi returned, badly stung, poor fellow. He had got his fire to burn and lay behind its smoke in all that blazing, blistering heat; but he had rescued my rifle and helmet.

Having faced elephants, lions, and all the dangerous game, it seemed humiliating to be thus routed and put clean out of action by humble honey-bees!

The primary cause of all the trouble was doubtless that those monkeys had been raiding the honey, and the exasperated bees had wreaked a vicarious vengeance on an innocent passer-by. A dear young friend (Freddy Selous) suggested that the bees may have mistaken me for a monkey! but that was distinctly unkind.

I quote from my diary of the next day:—"Thank

¹ I find the following note in my diary:—"Such was the true kindness, sympathy, and almost loving attention of my wild Arabs that I felt truly sorry that I had lectured them somewhat mercilessly for their night's truancy at El Duem a week or so before. They had, however, grossly deceived me on that occasion. There is a strong strain of Ishmaelitish guile in the Arab, and after all it is a duty to keep such tendencies in check."

Heaven, this night is over and pain gradually lessening ; but I'm swollen all over like a putrid rhino—cheek-bones, knuckles, and such-like landmarks have ceased to exist ; eyes entirely bunged up, and feeling stiff and sore from top to toe—but no fever, *Gracias á Dios.*" Even eight days later I had not entirely recovered the use of my left eye.¹

What the larger monkeys were remains unproven ; but shortly thereafter I had opportunity of making acquaintance with the other kind under the following (less parlous) circumstances :—

GRIVET MONKEY.

Some elephants had been feeding on a spiny cactus-like plant that abounds in these forests—the sort that grows in half-disconnected sections and is often parasitic, hanging in festoons from tree to tree. The incident had occurred weeks before, during the rains ; yet great husks of fibrous substance, chewed and disgorged, lay scattered around.

This cactus-growth stretched in a belt right across our course. We were seeking a passage through the barrier when, in a tree just beyond it and not 20 yards away, appeared a startled black face—strangely human. For one instant our eyes met, and by the white eyebrows and bushy whiskers I recognised a grivet. In a flash the creature had sprung from sight. Quickly we found a way through the obstruction and saw, across an open beyond, two monkeys bounding away. Off dashed my Baggára like greyhounds, forcing the greybeards into the nearest clump of trees. With wondrous agility they leaped from tree to tree, but were presently at fault and I shot both ; indeed, three monkeys fell, for, unbeknown to me, the female had a young one clasped around her neck and breast. They proved to be grivets (*Certhopithecus*

¹ Cases have occurred when both men and donkeys have been killed outright by bees. An instance of their ferocity and power is amusingly related in Schweinfurth's *Heart of Africa*, i., pp. 73-75 and 81. See also *Deuteronomy*, i. 44.

æthiops) weighing, male, 12½, and female, 10 lb. respectively. I preserved the three skins and my men ate the flesh. In 1919 I shot one of a curious fulvous colour.

I smile now recalling that strenuous effort to secure the two first-seen grivets! for we subsequently found them abundant enough both on Blue and White Niles, and had no difficulty in procuring any specimens required.

The same morning, thinking I saw something move



GRIVET MONKEY.

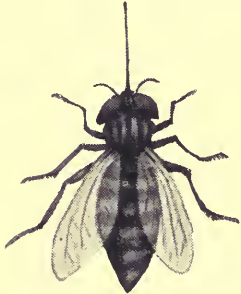
in the bush, I ran forward, but quickly realised that the suspect was a savage female—human! Instantly she had seized up a *toto* and plunging into a thicket, vanished from view as smartly and effectually as the “old man” monkey had done an hour before.

THE SEROOT-FLY.

“And it shall come to pass in that day, that the Lord shall hiss for the fly that is in the uttermost part of the rivers of Egypt.”—ISAIAH, vii. 18.

This insect-terror first appears in the region of Kosti bridge, some 170 miles south of Khartoum, and thence forwards forms a perpetual menace to peace. In general appearance the seroot (*Tabanus*) resembles a cleg but is quite twice as large.

Near Jebel Ahmed Agha I wrote:—“The ship swarms with seroot. We are obliged either (1) to close all doors and windows and then catch with butterfly-nets all the seroots inboard—which is hot work at noon; or (2) leave all open and live in a torrential draught. The seroot combines the speed of a peregrine with the sleuth of a weasel. Whereas the common house-fly alights with a buzz and a bump and then crawls, the seroot settles silent and insidious and goes to work at once. The victim is unaware of his attack till the spear pierces like a red-hot needle. His energy and power of penetration amaze. He gets home his sting and draws blood within *three seconds* and,



SEROOT.

if neglected, a serious sore results. A wash of ammonia, however, avoids that. The common house-fly of these parts also bites hard and can easily penetrate ordinary stockings or flannel shirts.” The latter terror belongs, I have since learnt, to the genus *Stomoxys*, probably of the species *Calcitrans*, L.

A LION NOTE.

On one of the nights of convalescence, as the breeze held, I was able to sit and smoke on the poop. Suddenly, about ten o'clock, the stillness of night was shocked by the splendid sonorous roar of a lion on the bank hard by. Commencing with the usual soughing “coughs,” it developed into a series of deep-chested explosive volleys that seemed to shake the very atmosphere, magnificent in its expression of brute power. Half an hour later we were favoured with a second demonstration, this time longer and more varied. The effect might well be described as musical—to me, if it be not sacrilege to say so, no earthly music impresses

more. Listening in the darkness, one realises the power and majesty of the Lion, King of Beasts, strolling forth under the pall of night to devour whichever of his subjects first suits his royal convenience.

It has become a vogue to depreciate the lion and to question his kingship. That is not fair, for no lion ever set up such silly claim. Most men who see lions nowadays, see them not in natural conditions, but as ridden-out by mounted Somalis, or mobbed from covert by a crowd of beaters and dogs into the unaccustomed light of day. The lion is not then apt to show himself to full advantage. His main sentiment is one of annoyance at being disturbed: his main object to gain some quieter spot to sleep off his overnight meal in peace. Hence he is not then "rampant"—all teeth and toe-nails—as depicted in armorial bearings, trade-marks, or heraldic designs. Hustle him too closely and not even in broad noontide will the lion disgrace his overlordship. But after all the lion is nocturnal, and it is then, when the mantle of night overshadows the tropical forest, that a truer appreciation of his majesty can be realised.

Such ideas as a kingship among beasts are, of course, purely poetic and imaginary. They are calculated, moreover, unless clearly so understood, to foster utterly erroneous impressions of wild-life in the wilderness. To me they have a "cockney" savour, nor have they any place outside a "Jungle-book," wherein animals speak and think and so on. The untaught savage of Africa who reads no rubbish but who lives his life among wild beasts, intuitively assigns to each its due degree of danger in truer proportion than some white men who write on such subjects; and he invariably gives the lion first place.

CHAPTER V

TIANG (*DAMALISCUS TIANG*)

ARABIC—*Tétel*

ONCE the true big-game country is reached, the hunter will hardly traverse many miles ere he finds himself confronted by a troop of tiang. And a singular silhouette they present as they stand on gaze, facing full-front towards the intruder, rigid and erect, nothing more than long black faces and thin necks showing above the deep grass. Viewed thus, their horns strike one as strangely short and stumpy, since the upright carriage of the head conceals the long receding tips from sight. Or, should the sun be already well up, the hunter's first introduction may be to a listless group, all quiescent and with drooping heads, half-asleep in the shade of some far-away mimosa-grove (p. 83). The animals are deep mahogany-red, with high withers and sloping quarters. "Tétel," whispers your swarthy companion; but the information is needless, since there is no mistaking a hartebeest. That tribe is a thing apart among all wild Nature's infinite designs. The almost exaggerated length of the face, carried rigidly erect, and prolonged by upright horns set in the same plane, together with the formal sloping figure, form a combination like nothing else on earth.

The tiang, however, is not a true hartebeest (*Bubalis*) but belongs to the allied genus *Damaliscus*, distinguishable even in the field by the lesser development

of the horn-pedicles and simpler form of horn—in this case a gentle backward curve, contrasting with the abrupt angles in hartebeest proper. A glance at the annexed diagram showing horns of (*A*) tiang, and (*B*) Jackson's hartebeest—which latter animal also occurs in the Sudan—will demonstrate the difference between the two genera better than words.

The Upper Sudan seems to form, not exactly a rendezvous (since none of the animals actually meet), but rather a centre of dispersal for three out of the four allied species of *Damaliscus*.¹ From its southern limits (say

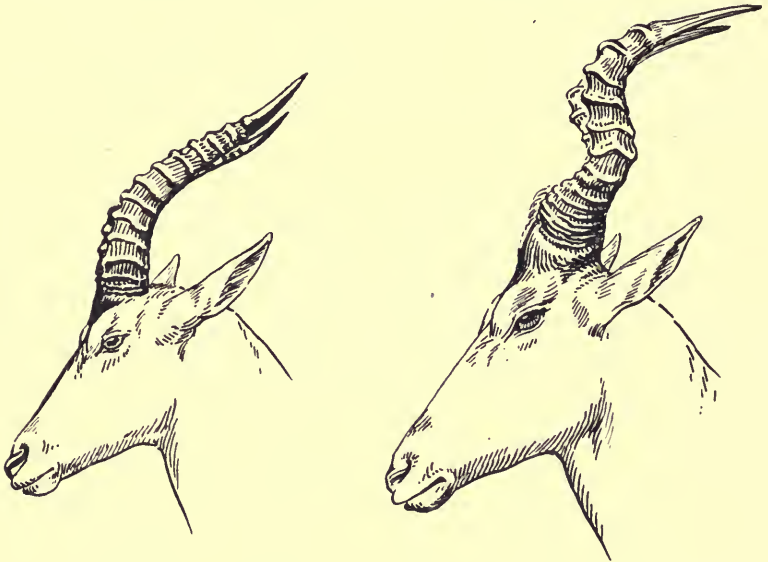


TIANG ON GAZE.

about 5° North latitude) the tiang—our present subject—spreads away northwards to Sahara; while southward—with a gap between—its cousin, the topi, extends into Equatoria; and from the west—again separated by a hiatus—intrudes the korrigum from Senegal. The first two of these three relatives agree among themselves (and equally with their somewhat segregated cousin, the sassaby of southern Africa) in the extreme richness and depth of colour of their coats. No other group quite matches it—a deep glossy mahogany-red, set-off by con-

¹ Besides the four referred to, other three species are, rightly or wrongly, included in the genus *Damaliscus*, to wit:—(1) Hunter's antelope, the headquarters of which lie along the Tana River in British East Africa; (2) the blessbuck; and (3) the bontebuck, both these latter being exclusively South African. None of these three quite conform in external characteristics with the four species under review; nor are they included in this particular survey of the *Damaliscus* group.

spicuous black blotches both on fore-quarters and flanks, as well as by a bold black "blaze" on the face. This striking colour-scheme is, moreover, accentuated by iridescent effects, the whole being "shot" with lustrous reflections of purple, mauve, and violet, that gleam and glance with the play of light. Of the four, the southernmost (the sassaby, which I shot in the Transvaal) is certainly the



HEADS OF (A) TIANG (B) JACKSON'S HARTEBEEST.

most exquisitely gifted, the sheen on its flanks resembling the bloom of a ripe grape. Similar effects are visible, though in somewhat minor degree, on the tiang; while the korrigum responds to its desert environment by eschewing such adornments altogether.

The main stronghold of tiang is on White Nile; but it extends eastward to Blue Nile and Dinder, being replaced beyond the latter river (on Atbara, Settite, and Rahad rivers) by the Tora hartebeest. The first desideratum of the tiang is good firm dry ground—swamp or *Sudd* he abhors and never enters. Given this essential condition, the tiang is ubiquitous throughout

the game-country of Sudan, and though in the main a denizen of the open prairie, yet in the south we constantly found these antelopes in forests denser than I ever saw hartebeests frequent elsewhere. Tiang drink twice a day; in the mornings very early, before it is light enough to see, for dawn discovers them slowly grazing away from the riverside.¹ Owing to this dependence upon water, tiang, in a dry season, are never found far inland, usually within a few miles provided pasturage is plentiful. In places where their feeding-grounds lie further back, they are restless and unsettled



TIANG AT MIDDAY—Zeraf River, February 19th, 1913.

while passing through the intermediate belt, snatching a mouthful here and there and keeping a keen look-out. In such places it is time wasted to trouble them; better seek them out at their permanent pasturages.

After their pre-dawn drink and a morning's feed, tiang are most playful animals. I have watched a herd of sixty or eighty performing a regular series of evolutions, galloping wildly around in circles—opposing, concentric, and elliptic—bucking and leap-frogging over one another's backs, as though in terror. At first I

¹ Whereas, as just described, tiang habitually drink at least twice every day, yet by one of those inexplicable paradoxes that confront one in Nature, its nearest relative the korrigum is exclusively confined (as regards the Sudan) to the arid Deserts of Western Kordofan, where no water exists, and where thirst can only be allayed by digging up the bitter melon.

imagined that a lion was menacing them; but it soon became obvious that sheer exuberance of spirit formed the motive cause. For while we watched, little bouts of sham-fights began between younger bulls, while others coquetted with the females. Half an hour later the whole herd had relapsed into quiescence, enjoying a noontide siesta, mostly afoot though several lay down.

Although gregarious — some herds numbering one hundred and upwards—tiang are not social and rarely mix much with other species. Occasionally one sees an odd *tétel* among the mobs of white-eared cob and, more rarely, with roan. With waterbuck, though the two species often pasture alongside, the tiang never associate. This trait was markedly conspicuous on the Zeraf River, where every afternoon we watched huge aggregations of both these antelopes leisurely filing down towards the water — charming pageants in wild-life. However closely their companies might approach each other, yet never did the herds intermingle. The waterbuck often came on boldly to drink in broad daylight; the tiang never. There were giraffe and roan there also, but these never came near the river at all.

This was in February, 1914, when, by reason of a Nuer outbreak further up the river, all rifle-shooting on the Bahr-el-Zeraf was closed. We had been granted a special permit to collect birds only (for the British Museum), and were therefore free to revel in these delightful scenes undisturbed by ulterior motives or designs.

Tiang are watchful animals and, on the dead-level grass-prairies, distinctly difficult to stalk, especially when a sentry stands posted on a 10-foot ant-hill. It is curious, however, how much animal-instinct varies. I remember one day when, after shooting two *tétel*—each after a laborious crawl—another herd allowed me to walk openly past them within 200 yards (nearer, in fact, than either of my hard-earned shots). Twice, a restless spirit or two

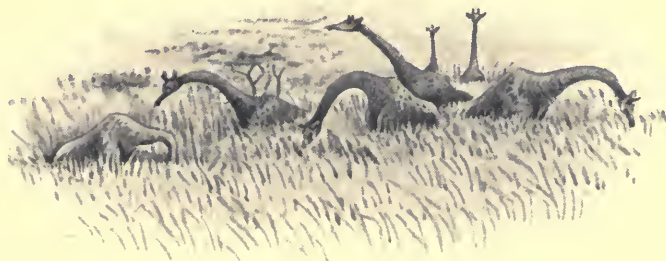
among this troop started a short stampede but, thinking better of it, they all relapsed into their former sleepy postures, in which I finally left them.

Among bush or in forest, stalking is naturally easier ;



TIANG AT PLAY.

and under reasonably favouring conditions, aided here by an overthrown tree, an ant-hill, or thick trunk, there by bush or tall grass, the hunter should, on most occasions, "get in." A shot, however, does not necessarily follow; for so thickly do these antelopes mass together that, among trees and shadows, it is often impossible to distinguish the best; while, should the selected bull for a



GIRAFFE ON THE ZERAF RIVER.
(Grazing on Low Thorn-Saplings in Deep Grass.)

moment stand exposed, the constant movement of the rest will probably mask his outline ere aim can be taken.

When, in the middle of a stalk, the hunter at a crucial moment finds himself "held up" by some impassable obstacle—say an intrusive reedbuck or oribi—when fifty pairs of alert eyes beyond play upon everything like a

searchlight, and hope seems to peter out . . . suddenly and inexplicably the wrapt attention of the whole herd ahead appears diverted; some vagrant pre-occupation arrests their vigilance. With heads held low, some stroll aimlessly; others stand inert; none are watching; all are bemused. For the hunter who has eyes to see, this is a decisive moment. Instantly and almost in full view—ere the momentary hallucination pass—he risks an advance that, till then, would have been certainly fatal. Now the obstacle is safely passed—the rest is easy. Such “lapses,” naturally, may not synchronise with a hunter’s necessities; nor be relied upon at any time. It involves, moreover, the closest observation to recognise the chance—a sort of appreciation of what is passing in the minds of the game—as otherwise a fiasco must result.

Half a dozen episodes of actual field-work with tiang—such as those which follow (were only the pen inspired, which it is not)—should convey a more effective insight into the ways and daily lives of these and other wild creatures, than reams of written words.

TIANG-STALKING

(I) SOBAT RIVER, *February 1st*

Dawn revealed four tiang some 600 yards away on the south bank. We landed at once, but a chance native, passing by, moved the game. Beyond, on open prairie, fed a second herd of thirty, and all now grazed away together towards forest a mile distant. That covert offering better access, by a long encircling detour we gained its shelter, and speedily arrived opposite the spot where the united herds grazed, 300 yards out in the open. The outermost trees grew thin and scattered. I therefore crawled forward alone towards a triple bushy trunk that offered the best cover; but by evil chance, when within 60 yards of that objective, a bushbuck doe obtruded its unwelcome form straight ahead and stood on gaze. Not

even so slight a signal escaped observation by the watchful tiang far beyond. Several at once faced directly round, and suspicion deepened in their minds to certainty when the intrusive bushbuck bounded away. Fifteen long minutes slowly elapsed ere those acute suspicions began to relax and then some of the tiang laid down. Three sentries still gazed fixedly; despite which I then wormed a serpent-like advance to the outmost tree, whose triple bole afforded a scant but welcome screen. Beyond, it was impossible to move a single inch. I therefore adjusted sights to 300 yards and was preparing a "rest" on the friendly trunk when I observed the whole troop suddenly face the other way. The recumbent animals sprang up, and it was evident that some fresh alarm threatened from beyond. I therefore reserved my fire, in the hope that the disturbed troop might retreat my way. Presumably they would have done so, but alas! that "bushbuck-signal" still lingered cogent in their minds—wild creatures never forget—and the whole herd, purposely avoiding the danger-spot, galloped off wide to my left, entering the timber far beyond range.

On standing up, I observed half a mile away a dozen Shilluks, with dogs, directly beyond the spot where the tiang had been standing. Presumably these savages would have, unconsciously, driven the game right into my face . . . but for that thrice-blessed bushbuck!

An hour's walk revealed the fugitive herd on a wide forest-open, moving straight down-wind, thus involving another two-mile detour. This circuit placed us on their flank to leeward, as they skirted the trees. Shortly we were, for ten seconds, within 100 yards; but so thickly grew the bush at that point that no clear shot offered, and we were fain to forego that chance and follow on once more.

Then, at last, the long-delayed opportunity arrived. The forest ran out in a long tongue and, hurrying to its apex, I found myself within shot. The tiang, not having

seen us for a couple of hours, halted unsuspecting, strung out in a long string. Adjusted sights to 275 yards and had the supreme satisfaction, on firing, to see the selected bull drop vertically from the field of the object-glass. The ball had penetrated both shoulder-blades and he fell as though struck by a thunderbolt. His horns taped a trifle under 19 inches—identical with those of two others previously shot—and, judging from my recollection of topi in British East Africa, I (quite erroneously) reckoned I possessed three quite good tiang heads.¹

A curious incident deserves mention. My companion, Lowe, lay crouched at my elbow and we had both heard the bullet "tell"; we both, moreover, saw the animal immediately *in front* of my selected mark bound high in air and make off. L— (who, of course, could not see at which of the group I had aimed) remarked:—"You've hit him, but I fear not on the right place." Having, however, myself *seen through the object-glass* the instant fall of my selected tiang, I was able to reassure him; and, on our standing up, we descried the dark red object right enough, lying stone-dead in the grass.

(II) AN OFT-OBSTRUCTED STALK

An hour's walk had brought us within sight of a troop of tiang grazing in open forest. These woods swarm with oribi which, by bounding forward, oft convey alarm to finer game. Reedbuck also, on occasion, do similar disservice. This morning we avoided such mischance and presently had the *tétel* at 150 yards. There were several grand heads among them, but so thickly did they cluster that I refused the shot. Slowly they grazed across an open glade and entered the thin forest beyond. Following their course, we espied among the fringing trees the massive forms of two great roan antelope inter-

¹ Topi heads average little more than 15 or 16 inches, while tiang average fully 20 inches, and I subsequently secured tiang trophies very largely exceeding that measurement.

cepting our course. These, of course, we should have preferred to the biggest tiang in all Sudan; but an exhaustive survey with the glass revealed quite inferior heads, so we withdrew and passed on, leaving the twain in peace.

But . . . was there ever such obstructive luck? Hardly had we gained the opposite covert, than in an embayed inlet we found ourselves face to face with two mighty giraffe! Both were browsing upon tall camel-thorns (*Acacia horrida*), twice their own height; but while the nearer showed up pale creamy-fulvous in hue, the second appeared quite dark. The discrepancy was, however, merely the effect of light and shade; for, while one giraffe happened to stand in full sunlight, the other was screened from the sun by intervening trees.

We had been charged by the British Museum to bring home an entire specimen of the dark-coloured "reticulated giraffe"; so that (while assured in my own mind that that species does not exist in the Sudan—nor does it) I felt in duty bound to put my doubts to the proof. Within a few minutes we had crept in near enough to satisfy ourselves that *both* giraffes were identical in colour—the common Sudan species.

Precious minutes were lost both in the stalk and afterwards in extricating ourselves from the sight and scent of our long-necked friends, whom we left still browsing and unconscious of the interview. Meanwhile our tiang had got a mile away, circling round almost to leeward. During these protracted manœuvres we had observed a second herd of tiang, and these now stood well up-wind and among big forest-trees. The midday sun was unspeakably hot, and I feared, after two obstructed stalks, that that first herd was not destined to be mine. Resolution failed and, quite inexcusably, we transferred our efforts to what appeared to be an easier chance. I shall always regret that weakness, for our much-tried herd, we knew, held first-class heads; while, as the event proved, herd No. 2 did not.

The substituted stalk, as foreseen, proved easy; but at its climax, so low grew the overarching foliage above, and so tall was the undergrowth (stuff like wild raspberry canes), that it was impossible from the firing-point to see a single horn. I selected the biggest bulk in sight,



COMING TO THE KILL—MARABOU.

Baraka muttering, as I fired, "entire" (or a word that sounded like it—I believe the correct Arabic is *entiyah*)—and so it proved, a big cow with 17-inch horns. At the shot, the troop stampeded, but with that inscrutable instinct of theirs, upon missing one of their mess, pulled up in the open beyond. I then selected what was certainly the best bull of the whole company; yet his horns only taped 18 inches! That was our punishment for the pusillanimous change of game. Still I was glad to have a good

female specimen, for I doubt if I should ever have shot one of that sex knowingly.

In tiang there is no apparent difference in size between the sexes. On scrutinising a herd in the open, females can be distinguished by their shorter, thinner, slighter horns;¹ but all stand practically the same height at shoulder—say 45 to 46 inches. The bulls weigh well over 300 lb., live weight.

While off-skinning this pair, the rest of the herd still stood unconcerned within 400 yards awaiting their lost companions; while close around us assembled a circle of marabou and vultures, the latter including both the handsome white-headed species and that repulsive "undertaker," the Nubian vulture; and a pair of tawny eagles took post on a dead tree hard by. In their eagerness for a scrap of offal, the kites swept past within arm's length, often almost brushing our faces.

(III) PENULTIMATE

To complete the yarn I copy two brief *précis* from diary:—"Dressed by candle-light and away before dawn. Saw many oribi, reedbuck, and herds of tiang. Settled to one of fifteen in thin bush and crept within range, but was prevented by intervening 'detrimentals' from shooting the leading bull, the best hitherto seen. Quite a fine beast stood sentry on an ant-hill on our left; but he wasn't good enough and I refused him. Then by a stroke of sheer luck, the leader quietly strolled into the open, crossing our front at 170 yards. The bullet took him fair behind the shoulder; after a spasmodic rush of 30 yards he collapsed, dead—a beauty, horns 22 inches each, by 8 in basal circumference. This closes my account with tiang."

¹ Sportsmen of experience have expressed a contrary opinion, stating that they find a difficulty in distinguishing the sexes both of tiang and roan; even Sir Samuel Baker, on first encountering a herd of tiang, shot a cow by mistake (*Ismailia*, vol. i., p. 68). I can only say that this is the only cow tiang I ever shot; and then I could not see the horns.

(IV) FINAL

As prophets we usually fail, and this (fourth) yarn falsifies that last remark. A week later, I find in diary:—
 “As we needed meat, and also a carcass whereat to collect specimens of vultures, I stalked some tiang, and was in the usual quandary about selecting a choice specimen, when a heavily-horned head suddenly surmounted the



“ROOM FOR THREE.”

Giraffes at Jebel Zeraf, February 1st, 1914.

low bush on our extreme left. Aiming one foot beneath the chin, I heard the bullet tell, and such a shot signifies ‘neck or nothing.’ After the usual preliminary stampede, the herd stood awaiting their outpost, and I tried, with binoculars and pencil, to catch some of their characteristic attitudes. Presently some began ‘playing,’ indulging in sham skirmishes, and then I realised that a truly grand

bull stood sleepily on my right front. He carried a massive head—a trophy never to be missed. Creeping forward to 250 yards unseen, I secured him, my best tiang, though only after a long cripple-chase. His jet-black face was brindled with white hair, forming almost an incipient ‘blaze,’ and his massive horns measured 23 inches by 9 in basal circumference.”

That really *did* “close the account.”

My tiang trophies thus displayed a gradually ascending scale, thus:—

	Length.	Basal Circumference.
A, B, C . . .	18 $\frac{3}{4}$ inches.	7 $\frac{1}{2}$ to 7 $\frac{3}{4}$ inches.
D . . .	19 $\frac{1}{2}$ ”	7 $\frac{7}{8}$ ”
E . . .	22 + 21 $\frac{3}{4}$ ”	8 + 8 ”
F . . .	23 + 22 $\frac{1}{2}$ ”	9 + 9 ”
FEMALE . . .	17 ”	5 $\frac{1}{2}$ ”

HARTEBEESTS OF THE SUDAN

(TRUE HARTEBEESTS—*Bubalis*)

Whereas in British East Africa the true hartebeests compose one of the most conspicuous elements in its fauna, in the Sudan, on the contrary, they are rather conspicuous by their absence, their place therein being taken by the allied genus of *Damaliscus*, of which the tiang, just described, forms the prevalent type.

Three species of the true hartebeest, nevertheless, find place in the Sudan game-list, as follows:—

(1) JACKSON'S HARTEBEEST.—Although in the forest-region of Kordofan I only thrice met with these big antelopes, yet further south, in the steppe-country by Lake No, they become numerous.

In the *Bahr-el-Ghazal* province beyond, Jackson's becomes the predominant species and may be seen in hundreds in such localities as N.W. of Rumbek, west of Wau on the Dem Zubeir road, and to the N. and N.E. of Tonj, associated with tiang, white-eared cob, waterbuck, and gazelle, as well as with giraffe and ostriches in lesser numbers. The saddle-backed lechwi extends up the Tonj River so far as swamp and sudd-like conditions prevail. Tonj is, in fact, an excellent hunting-ground, quite healthy, and in the dry season practically free from mosquitoes. Round 'Mvolo lies a haunt of elephants, the great pachyderms sometimes invading the settlement and evoking frantic appeals by telegram—until the beasts have broken down the wires!

South of the Sudd also, Jackson's hartebeest is plentiful. All seen by myself in that region certainly belonged to this species, an animal I knew well in British East, and which it is difficult to mistake. These Nilotic "Jackson's" have nevertheless been described as differing in some trifling detail from the typical form, and a subspecific title of more than doubtful value has been assigned to them.¹

¹ Personally I reject such differentiations on two grounds. First, all are based upon inadequate evidence and material—such, for example, as a flat skin or two; on a few skulls with or without masks, and so on, but ignoring the life-conditions and economies of the creatures themselves, such factors being unknown to many of the describers, and apparently

(2) NEUMANN'S HARTEBEEST (True *Bubalis neumanni*).—About 100 miles south of Renk, on White Nile, a "lone bull" of this species was shot by the Hon. Gerald Legge, who showed me the specimen aboard his gyassa, a second being obtained the same season (1914) near Bohr by Lieut. G. P. de B. Monk. In *both* cases the horns corresponded precisely with those of the hartebeests discovered by my late friend, Arthur Neumann, on Lake Rudolph, but *not* with those of that local race of hartebeest which, a few years ago, we all *mistook* for true "Neumann's," and whose range is restricted to the narrow limits between Lakes Elmenteita and Nakuru in British East Africa. The latter has now been separated—correctly, in my view—as *Bubalis nakuræ*, Heller. Between it and the *true* Neumann's on Lake Rudolph occurs a gap of 300 miles.



"MARABOU OVER."

Incidentally (and quite inappropriately) I here enter passing protest against a theory that ascribes the said Nakuru hartebeest to hybridism. In Nature's

plan hybridism has no place, though hybrids exist in plenty. For an object-lesson in hybrids, read SELOUS, *African Nature Notes and Reminiscences*, pp. 35-36.

(3) TORA HARTEBEEST (*Bubalis tora*).—This is the form found in Eastern Sudan—on Atbara, Settite, Rahad, Dinder, and Blue Nile—meeting the range of tiang on the head-waters of the two last-named rivers—a sandy-red animal, unicolorous, and with rather wide-spread horns that suggest affinity with its neighbour, Swayne's hartebeest further east (in Somaliland), and with Neumann's on the south. Horn measurements as given in Cotton's *Eastern Sudan* (p. 271), 17 to 18 inches, with a similar spread between tips. Weights of four bulls shot on Settite River, 313 to 397 lb.

regarded as of little or no importance. Secondly, that the value of the alleged differences themselves are trifling, amounting to no more than "individual variation," the range of which variation frequently far exceeds the meticulous trifles upon which systematists revel in multiplying fantastic racial forms. This fact my own small collections suffice to demonstrate.

CHAPTER VI

THE ROAN ANTELOPE (*HIPPOTRAGUS EQUINUS*)

ARABIC—*Abu Uruf*

THE roan was a special object in my Sudan programme, not merely because it represents one of the most imposing of African trophies, but chiefly because my previous experiences with this antelope had been slight and the Sudan promised a better acquaintanceship.

A characteristic of the roan is that, while widely distributed throughout Africa, it is nowhere common—common, that is, in the sense that sable, waterbuck, gnu, hartebeest, or impala, each in their respective areas, are common. I first came across the roan in Transvaal; and thence northwards it is known to every hunter, white or black, throughout Rhodesia, and onwards across the Equator to the verge of Sahara. Yet nowhere in that vast area is the roan really abundant; everywhere it exists locally, yet always relatively scarce.

To-day in the Sudan the roan is not only as abundant as anywhere else in Africa, but apparently reaches therein its highest development as a species. By inference, perhaps, it may have sprung from a northern ancestry whose subsequent dispersal has trended southward.

Though its actual numbers (as compared with the mobs of waterbuck, tiang, and cob) are relatively small, yet the roan is spread evenly over the whole game-country of Sudan, including Atbara and Dinder, Blue and White Niles, with their tributaries.

In the Sudan the roan is confined to forest, or at least to bush-country, and avoids the open plain. Save when merely crossing intervening prairie, I cannot recollect ever having seen these antelopes beyond a few hundred yards from the nearest covert.

Roan are more independent of water than any of their local neighbours. I can hardly think they require to drink oftener than once a week, possibly twice. It is, of course, difficult to prove a negative; but never have I seen roan near the river either at dawn or dusk, as one sees all the rest. Twice I remember observing troops of twenty to thirty striding down in stately single file towards the river in mid-afternoon, and once a company of seven at 11 A.M.; and on each occasion their gait left the impression that they had come from afar. Roan, moreover, are great wanderers, and range inland over arid areas that seem incompatible with a necessity for drinking daily.

Usually seen in small companies—two or three up to a dozen (though, as mentioned later, I once saw what I thought might be a hundred together)—roan are decidedly exclusive in social taste. Seldom or never do they herd with other species, and when seen in company with tiang, it is the latter who have intruded; at any rate, if disturbed, the roan go off at once their own way.

Despite their frequenting forest and bush—usually considered easy stalking-country—roan are always distinctly difficult of access. Beyond a doubt they are extremely vigilant, and gifted with brilliant eyesight to boot; moreover, their great height gives them a commanding outlook.

In writing the foregoing paragraphs I find myself in this quandary—that they seem to place me in opposition to the recorded experiences of one of our greatest hunters and observers, Sir Samuel Baker.

During a whole year on the *Nile Tributaries*, Baker records (pp. 475 and 484-5) that, "owing to their extreme



ROAN ANTELOPE—NOONTIDE (Kordofan).
Sketched at 300 yards.

wildness and the open nature of their haunts," he never shot but one roan antelope, and even that one was not recovered till the following day, when already half-eaten by a lion. More inexplicable still—on meeting with von Heuglin later at Khartoum, the latter, who had spent several years in the Sudan, stated that he had never seen a roan antelope, and regarded Baker's specimen as belonging to a new species (*op. cit.*, p. 543). This is a sidelight which, to my mind, casts an atmosphere of grave doubt over von Heuglin's competence as a naturalist—at least as regards the larger animals.

The discrepancy in our respective observations as to the haunts of roan, and equally the fact that Baker should have failed where so humble a hunter as the author succeeded with no supreme difficulty, are things that pass understanding. It is unnecessary to disclaim even a scintilla of "Satan's favourite sin, the pride that apes humility." The above remarks are simply a recapitulation of two sets of irreconcilable experiences; and mine, at the present day, I venture to assert, are correct.

In its colour the Sudani roan varies individually in marked degree. The few that I shot included animals of a rich rufous hue with brindled effects; one is, I believe, correctly described as "cinnamon," others paler, and one of a strawberry roan. But I had opportunity of examining others through glasses, at fairly close range, that appeared slaty-grey, varying in depth from darker to quite pale tones. Probably I examined, in the Sudan alone, roan of all the different colours upon which have been based subspecific or geographical distinctions, such as "*Rufopallidus*," and other fanciful names.

In the extraordinary length of its bushy ears, the roan far surpasses all its congeners. Following are relative ear-measurements of typical examples in my own collection:—

Species.	Length of Ear (Upper side).	
	Male,	Female,
Roan antelope . . .	15 inches.	13 inches.
Sable " . . .	9 $\frac{3}{4}$ "	9 $\frac{1}{2}$ "
Oryx beisa . . .	8 $\frac{1}{2}$ "	6 $\frac{3}{4}$ "
Waterbuck . . .	9 "	8 "
Eland . . .	9 "	
Koodoo . . .	10 "	

In roan, moreover, the apparent length is further accentuated by a terminal tuft of hair exceeding an inch in length. These long tufted ears the animal habitually carries horizontally—according to my observation, all illustrations showing the ears erect, or partially so, are incorrect. While travelling home with the Hon. Gerald Legge, he drew my attention to the point, and I found at once that all my rough sketches of roan, drawn at sight, corroborated the point, *save one*. That exception purported to represent a pair intently gazing at me while already taking aim. In all probability the extreme forward cast of the ears—especially as viewed from a slightly lower level—unduly accentuated the apparent upward carriage.

The following statement occurs in Darwin's *Origin of Species* (p. 11):—"Not a single domestic animal can be named which has not in some country drooping ears; and the view suggested by some authors that the drooping is due to the disuse of the muscles of the ear, from the animals not being much alarmed by danger, seems probable." That, no doubt, may be correct; but the case of the roan antelope (and equally that of the addra gazelle) proves that the principle does not always apply to wild animals in a state of Nature.

STALKING ROAN ANTELOPE

(1) MESHRA-EL-ZERAF, WHITE NILE, 10.50° N. lat.

The rising sun discovered us a mile inland. The country, thin bush with scattered patches of mimosa-forest, swarmed with wild-life. As we started, a spotted hyena trotted out in the gloom from among the huts of

a native village on the creek, and before sun-up we descried five giraffe (one a huge bull) browsing on low thorn-scrub not half their own height. Besides these, gazelles and big bustards adorned the plain, and during the morning we struck spoor and sign both of elephant and buffalo. The more open prairies were dotted with herds of *tétel* (tiang) and, although these latter were not included in our programme for that day, I was presently tempted by an exceptionally fine bull, accompanying six cows and calves, to essay a stalk. The seven tiang were feeding up-wind, perpetually on the move, and grazing as fast as we could follow. The bull constantly kept separate, holding an independent course, often 200 yards away from his consorts. These frequently altered their course, or stood awaiting his leisure to rejoin. For a mile or more I held on in pursuit, hoping to overhaul the laggard bull. Then suddenly we sighted afar in a forest-glade on our right, a big black beast whose dark pelt suggested buffalo. The glass, however, showed him to be a roan bull accompanied by two cows—the latter, being in sunlight, had not caught the naked eye.

We, of course, at once transferred our attention to the nobler game. At the moment the three roan were over half a mile away, almost directly to leeward and the whole intervening space bare—open grass, devoid of covert, though flanked by forest on either side. Baraka, my Arab shikari, with strange indifference to wind, proposed a direct stalk under these impossible conditions—even without risk of scent, access would have been laborious in the extreme, a flat crawl over hundreds of yards.

The singular indifference to the "wind" evinced by native hunters (who are quite aware of its import) has often struck me as inexplicable. It is possible that, in this high-dried country, scent may be less widely suffused than elsewhere—my own hunting-days in the Sudan are not long enough to gauge that point precisely; but, in a general way, I have satisfied myself again and again that,

in a breeze, game will assuredly take one's scent at fully average distances.

Away down that glade to leeward grazed the three great roan, showing alternately dark or light according as they faced the sun or touched the shade. Rejecting Baraka's crude strategy, I devised a plan of my own. By a rapid detour around the game, describing a semicircle of a mile or more, we placed ourselves straight ahead of the course they were then following and directly down-wind thereof. We had long lost sight of the game, and owing to the winding, irregular outlines of the glade, did not detect their approach till two of the animals, both cows, showed up together at about 120 yards, hidden up to their withers in the deep grass. The bull was bound to appear within a second or two, and the short range necessitated a readjustment of the "sights." With wondrous sharpness of eye, both animals had at once suspected danger and now stood full-face at gaze. Then came the glorious old bull, halting three-quarters "on" and exposing his chest. A memorable spectacle the trio then presented, with their striking facial adornments, massive figures, and huge ears extended sharply forward. Into the broad chest of the bull I put a soft-nosed bullet; at the shot both his consorts bounced away, but one (the bigger) soon pulled up and turned, facing, receiving the second bullet, also in chest. Both these superb antelopes fell dead, each with a single ball.

On walking up I was struck by their enormous bulk. If a tiang weighs 300 lb. and a waterbuck 500 lb., then a big roan bull must go well over 600—certainly near 700 lb.

A notable feature was the white tuft on the tear-duct. This, especially in the female, was fluffed out erect like a shaving brush! or like the auricles of a demoiselle crane. This it is difficult (or impossible) to reproduce in mounted trophies. Both these roan were of a rich tawny-chestnut, or cinnamon, in body-colour and both heavily

maned, right down to the withers. It is this stiff up-standing mane (which in an old bull exceeds six inches in vertical height), combined with their high withers and immensely thick neck, that gives roan their massive and imposing appearance—hence also their Arabic name *Abu Uruf* (=“Father of the mane”).

The height at shoulder of this bull I made one inch short of 5 feet straight; the cow lay awkwardly to measure, but was certainly 6 to 8 inches less.

Their horns, heavily ringed, were stained deep Indian red—probably from rubbing on the mimosa-bark—and measured:—bull $31\frac{1}{8}$ inches by $8\frac{3}{4}$ in basal circumference; cow 22 inches by $6\frac{7}{8}$ at base.

On the homeward march, heavily-laden, we walked openly past a herd of tiang within easy shot. The open or thinly-bushed country hereabouts swarms with these antelopes, and, on one occasion, I saw what I believe to have been an almost equally big troop of roan. When first descried, these animals were standing inside a fringe of forest, thirty or forty, I then thought. But on our attempting to cross the open prairie that intervened, the whole forest seemed amove. By the clouds of dust raised and the breadth occupied thereby, I judged there must have been well over a hundred animals. Possibly, however, some few of the troop may have been tiang.

Besides the above game, we saw here daily an odd gazelle or two and constantly struck spoor of lion, giraffe, and twice of buffalo. One morning we came on a foot-thick heglig-tree (*Balanites egyptiaca*) broken off short by elephants, which had feasted on its bitter-sweet, date-like fruit (called *lalôb* by natives), scattering the rest far and wide. To me the fracture looked new; but Baraka declared that the spoor was some days old.

(II) KORDOFAN

January 19.—Yesterday evening, landing an hour before dusk, I had shot, in open forest, two red-fronted gazelles; but there rankled in mind the memory of a lost opportunity. For I had allowed a lovely bushbuck ram to pass close by. Daintily he tripped past riverwards, and totally unconscious of my presence within 100 yards; but so fascinated were my eyes with his beauty—that



HARNESSED BUSHBUCK—Kordofan, January 18th, 1914.
 "Daintily tripped riverwards."

dark pelage all striped, spotted, and spangled in striking patterns—that I waited too long in admiration. Then His Majesty entered the zone of the setting sun, where aiming (with telescope-sight) becomes impossible, and I saw him no more. This was quite the handsomest male of the harnessed bushbuck (*Tragelephus scriptus*) that I happened seeing all that season in Sudan—his memory is preserved in the annexed unworthy effort to depict such animal-beauty—and I resolved, if energy could do it, to retrieve the catastrophe next day.

With that object, and also to secure a good head or two

of red-fronted gazelle, I started at dawn for a long day in these forests of Kordofan. The country was the usual blend of thicker wood alternating with inset stretches of prairie and low bush. Almost at the start we struck burning spoor of lion, which of course we followed, and soon its indications clearly showed that the beast was seeking a convenient lie-up. Here the spoor zigzagged erratically from bush to bush and anticipation waxed keen. Baraka indicated that he *smelt* the lion; but when he began to peer into individual clumps of bush, scrutinising their inmost recesses, I thought it time to prepare for close-quarters and unshipped the telescope-sight. Such moments set one's blood coursing. But an anti-climax followed—when my good shikari, suddenly poisoning his spear, hurled it into a dense nabbuk-thorn . . . at a hare!

The bush growing thicker, we eventually lost the lion-spoor, though more than once Baraka had displayed fine field-craft in picking it up afresh. Presently, having shot a gazelle, I sent my second gun-boy to carry the game down to the boat, Baraka and I smoking meanwhile in the shade. During this brief interlude, the insistent chattering of a honey-guide (*Indicator*) had induced Baraka to follow the importunate bird; with the result that within 100 yards it led him to a store of wild-honey. Ten minutes later the "boy" came rushing back in terror; he had run right into our lost lion! Bad luck that the King of Beasts should thus grant interview to a boy with a gazelle instead of to a man with a rifle? We returned at once to the spot, and there beyond all doubt—within 15 yards of the dead gazelle—were imprinted on the sandy soil the great pug-marks where the lion had quietly quitted his couch. It was a comparatively small bush, quite open underneath, that he had selected for his lie-up; had we only had the luck to pass that way, we could hardly have failed to detect him. As ill-chance fell out, we had been searching within 100 yards

only a few minutes before. At the very point where, in heavy bush, we had lost the spoor, the lion, we now found, had turned sharp to the right, while we had cast round by the left; such is the narrow margin that divides success from failure. Of course we took up the spoor again, but knew that our star had set. While following this spoor, it was curious to notice that at intervals along its course we passed groups of gazelles quietly grazing. These must have seen the great beast of prey pass along only a few minutes before, yet clearly had taken no alarm



ROAN ANTELOPE.

The Bull on the right is watching a Gazelle which we had unwittingly disturbed.

or notice of any kind. The previous year I had observed a somewhat similar incident in these same forests, but a little further north.

It was now midday and horribly hot — shade-temperature 108° —and we were seeking a shade-tree for lunch. For some time Baraka had been puzzling out a big heart-shaped spoor that in the hard ground I could not distinguish but which he called "*Burroo*." Now I may here interpolate (with heartfelt emphasis) that a grave handicap to all hunting in these wild lands springs from the fact that not one word at critical moments can one exchange with one's trusty companion. The Arabic names of all game I had learnt by heart, but *burroo*?

What was that? Simply good Baraka's local rendering of *Abu Uruf*. Five minutes later, I learned that lesson when, among open scrub ahead, I espied some thirty majestic roan antelope. They, like ourselves, were seeking shade for their midday rest, lazily slouching along in groups of half a dozen or so.

Presently the group settled in siesta beneath some low mimosas. The intervening space was a bare open glade, grassless, but sparsely studded with low bushes, and even these rapidly thinned out. The long flat crawl under a vertical sun was sufficiently exhausting, the

naked soil actually burning one's palms, and ere I reached the very last sheltering bush, I was utterly "pumped out." Moreover, I could not distinguish a single good head in all the crowd. The distance was 300 yards, which is, of course, within extreme long-range shot; but, right



then, some wood-sprite or

kindly genius whispered the word to hold my hand, and I obeyed. The thin leafless bush overhead afforded precisely as much shade as the naked frame of an umbrella. I had just got out pencil and sketch-book, when Baraka touched my arm and pointed. . . . Oh, what a spectacle! Broad on our right, and no further away than the others, stood four magnificent roan bulls, unrivalled on all the African Continent! These till that moment we had not seen—champions all, and not an inch to choose between them. They were totally unconscious of danger, so for half an hour I strove to catch the lines of those imposing figures and their listless, lazy attitudes.

Then one of the quartette—if there were a choice,

"STROLLED SLEEPILY ACROSS OUR FRONT."

surely he was the biggest—apparently dissatisfied with his billet, left his companions and slowly, sleepily strolled right across our front. His objective, it seemed clear, was a huge leafy shade-tree away on our left. Promptly the sketch-book (with pencil and india-rubber!) was pocketed, now the moment for action had arrived.

The first bullet told well—a mere trifle too far back. With drooping muzzle the stricken beast strode a few yards and stood beneath a flat-topped thorn. At the second shot he dropped from view. Our success now appeared complete; yet an episode typical of Africa was to follow. I need not further emphasise the helplessness that results from speechlessness. No sooner was the big bull down than away dashed Baraka, calling on me to follow. For ten seconds I forgot that the primary idea engrained on savage mind is ever to *kill the lot*. Obsessed by that primeval instinct, and regardless of the fallen prize (which he doubtless thought was finished), my good shikari sped away after the main herd, still standing in view among open forest 400 yards away. Not understanding either his tongue or his tactics, I followed. Mad? Admitted; but quickly the level mind was recovered when, within brief seconds, I saw in motion the horns of the big roan bull. Already he was on an even keel once more and strenuously struggling to regain his legs. A third bullet at junction of neck and shoulder finally terminated his career.

This roan was altogether a bigger-bodied beast than the bull previously shot at Meshra-el-Zeraf, standing 62 inches at the shoulder and going, by estimation, every bit of 700 lb. deadweight. His pelt was very shaggy, but paler and less rufous than those of either of that pair.

Oh, the heat of that afternoon and the tortures we endured from thirst! By half-past four o'clock we regained the river and spent the two remaining hours watching and awaiting the appearance of our smart friend, the harnessed bushbuck, of yester night. But, although

two of his potential harem, with their fawns (besides a wart-hog and some reedbucks), showed up, of him we saw no more.

Following are dimensions of my four Sudan roan :—

	Length of Horns on curve.	Basal cir- cumference.	Spread between Tips.	Shoulder height.
A. Bull . . .	33 + 33 inches	$9\frac{1}{3}$ inches	$9\frac{3}{4}$ inches	62 inches
B. " . . .	$31\frac{1}{8} + 30\frac{1}{2}$ "	$8\frac{3}{4}$ "	$9\frac{1}{2}$ "	59 "
C. " . . .	28 + 28 "	9 "	$7\frac{7}{8}$ "	...
D. Cow . . .	22 + 21 "	$6\frac{7}{8}$ "	$9\frac{1}{4}$ "	...

POSTSCRIPT.

While hunting on the Dinder river in 1920, Mr Francis Mitchell witnessed a scene which he thus described to me. Along the dry river-bed a herd of fifteen or twenty roan antelope were slowly strolling towards a pool of water. Presently from the opposite bank a lion emerged and endeavoured—as it seemed, of deliberate purpose—to *drive* the roan on to the water-hole, whereat (as afterwards transpired) a lioness lay in ambush. The roan, however, rose to their occasion. For a while they had continued on their original course, though obviously suspicious of danger by the water; but, at the point where the lion came directly above their wind, they at once halted, formed up in line abreast—thus presenting a solid “defensive front”—and boldly advanced directly towards where the lion lay concealed. The latter retired, and, by a detour, joined his mate by the water. Whether she upbraided him or otherwise, the lion proceeded to make a second attempt to drive in the roan, but always keeping at some distance beyond them. Once more he failed. These bold antelopes again assumed the aggressive, and finally the lion returned discomfited to the water-hole . . . where Mitchell shot him.

CHAPTER VII

THE FORESTS OF KORDOFAN

SKETCHES OF BIRD-LIFE IN THE "ETHIOPIAN REGION"

(TWO TYPICAL DAYS)

(1) ISIS, *January 29th*, 1913, about 10-55° North latitude (north of Melut). Dawn revealed deep forest fringing either bank. Hard by where we landed on the eastern shore, two great eagles sat, each posted on a tall tamarind-tree. There existed no special advantage for an approach, so that it was with some surprise that I presently found myself directly beneath the nearer eagle and shot him through the dense foliage. The second stalk presented less difficulty, for a leafy acacia intervened, so that within half an hour I had secured both eagles—a curiously easy triumph.

In Sudan the eagle knows neither foes nor fear. He selects a stance on the apex of some dead tree and regards not man. For here, in a pristine world, the bird of prey is not an Ishmaelite nor regarded as detrimental. Should there be cover, it is safer to stalk; otherwise quite conceivably one may walk up openly within shot. A similar remark applies to most of the larger Raptores—goshawks, buzzards, and falcons. The big vultures, on the other hand, are apt to be more wary. If required as specimens, it is usually necessary to stalk them; for example, I have passed right under a tawny eagle sitting complacently on a tree from which several

large vultures had already flown while quite a hundred yards away.

Noble falcons such as peregrine and lanner, which memory (in northern lands) associates exclusively with wild and sequestered crag on mountain, moor, or sea-coast, here in Sudan, mildly occupy the palm-groves of villages, and content themselves with such lowly fare as doves, small birds, and reptiles—snakes, frogs, lizards, even locusts are not despised.

All earlier sense of romance vanishes when one blows these fine birds out of a tree, or sitting careless on the ground. I remember shooting a lanner falcon right inside the settlement of Fashoda; while, close outside, a beautiful Rufipennis buzzard—a most imposing object as seen on wing—let me walk up and kill him at 25 yards with a puny .410-bore collecting-gun. I believe he was eating mole-crickets! Again, while



LITTLE BITTERN.

moored at Tewfikia, big falcons swept in mid-air amidst droves of doves, guinea-pigeons, and palm-swifts, within half-gunshot of our ship; while, close by, among the fringing riverside bush, drongos (*Dicrurus*) in dozens were busy fly-catching, all quite unconcerned. The element of fear seemed eliminated. Yet it was no true Elysium. The carnivores had not foresworn their function; for next morning I watched a lanner falcon administer a clean knock-out to a sandgrouse from a passing pack after a splendid ringiing flight. [An even more striking exhibition I witnessed a few days later at Khor Attar. A trip of garganeys—swiftest of all the duck-tribe—was

speeding by, when, like a bolt from the blue, a big falcon (probably a peregrine) shot down, sheering right into and through them and clean decapitating one of their number. Such was the pace and the force of impact that the victim, striking the water at an acute angle, rebounded vertically upwards like a football.]

To return to my two eagles shot at dawn:—The second was a white-headed river-eagle of the kind so common in the Sudan (and throughout Africa), a female, weighing $6\frac{1}{4}$ lb. The other was a dark-brown, falcon-built eagle, $4\frac{1}{2}$ lb., almost unicolorous, feathered to the toes, but with *white* feet, the specific status of which is doubtful. The authorities at the British Museum classify it as a tawny eagle (*Aquila rapax*), in the “dark phase” which that species undoubtedly assumes. That identification, with all deference, I am unable to accept. This white-footed forest eagle is common throughout the wooded plains of Sudan where subsequently I shot others, as well as several of the true tawny eagles both in their lighter and darker phases—some of each at their nests. Despite a superficial resemblance, I regard the two species as distinct, so (pending sufficient material becoming available to formulate a satisfactory biological analysis) shall provisionally christen that victim of mine:—

WHITE-FOOTED FOREST EAGLE (*Aquila albipes*). Habitat, plains of Upper Sudan; type in British Museum, shot on White Nile, 29/1/13. Most nearly approaches the spotted eagle of Europe (*Aq. maculata*), showing its close affinity thereto by arrow-headed splashes on the lesser coverts and on the carpal joints of wings both above and below—especially during immaturity; but essentially differing from that species (and equally from the tawny eagle in any phase) by having *white* feet, whereas in both the last-named the feet are bright yellow. Legs short, in the flesh barely reaching mid-tail. The tawny eagle, moreover, is essentially a camp-follower, coming regularly to “kills,” which the above eagle, *albipes*, never does—a specific character not observable in a skin.

This morning, after the daybreak episode with eagles, we pursued our ramble along the riverside, and never a mile but emphasised the fact that here we had entered—in geo-zoologic sense—upon a New World, that of Ethiopia.¹ The bird-life of the “Desert-Stretch” (Chapter III.) had been largely of European type. Here in Kordofan we were face to face with the bewilderments of a Tropic Zone.

Geographic distribution in the nature of things can have no cast-iron limits. Birds of many genera, for example, are cosmopolitans—there are “globe-spanners” which traverse our planet twice a year—several recognise no set bounds whatever. Hence these arbitrary faunal areas are merely designed as artificial aids to study—crutches whereby science can lamely limp along the devious pathway toward knowledge. Still, the system is approximately correct, though never rigidly so. Thus already in the “Desert-Stretch” we had detected the northernmost outposts—the scouts—of Ethiopia; here, in like degree, we still recognise a few Europeans. Below, say the twelfth degree of North latitude, the tropical type predominates; in the tenth, the revolution is complete, conspicuous to all who have eyes to see.

Thus to-day one's eye in constant sequence kept picking up creatures that in Europe would be as inconceivable as pterodactyls or flying ichthyosauri—giant figures such as the saddle-billed jabiru, clad in “thunder and



DARTERS.

¹ Europe, combined with North Africa down to Sahara, constitutes a single integral zoological area, defined in science as the “Palearctic Region.” Southwards from Sahara, all Africa is included in the region distinguished as “Ethiopian.”

lightning" patterns that would fix a colour-protectionist in recurrent hysterics; hardly less striking the gaunt marabou; and out on every shallow stalks the Goliath heron, well-named and conspicuous afar. Among colossal forms, figures the great pink pelican, with wild-geese double the size of anything we are wont to see at home; besides ubiquitous mobs of tropical cranes and storks



SADDLE-BILLED JABIRU.
(Jebel Ahmed Agha, January 29th, 1913.)

taller than school-boys. Then there are the spook-like openbills, egrets, and ibises in varied colours—to name but a few.

At midday we halted by a lateral lagoon, everywhere spangled with groups and conclaves of all these creatures, many asleep, others probing or preening, and all reflected in the mirror-like surface. Chestnut-red jacanas coursed over floating lily-leaves, and the foreground was adorned with graceful stilts, greenshanks in two sizes, godwits

(from Jutland), dotterels (*Char. asiaticus*), spur-winged, Kentish, and ring-plovers (*Æg. dubia*), stone-curlews, and, alongside of these, rested . . . *Curlew-sandpipers and Little Stints from the Highest Arctic!*

Close by, on the river beyond, a long narrow sand-bank was crowded with crowned cranes, 500 yards of them, all placidly asleep, though the shores of their exiguous sanctuary were punctuated on either side by lines of fearsome crocodiles—strange such confidence when we *know* that these reptiles habitually prey on similar water-fowl? From the stomach of a crocodile we have extracted an entire darter (*Plotus*), so uninjured that it might have made a “specimen.” But inter-relationship in wild-life still remains largely a closed book. Thus, in broad daylight, a disturbed lion will walk right past grazing antelopes without creating a symptom of alarm, or even, apparently, being recognised by his normal (nocturnal) prey.



GOLIATH HERON.

“Full-up”—Sunset, Kaka, March 13th, 1919.

In the intervening channel a great pink pelican was teaching the piscatorial art to a half-grown youngster. Slowly paddling up-stream, beak half-immersed, at brief intervals she made a powerful forward lunge—or, if side-long, aided by a half-stroke of one wing. Invariably she pouched prey. The chick watched and emulated; yet, industriously as he tried, never a victim could he secure, and it amused to watch his petulance as, disappointed, he demanded a dip into his mother’s well-stored pouch. One has read of other anglers content with a vicarious creel?

[There are found on Nile two distinct species of pelicans—the huge pink *Pelecanus onocratulus* and the smaller, silver-grey kind, *P. rufescens*, half his size and much less numerous. The latter are usually seen in little groups of a dozen or less, and never assemble in the big mobs that their larger cousins affect. The following table gives the measurements of five of the latter shot at Fashoda, 6th March 1914:—

		Length.	Expanse.	Weight.
No. 1.	Immature . . .	61 $\frac{1}{4}$ inches.	89 inches.	14 lb.
No. 2.	Do.	58 $\frac{3}{4}$ „	92 „	15 „
No. 3	Adult	60 „	96 „	16 „
No. 4.	Do., pink	58 $\frac{3}{4}$ „	92 „	15 „
No. 5.	Do., do.	61 „	90 „	20 „

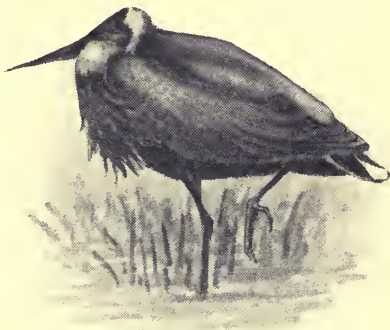
At the point of the crocodile-lined sandspit sat a compact bunch of comb-geese, all sound asleep, not a head in sight. A grass-clad ridge facilitated close approach. There were five geese. I thought to “whistle them up,” but it was not till the third challenge that the quintette of necks rose erect. Then a charge of No. 1 laid out three; the two survivors, rising “wing-to-wing,” were both cut down by the second barrel, and the whole five secured. Exploits such as this—or, similarly, enfilading a column of guinea-fowl—brought a gleam of satisfaction to the eyes of my hungry crew such as no mere ornithological successes could ever elicit.

A word as to the stone-curlews of the riverside: these belonged to the smaller species (*Edicnemus senegalensis*), and the contrast in character between these feebler folk and their strenuous European prototype was marked. Never would Spanish “Alcaravan” submit to systematic bullying by spurwing plover which its degenerate African cousin meekly accepts as a predestined portion in life. The note of the two species is similar, but here, on Nile, it lacks the ringing stridence so well remembered in Spain, and the flight of the African also is flickering and feebler.

A mixed bag that evening counted 10 $\frac{1}{2}$ brace. Besides the eagles and geese, it included goshawk (*Melierax polyzonus*), red-naped merlin, Goliath, squacco, and black-

headed herons, a brace of francolins and a mongoose—(a hedgehog, picked up in mummified state, not counted). The mongoose I shot last thing at dusk. It reared itself up in the long grass to see what was passing—a thick-set, rabbit-sized little beastie with bloodshot eyes, altogether ruddier and less slim than those we have shot in Spain, besides being banded, zebra-fashion, with black. Alongside it, half-eaten, lay one of those luridly coloured lizards in cobalt and orange (*Agama colonorum*) that frequent these regions. My men, I was told, ate the mongoose—(*Crossarchus zebra*).

(2) CANDACE, *January 26th, 1914*, about 10.15° North latitude (south of Melut—*similar country, but forest more open*). Amidst one of the usual mobs of exotic water-fowl assembled alongshore, I detected a bird new to me



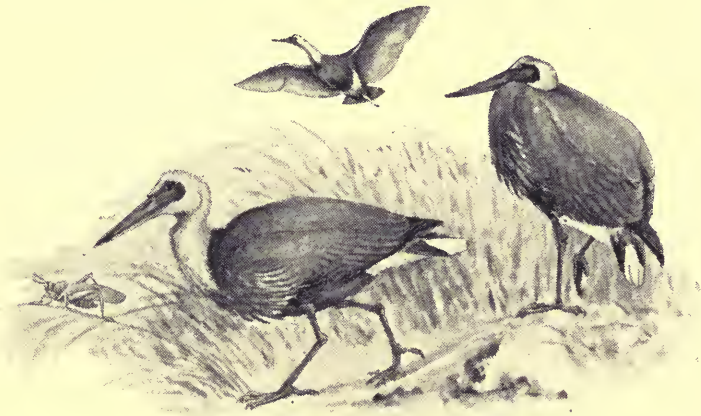
BISHOP-STORK.

and unobserved during previous voyages. This was a Bishop-stork (*Episcopus*), recognisable by its downy white nape and the loose fluffy feathers that adorn its breast. Ere we could land the stranger had disappeared, but amidst the crowd that remained were two great white egrets (*Herodias alba*), already at this early date in that full nuptial plumage that has proved so fatal to their race.¹ Should I be honoured by a lady reader, she will better recognise the bird under the milliners' title of "osprey." Both these exquisite creatures I secured, the same shot killing by accident a greenshank and two spurwing plovers. Half a mile further on, by a stagnant water-course, I

¹ This early assumption of the nuptial plumes is exceptional. We observed great white egrets much later than this without a sign of these adornments—in 1919 as late as March 9th.

descried our lost friend *Episcopus*, busily engaged in frog-catching. Under the bank of the khor I stalked and shot him, still holding a live frog in his mandibles.

This was the first Bishop-stork I had handled, and two features struck me as curious. First, the colour-plan of its blood-red eye; the pupil (small and black) was encircled by a double orbit in concentric rings, red and black respectively, and surrounded by a yellow outer circle, which latter extended to the bare skin of the



BISHOP-STORKS.

sclerotics. The only case analogous with this, in my experience, occurs with the grebes—see my *Bird-Life of the Borders*, 2nd ed., p. 406. Secondly, there was the tail: the Bishop-stork may almost be said to boast *two* tails; the upper black and forked, but lying superimposed upon a lower tail which is white and square. The rough sketches may better serve to show what is meant. This species is rather small for a bird of the stork persuasion, and is not common, though one meets with it here and there on Upper Nile.

On an ant-hill by the riverside a white-headed river-eagle was busy tearing up a victim, with a marsh-harrier perched close by, patiently expectant. The quarry, I

found, was a purple heron, and on two other occasions (in 1919) observed these eagles in furious pursuit of similar prey; each of these, however, escaped by plunging headlong into the papyrus-jungle beneath. The half-dry khor on which I had shot the Bishop-stork swarmed with all that infinite variety of weird water-fowl already mentioned—perhaps with wearisome iteration—so I will only name one. On an oozy corner a hammerhead (*Scopus umbretta*) was probing about. He rose wild, but went away with tell-tale wavering flight which culminated in a regular “tower,” gradually ascending till he turned over, dead. His gullet was crammed with strange amphibians—*nescio quos*.

This khor gradually led inland, into a region of open forest abounding in tropical types of bird-life to the full as strange and unknown as had been those of the marsh and riverside. There were “Ethiopian” woodpeckers and nightjars each in sundry forms; barbets and babblers, colies and glossy starlings (*Lamprocolius*) iridescent in purple sheen, shrikes and weaver-finches—both these latter in bewildering variety and of a dozen different genera; crombecs (*Sylviella*), like miniature nuthatches, and bee-eaters in emerald droves, with gem-like sunbirds. Gorgeous rollers perched on topmost sprays; quaint hornbills (*Lophoceros erythrorhynchus*) fed actively on the ground, running among the grass and snapping up beetles, centipedes, scorpions, etc., sometimes half-opening a wing to get an extra turn of speed. They also went for grasshoppers, springing up to snatch big ones off twigs high above their heads. There were hoopoes and wood-hoopoes—the latter in two types, *Irrisor* and *Scoptelus*. *Irrisor* I described in *On Safari* (p. 243) and sketched his woodpecker-like style of scaling the rough bark. *Scoptelus* is hardly so smart. He often drops a clean foot or two, clutching a fresh foothold as he falls, then reascending rather by flapping than by honest climbing—both these scansorial tricks being precisely similar to

the methods of our great spotted woodpecker at home. Two birds shot to-day struck me as peculiarly "British"—a rook and a short-eared owl; both, however, belong to slightly different species, *Corvus capensis* and *Asio capensis*. In the open groves were pririt fly-catchers (*Batis*), in black and white, not unlike our familiar pied fly-catchers



WOOD-HOOPOE (*Irrisor*).



BANDED GOSHAWK (*Melierax polyzonus*).

in England; also fantail warblers and those feathered mites no bigger than a hazel-nut, the grass-warblers (*Prinia*); these latter, however, I am wont to leave to Lynes' more expert eye, and indeed have no design to abuse the reader's patience by inflicting on him a whole catalogue of the forest-birds.¹

¹ I take refuge in a footnote to record the fact of finding in these woods three nests of sandgrouse (*Pterocles quadricinctus*), each with three salmon-pink eggs, quite fresh, on March 8th, all three nests near together, and on bareish ground among thin bush. A couple of days later, found the two eggs of a long-tailed nightjar (*Scotornis climacurus*), both parents

Presently something distinctly bigger hove in sight ahead. It was a great wart-hog boar slowly strolling through the open woods towards us. Baraka and I, though quite exposed, at once stood stock-still, and the boar rooted and rambled past within 40 yards and never a suspicion of our presence reached him. The Paradox gun was in hand and those splendid curving ivories a terrible



WART-HOG BOAR—South of Melut, January 26th, 1914.

temptation ; but this is "Sanctuary" and all evil thoughts were summarily suppressed. As the question has been argued, I took the opportunity to observe how the wart-hog carries his tail. All the time he remained within sight, the tail was held vertically upright, though the

rising at my feet. Certain weaver-birds had eggs all through January and February ; but, as we failed to secure the parents (a butterfly-net would have been more serviteable than a gun as the tiny birds dropped, like frightened mice, from their pendent nests into the deep grass below), the specimens are valueless. These eggs were pure white and about the size of those of willow-wren.

terminal "tassel" naturally waved to and fro according to the wind and the movements of the beast.

Where the trees grew thicker—hence where one would less expect such a thing—a pair of bustards rose from the grass close by and I got them both as they dodged, woodcock-like, through the branches. They were velvety black beneath, with bold white splashings on wings, and were, if I remember aright, Hartlaub's bustards. There occur, however, two species of lesser bustard in this region, Hartlaub's and Lovat's (of both of which we shot several), which may well be likened to Cæsar and Pompey—"very much alike, especially Pompey." They were both, however, excellent eating, as were also the francolins (*Francolinus clappertoni*), which could always be found by the riverside at dawn and towards dusk. These francolins were strangely silent for their noisy tribe. I never heard them utter a note. Sandgrouse, on the other hand, were distinctly clamant, springing with loud wing-clap and croaking harshly as they flew. We often fell in with packs of these—*Pterocles quadricinctus*—on the dry grass prairies inset amidst forest and far back from the river.

No living creature fears the kite. He is a regular parasite, attending every camp and kill, ready to snatch up morsels from the midst of the men; but never (save once) have I seen him attack a living thing or seize a scrap too big to carry off. On one occasion, Lynes, having carefully preserved and labelled a "cut-throat finch," laid it out to dry on a chop-box within a yard of his elbow. Instantly down swept a kite and away went the cherished specimen. We had the mortification to see the white label fluttering from his talons while the thief vainly bent his head down to tear the flesh—he found only cotton-wool!

The one exception mentioned was equally amusing. A grass-fire had burned down to the river's edge and leaping flames blazed and crackled in the fringing papyrus, causing consternation amongst the swarming bats that

abode therein. At once there assembled a host of kites, quick to take advantage of hapless fugitives held up between fire and water. Despite their powerful talons, never a kite attempted to seize; their sole scheme of attack was by means of rushing stoops, designed to hustle the wretched bats into the river. This had gone on for some minutes when I saw one bat fairly clutched in air and carried off. Something in the bearing of the captor, however, caught my eye, and a second glance showed he was not a kite but a marsh-harrier.

By inadvertence, Sir Samuel Baker, throughout his books, miscalled these ubiquitous kites "buzzards," and subsequently dozens of writers have studiously copied what was an obvious mistake. There are, of course, those who don't know a buzzard from a bustard, and who can confuse an ibex with an ibis; but there are other writers who should have known better, and surely each such crime deserves "Seven days, without the option"? Buzzards, in fact, are not at all characteristic birds of Sudan—one sees very few. There is the handsome *Buteo rufipennis*—not common. Butler has *once* shot the honey-buzzard, and both on Nile and in the Red Sea hills we observed flights of the Desert-buzzard (*B. desertorum*), obviously on migration; but the kite is with us always.

A bird of prey which *is* characteristic of the Sudan, and whose ringing cries—almost musical in their falling cadence—resound throughout the forests, is of the goshawk sect, the big ash-grey *Melierax polyzonus*. The build of this hawk (short rounded wings, long tail, and long red legs) proclaims its mission in life. Low on the ground, it sweeps along forest-glades, or threads the intricacies of the trees, smart as a sparrow-hawk in lightning pounce to right or left. This is a raptor of enterprise. On the Dinder River I saw one seize a guinea-fowl twice his own weight; but that big prey was too heavy—it struggled clear and we dined on it ourselves. Two, when shot, were in the act of devouring small

rat-snakes. [Note that, in my bedroom at Khartoum, I had caught a similar snake (scientific name, *Zamenis*), a fortnight before.] A third carried a striped rat in his talons, and Mr Butler records seeing one tackle a six-foot cobra.

This goshawk is designed in two sizes—or it would be more scientific to say that Nature has duplicated it in a second type of half its bulk. The latter is distinguished as *Melierax gabar* and—curiouser and curiouser—this latter has a double form, the majority being ash-grey like their bigger relative, while a minor proportion are entirely *black*. We shot several of both sizes and the smaller in the varying colours specified, both on the White and Blue Niles; but that the phenomenon is merely a colour-dimorphism (such as occurs with the Arctic skua, Sabine's snipe, reef-herons, etc.,) is demonstrated by the fact that *unfledged young in the same nest* exhibit an exactly similar variation.—*Teste*, Sir Geoffrey Archer.

THE TWO JEBELS OF WHITE NILE

On all its 627-mile course, White Nile boasts but two upstanding hills—and they are little better than koppies—Jebelein and Jebel Ahmed Agha, distant 239 and 340 miles from Khartoum respectively. The latter, though it stands in the best of the big-game country, needs no words. An isolated pyramid of black disintegrated shale, 350 feet high, it is largely occupied by bees (which resent human intrusion), and by little else of interest to a naturalist.

Jebelein, on the contrary, proved a regular stronghold both of wild beasts and of interesting birds. It comprises a group of conical granite piles, 500 feet high, and covering miles of space. I remember my first evening there. We had been required to bring home local examples of the hyrax. It was nearly dusk when, having bagged a brace or two of those beasties, a keen-eyed Arab lad, Achmet by name, who had attached himself to me, eagerly pointed to a crevice in the crags some 30 yards above. Quite

indistinctly I perceived something that looked like a rounded feline head—a serval cat, I concluded—and promptly put in a charge of No. 2. The response was startling. A great leopard, clawing and yowling, dropped off the ledge overhead and looked like tumbling right on top of us. I slipped in a bullet, but the beast had regained foothold and crawled into a lower crevice where, in the dark, we judged it prudent to leave him. Betimes next morning, with Achmet carrying four spears in a leather



ROCK-RABBITS (*Hyrax*).—On the Crag at Jebelein.

quiver, we returned. The rocks around the spot were splashed with blood, but the leopard had retreated. During the subsequent scramble, I saw another leopard close by among the rocks, besides hearing two more—the place seemed alive with them. Overnight we had set two big traps. One had been carried off, the strong ropelashing bitten through. Expecting the captive to be a leopard, we trailed it upwards through strong thorn-bush and towering boulders, almost to the topmost ridge, to find . . . a great gaunt striped hyena! Lynes (armed only for small birds) encountered another—a spotted hyena—quite unconscious of his presence within 50 yards.

We were told that lions had a strong haunt in these rocks, but neither saw nor heard them.

The most interesting birds here were the rare and beautiful cinnamon-coloured Alopex kestrels, which preyed on the abounding lizards; a big pale-grey eagle-owl (*Bubo lacteus*), here a cave-dweller, but which we found later, at Jebel Zeraf, nesting in a tree. Broad-winged ravens (*Corvus affinis*), not seen elsewhere till we reached Erkowit by the Red Sea littoral; blue rock-thrushes, helmet-shrikes (*Prionops*), glossy starlings of a fresh species with chestnut breasts (*Lamprocolius chalybæus*). *Nasutus* hornbill, blue rock-doves, with swarms of guinea-fowl and francolins. Besides these we shot tawny and crested eagles, white-headed vulture, a peregrine falcon, lesser kestrels (*Falco cenchris*) identical with Spanish examples, and I reckon not what besides.¹

One grateful word in memory of Achmet, my little Arab auxiliary. He had joined unbidden, entering keenly into the joys of hyrax-hunting; but from the start had constituted himself a regular guardian of my personal well-being. After losing the wounded leopard in the dark, he spontaneously took my gun and led me homewards with almost filial attention—taking my hand at awkward passes, breaking down each menacing thorn, and even stooping to throw aside any obstructive stone! Good luck to you, Achmet! *Kulu sanna ente taibe, Salaam aleikum* (= For all your years may you be happy.)

¹ *Apropos* of kestrels—two species of which are named in the last paragraph (besides our British kestrel, which spreads right through the Sudan)—it may here be convenient to add that, in 1919, a fourth and unexpected form came under observation. This was the scarce *Falco ardesiacus*. On 26th February, my brother J. and I were revelling in one of those recurrent scenes in massed bird-life (near Renk), when this stranger appeared. Though totally unknown, and camouflaged in smoke-grey, yet its kestrel-flight left no doubt as to generic affinities. Duty, doubtless, demanded that the "specimen" be secured; but so reluctant was I to dissolve the wondrous spectacle enacting before our eyes, that *Ardesiacus* was allowed to depart in peace, and readers must accept my identification for what it may be worth.

CHAPTER VIII

THE WATERBUCK (*COBUS DEFASSA*)

ARABIC—*Katamboor*

THE stately waterbuck, four-square in build, that recalls a Landseer red stag—but on giant scale—comes among the first of the bigger beasts that one meets in the Sudan ; for it is distributed widely over all the forest-country and as far northward as tree and bush extend—that is, to the verge of Sahara. Possibly the waterbuck is as numerous in Sudan as any other of its larger animals ; yet I had half decided to pass it over in silence, since careful scrutiny at close quarters, satisfied me that the waterbuck of the Sudan was precisely identical with that of British East Africa and therefore promised no new feature, nor required further study. To leave nothing to chance, however, I shot one big bull waterbuck near Jebel Ahmed Agha, and that specimen confirmed the above anticipation. The iron-grey pelt was of slightly paler cast than an average, and the white ring that surmounts the fetlocks less defined—almost wanting ; but such are merely individual or perhaps seasonal variations, too trifling for consideration. This bull stood 50 inches at shoulder and the horns taped $28\frac{1}{2}$ inches, with a spread of 23 inches between tips.

Beyond doubt, the initial impression was correct, in a general sense ; yet it is to the fact that we subsequently met with waterbuck in the Sudan of an essentially different type that this chapter owes its genesis.

But before relating that incident, it will be appropriate briefly to summarise the racial distinctions of the waterbuck throughout Africa. Its range extends over the whole continent, from the confines of Cape Colony to Sahara ; but in all that wide extension it exhibits but two types worthy of separate specific rank. These two are :—

(1) IN THE SOUTH—*Cobus ellypsiprymnus*.—Known as the “Common waterbuck”—until East Africa was



TWO WATERBUCK BULLS.

(Sketched 10 miles north of Renk, March 14th, 1919.)

discovered! Distinguished by the conspicuous elliptic band of pure white encircling an otherwise dark stern—as it were, like a target.

(2) IN THE NORTH—*Cobus defassa*, or Sing-sing waterbuck, in which the white circle is replaced by an entirely pale-coloured stern, similar to that in red deer and in many of the antelopes—see sketch above.

No. 1 extends northward but in gradually deteriorating form till it finally peters out by the Equator ; but precisely at that geographic symbol the vacated place is reoccupied by a new and vigorous form, bigger, and of

rather warmer-coloured pelage, with more marked facial adornments.

The waterbuck of the South, *ELLYPSIPRYMNUS*, has not lent itself to any vexing colour-variations. *DEFASSA*, in the reverse, varies considerably. Its vagaries, however, are chiefly limited to colour-distinctions, and these alone (whatever may be their value, if any, in Nature's scheme) never constitute a safe basis for differentiation. Personally, I attach little importance to them; nevertheless colour-distinctions constitute the main reason for spinning this yarn! It was because we encountered in the Sudan, waterbuck totally different *in colour only* from any of the thousands I must have seen in South and East Africa, as well as in the Sudan itself, that this chapter has materialised. That may seem an example of preaching what you don't practise—probably it is; but the incident is worth telling of itself, so here it goes into print!

The Sobat River (530 miles south of Khartoum), by reason of its erratic bends and generally eastward trend, presents great difficulties to navigation by sail. We were, however, anxious to explore a tributary of the Sobat, the Khor Filus; and by dint of much hard work—alternately sailing, poling, and laboriously dragging by tow-rope from the bush-clad bank—we reached that goal.

Landing next morning and advancing up the Khor—which was little more than a semi-stagnant backwater abounding in exotic bird-life—Lowe and I were soon joined by a friendly native or two; but presently our escort expanded into an ever-increasing mob of savages of the wildest and most weird aspects. These were Shilluks, tall, lean, and muscular, varying apparently between six and seven feet in stature. All were stark naked, some smeared red, others ochre-yellow, or a ghastly ash-grey, almost white; and with odd clay-cemented coiffures. Each carried three spears, and all were most friendly and loquacious, gesticulating anent *Gamoos—Abu Uruff—tétel*, etc. Having no fancy for hunting in a mob, we

bethought ourselves of a plan to get rid of these superfluous friends, and presently sat down to explain it. Much palaver flowed ere the scheme dawned on their minds; then, having sorted out the savages into convenient groups, I instructed them to set out separately, each party scouting for game in certain specified directions—which, however, excluded the windward. Upon finding game, they were instructed to return and report to us at the spot where we then sat. Ten minutes later, so soon as all their gangs were well out of sight in the thick bush, we proceeded alone, upwind, and, after a while, felt assured that our plan had succeeded.

Several hours had elapsed when, among rather open bush, we descried a herd of thirty waterbuck which at once struck us both as being totally different from any we had ever seen before. They were all of a light rufous fawn-colour, which at once reminded me of the plate entitled "*Cobus defassa*," in *The Book of Antelopes* (vol. ii., p. 115), the accuracy of which plate I had myself questioned (as regards colour only) in my *On Safari*, p. 24.

The herd now before us was chiefly composed of females and small beasts, but included five bulls, one conspicuously finer than his colleagues—in fact, quite a warrantable specimen. Him I resolved to possess, tempted thereto by his wholly unusual colour and by the desire to settle once for all (at least in my own mind) any question of racial distinctions among these waterbuck of the Sudan. The stalk itself presented no special difficulty, the deep grass being nicely studded with trees, and succeeded all right.

At little over 100 yards my bullet had taken the bull quite fair on the shoulder—a blow that in nine cases out of ten signifies instant death; yet the stricken beast merely moved a step or two forward and stood, head down, beneath a tree. While debating in my mind whether another shot was needed . . . suddenly, from



A WEIRD HUNTING SCENE.
Shilluks spearing a Wounded Waterbuff.

close behind, there burst forth a wild onslaught of yelling Shilluks, bounding past us over bush and brake. They were our friends of the morning! We thought to have given them the slip; as a matter of fact they, scenting meat, had followed us unseen the whole day! But what a nice sense of feeling those stark savages had revealed. Once they realised that their personal company was not acceptable, they had kept absolutely out of sight till they thought they could render us a service.

Disabled as he was, the stricken bull had nearly 200 yards' start and, terror lending wings to his heels, got away through the bush at a speed which, one might reckon, would far outdistance any human pursuer. But these stalwart savages pressed him hard from the start—held him for a long mile, possibly more—and finally killed him with the spear. The wounded beast had the speed; the savages the sleuth. With amazing skill they kept heading the quarry from one wing of flying spearmen right on to another which lay concealed. A wilder scene I never witnessed—both the actual chase and subsequent division of the spoils, an operation which evoked furious quarrels among the Shilluks themselves.

It is right to add that these savages thoroughly recognised the principle of "First blood." On our reaching the kill, the whole crowd sat panting like a pack of wild hounds around the victim, but none touched the meat till we gave the word.

Upon close examination the dead beast corresponded exactly with our impressions at the distant view. The colour was uniformly pale rufous, extending to the face, which was entirely devoid of the dark features that characterise the iron-grey type of waterbuck. A conspicuous white gorget encircled the throat, but there was no sign of white on the fetlocks. The long shaggy hair of the neck stood out erect, forming a ruff; but that feature is common to all the rough-haired antelopes though never shown in mounted specimens, in which it

is practically impossible to reproduce this effect.¹ Shoulder-height 48 inches; horns $28\frac{1}{2}$ inches in length, with a spread of 24 inches between tips. The animal would scale about 500 lb., and we left our savage friends revelling in a barbaric feast. Several, nevertheless, courteously escorted us back to our ship.

This rufous phase of the waterbuck is quite exceptional in the Sudan. Subsequently, in the Nuer country, further up White Nile, I shot a second example—a “lone bull” accompanying a troop of cob—and recognised the variety on *one* other occasion—that is, *thrice* in all—amidst the many hundreds of dark-brown or iron-grey waterbucks met with; nor do the two colour-phases intermingle. These few rufous examples are merely colour-varieties—a sort of erythrism of the common iron-grey waterbuck of northern Africa (*Cobus defassa*). They have been recorded from Abyssinia and southern Somaliland, and I have seen three shot on the upper Dinder River.

If it be permissible to hazard an impression, I would suggest that these rufous waterbucks may originate in West Africa—in Senegal, the Gambia, etc.—whence they spread across the continent in a thin horizontal line, west to east, bisecting the north-and-south range of the ordinary iron-grey waterbucks in the basin of Upper White Nile, where I met with them as above.

On returning home I offered one of my tawny waterbucks to the British Museum, and subsequently the late Mr R. Lydekker wrote me:—“Your specimens strengthen my idea that most of these so-called races are nothing more than individual herds.” Would that systematists and scientific nomenclators would consistently and con-

¹ No sort of blame is implied or imputed to our taxidermists. Human skill is incapable of restoring that careless grace which long loose layers of shaggy hair naturally assume in life; that is, when once the thick hide upon which they grew has been dried hard as a board. This remark applies to all the rough-haired antelopes—in Sudan, for example, to the roan with its arched and immensely bushy neck; also to the goat-like beard and neck-ruff of the saddle-backed lechwi (*Onotragus megaceros*).

scientifically apply that principle in practice! What a world of chaos and confusion it would save. The head of this rufous waterbuck now hangs on my walls alongside a typical example of the dark East-African form, and the contrast between the two is conspicuous at a glance.

Before leaving the Khor Filus, I should mention that the gazelles seen thereon belonged, we thought (though we did not shoot a specimen), to the southern race, or Mongalla gazelle (*Albonotata*), which certainly replaces the typical red-fronted gazelle (*Rufifrons*) on the Zeraf River, 32 miles to the westward. Probably the Sobat forms the dividing line between the two. An incident in bird-life was also unique in my experience — seven great pelicans sitting perched on the topmost branches of a big bare tree!

The waterbuck is too well known to need any detailed description; yet certain habits struck my



WATERBUCK BULL.—Warned by Wives.

attention which may deserve passing remark. One in particular was the singular degree in which the master-bull of a herd relies for his own safety upon the vigilance of his consorts. Frequently one sees a single old cow or group of cows already alarmed and retiring by stages. These, by stopping, wheeling about and stamping, seek to convey a danger-signal to their listless lord. This is a matter of daily observation and the warning, as a rule, is accepted in time. But the callousness to impending danger occasionally displayed by some old Sultans is remarkable. Having no hostile intent towards the waterbuck of Sudan (where I only shot the three old bulls above mentioned), I enjoyed perhaps better opportunity of entering into their domestic life than would be the case had

acquisitive ambitions existed. One old bull, I remember, only awoke to the peril of the situation after all his retinue had utterly disappeared from sight; although, in his case, a faithful—probably a favourite—female with half-grown calf had made stupendous efforts to arouse him. His blank astonishment as he scanned the vacant horizon beyond was amusing to watch; but presently when he turned to survey the other horizon, that astonishment was even deeper upon observing me close by! Another morning, at dawn, a herd returning from the river, grazed towards the woods, where they intended to pass the day. We, being between them and their objective, lay quiet till almost surrounded, when I sprang a gentle alarm. The crowd scattered to right and left *except* the Sultan. He, after looking up in mild surprise at his startled harem, continued grazing though within half-gunshot. Many similar instances could be recorded.

Curiously the “demonstrations” described are always silent, for the waterbuck of both sexes and of all ages is absolutely voiceless. A similar remark applies to all the hartebeests; and also to roan, save that the *young* of the latter habitually emit a loud ringing whistle—almost bird-like—whereas old bulls are totally silent. Reedbucks regularly “whistle,” as all hunters know; so also do oribi. Bushbucks bark, and the herds of lechwi keep up a low long-drawn sheep-like note; whereas their neighbours, the white-eared cob, are wholly unendowed with vocal powers.

Fond as they are of pure water—where the bottom is sound—waterbuck dislike real swamp and detest treacherous bog. It amuses to watch a company of them poking about the edges of such places, making good each footstep, and however thirsty they may be, disdain to drink foul water, and avoiding wet feet as daintily as a young lady crossing a muddy street. This applies to the region of Sudd.

At one point of that unspeakable swamp we lay

anchored for many days, investigating the life-history and specific values of certain tiny aquatic warblers. A few hundred yards inland grew a straggled clump of trees, islanded amidst deep swamp and known to us as "Lion-wood," since each evening a lion treated us to an African oratorio in B Major. Yet each dawn and dusk a single waterbuck bull emerged from its recesses. That small wood, in fact, was daily occupied by Lynes, a lion, and a waterbuck; yet neither sought the other's undoing.

The last-named of the trio was a frequent source of interest to me. His pasturage was a mere strip of a few acres, and his only access to sweet water lay exactly opposite to our ship; he would not drink of the mephitic swamp, nor trust himself on the bog. Still less dare he approach *Candace*. Night after night he kept coming nearer, but fear for long carried the day and he never got his "sun-downer." At length thirst and confidence prevailed. On the fifth evening he came boldly down and drank within 100 yards of the ship.

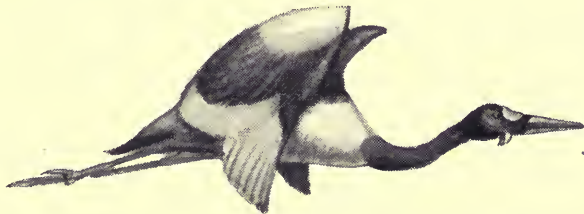
These pestilent morasses, it goes without saying, abound with mosquitoes in millions and with every class of flying terror. The wild beasts suffer therefrom as we do, and in similarly varying degree. Some prove immune, others not. Thus against me personally the mosquito and the flea prevail not. Were a "flea-biscite" available, I fancy those insects would exclude me from Africa (though the bloodthirsty seroot is my daily, hourly dread). Of the wild beasts, the waterbuck, while grazing round the swamps at dusk is, of all animals, the most terribly tormented. One sees his sufferings and sympathises. Perpetually he must cease grazing to shake his head, to scratch his neck with hind hoof, or hind quarters with horn. Never does he enjoy a whole minute's peace, nor half one, unmolested. Yet the white-eared cob and reedbuck, though often in sight at the same moment, are not plagued in anything like the same degree. True, the latter two hold the drier, firmer ground

and hardly feed so late; still, all three live within a few hundred yards of each other, and while some are pestered to distraction, the others seem almost immune.

I will close this chapter with another instance of the value of immobility. Near Meshra-el-Zeraf, Baraka and I were skirting a long straight stretch of mimosa bush, when a rustling inside the covert brought us to an instant standstill. Then appeared the horns of a waterbuck pushing its way through the outmost thorns. It emerged only 40 yards ahead of where we two stood in the open, yet it never saw us and unconcernedly commenced grazing. Once, between mouthfuls, it turned its head—still chewing—and gazed full-face towards us. Even then no realisation ensued. Our impersonation of two dead stumps may have been very artistic; but that I do not regard as the real reason.

As trophies, the Sudan waterbuck do not excel. Fine heads no doubt exist, but such are relatively rare. Friends of mine have shot examples that exceed 30 inches—the best, 33 inches—but not one of the many that came under my personal observation could be estimated at as much as 30 inches. Cows seem to outnumber bulls by four or five to one.

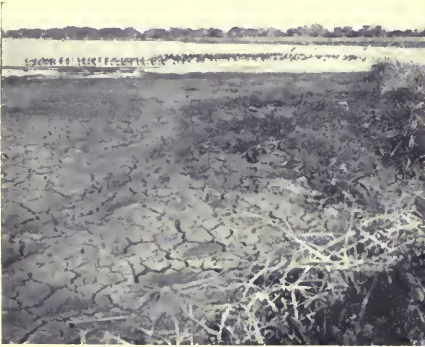
Waterbuck calves at first are very dark in colour—almost black—and during the early months of their lives are left alone, hidden in the deep grass, their mothers apparently only visiting them at night. This darker colour is retained for some time; the older the animal the lighter he becomes.



SADDLE-BILLED JABIRU ON WING.



GRASS-FIRE ON WHITE NILE.
Note the Kites hunting.



WILDFOWL ON WHITE NILE.
("Lion-Wood" in distance).



EAGLE-OWL (*Bubo lacteus*).
Shot off Nest in Kordofan,
Jan. 18th, 1914.

CHAPTER IX

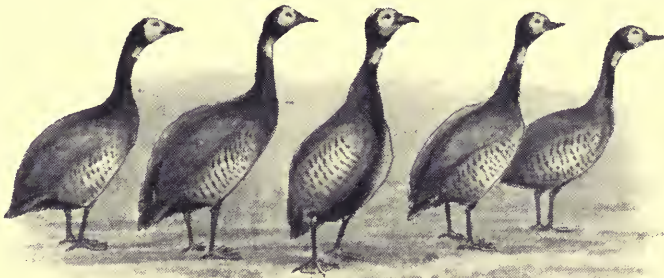
VOYAGE UP WHITE NILE—(*continued*)

(III) THE WESTERN BEND (OPEN STEPPE)

BEYOND the initial deserts, and beyond the forests already described, White Nile enters upon a third and totally dissimilar region. A succession of naked landscapes, of treeless steppe, open prairie, and of marsh interminable, stretches for 100 miles from about Kodok (better known in its period of ephemeral importance as Fashoda) right onwards to Lake No and the Sudd. There are scattered woods here also, some of great extent; but these being composed chiefly of the humble table-topped "Sont" (*Acacia arabica*, leafless, and little bigger than thorn-bush), are devoid of all semblance to the tall ever-green forests we have left behind. Such scenery can scarcely be described as alluring to a traveller who seeks only the sensational or the picturesque. But it is at that point where advantage accrues to the naturalist, and especially to the hunter-naturalist. For any monotony of physical scene sinks into insignificance as compared with its faunal aspect, and with the opportunity of encountering new forms of wild-life, some of them not to be met with elsewhere on earth.

On entering its "western bend," White Nile loses much of its majesty of breadth, being split up into a maze of channels separated by long, low, ridge-like islands, each outflanked by mural barriers of papyrus, cane-grass, and *oom-suff*, a giant flowering sedge or carex (*Vossia*

procera), that projects far out into the waterways. So colossal in places are these aquatic growths, that the wide-spreading tops of papyrus and the rest come to resemble the outlines of palms or of Scots fir. Navigating at dusk some tortuous channel through archipelagos where lateral creeks open out on every side, the ship appears to be enveloped in a *cul de sac* of broken pine-forest—in the mystery of tropical twilight, confusion grows greater as darkness deepens and fire-flies flash around. This 100 miles of aquatic labyrinths, bye-channels, and mud-banks swarms with hippopotami, crocodiles, and with a wealth



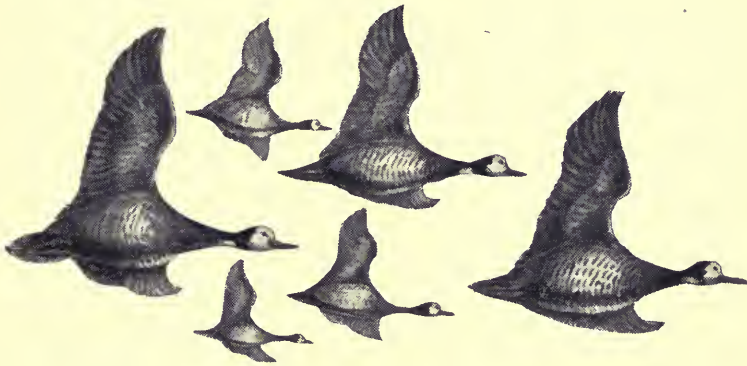
“WHISTLING TEAL.”

(Sit rigidly upright in stiff and formal pose.)

of bird-life no less amazing than that of the lower reaches already described. The avifauna of the first 150 miles I characterised as “true wildfowl,” a definition which I trust conveys its intended meaning; here, further south, the character is essentially “Ethiopian.” Already, in the central stretches of the river, we have made acquaintance with these Ethiopian orders; but that is merely their “overflow.” Here, in the “western bend,” we reach their true home.

It is here, upon these expanses of steppe and marsh of the “western bend” that the hunter-naturalist encounters two new forms of African antelope (possibly a third), neither of which has he seen before, since neither

are found save in Upper Sudan. Though more than fifty years have passed since the existence of these two antelopes was first reported, yet little even to-day is precisely known of their biology; indeed, it was only yesterday that the first correct details of their status and life-histories were partially rescued from chaos by Col. Roosevelt's American Expedition of 1909-10. The two Sudan antelopes in question are—(1) The white-eared cob (*Adenota leucotis*) on the steppe; and (2) the saddle-backed lechwi (*Onotragus megaceros*) on the marsh. The possible third is a duiker of sorts.



A PASSING FLIGHT OF "WHISTLING TEAL."

Such a record is creditable neither to British-African hunters nor (in yet less degree) to British science; hence the author hopes that both hunters and zoologists alike will take in good part the little lecture he addresses to them on this text on a following page.

As regards my friends the hunters—that is the privileged few who enjoy personal contact with the bigger game of the world—I suggest that it is nowadays up to them all to bring home—not merely "heads" for their private collections—but such critical and accurate information as in them lies to collect and formulate; since to succeeding generations no such opportunity may be available.

The dual services, *i.e.*, that of the hunter abroad and that of the zoologist at home, are essentially complementary, and should be brought into effective co-ordination. So long as the first is careless and neglectful of opportunity, the other (lacking "material") is apt to plunge into theory and wild deduction that clouds every issue.¹

Beyond the Zeraf River the main Nile assumes that irregular subdivided course already indicated. It is, moreover, flanked by infinite lateral lagoons teeming with wild-life, and each an example of amazing "struggles for existence." These sequestered pools are darkened by mobs of ducks and geese—spurwing and comb-geese, whistling-teal, etc.—along with all the other water-fowl in thousands, but all complacently regardless of their human neighbours, of the stark Shilluks—coal-black, ebonite figures—attending their herds close by; in fact, birds, beasts, and savage men seem all mixed in confusion, neither noticing the other. These lagoons too, are full of fish, many of large size, and all being prisoners—cut off at the dry season from the main stream—are at the mercy of enemies of every genus. Crocodiles and pelicans pouch them by wholesale, and the Shilluk with poised spear, wades, heron-like, amidst the fringing reeds. Frequently we saw these savages, casting at a venture, transfix victims that looked like ten to twenty-pounders, great silvery perch with eyes like rubies and scales big as half-crowns. Perhaps that term "the struggle for existence" becomes a misnomer where the weaker section seems complacently and resignedly—almost apathetically—to accept the office, each in turn, of providing a food-supply to its stronger neighbours.

Often on some long spit or shelving mud-bank, crowded to the last inch with massed water-fowl—geese, cranes, and

¹ The functions of the systematist, after all, are subsidiary or ancillary; he is the "hewer of wood and drawer of water." It is the explorer, the wilderness-hunter, and the field-naturalist who discover distant forests and locate the secret spring-heads.

varied waders—lay six, eight, or a dozen basking crocodiles, some with murderous jaws wide agape, lying close alongside the unsuspecting birds. Clearly the latter entertain no fear of their grim neighbours, for we often saw packs of geese, afloat, totally unconcerned by the sudden appearance of a crocodile almost in their midst. But, though I watched the smaller waders, such as spur-winged plovers



GREY HERON.



GOLIATH HERON.

and pluvians, poking about the ooze close alongside a sleeping crocodile, yet never did one perch on his back or attempt to "pick his teeth," as was averred by Herodotus to be their habit.

The avifauna of the Sudan includes some of the biggest flying creatures on earth, such as the marabou, whose wing-expanse exceeds 100 inches, the saddle-billed jabiru and Goliath herons,* whose stately figures ornament each morass and lagoon. One evening my ornithological bag included two Goliath herons, weighing $12\frac{1}{2}$ lb. apiece,

with an expanse of 92 and 93½ inches respectively, and a marabou of 103½ inches. The pouch of one heron contained a silurus-like fish of 1½ lb., that of the other a lung-fish (*Protopterus æthiopicus*), together with such a mass of strange amphibians, half-fish, half-reptile, that the bird was quite unable to close its beak. The same shot accidentally winged a spoonbill 30 yards beyond; and we also brought in a pallid harrier, scissor-bills, dotterels, ruffs, godwits, a darter, and two marsh-sand-



"THE BOLSHIEVIK."

pipers, or, more appropriate, lesser greenshanks (*Totanus stagnatilis*). The skimmers had plenty of work.

It was amusing while this operation proceeded, to watch the assembling of the scavengers alongside our ship, first kites, then pied crows and neophrons. A kite perches on a stump; up sidles a crow, with beak agape and hostile croak. The armed kite attempts no more than a mild deprecating sort of defence—useless against aggression. Soon *Corvus* occupies the stump, triumphant, *Milvus* retiring to a low ridge in the rear. Very soon he is dispossessed of that refuge and squats humbly in the grass—truly he is a craven! The crow is the feathered Bolsheviki; he scores on bluff and cheek, and because

his opponent is a coward who neglects to use his natural weapons—a rending beak and clinching talons—even in self-defence!

At first it is only the smaller scavengers that assemble; but soon the great carrion-feeders begin to arrive on the scene, clearly attracted, or rather, misled, by the gathering of the minor clans. For what use is the carcass of some



WHITE-HEADED VULTURES.

small bird to a hungry marabou? As scraps of meat are thrown ashore, the “site-value” of land adjacent to our anchorage, with its unearned increment, goes up by leaps and bounds. The smaller vultures (brown neophrons) lie dotted all over the grass, and beyond stands a solemn company of marabou, disconsolate at their misreading of the signs. One, more eager to investigate, perches with laboured wing-balancing on the apex of a heglig-tree already occupied, *inter alios*, by a pair of imposing white-headed vultures. The latter allowed so close an approach that, after making the annexed sketch, I “felled” the bigger of the two with No. 8 shot—weight, $8\frac{1}{2}$ lb., expanse, 84 inches.

Shilluks also frequented our various anchorages, partly to get any spare meat, but also bringing chickens for sale at fivepence a couple; the price of a wife, I understood, being twelve cattle. These stark savages are becoming "tamed" by being employed to cut and carry timber, as fuel, for the Government steamers, but the destruction resultant to the forests is appalling. Under the *Pax Britannica* the whole country is being repopulated: new villages spring up mushroom-like on every side. That is all to the good. Still a naturalist may lament the reckless and wickedly wasteful woodcutting and the grass-fires that desolate the land, scrub and saplings replacing the forests of yore.

I enjoyed one merry morning's shooting. Far away inland the veld seemed to bristle with a spiky *cheveau de frise* that might have been a Zulu Impi on the warpath. They were all crowned cranes, feasting on locusts and grasshoppers. I commandeered the services of our friendly Shilluks, and in each of two "drives" secured a right-and-left. The spectacle of these massed skeins, flashing alternately black and white, russet and rich maroon-red, together with their chorus of clarion cries, remains a notable memory. These splendid birds weighed from 8 to 9½ lb. apiece, with a wing-expanse of 78 inches, the sexes being equal, and, like all cranes, are excellent eating. I saw three giraffes that morning.

One evening after "browning" a passing flight of teal, a wounded duck, after circling blindly around, finally fell at some distance. After gathering the dead, I was rowing out in the dinghy to retrieve the cripple, when from behind came a rushing sound from the heavens, and a great river-eagle with collapsed wings swept down and, deftly clutching the prey (so smart was the stoop that I failed to see the actual stroke), bore it away to the opposite bank. I followed, and not wishing to shoot the eagle, hailed him that the teal was mine. The robber, however, was obdurate and rose

aloft, the stolen property hanging from one great bushy claw. At the first shot he dropped his prey, and to the second dropped himself—a handsome specimen, $6\frac{1}{2}$ lb. weight.



RIVER-EAGLE.—“My Teal, I believe?”

A SKETCH OF BIRD-LIFE ON THE WESTERN BEND
(*On the Arid Prairies eastward of Malakal*)

Sudan ostriches were among the specimens we had been commissioned to bring home for the British Museum; and local information led us to believe that a troop of those giant-birds frequented the Hinterland of Malakal. Lowe and I therefore set forth from that spot at dawn on January 28th. Now this was about as silly

an undertaking as any I have been guilty of, for an ostrich traverses the space of a British county what time you cover half a league. There occurs in Baker's *Ismailia* (vol. i., p. 113) a pertinent remark, had we remembered it. That great explorer shot a cock ostrich hereabouts and wrote:—"Its stomach was rich in scorpions, beetles, leaves of trees, and white quartz pebbles. The bird must have *travelled from a considerable distance*, as there is neither rock nor pebble in this neighbourhood." No; if you specially need an ostrich, wait till one comes in sight and then do your best. To set out deliberately on the quest in a "big country" is to waste labour.

Well, off we set, and so soon as the low tin roofs of the settlement and its palm-trees sank from view, not an object remained on the uninspiring horizon; all was a drear monotony of sere grass, waist-deep. Presently, to south-east, a low straggled thorn-growth showed up. To this we steered—nothing there. Farther still, and the crests of forest-trees peered over the sky-line and we set our course thereto. So far, no sign of life had relieved our eyes—nothing save a jackal or two, and little unknown duikers that sprang from underfoot, but which we were debarred from shooting owing to this region being "Sanctuary." We had, however, observed all the morning certain birds, in twos and threes and little groups, all flying north-east, and which we mistook for terns. We wondered why on earth *terns* should seek this arid desert—why?

While still a half-mile from the forest ahead, we noticed one of its nearer trees all blanched with a crowded burden of birds. Doves, I thought them, after survey with glass; since doves in certain lights oft show up near snow-white. Lowe disagreed, and we advanced to investigate. The strangers proved to be the rare swallow-tailed kite, *Nauclerus riocouri*, and so thick did they cluster that L. (I only carried a rifle) secured six specimens in his two shots. There must have been some 150 massed in that

one small tree and, after the shots, they soared, wheeled, and played in the air overhead with exquisite grace and speed, ere resuming their interrupted course to the north-east.

A striking feature in their pure white figures was one dark patch *beneath* the point of the wing as they soared above us. This, as our six specimens seemed to show, is a sexual distinction, denoting the female.



SWALLOW-TAILED KITE.

More chastely-coloured creatures than these do not exist. Save a black eye-patch, crimson irides, and yellow talons, their whole colour-scheme was delicate French-grey above, white below, and they had long forked tails. No wonder that, at a distance, we had mistaken them for terns! Terns certainly they resemble far more than birds of prey.



SWALLOW-TAILED KITE.

Our six specimens (2 males, 4 females) were all thin and in poor condition. Their crops were empty, save that one contained a few grasshoppers.

Although the date (January 28th) represents the Nadir of migration times, yet this band was clearly travelling north-east when they alighted, tired and hungry, on the first

tree they encountered after crossing leagues of open veld.

Up to that date Mr Butler had never had the luck, in a dozen years' work in the Sudan, to secure a specimen of the swallow-tailed kite; hence it was no small pleasure to us to present a specimen to the Khartoum Museum. A few weeks later, however, Butler wrote us this charming word-picture:—"At last I have got myself two of those exquisite little kites. Fancy, there were six of them, all sitting alongside a young vulture in its nest! The kites kept returning again and again, and I got the two by waiting under the nest. Each time the kites pitched, the



THE SOBAT BUSH-LARK.

big grey vulture - squab lifted its head and chuckled welcome; and the little white kites twittered and mewed and folded their long wings and sat in a row all round the squab! The vulture's nest (*Otogyph nubicus*) was on top of a big thorn-tree, not in "a

crag." This was in Kordofan.

Another remarkable coincidence followed. We had picked up our six kites and were still searching around in case any more had fallen, when from the long grass at my feet arose a bird that at once struck me as something fresh. . . . Undoubtedly a lark of sorts, but extremely dark-coloured, with broadly rounded wings and pale rufous quills—probably a *Mirafra*? Ere such thoughts had time to take shape in my mind the stranger fell dead, for Lowe is a man of instant action—shoot first, think after, is his plan. Examination satisfied us that we had secured a prize, and the anticipation subsequently proved correct, the bird being described as new to science under the title *Mirafra sobatensis*, Lynes.

These dark bush-larks were invariably solitary, sitting

close in the long grass—regular skulkers like jack-snipe, or rails, or burglars. It was practically impossible to put up a marked bird a second time. They were, moreover, extremely scarce, and we were lucky in securing two fine specimens that day. The second fell in the same instantaneous style, while yet I was wondering what it was. The annexed sketches give an idea of its curiously rounded wings and general appearance.

We afterwards found these dark-coloured mirafra in two other localities; always extremely scarce, solitary, and skulking. It was only after traversing many a



SOBAT BUSH-LARK (*Mirafra sobatensis*, Lynes).

toilsome league on those dreary flats that we finally succeeded in securing nine specimens. We probably walked 90 miles for those nine!

One incident in this prolonged hunt for mirafra fixed itself painfully in my memory. While pushing through tall grass against a strong head-wind, a spear-pointed blade pierced my right eye and my hunting ceased for twenty-four hours.¹

¹ A characteristic feature in these bush-larks (*Mirafra*) deserves passing note. In British East Africa (as related in *On Safari*, pp. 249 and 333) where I met with an allied species, *Mirafra fischeri* by name, my attention was first attracted by the curious vibrating sound (not unlike the "drumming" of a snipe at home) produced as the bird was soaring upwards, skylark fashion. Nothing of this habit was observed in our Sobat mirafra, though the seasons were identical.

For once—it was at Doleib hill on the Sobat—I caught sight of a mirafra while still undisturbed in the depths of the grass jungle. From that glimpse some of these sketches evolved.

Needless to add, we never set eyes on ostrich near Malakal! Still, having secured two specimens of a creature absolutely new to science—none of your “sub-species”!—and six of another new to the Sudan (to say nothing of the forbidden duikers, which are also probably “new”), we were well content with our long day’s ramble in the wilderness.



OUR NEW BUSH-LARK (*Mirafra sobatensis*, Lynes).

CHAPTER X

A FIRST PRIZE OF SUDAN

THE SADDLE-BACKED, OR NILE LECHWI

(*ONOTRAGUS MEGACEROS*)

ARABIC—*Teel*. SHILLUK—*Gyek*

ALONG the 100-mile stretch of White Nile which I have defined as the "Western Bend"—to be precise, that between the Sobat River and Lake No (latitude 9.50° North)—the traveller enters upon the territory of this unique African antelope, the saddle-backed lechwi. At this point it is to the *north* bank only that search should be directed, since the southern shores (being firm "cotton-soil") are abhorrent to the tastes of a swamp-loving animal.

The geographical range of the Nile lechwi—restricted as it is—is, nevertheless, not so narrow as the above sentence might convey, since beyond Lake No it is prolonged westward up the Bahr-el-Ghazal, southward up the Bahr-el-Jebel (or Mountain Nile) precisely so far as "Sudd," or sudd-like conditions, extend on either waterway—say as far as Tonj to the west, to Bohr on the south respectively (roughly about a couple of hundred miles each way). For a rare and highly specialised species such limits are dangerously narrow, and the Nile lechwi deserves the utmost consideration under the Sudan game-laws. Luckily its preference for almost impassable swamp affords it some degree of natural

“protection”; but physical obstacles such as that present small terrors to many of our big-game hunters.

The Nile lechwi forms one of a genus of two semi-amphibious antelopes which possess no relations either in Africa or elsewhere. The second is the Zambesi lechwi (*Onotragus lechee*), and the pair are separated by 1000 miles of intervening space.

The Nile lechwi is confined, not to the “Sudd” proper (which it never enters), but to those circumjacent



NILE LECHWI, OR SADDLEBACK, CHASED BY SHILLUK DOGS.

areas where sudd-like swamps prevail. For the actual *Sudd* itself, Nature has designed another form even more amphibious than the lechwi, to wit, the Situtunga (*Limnotragus*). Herein we find an instance of physical adaptation worthy of a few moments' consideration. The degrees of specialisation provided by Nature to adapt each of these two animals respectively to its own assigned habitat—(let us call those habitats, in the one case, “treacherous swamp”; in the other, “bottomless bog”)—are beautifully evidenced in the forms of their hoofs. In *both* species the hoofs are so specially elongated as to afford firm foothold on rotten ooze or surface-floatage not otherwise traversable. But in the situtunga (which is

virtually an amphibian) the degree of elongation becomes almost grotesque; while, secondly, the long toes are also widely flexible—that is, provided with a power of lateral extension which, in effect, approximates to the wide-spreading toes of marsh-birds such as the jacanas, or even our common British waterhen—enabling these birds safely to traverse floating lily-leaves and such-like frail support. Thirdly, not only are the pasterns of these antelopes also elongated, but the under-surfaces—instead of being hair-clad, as in other animals—are furnished with a naked horny substance, virtually a sort of pad as elastic as the rubber-tyres of an automobile!

The combined effect of this triple adaptation—*i.e.*, elongated hoofs and elongated pasterns, plus rubber-tyres to the latter—practically doubles or trebles the “bearing surfaces” of the hoofs upon their selected ground. And the merit of this adaptation becomes painfully demonstrated when the unequipped human biped seeks to compete with specialised creatures upon their own (abominable) domain of swamp and sudd.

The following table (together with the sketches annexed, shows the respective degree of specialisation in each of these three groups of animals, namely (1) The “amphibian”; (2) the mere “bog-trotter”; and (3) their dry-land cousin, thrice removed.¹

1. <i>Limnotragus</i> (=“Amphibian”)	Fore Hoof.	Hind Hoof.
Situtunga	7 inches.	7½ inches.
2. <i>Onotragus</i> (=“Bog-trotter”)		
Saddle-backed lechwi	3½ ”	3½ ”
3. <i>Adenota</i> (=“Dry-land Cousin”)		
White-eared cob	1½ ”	1¾ ”

The personal characters that, in the life, strike an observer as differentiating the lechwi from every other antelope in Sudan are, first the short cobby head, blunt,

¹ For assistance with these measurements I am indebted to Sir S. F. Harmer, F.R.S., Keeper of Zoology at the British Museum (Natural History), and to Messrs Rowland Ward.

with bristly beard and a loose bushy mane on neck, and generally shaggy pelage—the reverse of that in the smooth-coated cobs. But more conspicuous than any of these points, as seen from a distance, comes the singular horizontal carriage of head and neck, poked forward so as to bring the long curving sweep of its splendid horns lying close along the line of its back; in fact, the lower curve of the horn is often lost to view against the sable quarters. I cannot call to mind ever seeing the lechwi hold its head and neck upright, as all cob and waterbuck habitually do. No field-naturalist could conceivably mistake a lechwi for a waterbuck—as systematists



HOOFS OF SITUTUNGA.



HOOFS OF COB—SITUTUNGA—LECHWI.

have blindly done for two generations—nor confuse it with the cobs either. For those who have eyes to see and to discriminate, the three animals obviously belong to three totally distinct genera.

As seen afar on the marshy plain, saddle-back rams show up absolutely black; no suspicion of other colour occurs, save only the snow-white saddle. But when the prize lies at your feet, then the warmer tones of the interior fur, showing up through the dark and shaggy exterior, produce an effect of lustrous sable. Sometimes one discerns a faint semblance—a mere shadowy indication—of the paler gorget so characteristic of ariel, addra, and Grant's gazelle, white-eared cob, and other antelopes. The females of lechwi are hornless and of a tawny fawn colour, not to me distinguishable from those of the cob,

though keener eyes than mine have detected a deeper, rustier red.

The Sudan, as before stated, can fairly claim several of Afric's most notable game-beasts as being almost exclusively her own—endemic. All of these, however (save one), acknowledge relatives not markedly dissimilar and co-existent in adjacent regions of the African Continent, since the water-parting of Nile and Congo forms either a rendezvous of relatives or a centre of dispersal for diverging



NILE LECHWI, OR SADDLEBACK, IN NORMAL ATTITUDE.

types of nascent species. Our beautiful subject, the Nilotic lechwi, forms the single exception indicated. It is absolutely loyal to the Nile watershed, never transgressing those boundaries; nor—saving only the Zambesi lechwi, 1000 miles to the southward—does it acknowledge a single relative, similar or dissimilar, elsewhere in Africa, or in the world.

Whether within its limits, the Nile lechwi is really abundant, or otherwise, it is difficult to estimate, since no reliable census is available amid ocean-like expanses of reed-jungle and impassable swamp. The consensus of opinion among big-game hunters (many of whom have their own pet resorts carefully located and as carefully kept

secret!) points to this marsh-buck being quite plentiful locally; and with that, my own experience tallies. Whether one may happen in a season to see many or few is largely a matter of luck.

Already I have devoted what (I gravely fear) may appear quite tiresome space to the mere zoology of a single animal. My excuse—and apology—is that the generic status of the Nile lechwi has never before been correctly aligned in any British work. Should, however, my feeble statement of the case (see Appendix, *infra*) be held to fall short of proof, then let me refer to an exact



analogue in South Africa. There, on the Zambesi, are also found living alongside each other and in precisely parallel circumstance, a lechwi (*Onotragus lechwe*) and also a cob (*Adenota vardoni*), just as we find their counterparts here on the White

Nile. But while, in either habitat, the two forms are constantly found within half a mile of each other, yet never do they come in contact. The swamp-loving lechwi grazes girth-deep; the other as invariably avoids wetting its feet!¹

The saddleback I have entitled a First Prize of Sudan; nevertheless I had excluded its capture from my personal programme and ambitions therein. There comes a period in life when it behoves to economise physical powers, or at least to avoid squandering them on doubtful emprise; and the terror of those Nilotic swamps prevailed. I struck the coveted saddleback off my schedule. But *dis aliter visum*.

¹ See SELOUS' notes on these two Zambesi antelopes, both in his own work *A Hunter's Wanderings*, and also in his contribution to Rowland Ward's *Great and Small Game of Africa*, particularly at pp. 300-1.

A MEMORABLE AFTERNOON WITH SADDLEBACK

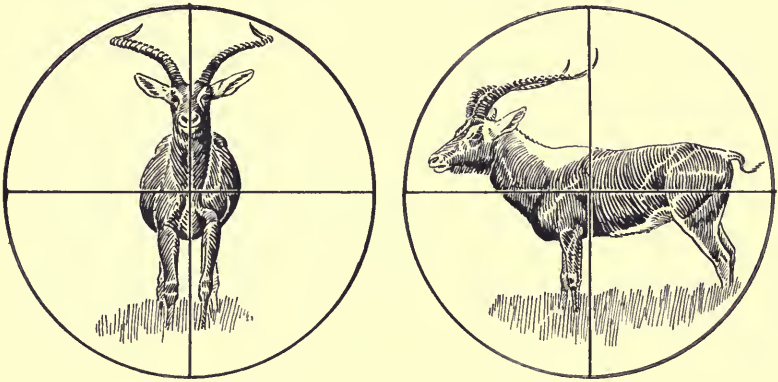
Upon the sixth of February, 1914—despite the self-denying resolve just recorded—we had searched a well-reputed haunt of “Megaceros.” Starting before dawn we hunted till past noontide; yet never a sight of the sable syren rewarded those seven hours’ toil, and by one o’clock *Candace* was under way. Two hours later—I was busy writing in my cabin—an excited report electrified the atmosphere. Within view from the poop stood a troop of a dozen saddleback, including two rams, whose jet-black hides set off snow-white withers. Both these rams, as revealed by the binoculars, carried thoroughly warrantable heads; moreover, the herd appeared to be grazing on relatively solid ground. Hence orders to “close with the shore” promptly followed, and within a mile we discovered an available landing-place.

Oh! the fraud of appearances! What we had innocently mistaken for firm ground proved but little better than bottomless bog. The first step had been knee-deep; within 50 yards we were mired to the middle. Nature’s camouflage was perfect. Above, charred stalks of papyrus and a tangle of rank swamp-grasses served to half conceal the Serbonian bog beneath—deep slime, fœtid and stinking, intercepted by criss-crossed canes that tripped one’s feet and arrested every step. Moreover, at short intervals, yet deeper *khors* threatened absolutely to bar all further progress. The venture appeared hopeless but, having put our hands to the plough, we proceeded.

The game being a mile back, was at first beyond sight. Through those intervening screens of tall canes and bulrush—often on hands and knees—we forced a painful way; rampikes of splintered cane or spear-grass pierced clothes and flesh alike, while the armoured shafts of *Oom-suff* (*Carex*) fairly pincushioned arms and hands with a thousand barbed spicules. We won through in

time and found our dozen friends still feeding and now 200 yards ahead.

A second inspection at this shorter range showed that while the horns of the two rams were approximately equal in length, yet one of the pair displayed a far bolder "spread." Him, of course, I selected for my trophy. Friendly clumps of canes enabled me to creep forward to the deadly 100-yard range; yet, even so, the shot made was a poor one. The bullet struck 4 inches too low, just at junction of fore-leg with shoulder. Should excuse



AIMING WITH TELESCOPE-SIGHT.

be needed, remember that there was absolutely nothing *solid* to sit on. The process of perfecting an aim demands some few seconds; and during those seconds I was sinking deeper and deeper into slime. Quaking bog boiled, bubbled, and fretted around, and already a greenish fluid had risen above my belt—even a cracksman at Bisley might be disconcerted?

The shock of course knocked the animal over; but, soon recovering his feet, he staggered after the flying herd. These, taking a course riverwards and presently wheeling inwards, actually passed between me and the ship behind, thus enabling my watching companions aboard to witness the striking incident that ensued. The stricken ram—one leg swinging useless from the shoulder

—had already stopped twice, and appeared on the point of abandoning further effort, when his sable pal, with at least *one* of their tawny consorts, deliberately turned back to the rescue of their disabled friend—surely a beautiful example of animal-sympathy? Supported thus on either flank, for a while my quarry gamely struggled onwards; but soon it became obvious that the effort was beyond his ebbing strength. Then the gallant auxiliaries had perforce to abandon their attempt, and soon the whole herd proceeded full speed inland. I watched them afar, “bucking” like impala as they sped away in the direction of Timbuctoo.

Meanwhile, the wounded ram slowly staggered away; and I watched with hungry eyes till he eventually lay down—luckily among some clumps of green iris, 400 yards away. Now that green iris was invaluable as a mark; yet well I knew—from much bog-trotting—that the presence of that plant ever bespeaks the deepest and most dangerous bog.

Passing over unspoken the miseries of that quarter-mile traverse, I presently reached the edge of the iris. Here, as anticipated, the bog got worse and worse, so that to maintain equilibrium it became necessary to use both hands. I had just passed the rifle to Abdul Halim, my gun-bearer, when I all but stumbled right atop of the recumbent buck. Within a couple of yards he struggled to his feet and feebly strove to make off. Abdul was at my elbow; but that volatile savage, seeing the sore plight of our quarry, and thinking to catch it by hand, dashed off in pursuit, leaving me unarmed and helpless—aye, and hopeless too. Within six seconds Abdul was bogged to the neck, and I trembled at the risk of the telescope-sight being submerged—what a fiasco!

All odds now pointed to a total loss of our prize. With tottering steps the poor beastie struggled away, and hope died outright in my breast when time after time we utterly lost sight behind intervening clumps of cane-grass and

reeds. However, we always picked him up again, and at length, after a suspense that had seemed eternal, marked him into a patch of green flags half a mile away. That patch was merely one amidst hundreds all precisely similar ; so I spent ten minutes in taking exact "bearings" and identification-marks—even to counting the bulrush-heads in that crucial clump. Then off we set, and more than an hour we spent in suffocating heat, plunging and wallowing through quagmire and morass. Then, when 200 yards from the well-recognised marks, we sighted, standing on the very fringe of the guiding flags, the vision of our half-lost trophy—what a beauty! By aid of friendly clumps of canes I crept in to 100 yards, when a clean shoulder-shot dropped him, stone-dead, where he stood.

We were not long in reaching the spot and then, while feasting enraptured eyes on the prostrate prize—surely one of the rarest in the whole gamut of the hunter?—we were startled by a deep-drawn groan, evidently from a dying beast, close alongside. Within the fringing flags and certainly not two yards away, lay the animal *first* fired at. The one I had just now unwittingly killed was the *second* of the pair ; in short, I had shot them both. Note that the licence allows but one.

Now during the whole of this long-protracted pursuit, I had never (since shortly after firing the original shot at his pal) set eyes on this second buck at all. Then, when last seen, he, with his harem, was holding away northward, and I presumed that all had cleared right out of the country. So undoubtedly they had, for I saw it myself. Yet on second thoughts, and actuated obviously by pure sympathy, this devoted animal had changed his mind and returned to safeguard his stricken friend. Thus had he met his death, standing actually alongside. I did not then, nor do I now, feel that reproach can attach to me ; since to anticipate what had actually occurred passes the scope of human diagnosis.



ANIMAL-SYMPATHY.

Disabled Lechwi assisted to escape by two of his Companions—6th February 1914.

It was dusk ere we regained *Candace*—triumphant, but bemired to the eyes, blackened with charred reeds, pierced in every limb, and with khaki clothes cut to ribbons by canes and spear-grass. Never do I recollect a more exhausting stalk.

My trophies measured :—

	Length of Horn on Curve.	Basal Circumference.	Spread, between Tips.	Height at Shoulder.
No. 1	27 $\frac{1}{4}$ inches	7 $\frac{1}{8}$ inches	21 $\frac{1}{2}$ inches	39 inches
No. 2	26 $\frac{1}{2}$ „	„	15 $\frac{1}{4}$ „	38 „

The wide “spread” of No. 1 amply corroborates our correct eye-judgment as formed at the first, distant view; while the worn-down annulations showed this (indeed *both*) to be aged animals.

Curiously these two saddle-back rams were the only *first-rate* males of their kind that we happened to see this year during a whole month spent in their haunts; though the previous winter (1912-13) I had met with quite a number, including troops of twenty and upwards. In 1919, a single ram that appeared quite of champion class, stood meditatively at almost the identical spot; and both these winters we saw others of minor merit.

The same evening I drew up a full and formal report of the incident—practically the above yarn (which now doubtless reposes among stored archives of the Sudan)—addressed to the Superintendent of the Game Department of the Sudan Government. That Authority was, I am convinced, satisfied with its *bona fides*; but, being an esteemed personal friend of my own—to wit, Mr A. L. Butler—preferred to leave its adjudication to the Sirdar, Sir Reginald Wingate, who exonerated me from blame, while confiscating the *second* trophy! The justice of the latter condition is self-evident.

The game-regulations in our East-African Colonies

and in the Sudan are, within my experience, honestly and honourably fulfilled 'by visiting sportsmen. But there are exceptions. What wealth of detail—amusing or lamentable—must have accumulated, locked away in the breasts of Colonial Governors and Game-Superintendents!—the excuses, specious or otherwise, the . . . ? Any offender, whether wittingly or unwittingly, may rest assured that he will need to be some points better than a super-Ananias, if he rely for escape upon anything beyond the simple naked truth.

A NOTE ON NOMENCLATURE

WITH SPECIAL REFERENCE TO THE NILE LECHWI

(*ONOTRAGUS MEGACEROS*)

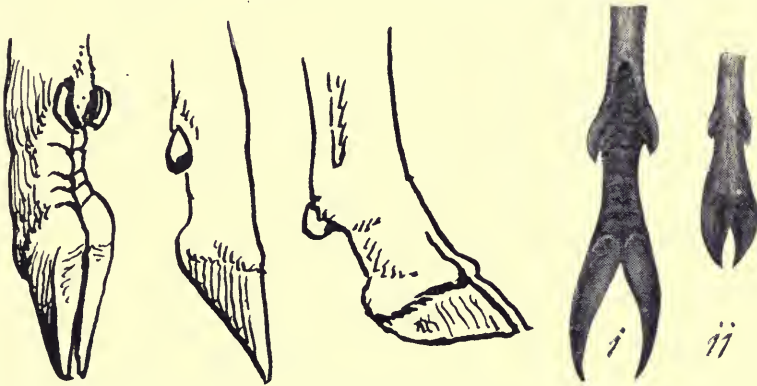
That an animal so distinct and so highly specialised as the Nile lechwi should for half a century have figured under a false name—or, in Roosevelt's phrase, been "cursed with the silly misnomer of 'Mrs Gray's waterbuck' (*Cobus maria*)"—casts a sinister sidelight on the system of zoological nomenclature. To begin with, in my view, such a name is bad equally in fact and in grammar, since by grammatic axiom (though not otherwise) "the male is more worthy."

Since most laymen naturally conclude that some "Mrs Gray" must have had a hand in the discovery of this antelope, a short review of the facts becomes appropriate.

The existence of this Sudan marsh-buck was first made known to science by an Austrian explorer, von Heuglin, who in 1855 brought to Vienna seven complete specimens, including one living female. Having named his discovery *Adenota megaceros* (a definition which, although wrong, was not so very far wrong after all), von Heuglin, neglecting the red-tape of scientific formulæ, hurried back to Africa. Four years later, in 1859, our great British Consul at Khartoum, John Petherick, sent home a couple of lechwi skulls with masks. From these paltry fragments the then Curator of the British Museum (Dr Gray), ignoring the prior discovery by von Heuglin, hastily and unwarrantably jumped to totally false

conclusions and named the animal after his wife, *Cobus maria*, "Mrs Gray's waterbuck."¹

It is thus clear that Gray undertook to describe and to classify an animal of whose specialised characters—as, *e.g.*, the elongated hoofs which dominate its systematic status (to say nothing of its life-habits and economies)—he then possessed no shred of knowledge. For, at the time, all he had before him was this pair of skulls and masks. Therein, according to my view, he was guilty of a grave scientific offence; but in this condemnation Dr Gray does not stand alone. On the contrary, he is merely one of a crowd of fellow-criminals, since that type of "crime" has become well-nigh a form of



1 and 2. HOOFS OF LECHWI. 3. HOOF OF HARTEBEEST. "RUBBER-TYRED."

original sin amongst our systematists and closet-naturalists. Many are prepared—some almost panting!—to bestow long and irrevocable Latin names (in triplicate) on creatures of which they possess practically no knowledge—or say, perhaps a flat skin, or a skull or two, with or without the mask. Such "material" is obviously inadequate. Equally obvious it is that such *System* connotes, not Science, but Speculation.

The present is a case in point, but similar instances occur daily and could be cited by the dozen. I will content myself

¹ *Adenota megaceros* is what is termed in the technique of zoology, a *nomen nudum*—that is, it had no specific diagnosis appended. Heuglin, it is true, did not "describe" his discovery; but he did what is tenfold more important—he brought home seven complete specimens. These sufficiently describe themselves. It is, to me, utterly inconceivable that any contemporary zoologist could be wholly unaware of these facts.

with quoting one, merely because it chanced to be a subject of discussion in *The Field* at the moment of writing (December 1917). The frontlet and horns of an eland cow—abnormal, owing to the absence of a “spiral,” but of a recurrent type not unfamiliar to South-African hunters—had reached the British Museum. Their form puzzled our closet-systematists and thereupon a *new species*, “Antelope triangularis,” was actually founded on this fragment by the then Curator of the British Museum, Dr Günther—a German, I presume.¹ Not quite content with this mad leap in the dark, another accomplished zoologist proceeded to elevate the phantom into a *new genus*, “*Doratoceros triangularis*”! And the scrap of bone that had inspired all this scientific banality was only a deformed cow-eland after all! Instances such as these—which read rather like Gilbert and Sullivan than serious science—induce a doubt of the intrinsic value of scientific practice, of learned professors hovering around ready to pounce on any insignificant fragment—*aliquid novi ex Africâ* or elsewhere—and evolving fantastic genera or species on evidence that would not suffice to hang a flea!²

I remember as a child being taken to a meeting of the British Association, and meeting (with appropriate awe) a Savant who—I was told, and still believe—was able, *given a single bone*, to “reconstruct” the owner of that bone precisely as the creature had lived in Pleistocene or other prehistoric age. Such creative power impressed childish imagination—perhaps correctly, for there were giants in those days—but some fifty or sixty years of subsequent experience in such matters has tended to subdue all too credulous faith. “Reconstruction” on *modern* lines is as easy as falling off a log. With light hearts we do it daily. But whether the reconstructed creature bears a true resemblance—or any—to the original is regarded as immaterial. No one knows: few seem to care.

¹ So long ago as 1887, Sir F. J. Jackson had shot a cow-eland of this abnormal type on Kilimanjaro, in British East Africa, and presented the skull and horns to the British Museum. Though Jackson *knew* the animal to have been an eland, Dr Günther insisted upon regarding it as an example of his *new* “*Triangularis*”!

² Needless to say these criticisms are directed solely against the system arraigned, and not against systematists personally.

Having taken up my parable, I will further suggest that—save in exceptional cases—new names assigned should preferably be descriptive (or “onomatopoetic”) rather than personal tributes to some transient human being who even at the passing moment is unknown beyond his own exiguous circle, and whose existence within a decade will be lost in oblivion. Those who have done good work will not be forgotten; nor will others be rescued from obscurity by having their fugitive patronymics tacked-on to Nature’s forms that endure through the ages.



“IN THE NECK” (CROCODILE). (See p. 57.)

Mr J. G. Millais, to whom I am indebted for the above drawing, writes me that it suggests to him a “Residuary Legatee listening to the reading of the Will.”

CHAPTER XI

THE WHITE-EARED COB (*ADENOTA LEUCOTIS*)

ARABIC—*Teel*

DAWN had already broken when against a fire-blackened bank ahead I descried in clear silhouette a group of antelopes, whose pale tawny pelage contrasted sharply with their dark environment. Though new to me, I recognised the strangers as white-eared cob. Silently our ship sped towards them, her swift approach easily inappreciable from the animals' point of view. Pale foxy-red in hue, their sheeny coats shone refulgent in the horizontal sun-rays, well set-off by the black bank behind. Obviously they had just enjoyed a matutinal drink, and now grazed unsuspecting on scant green blades upspringing from new burnt soil. Then, at 200 yards, my eyes caught what at first had escaped detection. Two coal-black bucks, standing slightly apart and nearer, complacently gazed back at us over their shoulders. That dark background, though it had rendered their female consorts so conspicuous, had effectually concealed these two black males from our view. Thus occurred my first interview with white-eared cob.

That same afternoon a second encounter precisely reversed the conditions just described. Far out in the midst of an ocean of sere grass, a solitary horned animal stood out conspicuous as a coal-cart. Possibly in the joy and excitement of a first introduction to new creatures, I had no eye for collateral objects; but the binoculars speedily revealed that what had appeared a solitary

black beauty stood surrounded by a dozen pale-hued pals. These being females, their tawny pelage so closely assimilated with the yellow grass around as to mock the naked eye. Where the one sex was almost invisible, the other, in either case, was "given away"!

A decade ago, the idea universally held among big-game hunters—and shared by zoological authorities—was that the career of the white-eared cob followed these lines:—That all alike commenced life in a common pelage of tawny-fawn, but that (while females retained that



colour unchanged) the males with age gradually assumed a darker coat; while the degree of darkness deepened proportionately as you travelled south. Consequently it was assumed that the farther south (within their range) the hunter penetrated, the handsomer and more typical would his trophies become. There exists a certain substratum of truth in the idea—it may be said to be based on a half-truth; but half-truths are no good nowadays.¹ The misfortune of the current belief was that sportsmen refrained from shooting specimens of white-eared cob at the northernmost limits of their range, since

¹ While writing this chapter I was rather surprised to observe by an article in *The Field* (June 7th, 1919), that some systematists still cling to the exploded belief that the dark pelage is a necessary index of age.

all naturally preferred to secure the handsomer, black-coated trophies farther south. Hence we have all (myself included) left neglected and unexamined the northern race, which remains virtually unknown.

One first sees these handsome antelopes at a point about 300 miles south of Khartoum. While northward-bound in 1913, I carefully examined two or three troops a trifle north of that point. Though all were uniformly tawny, yet, to my surprise, several bucks carried fine



WHITE-EARED COB.—Sketched South of Kaka, January 24th, 1914.

heads—one in particular the best I had seen that year. Similar experiences befell later—on Abba Island for example; but having already shot my “limit,” no specimens could be legally secured. Though four head per year is ample allowance for a sportsman, it necessarily handicaps the investigations of a naturalist.

It is not till after passing Jebel Ahmed Agha (340 miles) that one notices the earliest indications of a “black coat,” and from thence southward the traveller enters the typical domain of *Adenota leucotis*. At dawn and dusk the riverain prairies become “quick” with thirsty files, and, whether a hunter or not, everyone capable of

appreciating one of Nature's loveliest designs must be entranced by these bi-diurnal spectacles.

Six times in all have we passed through this region of the "all-tawny race," admired yet neglected for the reasons stated. It was not till we had reached a point approximately 400 miles south of Khartoum that we first



WHITE-EARED COB (*Adenota leucotis*).

landed to select some typical specimens of the white-eared cob.

Already as a dim grey light heralded the approach of day, three separate herds became discernible, moving like shadows among tall reed-beds that fringed the river-side. A charming pageant of African wild-life succeeded the dawn—troop beyond troop of lovely forms (water-buck, tiang, and cob) strode by, slowly grazing inland; exactly as for thousands of generations before they had grazed across this same veld when no cordite rifle lurked on their path. No suspicion of such modern development

troubled their keen instincts. How could it? They have no ha'penny papers to instruct them in all they ought to know—and much more besides. But the lurking "rifle" had sympathy, and for long forbore to disturb a scene of the peaceful prime. Still, I had come out with an object—had travelled 7000 miles to effect that object—and the time for action had arrived.

The game at this point could not be described as wild. I had had no difficulty in gaining a position to landward whence I could watch at leisure.¹ Ere daylight was fully established the "teel" had drawn away from the water and slowly moved inland, several passing unsuspecting close by where I lay hidden. The range of colour-variation was conspicuous, not to say confusing.

During that memorable morning I shot three of my four permitted specimens and obtained a fourth head which had been killed by Shilluks. These stark savages, by the way, had hung on our flanks all day, and on one occasion helped me to secure a buck that had been hit rather too low down on the shoulder, but only after a run of a couple of miles before their dogs. It formed a wondrously wild episode, and but for their assistance we might not have retrieved that buck. At parting, we had given them a couple of carcasses and, after dark, when we were already under-way, they hailed *Candace*, asking us to send a boat ashore as they had a head they wished to give us. Surely this was a bit of true natural courtesy (by way of a return for our gifts) that was particularly graceful, not to say amazing, on the part of the wildest of wild savages? These Shilluks belong to a tribe spreading eastwards from Kaka, and their chief, resident

¹ I ought not entirely to omit mention of the fact that during this manœuvre I passed within 20 yards of a mimosa-tree upon which was roosting a golden eagle. At such close quarters every detail of plumage was clearly discernible, and I set down the bird in my notebook as *Aquila chrysaetos* with absolute confidence. Whether our European golden eagle penetrates so far south, I do not know; if not, he has here a local "double."

at Kurwa (10 miles inland), was a magnificent savage, both in appearance and manners.

Tall, lean, spectral figures were these Shilluks, many appearing 7 feet in height, lithe of limb as greyhounds, and all stark naked—merely coated in red or yellow clay, or blanched with the grey wood-ash in which they make their lairs. Some had ostrich-plumes waving aloft, and each carried a handful of murderous spears. An antecedent incident deserves passing note. After that wild joint hunt, we had assembled beneath a grove of shade-trees. Baraka and Abdul were busy off-skinning, and I was having lunch; our weird auxiliaries squatted in a circle around. A strange trilateral group we formed! Though none of the triplice spoke the other's tongue, yet conversation flowed continuous, Arab, savage, and Britisher all discussing the hunt. Fierce-looking as they appear—and assuredly would be in a scrimmage—yet these simple, stark, unsophisticated examples of a species in evolution revealed a nice sense of "manners." Curiosity, it was clear, was their main mental pre-occupation; yet an innate sense restrained its undue display. After a while, however, I felt just a gentle touch on my foot, and found that an inquiring black hand sought to investigate the mystery of British shooting-boots! Undoubtedly the owner of that hand was intent on ascertaining whether leather foot-gear forms an integral part of the anatomy of the white man.

Of the four animals secured that day, two were as black as these cobs ever become at this point of their range (specimens marked *D* and *E* in tabulated list at end of chapter); at any rate, these two were selected as the blackest seen to-day among many hundreds. Closer examination disclosed the surprising fact that the two blackest bucks were actually the poorest in horn of the four! A beautifully brindled animal (*B*), specially selected as representing the intermediate type, taped nearly two inches more on the horn; while a purely fawn-coloured

example (that *ought*, by theory, to have been the smallest) proved the biggest of the lot, both in body and horn! The annulations being worn nearly smooth, showed this (*A*) to be a very old animal.

The two *black* bucks (as usually happens—and not with wild beasts only!) were not so black as they had appeared. Their rich, lustrous pelts were rather of a deep sable hue, relieved by dark chestnut points; while the beauty of the whole design was accentuated by the narrow fringe of deeper, sheeny black that bordered the snow-white areas. Irides, rich dark brown.

A typical mounted example in the African Galleries at South Kensington illustrates better than written words the extreme beauty of this species.

My fourth white-eared cob I reserved till we had voyaged 200 miles further south. We landed near Tonga, and had walked a few miles inland over level plains with knee-deep grass and thin forest-belts, when a herd of cob was sighted. It surprised me that on such bare ground, devoid of covert, this troop allowed us to walk openly to within 300 yards. At that point we got a big ant-hill in line, and by simple crouching made good our approach. Still the herd took no notice—many of them were lying down.

We were now at a distance of 175 yards from these careless beauties. There were forty-four of them, but only one male proved conspicuously blacker than his fellows. So closely did they crowd that for more than two hours a clear shot at the champion in separate outline did not present itself. As often as he showed alone some wretched doe or young buck would move out and “mask” him, or (what was just as fatal) stand directly behind. Thus for half a morning, we (Lowe was with me) enjoyed delightful opportunity of observing them at home. Though the troop remained quiescent, yet there was constant shifting of individual positions, and a series of mild skirmishes between

our special sable friend and his next darkest rival aided our object.

It is worth special note that three fine *tawny* males, with their consorts, were *lying down together*, slightly apart, all the time, and took no interest in the sparring of their darker cousins. Apparently they belonged to a separate caste.

At length the awaited chance arrived and the ball went true. The champion, though apparently black, proved to be considerably brindled with foxy-chestnut—an exquisitely beautiful creature, but not the genuinely black ideal of one's dreams. His horns (*C*) were of similar measurements to those of the former "brindled" example (*B*) shot near Kaka; that is, intermediate between the smaller black heads and the bigger tawny.

I had now reached my "limit" of white-eared cob, and a few days later, while shooting sandgrouse on the northern shore of Lake No (620 miles), encountered the first absolutely black example I had seen. With a single doe, he lay sleeping among green flags and sprang underfoot. Never in my life have I seen a wild animal (carrying a handsome trophy) so totally careless of human intrusion. At 30 yards he pulled up and stood on gaze, his mate just beyond. Truly it seemed that he had studied the game-ordinances of Sudan and knew, moreover, that I had shot my allowance. At any rate there they both stood while I attempted the rude sketch here reproduced, and once the buck even stooped to scratch an ear with his hind-hoof.



This antelope, I could *swear* it, was purely and absolutely black and white with never a tawny hair on him from stem to stern. At that close range mistake was impossible. His horns were of merely medium size.

Another surprise awaited. Not far from Lake No, but amongst the dense forests which clothe the south bank (the proper right), we found a woodland cob in great numbers and excessively tame, allowing us to walk past within 60 or 80 yards—on occasion, even less. These were practically *all* tawny, paler than any hitherto seen, and devoid of the conspicuously white facial markings. They carried, moreover, finer horns—some scarcely inferior to those of many a saddleback. Indeed, with their uniform foxy pelts and splendid cornual equipment, these buck rather recalled visions of impala than any white-eared cob I had ever seen.

Could I have been *certain* that these antelopes belonged to another species, I would have been entitled to shoot six more—and thus set the question at rest. By some inconceivable oversight, we had on board *Candace* no single book of reference on the subject of antelopes, and I dared not trust to memory alone. As already confessed, I had by pure mischance *overshot* my limit in saddle-back lechwi, and, with that on my mind, declined all risk of even a technical infraction of the game-ordinance. Thus the problem remained for solution in another year; or rather, as the date was only February, we thought to solve it in the succeeding November. How little we then foresaw! . . . It remains unsolved still. Possibly these were “Uganda cobs” out of bounds.

The white-eared cob one associates almost exclusively with wide grass-prairies, devoid of bush or covert. Here these undetermined cobs were equally at home amidst relatively dense forest, associated with waterbuck, bush-buck, and tiang, and close neighbours of buffalo.

From the above it is at least clear that a dark or black coat in *Adenota leucotis* is no exclusive index of maturity. The darker individuals are unquestionably adults and probably aged. This is shown by their horn-measurements. But on an average the big tawny-coloured males

fully equal—when they do not exceed them—in horn length and in all other indices of maturity.¹

As regards their habits, white-eared cob normally frequent the open plains—always on firm dry ground—in bands of a dozen to a score or two, though one often sees far larger aggregations. I once counted over one hundred together, mostly does, with a single tiang as chaperon. They drink at, or a trifle before the dawn, and, at such spots as they favour, may always be found by the riverside at break of day. Thence, as light waxes, they graze away inland and, towards noon, reassemble for a siesta. The hot midday hours they spend resting—many lying down—either in the open or sheltering from the sun in the shade of trees, should such adjoin their pasturage. At such spots the cob may be found associating with tiang, but as a rule are not much given to herd with other species. When alarmed and running off, these antelopes bound in air, like impala or springbuck—marvellous flying leaps.

Towards sundown the “teel” may again be seen wending riverwards, often in very great aggregations of many herds mixed, strung out in straggling files for half a mile and more. Occasionally, two or more such columns may be in sight at once, converging on some favourite watering-place. When near the river, however, the various herds squander and loiter about, grazing so long as it is light enough to distinguish. I have never seen them come actually down to the water’s edge in daylight, as waterbuck do.

One morning late in February (1913) we noticed this curious phenomenon. A big grass fire was raging half a mile to the northward, filling the heavens with dense black

¹ At this point it is necessary to put in a word of caution against any judgment being based on mounted heads, whether in museums or private collections. It is well within my own knowledge that sportsmen—innocent of all intent to deceive, but over-anxious to possess handsome trophies—habitually order the darker head-skins to be mounted on the skulls of longer-horned (but tawny) examples.

smoke-clouds, punctuated by flying brands still aflame. Nearer at hand a minor blaze—merely flickering tongues of fire—was eating up a strip of thin bush close by. The space between the two fires was occupied by several groups of white-eared cob, with a few scattered tiang; and we were struck by the complete indifference of the wild game



“SUSPICION” (White-eared Cob).

to these rather startling conflagrations. Some cob were feeding so near the farther fire that their figures appeared actually silhouetted against the flames. They took no sort of notice. While watching this scene, we became aware of something amove in the nearer strip of bush, and presently from its leeward point emerged two lions, one much larger than the other. The grim pair, clearly disturbed by the approaching fire, strode slowly and deliberately away down-wind, and of course in full view of the game, the ground there being quite open. Yet

no stampede ensued, nor (so far as we could see) was there any sign of alarm or even of recognition. When first seen, these lions would be from 400 to 500 yards distant—beyond all reasonable range, yet still offering a bare off-chance. For the second time in my life with lions (see *On Safari*, p. 246), I was so intent on watching an entrancing scene that the rifle was forgotten.

I have not thought it necessary to add further particulars from a purely sporting point of view, because I have always found the white-eared cob fairly easy of access. This, however, may not be a universal rule, and other sportsmen have expressed an opposite opinion. It is, I think, largely a question of locality. There are certain well-known resorts where the “teel” have been heavily hunted, and there they are probably wild enough. We studiously avoided these oft-exploited points, despite the entreaties of our men, who love best the beaten track. At the spots where these notes were gathered together, I conceive it quite possible that no white man had hunted before. It must be borne in mind that the game-country of White Nile covers hundreds of miles (on both banks), and that a landing—except at the well-known spots referred to—usually presents very considerable difficulties. These may prove absolutely insuperable; yet the effort is always worth making, since success spells nothing less than gaining a hunter’s paradise, stocked with unsophisticated game intact in all their native grace and beauty. It is not that I fear tackling the wildest of wild game—and being beaten; but I love yet more to wander around amidst Nature’s pristine conditions, where the wild beasts—never having heard the report of a rifle—allow one to study them at leisure, and to select, with discrimination, such specimens as may be required.

Though the evidence is obviously incomplete (owing to circumstances beyond my control—that is, the War), I will venture to insert this provisional diagnosis:—(1) That northern individuals of the white-eared cob—while in no

sense inferior whether in body or horn—are exclusively tawny in colour and devoid of all melanistic tendency. (2) That melanism begins to appear, though co-existent with the paler type, at a point some 350 or 400 miles south of Khartoum—say about $10\frac{1}{2}^{\circ}$ North latitude; (3) That the range of the blackest individuals extends from the Sobat River to Lake No, or a trifle beyond that point; but that throughout this *melanistic area* the tawny type still co-exists side by side, though the two forms, while associating, appear to stand somewhat aloof from each other. (4) That from Lake No westward, melanism decreases and the prevalent type becomes increasingly tawny, gradually merging into the so-called “Vaughan’s cob” of the western Bahr-el-Ghazal. The latter is merely one of the regular colour-phases of the white-eared cob throughout the whole of its range.

Should these assumptions eventually prove correct, the curious result follows that a species which, at the two *extremities* of its range (only a few hundred miles), is practically identical, nevertheless develops in its *central* area a separate, or dimorphic, melanism.

Mr Butler adds the following note:—“In February and March 1902, I saw on the Bahr-el-Ghazal more white-eared cobs than I have ever seen since. For eighty miles along that river they formed practically a continuous, if scattered, herd—perhaps hundreds of thousands strong. All the way there was a good proportion of black ones.”

"A."—Entirely tawny,
though aged. Horns, 20½".

"C."—Brindled.
Horns, 18¾".

"E."—Black.
Horns, 17¾".



WHITE-EARED COB (*Adenota leucotis*).

WHITE-EARED COB (*ADENOTA LEUCOTIS*).

TABULATED LIST OF HORN - MEASUREMENTS.

(1) *Seven Tawny Examples.*

	Length on Curve.	Basal Circumference.	Tip to Tip.	
...	15 $\frac{3}{4}$ inches	6 $\frac{7}{8}$ inches	7 inches	Bahr-el-Ghazal.
H*	16 $\frac{3}{4}$ "	6 $\frac{3}{4}$ "	9 $\frac{1}{2}$ "	"
...	18 "	6 $\frac{1}{4}$ "	...	White Nile.
...	18 $\frac{1}{4}$ "	6 $\frac{1}{2}$ "	8 $\frac{3}{4}$ "	"
A†	20 $\frac{1}{4}$ "	6 "	7 $\frac{7}{8}$ "	"
...	20 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	10 "	Lake No.
K†	21 "	6 $\frac{1}{2}$ "	10 $\frac{1}{2}$ "	"

* Entirely pale tawny, including the cheeks, which are dark in all the others.

† Both very old beasts, annulations worn smooth.

(2) *Four Brindled Examples.*

	Length on Curve.	Basal Circumference.	Tip to Tip.	
...	17 $\frac{5}{8}$ inches	7 $\frac{1}{2}$ inches	...	White Nile.
C	18 $\frac{3}{4}$ "	6 $\frac{3}{8}$ "	7 $\frac{5}{8}$ inches	"
B	19 $\frac{1}{4}$ "	6 $\frac{3}{4}$ "	10 $\frac{3}{4}$ "	"
...	19 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	10 $\frac{1}{4}$ "	"

(3) *Five Black Examples.*

	Length on Curve.	Basal Circumference.	Tip to Tip.	
D	17 $\frac{3}{4}$ inches	5 $\frac{1}{2}$ inches	9 $\frac{1}{4}$ inches	White Nile.
E	17 $\frac{1}{4}$ "	5 $\frac{1}{2}$ "	11 $\frac{1}{4}$ "	"
...	18 "	6 $\frac{7}{8}$ "	...	"
...	20 $\frac{1}{4}$ "	7 "	...	"
...	19 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	10 "	Lake No.

CHAPTER XII

BUFFALO

ARABIC—*Gamoos*

BUFFALO I had not specially included in my Sudan programme or ambitions. That was partly because I already possessed specimens, but far more because previous experiences had taught me that any systematic pursuit of these great bovines involves a certainty of hard work and endurance that tests physical powers to the utmost. These, in one's seventh decade, it is wise to economise, especially under a tropical sun. Should luck or chance throw buffalo across my path, well and good; but with such hazard I had resolved to content myself. The marked difference between the buffaloes of Central Africa and those of the Sudan of course I knew quite well. Now that trophies of both hang before me, I am half-inclined to award the palm to the latter type.

At various points both in Kordofan and to the east of White Nile we had struck fresh buffalo spoor; but though often following the track for considerable distances, had never been rewarded by a vision of coal-black hides ahead. Sometimes a burning spoor led right through the forest and out into open veld beyond. When this veld was bounded by further forest that looked not more than a mile or two away, we persevered. But on each occasion the tireless hoof-prints held on—on—on—never did we succeed in overhauling them. Though blank

in their main objective, yet the memory of those rambles remains replete with incident and adventure.

But fortune that is denied to systematic effort may sometimes be vouchsafed to the easier category of chance.

We were navigating the great "Western Bend," slowly coasting along the Nuer country, close-hauled on the beam-wind, when the game-like look of certain forests inflamed us with the resolve to make a great effort to reach them. The difficulties of landing, common to all White Nile, were here accentuated. The river in these regions subdivides itself into several channels separated by narrow but league-long islands, each usually impassable by reason of the broad buttresses of papyrus which outflank it. One such island now interposed itself between us and our goal; we could, moreover, see from the mast-head that not only the island itself but also the main shore beyond were deeply bordered by heavy papyrus-barriers which might, or rather, almost certainly would preclude all hope of landing, even if we ever reached their outskirts. As dusk fell, however, we imagined we had discovered a sort of break or breachable channel through the obstructive island that might possibly be made negotiable for the dinghy. We chanced the rest and anchored; it was a happy decision.

By dawn, after stolid digging, we had cut a passage through the intervening island and reached the open water beyond; but after crossing that channel, the mural papyrus-barrier on the main shore appeared at first impregnable. After cruising some distance along it, we rejoiced to observe a slight break in its solid continuity. This proved to be the private landing-place of a hippopotamus, a sort of tunnel winding for 50 yards through floating swamp and submerged roots with deep water between. Though neither pachydermatous nor amphibian, we essayed the plunge. By aid of the oars and bottom-boards of the dinghy, and after struggles when success or

failure hovered in the balance, eventually we reached the solid land beyond, possibly the first white men who had ever set foot thereon.¹

Hardly had we landed than the fresh spoor of buffalo, converging on the watering-place, with other unmis-



“TREADING ON HIS TAIL.”—(Spotted Hyena).

takable sign, convinced us that that element of chance above defined, looked uncommonly like materialising.

From the start this forest proved full of game. Tiang and cob were ubiquitous; we passed troops of waterbuck sheltering in deep shade, reedbucks on the outskirts, oribi among the thinner bush; while the erstwhile marshy khors (now sun-baked hard as bricks) were traversed by the giant slot of giraffes, and elephants had broken down trees by the acre.

¹ The spot is shown in photo facing p. 200.

The day commenced with a rather startling adventure. We were walking in file, Baraka leading and Lowe just behind me, when we suddenly stepped right atop of a pack of hyenas, all sound asleep in deep grass. In a moment the forest-glade was alive with great bouncing



FACE TO FACE.—(Bull Buffalo).

beasts. Baraka smartly handed me the rifle, and in the same moment a huge old dog-hyena, presumably the captain of the gang, and evidently aroused from deep slumber by the flight of his troop, raised himself on his haunches, as sketched, not two yards in front of where I stood. Clearly he was blissfully unconscious of the fact that I was almost "treading on his tail"; nor did he ever realise it, for a bullet in the nape laid him out. Two more were knocked over by L.'s magazine-fire ere the pack got

clear, but in the long grass and bush both these made good their escape.

Everywhere the floor of this virgin forest was studded with the tracks and the evidence of buffalo, their spoor criss-crossing in an intricacy that forbade any individual herd being followed beyond short distance. We had the luck, however, to strike a trail which recalled one of the old-time "drove-roads" of the Borders. Along this we hastened, and after a while Baraka, bending low, whispered *Gamoos* (= buffalo). We realised that his savage eyesight had surely descried the beasts, though to mine (aided by prism binoculars) not an animate object was distinguishable amid the welter of bush and bough, with intercepted lights and shades, that lay in front. But well we knew we were face to face with dangerous game, and that sensation ever thrills.

Since neither of us could detect the slightest vestige of what our savage guide saw clearly enough, we presently, with infinite caution, advanced towards a 5-foot conical ant-hill that stood 50 yards ahead. Therefrom a meticulous survey revealed to me a single darker blurr among the forest-shades beyond. The blurr was quite inarticulate, but, were it a buffalo, then the beast was standing end-on. But which end? So overshadowed was every detail by over-arching foliage and a maze of intervening twiggy, that nothing definite was revealed. Intently I watched that crucial blurr till, after ages of suspense, a bough lifting in the breeze admitted a sunray . . . and it glinted on horns, great, rugged, corrugated horns. The buffalo, I now saw, stood directly facing, and presently came to recognise the broad sweep of his horns standing out clear on either side of the huge four-square bulk.

One awkward obstacle remained. The buffalo stood somnolent at 100 yards; but exactly half-way between us, a thick white horizontal bough interposed itself so low as almost to cut the ridge of his spine. To be

fatal, the ball must strike *above* the horn bosses, but yet pass *below* that obstructive branch. The interval looked like a scant 4 inches ; but at 100 yards one ought to manage that—or stay at home. Moreover, I had a solid rest on the ant-hill, and the .375 “solid” struck the selected spot with mechanical precision. We all heard the impact—it was upon “meat”—but by some strange mischance, none of our three pairs of eyes saw anything



“WITH ENORMOUS CORRUGATED BOSSES.”
A Second Great Buffalo-Bull.

more. The dark blurr had vanished . . . how and where? No time for reflection was given ; for, at the shot, the forest seemed amove, and a second huge black bulk loomed up obscure and indistinct amid the shades. Again an opportune glint of sunlight revealed the enormous corrugated bosses of an old buffalo bull, standing full broadside at 100 yards. The second bullet struck fair on centre of shoulder and the beast stumbled forward and fell. We could, however, see that he still held his horns upright. I had only three more “solid” cartridges in my belt, so, having regard to contingencies,

asked Lowe to finish this beast with the Winchester. The effect of two well-placed bullets from that less powerful rifle was merely to set the fallen buffalo on his legs again. In two steps he vanished from our view—*both* my buffaloes had vanished.

The situation had become involved. I had hit fair and square two buffalo bulls ; but neither was in hand, nor was anything in sight save viewless bush. But from beyond the narrow limits of vision came a tell-tale index ; a chorus of subdued bellowing told that the great bovines were still close on our front, and with them, presumably, the two stricken beasts. Therefore, with a caution that not even Agag knew (since a wounded buffalo presents the most perilous proposition of all), we advanced to investigate. Within brief moments was disclosed to view an extraordinary spectacle. In an open, amidst deep grass, we descried the indication of a prostrate form ; but alongside it stood others, pushing and poking their fallen friend with their muzzles—even “horning” him—to an accompaniment of confidential grunts, snorts, and bellows. The object was clear—to arouse their pal to a sense of danger, “wake up, Bill!”—surely a striking scene in wild-life and of animal-sympathy? The spectacle certainly fascinated us ; but, while yet watching, a sudden development distracted all merely platonic interest. From broad on our right came a crash in the brushwood and there loomed up the apparition of another great buffalo bull, making straight towards where we stood. Precisely what were that buffalo’s intentions or what his frame of mind I know not, nor stopped to inquire—one hasty glimpse revealed a broad muzzle carried horizontal and a mass of grass and bush stuck across the horns. Without spoken word, by mutual instinct we fled. During the advance, and in due anticipation of such contingencies, I had taken the precaution of noting a tree which seemed to lend itself for purposes of refuge. It sprang from the summit of an ant-hill and

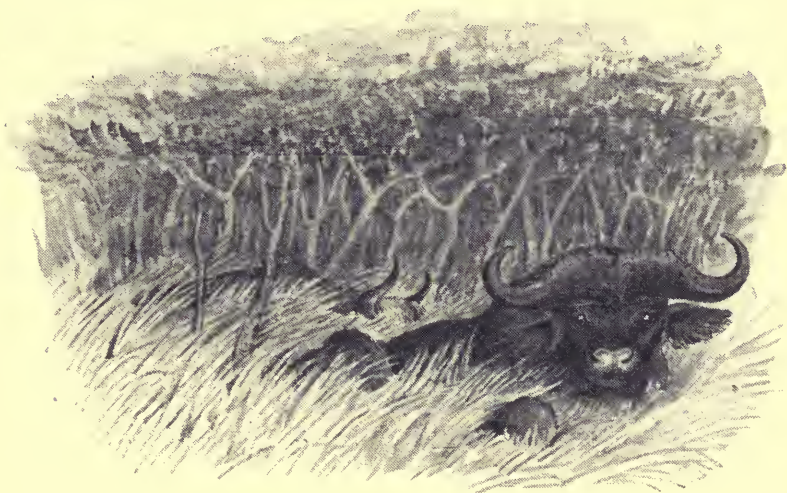
being double-trunked, formed a rude sort of ladder. I now lost no time in reaching its shelter, nor in scaling it, despite cruel thorns. At one time I was fairly handy at tree-climbing; nowadays I prefer not to be hurried in the operation, especially among 3-inch thorns. The occasion, however, was one of urgency.

Of the intrusive bull I saw no more. Curiosity had given place to the exigency of the moment, and not even explosive grunts within a yard of my legs were allowed to interfere with the instant necessity of climbing a trifle higher. Ere I had gained a safe position he had disappeared in the bush.

From my perch I thought I could distinguish—though quite uncertainly—the position of *both* the fallen buffaloes, each point being surrounded by sympathetic fellows, while others lingered in the shades beyond. None saw us in our trees. Few wild animals ever look upwards and, with buffalo, the overhung bosses of the horn form a specific obstacle; moreover, their foes are not usually arboreal. More than half an hour we had remained aloft—myriads of biting tree-ants adding to the torment of the thorns—when a burst of loud and continuous bellowing resounded through the forest. This, I felt assured, signified the death-throes of one of the victims—fancied I could recollect Selous or Jackson so describing it. Baraka also had rightly interpreted the signal; for he now rushed up—I know not whence—seized my rifle (which I had fain left atop of the ant-hill), and urged me to come forward. But I regarded masterly inactivity as a safer policy meanwhile, and ordered him to sit down, adding (what he perfectly understood), *J'y suis, j'y reste*—till that bellowing is all over.

When silence reigned once more, we reassembled and continued a cautious advance. In a little inset opening close ahead, and within ten yards of each other, lay the pair of *ingentia corpora*. The survivors had cleared and we saw no more of them. Yet another thrill—electric in

its suddenness—awaited. When well within 20 yards we realised that the nearer buffalo was not dead. The great armoured head uprose, and there ensued an awe-inspiring moment when those massive horns swung round directly facing us. No friendly tree now offered shelter and, had the stricken beast been able to regain his legs, we should have been in a false position. By sheer good luck he was too far gone for mischief, and (though the Winchester



BUFFALO BULLS RIGHT-AND-LEFT.

“Not dead yet.”

again failed to produce the slightest effect) a .375 “solid” at base of neck promptly resolved all doubts. That rifle had put both beasts out of action with a single ball apiece; nor, as we now saw clearly, had either animal moved 20 yards from the point where the first bullet had struck him, though each eventually required a “finisher.” A bout with buffalo is always apt to develop nerve-trying situations, and this one proved no exception. We had experienced two distinctly critical moments; first, when the solitaire crashed down directly upon us, and finally, when we approached our fallen foes only to discover that both were still alive.

We could now examine our noble trophies at leisure —what superb pictures of brute-power and massive strength! Sullen deep-set eyes overhung by beetling bosses, rugged and ridged like primeval rock; foreheads hairless, shaved clean by constant crashing through thorn-thicket and jungle; but bushy, almost walrus-like whiskers pendent from either lip, forming a sort of moustache; and there was a strong black bristly beard beneath the chin. But beyond these hirsute muzzles, a far more important character differentiates the buffalo of the White Nile from *Bos caffer* of East and Central Africa. The horns spread out laterally on a far more even plane, less decurved downwards, and the frontal bosses instead of being convex, are nearly flat across the basal palm.

Following are the measurements of these two buffalo bulls, shot Nuer country, February 19th, 1914:—

No.	Extreme Span of Horns.		Tip to Tip.	Breadth of Boss.	Length on Outside Curve.	Height at Shoulder.
	Outside.	Inside.				
1	37	34½	32¼	9½	26	58½ inches
2	30	26	23½	11½	22¼	...

Deadweight estimated at 1500 lb. apiece.

The Sudan buffalo displays two constant but quite distinct types of horn, namely:—(1) That with broad lateral sweep but relatively narrow bosses; and (2) the shorter type wherein the bosses are always deep and sometimes of almost exaggerated depth. The two particular buffaloes just described, and whose horns are shown in the photograph annexed, happen typically to represent both forms, though both were shot from the same herd. I read that the Sudan buffalo is a *small* race, only standing 4 feet at shoulder. That is incorrect. In size they quite equal, on an average, their cousins in South or Central Africa, measuring at shoulder from 4½ to

quite 5 feet. Mr Norman Smith tells me he shot one on White Nile that taped $60\frac{1}{4}$ inches. We have no more valuable or reliable work than Rowland Ward's *Records of Big-Game*; but as regards the Nile buffalo, the writer seems to have got astray in several of his facts.

Colonel Roosevelt, in his *African Game Trails*, has some amusingly drastic remarks on the folly of attaching specific values to what are merely trifling individual variations in the form or measurements of horns and such-like details. Some German professor, it appears, had created *fifteen or twenty* classes of African buffalo, each distinguished by a separate Latin name, and all based upon just such trivial differences. But when the great ex-President had secured three specimens from a single herd on the Athi Plains (British East Africa), he found that two, if not all three, belonged to separate breeds — breeds, that is, as made in Germany! To this criticism of Roosevelt's, the Hun replied by naming yet two more "subspecies" from this identical herd, thus making *five* distinct races of buffalo all inhabiting a single papyrus-swamp of 15 miles in length by a maximum of one in breadth! 'Tis a sorry sort of science, typical of the muddle-headed mentality of the modern German, a combination of super-egoism with empty arrogance. Let those poor Britishers who would emulate such follies take timely warning of their consequences in a larger field.

The African buffalo is subject to an exceptional degree of variation as between individuals; moreover, between the deeply-arched horns of the South-Zambesi races and their relatively flat sweep in Sudan occurs an intermediate gradation. My own knowledge is insufficient to define that gradation as absolutely complete, though I believe it to be practically so. To recognise such inconstant characters as having any systematic value would involve naming, say every fifth beast; thus, if the bovine population of Africa be five million head, we should require a million separate Latin labels for buffaloes alone.



"CANDACE" NEAR "BUFFALO-BIGHT" (Western Bend).
Fore-rigging festooned with strips of meat drying in the sun—February 18th, 1914.



WHITE NILE—A LATERAL CREEK.
(520 miles south of Khartoum.)

[To face page 188.

On our homeward way that evening, triumphant but weary and heavy-laden, we espied towards the outskirts of the forest, two big and bulky-looking beasts that in the rays of a lowering sun shone silvery-grey. It was then too late to undertake a fresh adventure; but we (Lowe and I) were convinced that these animals were a pair of elands, and that conviction was corroborated by Lynes reporting the same evening that he also had seen two big pale-coloured beasts with pronounced hump on withers, unknown to him. Presumably—almost certainly—in both cases the animals seen were *eland*s, and the interest of the observation lies in the fact that eland (scarce anywhere in the Sudan) are not known to range north of Mongalla, 400 miles away. Mr E. S. Grogan, however, subsequently informed us that he had met with eland (also with lechwi) on a marshy khor running south-east from the Zeraf River at a point 120 miles from its junction with White Nile, and approximately at a similar distance from where we saw the presumed elands to-day.

It is pertinent, however, to add that during the remainder of our sojourn in this region, though we daily traversed many leagues of these wild woods—and always with a special eye for elands—we failed to see them again, or to glean any further evidence of their presence therein.

So ended that nineteenth of February, 1914—a memorable date that in my humble hunting-annals stands alongside a “Glorious First of September,” as recorded in *Wild Norway*; also with our three lions at Nakuru, and four elephants at Solai (*plus* a rhinoceros the same morning!), as chronicled in *On Safari*; besides several others, during forty years, in *Wild Spain*.

ON THE HAUNTS AND HABITS OF BUFFALO

These virgin forests, with their teeming game, we came to regard as our private buffalo-preserve by right of discovery, and delightful days we spent therein

endeavouring to perfect an acquaintance both with the big bovines and numerous other co-tenants.

The buffalo is nowadays (and probably always was, more or less) practically nocturnal in habit, both feeding and drinking exclusively by night. That, in all my experience, is his nature, though I am far from dogmatising about regions where I have never been and where good observers may have recorded a different habit. Twice during my first voyage in 1912-13, being on deck before dawn, I enjoyed seeing herds by the riverside. Some stood drinking, knee-deep; others wallowed in the shallows, while in each case stood sentries, watching and warning from the dark bank above.

Leaving their watering-places before it is light, buffaloes, throughout the regular "game-country" of White Nile, usually wander far inland before lying-up for the day, and for their siesta select dense cane-brakes or thorn-thickets. These, however, are presumably modern habits induced by exigencies of safety rather than the normal inherent disposition of the beast. For the buffalo—massive, ponderous, and short of limb—is not by choice a traveller. This trait is clearly perceptible should one enjoy the extreme good fortune to study buffalo, as we did here, in regions remote, unharassed by hunters. Here, in the simplicity of forests yet undisturbed, the *Gamoos* rarely troubles to travel a league inland—often not a mile—and then (this was a surprise to me) eschews thorn-thicket and selects for his siesta some little "clearing," bare of grass but where a grove of thickly-growing trees affords shade and shelter from the sun above. There were many such "stands" in our Hunters' Eden, and all were so selected—or *formed*? Though for half an acre or so the chosen spot was naked of grass, yet immediately around grew bush and jungle in plenty. That the buffalo-herds habitually, year in and year out, spend somnolent days at these selected "stands"—and probably had done so for ages—was abundantly evidenced; some of them

were reminiscent of "Smithfield" (a spot I have never seen).

Born and bred in primal security, unconscious of care or of cordite, these happier herds probably spent their whole lives within a radius of a league or two. Nevertheless it remains to remark that even these unharassed buffaloes, although secure in pristine fastnesses, still prefer to *feed by night*; and that by day—though scorning protection of



HORNS OF TWO OLD BUFFALO-BULLS, SHOWING DIVERGENT TYPES.
(Shot right-and-left from same Herd, on White Nile.)

thicket or jungle—they continue alert to the last degree; as keen in all the senses of sight, sound, and scent as any wild beast I have ever pursued.¹

¹ These last paragraphs are obviously at variance with my own previous remarks on the habits of much-hunted buffaloes as observed elsewhere—as, for example, not only in other parts of Sudan but in British East Africa. In the latter, as related in *On Safari* (p. 186), the great bovines seek out the densest and most impenetrable thorn-thickets, or—as at Lake Baringo—oceans of "elephant-grass," equally impassable to man, for their diurnal refuge. In light of these memories, it amazed me to find buffalo here in an odd corner of Sudan lying-up in open forest, and even choosing bare spots at that! It is solely a question of local conditions and of the degree of persecution to which they may have been subjected.

On the Upper Blue Nile beyond Roseires, vast areas of 10-foot cane-grass adjoin or abut upon the river, and buffalo (with elephants too) habitually resort to the security of these impenetrable strongholds. Good sportsmen whom we met on that river had deliberately left the great beasts unmolested, considering it reckless to follow them into such fastnesses. In that I agree, and have remarked that those who live on the spot, and hence are most in touch with the heaviest game, are ever the least apt to minimise the danger of its pursuit.



DEMOISELLE CRANE.

Sobat River, January 30th, 1914.

CHAPTER XIII

HIPPOPOTAMUS

ARABIC—*Grinti*

It was one of these delicious cool nights that in the tropics one so appreciates after the furnace-like heat of the day. The North wind that in winter blows all day but often dies down after sunset, to-night held strong—exorcising mosquitoes. Hence I sat on the poop smoking the final pipe and enjoying the eerie sounds of an African night, while our gyassa sped along at six or seven knots through the dark waters. Suddenly the ship was brought up, all standing, with a shock that shivered her whole frame and sent my deck-chair flying. We might have struck a rock . . . but there are no rocks there and we were right in mid-stream, a mile wide. A hippopotamus had come up under our “forefoot,” and I felt the continuous scraping and scrunching as the keel passed over his back. Fifty yards astern he came up snorting and blowing.

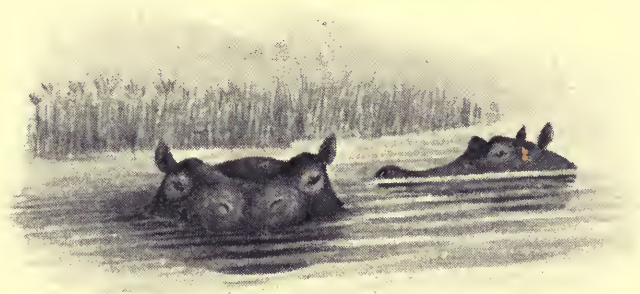
This was no hostile attack. The Pleistocene amphibian, mindless of passing ages and the advent of gyassas and stern-wheelers, had merely come up to the surface without taking thought of possible modern obstructions thereon.

This occurred near Jebelein on my first voyage in 1913 and is not an unusual incident.¹ From that point onwards the hippopotamus is a constant companion.

Our generation has witnessed the (often senseless) extirpation of so many unique animal-forms, and the

¹ Petherick records a similar incident, but attributes it to a female hippo, apprehensive for the safety of her young (*Travels in Central Africa*, i, p. 94). Baker gives two instances—both with enraged bulls.

reduction within dangerously narrow limits of so many more, that it gratifies to record the fact that at this day the huge hippopotamus—second biggest of extant terrestrial mammals (four tons weight!)—still abounds on the Upper Nile in numbers almost incredible. Daily one passes them in “schools” of a dozen or a score—sometimes double that. Most of them are afloat, showing little above water but the prominent snout and the cranial region behind, with eyes set in semicircular redoubts, and ears disproportionately small; others, like bronze



HIPPUS AFLOAT—BULL AND COW.

images, stand with half their glistening bulk exposed, on some spit or sand-bank.

A second adventure occurred a few days later. Towards sunset the breeze had slackened down; then it died away, and the *Isis*, making sternway, drifted stern-first towards a herd of hippo which we had already passed. These, unconscious of our involuntarily changed course, continued their pre-nocturnal gambols till we were “right aboard ’em.” Close by, a big bull, distinguishable by his broad forehead and blacker hue, roared and yawned, displaying a tempting show of ivory. When he presented a broadside shot, I got him, stone-dead, below the ear. At the report, a second bull splashed half-clear of the water, offering a shoulder-shot. While shifting the rifle

along the taffrail so as to cover this second hippo . . . suddenly the telescope-sight detached itself, toppled sidelong, and with sullen plunge disappeared in the depths of Nile! This spelt sheer catastrophe, for I only possessed one of these instruments and its loss signified to me nothing less than *atrophy*—the virtual annihilation of all the plans and ambitions of my expedition. That fact I realised at once, and instantly turned to take exact bearings. On the bank directly inshore grew an ambatch with a single yellow blossom, and I reckoned that the lost telescope lay 18 yards straight outside that flower. At once we anchored and I proceeded to my mark in the dinghy. Everything now depended on the depth of water. That, by signal good-luck, proved to be just 5 feet—“chin-deep”—and soon I had three of the crew hanging on to the gunwale while they explored the river-bed with their feet. The bottom proved to be firm soil overgrown by a creeping water-plant. Hope arose. Then, at that critical moment, came a shout from the gyassa—anchored 40 yards away—“*Timsah!*” (=crocodile). There was a swirl on the surface, and within brief seconds the three “boys” had scrambled aboard. Hope fell to zero. As a desperate resource I now fired three or four rifle-shots vertically into the river; the vast columns of water flung up 20 feet high by the impact of bullets striking at a velocity of half a mile per second—together with a hint of *backsheesh* (the first and only time I ever uttered that hateful word in the Sudan)—turned the scale. The sheer amazement of the men on thus visualising the power of cordite, dissolved fear and reanimated them to fresh efforts. A minute later one of the three black heads plunged beneath the surface, the corresponding hands disappearing from the gunwale. The next I saw of them—ere the head showed above water—those uplifted hands grasped the sunken telescope! Truly it was a marvellous recovery? I did those “boys” well that night—and well they deserved it.

The cause of the mishap was now clear. The lever actuating the catch-block which secures the attachment of telescope to barrel, had been tampered with; it had been lowered, so that the telescope lay merely resting on its "slides," unclamped, and after the recoil of the shot it was left absolutely loose.

Travelling forward along White Nile, though in constant touch with hippos daily and all day, however leisurely you cruise, yet but little chance is afforded the voyager of making intimate acquaintance with his huge neighbours. For that purpose, it is necessary to sojourn stationary among them. We enjoyed abundant opportunity. Once, for a week, *Candace* lay anchored right in the "pitch" of a school. Their normal landing-place—a deep arched inlet among the papyrus—lay broad on our beam, only 60 yards away. In ordinary course this herd would have spent their days precisely where we had selected our moorings. Owing to our intrusion they temporarily shifted their quarters 100 yards lower down-stream, and all day wallowed, dipping, diving, grunting, and blowing, right under our stern. Often a pinky-brown *toto* climbed upon its mother's back, or a bull reared his massive head to rest on the quarters of his neighbour next ahead. It seemed a monotonous existence; but here there were no sand-banks, so the hippos had perforce to make the best they could of deep water. At other, and more congenial points of the river, like the "enterprising burglar," they "love to lie a-basking in the sun," with half their bulk exposed.

When, after a big morning's hunt, we had returned early to our ship, it amused to sit on deck and watch their proceedings. Towards sundown, but sometimes a full hour earlier, our monster neighbours would wake up, and begin with intense caution to draw upstream towards their landing-place, scrutinising the obstructive ship with inquiring eyes and often raising half their

bodies out of water to examine the phenomenon. The last stage, at this period, they did under water. But day by day, since we never molested them, confidence increased and soon they all swam boldly by, passing within stone's-throw.

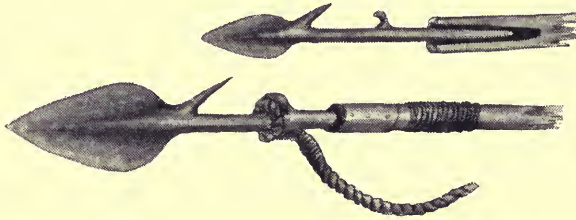
Half an hour after dark their gruntings and blowings had ceased, and the silence of the tropic night was only broken by the distant wail of a hyena or, later, by the low soughing call of a questing lion. Still there always remain in the river a certain number of hippos (for what reason, I suggest later), and these one also hears.

During the last moments at which it was possible to see anything at all, I twice at this spot (and several times at other points on Nile) observed hippos emerge from the cane-fastnesses on the bank and enter the river at the very moment when all the rest were just leaving it. At the time, these incidents seemed inexplicable. They reversed the normal course of daily life and habit; but presently I learned that these particular hippos habitually spent the whole day ashore (as explained later in this chapter), and only came down to the river for a drink, before setting forth on their nocturnal foray.

I slept on deck—my “stretcher,” with mosquito-curtain (for we were here in the Sudd region), set up on the poop. Punctually as Abdullah brought my morning tea, the returning hippos were more punctual still—and earlier. Each morning in the black darkness that precedes the dawn the noisy amphibians awoke me as they returned, full-fed and exuberant, to the river. Sometimes, when there was a waning moon, I could half distinguish their dusky forms and the spray as, bellowing and splashing, they plunged down their “*meshra*”—or prepared landing-place—and forgetful of our presence passed within 20 yards of the ship. Even so, they displayed rather curiosity than fear. Not all of these hippos, when returning to the river at dawn, used the regular *meshra*, for twice or thrice I heard the crunching of canes on the main shore just

opposite, and these lingerers, preferring a short-cut, reached the river by taking clean "headers" off the 5-foot bank—and a mighty splash they made!

Twice we sojourned for a few days at a spot we called Hippo-basin, by reason of a herd of these animals which shared with us a broad backwater full of shallows and sand-banks whereon they loved to lie basking, careless of our frequent passing to and fro. Here, the shelving shore being firm, the hippos were not restricted to a single carefully prepared causeway through the fringing papyrus swamp; they could go ashore wherever they chose, but nevertheless used several landing-places on either bank.



SHILLUK HARPOON FOR HIPPOPOTAMUS.

Each of these was distinctly recognisable, and week by week a hippo or two fell a victim to the harpoons of Shilluks on north, Nuers on south bank. These savage hunters lie concealed at dusk close alongside the tracks leading inland from these various exits, and as the huge beast waddles past within arm's length, drive a barbed harpoon deep into his side. An old and crusty bull full oft makes short work of his hand-to-hand assailant; but usually the stricken beast retreats to the water, dragging after him the attached rope with its tell-tale float of ambatch faggots. The annexed sketch illustrates better than words this apparatus; but the system, after all, is exactly as described by Baker fifty years ago. Wherever he goes, his sub-aquatic course is betrayed by the floating ambatch, and the luckless hippo eventually succumbs to the spears of scores of converging pursuers—not always

unavenged, for he is prompt to seize a chance, and one crunch of those tremendous jaws may seal the fate of a dug-out with all its crew. But savage life hardly counts.

The still, currentless water at this point being favourable for recovering dead, I shot a couple of these hippos. It is a remarkable fact that not even the terrific shock of a .450 cordite rifle (exerting a striking energy of 5000 foot-pounds) will kill a hippo outright *unless* the brain itself be pierced—and that organ is extremely small. In that case (death of course being instantaneous), the hippo either slowly subsides from view—a gurgle of escaping air following the final disappearance; or else rolls completely over, displaying the four stumpy legs erect and rigid, with their four toes widely outstretched. If these are rigid, the animal is already dead. But should the legs when thus exposed be working at full speed—as though their owner were galloping upside down—then the actual brain has not been pierced and that hippo may not be recovered at once, if at all.



SHILLUK CHIEF.

The certain spot to kill a swimming hippo outright when full broadside on, is two inches below base of ear, which means about one inch above water-line. This involves very accurate aiming.

What savage scenes attend the death of each hippopotamus! The huge carcass has been dragged ashore, a mountain of flesh—pink below, mud-brown above—surrounded by chattering hordes of excited naked Shilluks in oddest coiffures. With wondrous skill they carve and hack, and hew with their spears great blocks, chunks and strips of reeking meat—butchering, yelling, squabbling savages—a pandemonium.

Already lines of fires have been lit and there is a pretence of cooking, but the bulk of our friends bolt it raw and reeking. Presently a ton or two of meat, cut

in red ribbons, festoons all the neighbouring trees—or, in default of trees, long withy-fences erected for the purpose. Within two hours little is left on the skeleton.

Opposite, on the south bank, squat Nuers, watching with envious eyes. They are at enmity with the Shilluks but, having no canoes, cannot cross; or else there would ensue a fight.

We reserved only the tongues for ourselves—all kinds of tongues, by the way, are excellent, nor do they vary *inter se* in their well-known generic flavour; and our crew always saw to keeping for themselves a lion's share of meat for biltong.

In this region we observed what was to me a new and surprising habit of the hippo; though perhaps it would be more accurate to say that in these sequestered swamps certain hippopotami still retain an ancient life-habit that in the dim past—ere man appeared on the scene—may have been their normal custom. Nowadays, in all frequented regions, hippos habitually spend the entire day in the water, only emerging to feed ashore after darkness lends a measure of security, and returning before dawn. Here, however, in regions remote, where scarce a human foot intrudes—(since swamps and sudd repel even the savage)—many hippos have developed the habit—if they had ever lost it—of remaining ashore throughout the entire day. The first indications of the fact occurred to Lynes who, penetrating, with other objects, the inmost recesses of swamp and bog, encountered somnolent monsters in unwonted and wholly unexpected haunts. Nothing, however, was revealed to view. There was a resounding crash amidst viewless papyrus, possibly a momentary glimpse of grey hide might be vouchsafed—that was all. L. naturally concluded that the unseen beasts were buffalo; and since buffalo fall within my department, I promptly followed up the clue. The results, as recorded in diary, read as follows:—Landed at three o'clock, in breathless, blistering heat. This



HIPPOPOTAMUS—HAULED ASHORE BY SHILLUKS.
(Author on Right.)



A HIPPO'S LANDING-PLACE.
Tunnelled through Sudd—Papyrus beyond.

[To face page 200.]

was one of those days when the merciful breeze from North dies away and is replaced by pestilent exudations from the Sudd. Our tribulations began at the start, for there was an initial mile of abominable bog to traverse.¹ The final goal, a couple of miles beyond, presented slightly firmer ground; but was heavily bushed, full of snakes, and everywhere intersected by a labyrinth of deep dongas each choked with papyrus 12 feet high, all impenetrably bound up by trailing



LANDING A BULL-HIPPOPOTAMUS.

convolvuli, prehensile creepers, and other obstructions as bad as barbed wire. Quickly, however, I learned the secret, though the lesson cost one momentary thrill. Expecting nothing but buffalo, a sudden explosive grunt right under my nose, followed by the rush of a heavy beast, was apt to disconcert; but second thoughts had instantly identified that snort—it was *not* a buffalo, but

¹ A shy suspicion that my gallant collaborator will smile at this suggests itself; but, reader, it expresses the solid truth. That bog averaged well over knee-deep and was intersected by innumerable *khors*, quite indistinguishable, that were deeper still. Thrice I had to squat down suddenly to avoid falling flat lengthwise; moreover, the cane-grass here was of that sort that fills arms, hands, and skin generally with thousands of tiny barbed spicules. But L., like Gallio, cares for none of these things.

a hippopotamus. Investigation promptly showed that these swamp-strongholds, though miles from the river, were crowded with the great amphibians. Therein, in fastnesses untrodden, protected by armoured jungle, and sheltered from the sun above by overarching papyrus, whole herds are wont to spend archaic lives—a custom that elsewhere throughout Africa has long become obsolete.

The entrance to each lair was precisely indicated by the broken-down trails that led inwards; and that the owner was “at home” quickly proved by throwing in a clod—one beast I actually poked up with my stick. At one point, a big tunnel invited further exploration, and Baraka and I followed it into the prehistoric precincts. In the dim light within—never high enough to stand upright—we perceived a stagnant waterway, or series of pools, both sides of which were sculptured with the “beds” of hippopotami. These, being made when the mud was soft and plastic, resembled in size and shape the “cast” of a dinghy. There was an asphyxiating odour—partly the exhalation of mephitic water; chiefly, I suspected, the personal aroma of generations of hippopotami which during ages had dwelt herein without having learnt—even though through adversity—the charm of daily ablutions. Save for the smell, I felt it was good to stand in that dim under-world. Those few minutes therein, we spent right outside the limits of the world we know; within the romance of the Pleistocene, when prehistoric monsters which neither knew nor feared man, possessed the planet.

We found another hippo-colony, similar to this, on the shores of Lake No. Apparently these huge amphibians, provided they can discover some retreat absolutely secure from molestation, are prepared to adopt (or retain) more terrestrial habits than is their normal wont to-day. It is these inland hippos which resort to the river for a drink after dark—which explains a fact which at first had puzzled us (see p. 197).

It is of course conceivable that the river itself automatically brings down food sufficient to supply a certain percentage of its pachydermatous population. Thus there is the little water-cabbage (*Pistia stratiotes*) which drifts down in millions from the Sudd regions. One sees acres of backwaters and by-channels blocked solid with its accumulations, and these stores would yield food for many hippos. No more obstructive agent to navigation exists than this water-cabbage—it is largely to its malevolence that we owe the Sudd!—hence, should this hypothesis be correct, the antediluvian amphibian is to-day helping (albeit unconsciously) to advance modern progress.

It is notable that even when totally unharassed, the hippopotamus deliberately selects the darkness of night as his period of activity and all day lies up somnolent.

By nature, no animal is more inoffensive in disposition; yet persecution modifies that mildness, and to-day many hippos have developed characters both savage and truculent. Moreover, their vast strength and armoured jaws give the power to enforce that truculence. On Upper Nile it is of daily occurrence that the dug-out canoes of the natives are attacked and scrunched into matchwood, some or all of the crew inevitably perishing in the *mêlée*. Although never myself having experienced an actual attack, yet twice when “probing” for a dead hippo—(with the view of making fast a rope to his leg and so towing him ashore before dark)—the demeanour of the rest of the herd became so obviously menacing, bellowing and blowing half round our boat, that I promptly gave the order to “pull away” and felt no small relief when we had regained shallow water.

A curious metaphysical fact relative to the hippopotamus deserves note—that is, that when the animal itself is deep under water, yet its snorts and gruntings may still be distinctly audible, albeit no air-bubbles or other trace appears on the surface. I first noticed this phenomenon in East Africa and mentioned it in *On*

Safari, p. 144. On the Nile, on several occasions, it occurred that subaquatic grunts were heard from hippos that we knew to be close by, though not one was in sight, and though we had an uninterrupted view of a full stretch and breadth of the river. I remember an analogous case with the big seals in Spitsbergen, whose sibilant submarine calls were clearly audible though not a seal was in sight. The Norsk harpooneers would stop rowing and endeavour *by sound only* to locate the position of an unseen seal. Also, I find quoted in my *Wild Norway* (p. 349) this extract from Mr Arnold Pike's Spitsbergen diary of 1888-9:—"May 17th—Heard blue seals whistling under water. Their cry is audible for half a mile, not unlike the whining of a dog. The sealers say it is not heard after early June."

Dimensions of Hippopotami.

		Length.			
		Snout to Tail.	Tail.	Total.	Shoulder-height.
A. Bull	.	12 ft. 3 in.	+ 1 ft. 10 in.	= 14 ft. 1 in.	*about 4 ft. } Brain
B. "	.	12 ft. 0 in.	+ 1 ft. 8 in.	= 13 ft. 8 in.	*under 4 ft. } very small.
†C. Cow	.	10 ft. 6 in.	+ 1 ft. 7 in.	= 12 ft. 1 in.	3 ft. 9 in.

* No measurements could be taken accurately, as the animals lay awkwardly.

† The cow contained a brick-red fœtus, 36 inches long, on February 17th—now in British Museum.



BEHEMOTH IN DEATH.

Shot and sketched, "Hippo Basin," February 16th, 1914.

CHAPTER XIV

OSTRICH

THE ostrich in Sudan stands on the prohibited list—none may be shot; but as the British Museum required specimens of the Sudan species, a special faculty had been granted to our expedition—(through the Foreign Office and the Sirdar)—to obtain these examples.¹

Never having so much as seen an ostrich in the Sudan during my first expedition thereto, I cherished no great hope of being able to fulfil either this mission or two others with which we were entrusted, namely, to bring home specimens of the reticulated giraffe and of the Secretary-bird. The latter, though known to occur in the Sudan, is so scarce that only once during three years did we see it; the reticulated giraffe I felt (and feel) certain exists nowhere on the Nile.

The ostrich, however, we did secure—thanks exclusively to the wonderful aptitude for “collecting”

¹ Nowhere in the Sudan do ostriches exist in the abundance that characterises British East Africa; still the bird is widely distributed in those regions which are congenial to its peculiar tastes. These comprise the arid dry-grass prairies of the remote interior which the ostrich shares with giraffe and desert-gazelle. Thus towards Nyeda—eighty or ninety miles eastward of the Nile at Melut—half a dozen parties of ostrich may be encountered in a single day's march; and the same applies to the dry plateau of central Bahr-el-Ghazal. Naturally in marshy or forest-regions (such as constitute so much of the riverain of Nile) the ostrich is less in evidence.

The Sudan ostrich has been differentiated as a distinct species—*Struthio molybdophanes*—and that diagnosis may be correct. Yet in British East Africa, I have a vague recollection (being at the time unaware of any distinction) that we shot ostriches of both of the presumed types—at any rate, some of the ostriches there have blue necks, others pink.

possessed by my pal, Mr Willoughby Lowe. The following faithfully describes this fine performance. When first sighted, the enemy, five in number, were distant 500 yards and among scrub that concealed all but their necks. They were already moving away, alarmed, and in an ordinary sporting sense presented no sort of chance whatever. That circumstance in no way disconcerted my expert friend—if a creature exists that has to be “collected,” then Lowe may be trusted to collect it.

With sights set at 700 yards, he opened rapid magazine-fire, sending volley after volley right over the heads of the flying foe, each bullet plugging into the sun-dried soil beyond and throwing up terrifying spurts of dust and broken boughs. This tornado close in front appeared to the ostriches yet more fearsome than the distant pom-pomming behind and soon they wheeled to seek a safer course to starboard. The change brought no relief. With altered line of aim, that ceaseless series of concussions and explosions was renewed on the fresh front—earthquakes, the bewildered Struthios may well have thought them. Whichever way they turned the very earth ahead seemed to spurt forth in geysers. At length, in sheer panic and perplexity, the whole quintette, moving at hurricane speed, crossed full broadside at 200 yards, and the biggest got a bullet amidships. Later I witnessed a similar performance with a hyena. Bullets rained around him till finally two went through him!

Such shooting-practice (and extravagance in ammunition!) was something entirely new to me; but for the purpose in hand it was a magnificent performance, even though from a strictly sporting standpoint a critic may exclaim, “*C'est magnifique mais ce n'est pas la guerre.*” That, of course, is not, in this case, the point. Here the essential was to secure a particular specimen. As regards *game*, I have before expressed the view (and stand to it solidly) that the repeating rifle is unfair and should be barred in every hunting-field.

The prize proved a male, and, though the blackest in the troop, had hardly attained the fullest glory of maturity. An ostrich, by the way, caught as a chick on the Sobat and kept in captivity by our friend the Rev. D. S. Oyler at the American Mission, did not acquire the full black plumage till rather over two years of age. The stomach of our bird contained broken bits of jointed cactus, seeds, stones, and water. Though the ostrich is the biggest of living birds, and one of the wariest and most keen of sight to boot, yet it possesses a brain no bigger than that of a crow! We dined on its flesh, which was pronounced all right by those who know.

We had seen ostriches, singly or in pairs—once a dozen together, including a magnificent male—both on the Zeraf River and along the “western bend”; but always either on horizon-wide prairie or among bush that forbade hope of a shot. Once, however, we threw a chance away. It was in the Nuer country, and for the first time in remembrance Lowe and I had landed *without* our rifles. Instantly we sighted a pair of ostriches—superb adults—making riverwards for their matutinal drink. Half an hour was lost in sending back for the forgotten rifles. Meanwhile the ostriches had quenched their thirst and were slowly retiring inland. There was loose forest two miles away, and by a tremendous sprint and some masterly manœuvring on L.’s part, we actually succeeded in cutting the game out to landward. Presently the ostriches were no more than 200 yards away, the coal-black cock for fleeting moments in full view among scattered trees. Everything depended on instant action. L. relied on me to take a quick shot with the telescope-sight. Alas! I lost one precious second mopping from my eyes the flood of blinding perspiration that poured into them—verily I was the only moist spot over leagues of that arid veld!—and the waste of that second cost the chance. Ere I could fire, the game had moved a few yards and was out of sight. We followed on, but the ostriches

were suspicious and we saw them no more. Just as all hope was abandoned, consolation came, for we "jumped" a reed-duck ram; at 100 yards he stopped to look back—like Lot's wife—and got a ball in the heart—horns 12 inches by $4\frac{3}{4}$ inches in basal circumference. The diary recorded:—"This is no '*Common*' reed-duck;" and it isn't—full details later.

Once when busy on a stalk, I had instructed my "boys" to remain behind. On rejoining, they brought handfuls of ostrich-plumes and declared that a lion had killed the "*Narm*." On going to the spot a lot of feathers lay scattered around, together with the legs, head, and part neck of a hen ostrich. Whether lions do kill ostriches, or what had killed this one, remained unproven.

To this Mr Willoughby Lowe adds:—"Lions do great damage to ostrich-farms, so it is more than probable they will kill wild ostriches, especially when nesting. Captain Lambert, who was my companion in British East Africa and Uganda, told me lions had killed his brother's entire stock of ostriches in one night, forcing their way through a strong barbed wire fence."



CHAPTER XV

WILD MEN AND WILD BEASTS

OF the savage tribes amongst whom we sojourned on the Upper Nile—to wit, the Shilluks, Dinkas, and Nuers—every man is a born and inveterate hunter; and an indiscriminate massacre of game (regardless of season, size, or sex) rages daily in those regions on a scale which took us entirely by surprise.

All these tribes, moreover, seem expressly built and engined by Nature for the chase. Taller in stature than any European race, light and wiry in frame, with long lithe limbs and a sinewy muscular development kept constantly on full stretch by strenuous open-air life, each savage is practically an agile athlete in full training.

Herdsmen by profession, cultivating but little, and largely dependent for grain upon the dhows of Arab traders with whom they carry on a sort of truck-trade (exchanging ivory, feathers, skins, and gum for wire and dhurra), their main subsistence is on the milk and blood of their herds. The latter fluid they “tap” at intervals. Naturally that repulsive operation cannot be availed often: during the intervening periods, the savage looks to the wild game.

It must read incredible that human beings, however agile and physically adapted thereto, can conceivably run down and kill by spear big and powerful wild animals so alert and fleet of foot as waterbuck, hartebeest, roan, tiang—to say nothing of such smaller game as cob, reedbuck, and the like. Yet they do so daily, and in

wholesale style to boot. Not entirely is their success due to speed and physical endurance, though those attributes count for much; but rather to organised levies-in-mass whereby, aided by dogs, and often by firing the grass for miles (since they are up to every move on the board), they encircle whole troops of game, drive them into some cul-de-sac, and there mob and massacre the lot. Big resolute beasts may break-back through the yelling cordon; the feebler, the females and the young, are done to death, either speared in the covert or clubbed from canoes as they swim, should any succeed in reaching the river.

Besides this system of wholesale "driving," by fire, dogs, and spear, the savages are adepts at employing snares—chiefly of the noose-and-bent-stick type—which they set at all the water-holes, capturing thereby gazelles, oribi, reedbuck, etc.

Their methods of killing the hippopotamus, both by pitfalls and by hand-thrust harpoons ashore (with an ambatch-float attached), have elsewhere been described (p. 198). I asked them, by the way, why they never harpooned the hippo afloat, as Baker's "howartis" did on the Settite—swimming stealthily up from the leeward (*Nile Tributaries*, pp. 394-5). The reply was:—"It is too dangerous to harpoon the hippo by swimming, since, after he is speared, he can bite a man into two pieces."

The following extracts from diary, selected from dozens similar, will serve to show how serious is the danger to game.

"*Khor Filus*.—By outflanking them with a double ring of flame and beaters, and then driving the game into the river, the Shilluks speared in one day over one hundred head, including thirty waterbuck."

"*Western Bend*.—This morning a line of Shilluks, with dogs, extended a full mile inland, pushing the game eastwards. Presently, direct to windward (north), a line of flame burst forth, and we then realised that a second driving-line was converging from the north and east, thus

entirely enclosing the game. We did not hear the results of this operation; but that evening, on the opposite bank, met a crowd of Nuers, all blood-covered, and carrying eight reedbuck does and one small cob with 16-inch horn, all intercepted on their own bank. This head, with fine courtesy, the Nuer chief insisted on presenting to me and, on my respectfully declining the trophy, laid the horns at my feet, and with a stately gesture of farewell, turned to rejoin his troop."

An unfortunate incident befell that evening. Before dusk we had baited and set our two large steel-traps intending to catch a hyena whose spoor in the sand betrayed a regular nocturnal prowling by the riverside. Our men had left the traps unguarded too early, with the result that, before dark, a vulture and a Nuer dog were caught. Reasonably the Nuers might have felt aggrieved; instead, they took the mishap quite good-naturedly and in excellent part, recognising that it had been unintentional. The dog's view was not ascertained.

From these Nuers we learnt that most of the game is killed by the spear; dogs are only effective after an animal has been wounded—or with *fawns*! The Nuers exhibit great intelligence in availing themselves of every advantage in the lie of the land, utilising each promontory or isolated neck where game can best be cut out. The buffalo they never attack; they fear his revenge, and state that his hide is too thick for their spears to penetrate. Even the Baggára elephant-hunters in Kordofan, who tackle that mighty pachyderm with their shovel-headed spears, respect the *Gamoos*. Only three survived, it is recorded, out of six who first essayed such a fight.

"*February* 20.—Met to-day in the heart of the forest, a gang of fifty Nuers with a pack of dogs; they carried eight reedbuck and cob does, with a lot of unrecognisable fawns, and after greetings vanished like wild game in the woods." See photo by Captain Lynes.

"*February 28.*—Nuers this morning hunting all over; they have everything on the run. Possibly the dry season gives them an exceptional opportunity to mob and massacre; anyway they are everlastingly at it. I hear also their *dhurra* crops failed, so that many are starving."¹

"*March 1.*—Shilluks in an immense half-moon encircling the sudd and swamps on north shore; the speed and agility with which they traverse these dangerous bogs—often shoulder-deep—is nothing short of marvellous. They are semi-amphibious."

"*Moghrem.*—The Shilluks at the two villages on north have many heads of Jackson's and a few of Neumann's hartebeest, also of waterbuck, roan, tiang, cob, etc., all killed in their bush-driving; besides hippo ivory. The damage caused to game is terrible to contemplate, since these savages kill like wild-beasts in sheer blood-thirstiness and without any saving Grace of Mercy."

The following incident shows that the simple Nuers are not without guile!—While following the blood-spoor of a badly wounded buffalo, we came face to face with a hunting-gang with many dogs. The midday heat was intense (108° in shade), and as the Nuers felt confident of being able to finish off the crippled buffalo, we arranged with them to bring the head aboard *Candace*, they keeping the meat for their share. The following day, by mere chance, Lowe came across the spot where they had killed, the huge mass of half-digested grass leaving no doubt as to the victim being a buffalo (and the Nuers never tackle these unwounded). We at once sent to seek out our crafty friends; but no sooner had our emissaries appeared in sight of the fires where they were busy cooking, than the whole gang snatched up their possessions and fled.

¹ Mr Butler confirms this, telling me that the failure of crops, with its resultant food-shortage and famine among the savages, was exceptionally severe in the season when these notes were written. Hence this organised bush-driving was being carried out on a scale exceeding its average intensity.



SHILLUKS ON RIVER-BANK ALONGSIDE "CANDACE."



A HUNTING-PARTY OF SHILLUKS.

Note the poor little Fawns that these wild Savages kill.

Photo. by Capt. H. Lynes.]

[To face page 212.]

At the moment a "punitive expedition" was operating against certain Nuer tribes on the Zeraf, not far away; and that fact may have made these folk unduly nervous as to our intentions. A sense of apprehension had spread far and wide, extending even to the Shilluks across the river; for, on entering a Shilluk village on the north bank a few days earlier, in order to seek information as to game, our repeated hails brought no response. On instituting a search, we found the inhabitants all hiding in their huts. Their sentiment was probably that of "naughty boys" fearing some punishment.

Here is another incident, quoted from diary:—
"Though some Nuer villages by the riverside are occupied, those away back in the forests are deserted, the natives, we are told, being off on the war-path. To-day, while off-skinning an oribi, about five miles inland, two Nuers appeared, reconnoitring us from 200 yards, strangely nervous. Though we hailed them and held up open palms, they hesitated to approach till a third and bolder spirit came right in. They were busy seeking gum, but had only collected half a dozen small lumps in their gourd-shells and seemed half-starved. We gave them half the oribi and in a few minutes, their confidence restored, they had started a fire (by rubbing sticks), and began a feast alongside us."

A curious incident happened near this spot. In an abandoned village we had set a number of traps for small mammals. Next morning the traps had been taken up and the whole nineteen left in a pile together!

The cause of trouble that had brought on the Punitive Expedition, or Patrol, as it is called, was the refusal by a Nuer tribe to pay their "hut-tax." The recusants fled—that is the survivors of them, including their chief—into impenetrable morasses; but the simple savage overlooked the fact that he thereby left his herds behind as hostages. The result followed that the steamer which eventually towed us back to Khartoum carried in her

'tween-decks and attendant barges some 180 huge-horned Nuer cattle, destined, we were told, to feed our garrison at Malta!

In considering the status of big-game in Sudan, as compared with, say East Africa, it is necessary to bear this factor in mind—that in British Eutoria (where game is far more abundant) the wild beasts have no such tremendous “prior charge” imposed upon them as their representatives suffer here in the Sudan. For the dominant Masai and other East-African tribes are not, and never were, hunters. The lordly Masai never interfere with game, and contemptuously leave the chase to the despised and outcast nomadic tribes of the Wandorobo. In East Africa, practically the whole of the teeming game was at the sole disposal and enjoyment of the intrusive Britisher.

In Sudan, the reverse is the case. The indigenous tribes have always been inveterate hunters, and their destruction of game is both wholesale and wasteful. The “limits” allowed to white hunters (on a £50 licence) appear narrow; but they are right, since every head now shot by us is an *extra* drain on the game-resources of the country, over and above the enormous toll which is taken, now as hitherto, by the savage hunting-tribes.

I venture to think that the existing state of affairs cannot be continued indefinitely. In the interests of all alike, some restriction must, in time, be placed on our savage fellow-subjects—as we place it on ourselves.

Considering that the country is (or was) theirs, and its wild game likewise, it may seem unjust to interfere with ancient forest-rights; but such ideas are superficial and will not stand a moment's study.

Here in the Sudan the vital fact is that under the *Pax Britannica* the savage races—decimated a dozen years ago—are recovering their former numbers with abnormal rapidity. They promise soon far to exceed them. They are no longer liable to slave-raids which swept them off

in ship-loads; nor is internecine tribal warfare permitted. There survive neither Mahdis nor Kaliphas to massacre them by the million. Disease is by way of being checked, and so, in time, will the risk of recurring famine be reduced. Each and all these benefits they owe to British rule. There will be nothing unreasonable if, in due time, we require a measure of reciprocity and part-payment of the debt by insisting on the savages treating the game (as they are treated themselves) with consideration—not to say with mercy.

Game-laws, we know, have appeared to some tub-thumpers a sort of Anathema Maranatha in the past. That, however, was when horizons were limited by the immaterial fact that, in our bits of islands, there was neither game enough nor ground enough to "go round." But game-laws, when all is said and done, have always been a first footstep towards progress in savage lands; and will outlast all prejudice in the civilised. For game are God's creatures and (subject to rational control and to the prior rights of mankind) have an inherent and indefeasible right to live.

A NOTE ON GAME-PRESERVATION

A deadly danger to game—perhaps the deadliest of any (since the implication is subtle)—is to admit any sort of confusion between the terms *Game* and "*Meat*." Once allow these to become synonymous, once allow the practice (for some paltry economy) of feeding native troops on "meat"—meaning *Game*—and the death-warrant of that game is signed for ever. Consider what such a practice involves. Squads of semi-savage natives—blood-thirsty by nature, totally unversed in the ethics of sport or in its most elementary laws, scarce knowing one beast from another—are sent afield to procure "meat." Result:—A reckless, barbarous fusillade, indiscriminate file-firing up to impossible ranges, neither sex

nor age respected, or thought of, ten to twenty animals wounded and lost for every head that is procured. In short, a brutal, wasteful, sickening, and senseless massacre. I do not imply that such things are being done; but they have been done in the past, hence this warning for the future is justified.

Another grave (and strictly cognate) danger to game arises from tampering with the strictly *personal* right to shoot game *under licence*. No delegation of that right is legal, and on no pretext whatever should any delegation be permitted. Consider how any laxity in the law would operate. Every Government official, military or other, is entitled for a trifling sum (I think £6) to shoot big-game, including two elephants which may represent a *cash-value* of £100, or even much more—at the present value of ivory, treble or quintuple that sum! Now an official is not, *ipso facto*, a sportsman at all; he is not always British, some are Egyptians, some Sudanese, or even foreigners of sorts. The danger of the lucre lure is obvious. Any such (hypothetical) official—though he may not have the faintest flame of sporting instinct in his breast—may pay up the paltry fee and then send forth a posse of his savage subordinates to secure the two permitted elephants, and, incidentally, whatever else they choose to, and can slaughter. The identical result follows, as in the case previously foreshadowed—that is, wanton, wasteful wounding and loss. No game, however abundant, can long withstand such treatment.

To the Sudan, its big-game counts as one of the most valuable of assets. It is worth preserving, even if only regarded on that low level of appreciation. The functions of the Game-Superintendent should be esteemed as of supreme importance, and his office count second only to that of its Chancellor of the Exchequer!

CHAPTER XVI

THE SHILLUK'S CONCEPTION OF GOD AND OF CREATION

FOR the following synopsis of Shilluk ideas regarding a Supreme God and Creator, I am indebted to the Rev. David S. Oyler of the American Mission on the Sobat River. Mr Oyler is, I believe, the sole white man who has (or who then had) mastered the intricacies of the Shilluk tongue, and these notes—the outcome of direct verbal conversations with his savage flock — he most kindly gave to me.

THE SHILLUK CONCEPTION OF GOD

“On the subject of God the knowledge of Shilluks breaks down. Their conception of God is nebulous; such Power as His lies beyond their range of thought; the whole subject is shrouded in a mystery too deep for Shilluk comprehension. Conceptions such as omnipotence and omnipresence, or as Eternity, meaning infinity of Time and Space without limit or bound, surpass the mentality of the stark savage. Can any wonder? The marvel would arise were it otherwise. The savage of course has no external guidance in religion, no aid in the form of writings or prophecies. He gropes in the dark, seeking God, but finds no light to guide him.

“The Shilluks liken God to a whirlwind, a phenomenon so common and characteristic of their far-flung

plains.¹ When they see a whirlwind passing by, they say that God walks in it. Others say that the whirlwind is God. One man said that God is black, the underlying sentiment being that, since God is unseen, He must therefore exist in darkness.

“Man, the Shilluk believes, is made or created by God and, when he dies, is taken back by God. When a very old man dies they say he has ‘gone to his people’—meaning to God.

“Here is a Shilluk form of prayer:—‘God, leave us men alone, that we may escape; for you are great, you are God, and none can speak to you (in the sense of denying). You are God; whom you kill, die. Spirit is in you. You are God; save us and we escape.’ While praying thus, some stand erect, spear in hand; others kneel.

“In a sort of unconscious effort to bring the mystery of God nearer to the sphere of human comprehension, the Shilluks personify the Deity by introducing an intermediary of man-like form whom they call Nikawng. After praying to God as above, they offer a supplementary prayer to His subordinate, thus:—‘Nikawng, you were given the earth by God; you rule the Shilluks. Now go and intercede for us with God that the cow we are about to kill shall be a cow of God.’ The sacrifice is then killed and, the spear being washed, the water (together with the contents of the stomach and intestines) is sprinkled over the people.

“God is greater than Nikawng, His prophet; yet by reason of His incomprehensible distance and the mystery which shrouds His being, God is more intangible to the Shilluk than Nikawng whom he pictures as a man.”

¹ In winter, after the universal grass-burning, these whirlwinds are charged with black burnt ash, and form vast rotating columns often hundreds of feet in height and speeding, a dozen at a time, across country. At Khartoum where, instead of ash, they are charged with sand, they are popularly known as “dust-devils.”

SHILLUK IDEA OF CREATION

“God has a prominent place in the traditional lore of the Shilluks. They recognise Him as Creator. God, they believe, first created two great level spaces, one above, one below. These levels are the heavens and the earth. He then created the plants and the trees. The first animal created was the buffalo, and this was God’s favourite. Later, Man was made. God spake to the buffalo, saying, ‘Come to-morrow and I will give you a spear.’ Man overheard, and so when the time came, Man went to God and as it was dark, God could not see. Man approached on his hands and knees, bellowing like a buffalo. God said, ‘Who is this?’ and Man answered, ‘I am the one with the horns turned backwards.’ God, being deceived, gave the spear to Man; and later, when the buffalo came bellowing, God said ‘Who is this?’ The buffalo answered, ‘I am the one with the horns turned backwards.’ God said, ‘Did you not receive your spear a little while ago?’ The buffalo replied, ‘No,’ and God said, ‘Who got it?’ The buffalo answered, ‘Man.’ God said, ‘Man, then, has got the spear.’ God, however, gave the buffalo his horns and said, ‘When you see a Man thrust your horn into him.’

“The spear did not greatly improve Man’s condition as it had no handle and could not be thrown. ‘Man’s friend, the vulture, perceived this and said to Man, ‘Why is your spear without a handle?’ Man had to admit he knew not how to make a handle. The vulture thereupon made it and fixed it in its place, saying, ‘I ask no reward for this, but when you hunt I will watch, and when you kill something I will come to feed on the blood that is shed on the ground. Man then made war on the buffalo, and sometimes Man was killed and sometimes the buffalo was killed. When the buffalo was killed the vulture got his blood; but when Man was killed he was buried by his friends.

“God created all the animals. Man he created on this wise. God went to the river-bank and took some red clay and made a man. The man was red (that is, according to Shilluk standard; white by ours). God then went away from the river, to the black soil, and made another man who was black. When God had finished making Man, He rubbed His hands together to get the mud off. It came off in little particles and as these fell they became stinging gnats. The gnats became a great nuisance as they would get into the hair on Man’s head and could not be dislodged. God saw Man’s sad plight so He invented the razor and gave it to Man, whereby he could shave his head and thus obtain relief from the gnats.

“The next animal created was the oribi. This little antelope is chief of the smaller animals. The oribi’s first child was the elephant; the second was the hippopotamus. When the hippo was a baby, God made the water-courses (*khors*) so that the water all flowed into the big river and the inland pools all dried up. The people were dying of thirst, but God said, ‘People, there is water in the river; go to it.’ The people went, but the hippo could not walk so far as he was very heavy, while his mother, the oribi, was very small. She broke down, trying to carry her child. Thereupon she cried to the hyena, saying, ‘Sister, come help me carry my child.’ The hyena agreed, and throwing the young hippo across its neck, proceeded and presently reached a small pool; it was only a water-hole and not the river. The hyena became angry with the gazelle, saying, ‘My neck is broken by the weight of your child; where are my wages?’ The hyena bit a piece from the hippo’s neck as his wages, and therefore the hippo’s neck remains crooked to this day. The gazelle cursed the hyena, saying: ‘For eating my child’s neck you shall remain in the wilderness for ever.’

“The water at that place being insufficient, the

gazelle asked the lion to carry her child to the river, and the lion consented. They came to a pool of water, but it was small; then to a second, but it again proved small, insufficient to cover the hippo. The third, however, proved to be the White Nile. The lion put the hippo into the river and it dived and remained down below and came up again and blew out the water and dived again; when it came up, it said to the lion, 'Go now; you shall have the power to hide yourself in quite a small clump of grass, so that nothing shall see you. Your prey shall come right up to you, unawares, so you will be able to kill them on the spot; whereas the hyena shall have to chase his prey and will not be able to capture it; so he shall take to stealing sheep.'

"According to Shilluk legend, God also created the lion, hyena, leopard, and hare, the other animals being derived from these.

"Another story of the Creation is also told, and the two can apparently be reconciled since some of the people believe both. A woman of God's House—that is His wife—brought forth twins. One was black, the other white. She loved the black and hated the white child. The child cried and God heard it and asked the mother what it was. She said it was a child. God asked to see the child and she showed Him the white one and hid the black child. God gave her orders to rear the child. One day both children were crying at once and God asked to see the child. Again she showed him the white one, hiding the black child under a rag. God, being suspicious, raised the cloth and saw the black child. He said, 'Is this a child too?' The mother answered, 'Yes'; and God gave her orders to rear them both. When the children had grown up, God called them to him one day and said, 'Lick my feet with your tongues.' The white one, being servile, obeyed; the black child refused. God thereafter loved the white man and showed great partiality towards him. God allowed them to

return to their mother, but he said, 'Woman, the white child is my son and he shall rule over the black one, and the black one shall be bought and sold by him.' Then to enable the white man to gain the pre-eminence, God gave him many useful weapons and inventions such as are found in the house of the white man. The Shilluks think that the white man has been able to rule the black only because God favoured him and gave these machines to him. They also think that God's prejudice was unjust.

"The utter inconsequence of all this, its half-held, half-interrupted lines of thought illustrate the mentality of the savage—childish, often irrelevant, yet never wholly illogical. To me there seems an ever lurking suggestion, alike in their beliefs and in their personal bearing, of latent possibilities of development—gradual and protracted though such must necessarily be. Splendidly equipped physically, the Shilluks and other Nilotic aborigines are certainly not devoid of potential mental cultivation. In these tribes we have, in short, a vast human reserve of 'raw material' capable of manufacture, degree by degree and process by process, into a finished article of value.

"Fancy may picture singular little half-seen analogies between these primitive Shilluk traditions and some of our own scriptural records. Thus Man's deception of the Creator in order to obtain the spear promised to the buffalo recalls the incident of Jacob stealing Esau's birthright by a similar trick. Then the impersonation of the Deity in human form as Nikawng seems to shadow a sort of inflection of the Incarnation. No sort of parallel, however, is traceable in the vulture story. A vulture, as we know it, has surely no personal qualifications to practise as a handle-maker? Except such instances, and allowing for the fabulous (such as an oribi giving birth to an elephant or a hippopotamus), the Shilluk zoology follows the lines of observed Nature."

CHAPTER XVII

NILE ANGLING

FISH we partly depended upon for our commissariat; but having more insistent duties ourselves, we largely left the angling to Mahomed Maghazi and Abdul Hamil who caught a daily supply. The best of their captures was a fish that, at superficial glance, somewhat resembled a cod, and these averaged some 10 or 12 lb. apiece, though Mahomed constantly averred that he had hooked and lost others of colossal dimensions. That is, of course, the unvarying tale of the angler; but in Mahomed's case it was undoubtedly true. These fish were the "Bayard" of Sir Samuel Baker who, in his *Nile Tributaries* (p. 214) mentions having frequently seen them up to 60 or 70 lb. weight.

I had brought out a rod specially for the "big-game fishing" on the Red Sea—(described later)—a stiff harling-rod by Farlow, only some 7 feet long, with an enormous wooden winch that held 200 yards of line. We had brought it with us up the Nile, and that rod lay constantly fishing by itself on the 'midship deck. One morning just as we were going ashore at dawn, the reel gave forth a startled shriek that indicated "something big" at the far end. A few moments' observation of what followed served to explain Mahomed's previous failures with these Nilotic monsters. Our good dragoman, having seized the rod, held its point directed straight as a rifle-barrel towards the game; thus allowing the captive at its own sweet will to take out as much line as it fancied without effort or

resistance. Meanwhile the supreme object of every man-jack on board was concentrated on frantic efforts to seize hold of the line somewhere beyond the rod point! Some sought to effect this insanity with boat-hooks, others by wading, a third lot were getting the pinnace away. The function of a rod as a factor in killing fish was wholly ignored.

I therefore took the rod from Mahomed and ordering all hands to stand clear, reeled in the slack and brought pressure to bear. On feeling itself held, the fish responded at once with a straight-away burst of 80 yards, terminating in a mighty "flowse" on the surface. Two other fairly determined runs followed, but neither so far nor so fast as the first, and after that there was twenty minutes' hardish fighting ere any visible sign indicated the approach of the climax. Then with intense interest we watched to see what manner of monster we were tackling. By sundry head-and-tail "breaks" we had judged the fish to be well nigh two yards long. Despite that foreknowledge, it was nevertheless a somewhat startling vision when a huge flat head appeared alongside—a ghost-like object in the opaque water with long tentacles streaming away astern, recalling Sir Samuel Baker's simile of "a cross between a sponging-bath and a waggon-wheel!"

By means of a big iron hook that we had brought out with the view of catching crocodiles, the played-out silurus was gaffed and lifted aboard. Although its head was broad and flat, with a gash-like mouth, yet the body, aft of the shoulders, was upright, not unlike a giant conger-eel, and fringed above and below with continuous fins. This fish weighed 45 lb. and measured a trifle under 5 feet in length. Subsequently we caught several others even bigger, the two heaviest scaling 48 and 55 lb.

Our crew held that these fish were uneatable and their dictum we accepted untested. There was something repulsive about their appearance and their musky smell. The bait used was a lump of raw meat. This silurus,

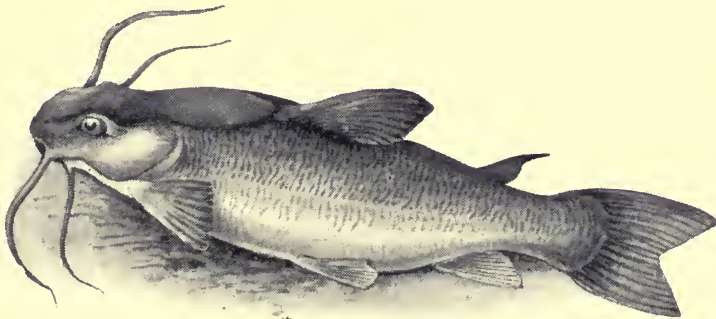
or cat-fish, is doubtless the "coor" of Sir Samuel Baker (see *Nile Tributaries*, p. 225)—*Clarias niloticus*.

The angler's chief prize on the Nile is, of course, the "Aigel" or Nile-perch (*Lates niloticus*)¹—a splendid game-fish with eyes like rubies and huge silvery scales, which runs like a salmon and of quite unascertained dimensions. Near Khartoum it has been taken on rod and line up to 70 or 80 lb., and in the Albert Nyanza there is an authentic record of one so captured that weighed 198 lb. But very much heavier examples have been secured—though not necessarily by the rod. Thus Mr Butler killed one that, on a newly received weighing-machine, scaled 245 lb., and measured :—

Length (straight)	6 feet 1½ inches.
Girth	4 „ 9 „

Mr Butler further tells me he has had skulls of Nile-perch that indicated owners of much greater dimensions than those just given. So it is conceivable that the species may eventually prove to reach 300 or 400 lb. in weight. The Nile-perch is caught either by spinning or live-baiting; but having had no personal experience with it, will say no more.

¹ This is the "Baggar" of Sir Samuel Baker.



CAUGHT AT LAKE NO, February 9th, 1913.
Length, 15 inches : bluish above, silvery below ; pectoral fins blood-red.

CHAPTER XVIII

VOYAGE UP WHITE NILE—(*continued*)

THE WESTERN BEND (BY THE ZERAF RIVER)

(I) A MORNING IN A MARSH

DURING the night we had anchored opposite a sedge-clad bog wherein the year before I had wounded (and lost) an unknown prize—a “Porphyrio” of sorts, but one that enjoys no allotted place in the Sudan avifauna.¹ Beyond the bog, a mile away, a tempting forest displayed two great stick-built nests, by one of which stood perched a giant jabiru—it was the old attraction of “Caldecot’s Spinny” in *Tom Brown*. I resolved to reach those great nests at any cost, and plunged into the interposed marsh, ecstatic in varied anticipations. At the end of an hour those ecstasies were cooling. A ceaseless struggle through canes, each as strong and as stubborn as a mule, combined with an entanglement of *khors* that embogged above the knee, had tended to pale the more roseate aspect of mundane things. At this juncture I found myself face to face with a sinister-looking savage. He was immensely tall—most Shilluks are—and carried a coal-shovel spear, while right across his chest stretched a great gaping gash, half-healed; then his face . . . well, I only saw it *once*, but that glimpse sufficed. My visual sense recoils from a sickening memory. To put it mildly,

¹ A big waterhen-like bird, dull sage-green in colour with a “fever-green” beak and frontal plate. Later I saw another similar, twenty miles west of Zeraf, but failed to procure either—they were too big for the “collecting-gun”; so there remains “something new” in Sudan.



A COLONY OF GLOSSY STARLINGS (*Lamprocolius*).
On top of a big clump of Nests (on left) lay a young Eagle-Owl (*Bubo lacteus*).



ON WHITE NILE NEAR RENK—March 8th, 1914.
Nest of *Petronia Dentata* in hole above gun-muzzle—Young near full-fledged.

[To face page 296.

his visage had been sliced into fragments and one eye . . . well, it wasn't in its normal site. That poor stricken savage might have been at Louvain or Aerschot—but those horrors had not then shocked the world. With averted gaze, I requested him to pilot me out of that Serbonian bog. From his reply I gathered that he had urgent business elsewhere, but that he would send someone else. With that he vanished amidst the tasselled sedges, a pathetic memory.

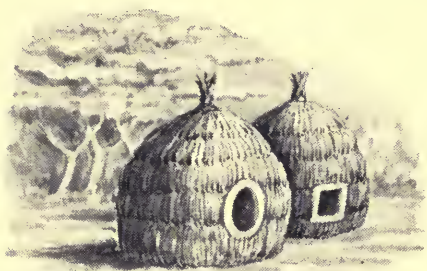
None who have had experience with big-game can have failed to notice that, even under the stress of terrible injuries, animals often appear callous, actually unpaired, hardly even inconvenienced. But to see a human being so—bearing his wounds without a flinch, though without hope of relief—created a different sensation. Surely in their respective perceptions of pain, the margin between wild beasts and savage man must be narrow?

Within five minutes the substituted guide, a stalwart and smiling young Shilluk, arrived, and without spoken word took the lead; soon we had regained a firm foothold. Those big nests drew blank—they generally do in mid-winter (though one of them, it was obvious, had recently been occupied by youngsters)—but I am not here going into ornithological detail. Suffice it to say that we enjoyed a delightful morning and later secured in these forests many specimens.¹

On the outskirts of the forest, where it thins out into scattered trees, our guide led us into his native village, and a truly primitive settlement it proved. This was, I imagine, a temporary "cattle-camp," for the Nilotic tribes live as a rule in grass-built huts of the beehive pattern. Here, aboriginal architecture was reduced to

¹ Such as tchagra (see over), masked and helmet-shrikes, colies and wood-hoopoes; glossy starlings brilliant in iridescent purples, lilacs, and chestnut; babblers, barbets, and bee-eaters in grass-green with crimson contrasts; sun-birds, serins, and silver-bills; drongos, finch-larks, spot-winged doves, a honey-guide; and an eagle-owl (*Bubo cinerascens*) killed with the 410 Tomtit gun!

mere circles of upstanding bamboos stuck into the ground and laced together with pliant canes and fibres.



HUTS OF THE NUER TRIBE.
Front doors plastered round with clay.

There were three of these enclosures, each 18 or 20 feet in diameter. In the centre of each burned a fire and the whole interior space was heaped up with the gradual accumulations of wood-ash, deepening towards the periphery. This wood-ash served as bed, bedding, mattress

and all; it further explained the hoary-grey complexions of these savages which oft puzzled one, knowing Shilluks to be coal-black. Several recumbent forms could be distinguished, all lying concentrically side by side, each buried in ash, and sleeping feet-towards-fires. None noticed our intrusion. Around, outside the stockades, were tethered herds of cattle.

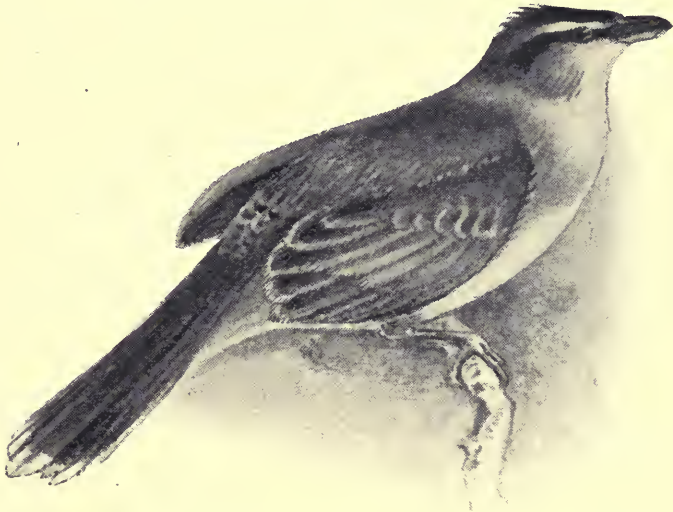
Leaving the village, we met on the narrow trail two young Shilluk maidens, tall and shapely—"willowy," in fact, as the fashion-plates one sees in newspapers (and in life too, sometimes). On suddenly finding themselves confronted by a white man when thus in *deshabille* (if that is the correct term), a burst of giggling ensued amidst which the pair dived into the bush. An apology for my intrusion suggested itself, but their precipitate flight—to say nothing of innate modesty—forbade. Surely these dusky Eves had consulted the Serpent?



AN EGRET.

In Savagedom, the female sex is rarely much in

evidence to outsiders; nevertheless another interesting experience befell. Baraka and I had just sat down to prepare and stow some specimens of sand-grouse, when two young women, bearing water-jars, appeared on the scene. Of the twain, one, it may be, was precocious; for on perceiving us, she at once came up and entered into voluble conversation. I replied as the occasion seemed to demand—since my fair interlocutor



TCHAGRA, OR RED-WINGED BUSH-SHRIKE (*Telephonus remigiatis*).

was distinctly shapely and presumably (to Shilluk eye) a belle—her more demure companion hanging back, a few yards away, among the bush. Presently on my invitation, my vivacious visitor set herself down alongside and with a sort of childish pride expatiated on the beauty of her scanty adornments. There was a necklet of shells and snakes' vertebræ, sundry bracelets evolved from ivory, animal-sinews or fibres. These gems, one by one, she took off for my more complete appreciation—that, I presume, being the root-idea. To reciprocate her friendliness, I begged her to stand while I made the

accompanying sketch from life. This seemed to shock Baraka's Mohammedan susceptibilities, and the interesting interview terminated all too soon—but leaving quite a pleasant memory!

To resume the narrative:—We were now accompanied by half the villagers; but these savages, not appreciating the glories of birds'-nesting or of Tomtit-shooting, ever had something bigger (and more eatable) in their minds. They yearned for big-game, yet all they could show me in a long morning's ramble were two bushbuck does (one followed by a fawn). I also saw, far out in waist-deep grass, the horns of a sleeping waterbuck; so sound was his repose that I actually walked up to within 50 yards. I did this purely for my own amusement, as his was a poor little 24-inch head; but that again was not understood of the people.



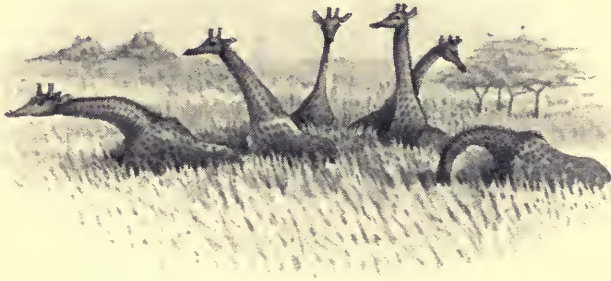
MY SHILLUK BELLE.

In an opening among this grass, I shot a snake, 5½ feet long, a mamba. Mahomed Maghazi's terror of snakes and of all that is unseen was a recurrent amusement. To do that excellent Sudani justice, I should add that he had "signed on" solely as dragoman, and in taking him into the bush at all, I was taking him entirely outside his proper sphere and into ceaseless alarms. To-day he had implored me not to enter the long grass. "Why, Mahomed?" "Oh, that very bad grass; no Shilluk go in there; grass very bad—full of lion, leopard, snake!" "But, Mahomed, that's just what we want. You take these natives, go round by those far trees, and drive out a few lions and leopards." Poor Mahomed turned chocolate-green at the prospect. As a matter of fact, one sees very very few snakes in the Sudan.

One day Mahomed declared he had been attacked

by a big black snake. To reassure him I spun this South African yarn:—"Remember that the *black* mamba is not so bad. It is the *green* mamba you should avoid, since its bite means death in twenty minutes; whereas you may be struck by a black mamba and yet survive (in agony) . . . for three hours!"

We spent a couple of nights out here, penetrating far back from the river into attractive, park-like country, where stretches of grass-prairies alternated with thorn-bush and scattered groves. Both big-game and gazelles

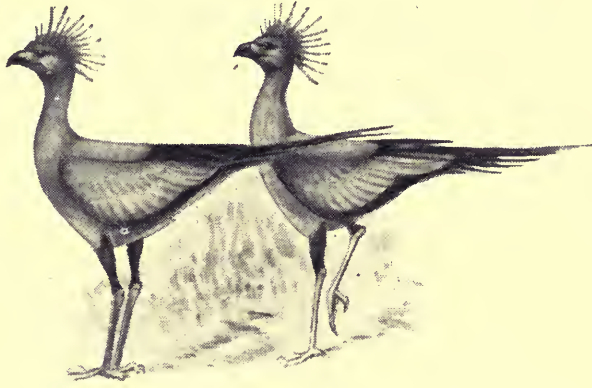


GIRAFFES NEAR JEBEL ZERAF. (Sketched February 19th, 1913.)

were fairly plentiful, chiefly of the usual species already described, but including both herds and many small groups of giraffe. At one point I descried a pair of Secretary birds (*Serpentarius secretarius*)—the only instance of their occurrence during all my rambles in the Sudan. During a full hour, while we enjoyed our midday rest under grateful evergreen shade, I watched these two "Secretaries (unpaid)" sedately stalking about in open grass; but no prey rewarded their search while they remained in sight.¹ During the half-light next morning I saw a couple of lionesses slowly strolling forest-wards, and presently—

¹ Only once during his sixteen years in these regions did Petherick meet with the "Secretary." He gives a characteristic description of that encounter in *Upper Egypt and Central Africa*, p. 295.

guided by the assembling vultures—found where they had killed a tiang-cow, hardly full-grown. The carcase lay quite in the open; but 55 yards away to leeward a low



TWO SUDAN SECRETARIES—(Unpaid).

clump of bush had clearly provided the “jumping-off” point. That afternoon I shot a tiang-bull, the meat of which I presented to my spectral friends; also a red-front gazelle for my own mess.

While returning towards the ship on the following evening, an object in a narrow forest-glade ahead struck me as incongruous. The spy-glass confirmed suspicion, though the precise nature of the suspect was quite indefinite—it might have been the bend of a fallen trunk, an ant-hill, or such like inanimate object. To

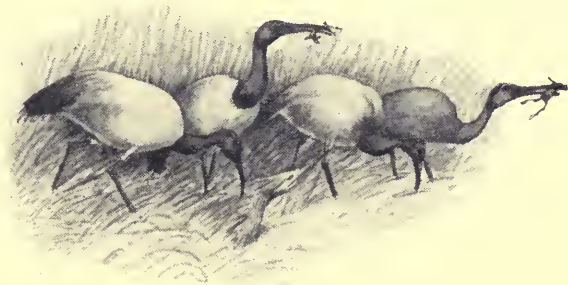


WART-HOG BOAR—Tushes $10\frac{1}{4}$ inches exposed.
Shot East of Zeraf River, February 4th, 1913.

make good, I retired from view, advancing inside the covert, presently to find myself standing close by the

stern of a somnolent wart-hog—his fore-end half-hidden in grass, hind legs at full stretch behind. He was sound asleep; nor did he ever awake—a fine old boar, with tusks projecting $10\frac{1}{4}$ inches clear of the gums. Thus the friendly villagers again went home well laden.

The *Isis* that night (February 4th) was infested by tiny flies, the size of a pin-point—never seen before or since. By day, to make things lively, we had swarms of flying ants (that bite), as well as seroot-flies with the speed of a falcon and malevolent energy of the erewhile militant suffragette. It may likewise be worth mentioning that that morning a distinct rainbow had showed to the south, the only one I then recollected seeing in the Sudan; though I have subsequently observed the phenomenon on two or three occasions.



SACRED AND HAGEDASH IBIS.
(Note invisible Squacco Heron in foreground.)

(II) KHOR ATTAR

The merciful mystery of dawn (terminating a sweltering night in knee-boots) revealed what appeared to be two goal-posts on the eastern bank. But what football club plays here? Dim memories of far-away Rugby days recalled the "Black Heathens"; but have they a Nilotic outpost? Such silly musings were dissolved when, at sun-up, a sentry appeared and the British and Egyptian flags flew out from the twin staffs. Nothing

else was within sight; yet those posts marked the Government Station of Khor Attar.

Hard by, a broad stagnant backwater bends away from the river, circling inland for a league. Here I spent a few days, and seldom has ornithologist enjoyed more entrancing scenes. To recapitulate all the infinite variety of Ethiopian water-fowl—geese, ducks, darters, ibis, herons, storks, and the rest—is unnecessary, or rather superfluous. Suffice it to say they filled the landscape.

Fleets of pelicans whitened acres of water, some gleaming pink in the low sun-rays; others passing overhead in marshalled skeins, every wing-beat in unison.

One's earlier introduction to the pelican (which weighs a stone-and-a-half and displays no visible agility) suggests doubt as to how so cumbrous a bird can gain its livelihood by catching prey so active as fish. One answer thereto was afforded this morning. Flying a yard above the surface, six of these giant birds came speeding towards me. Suddenly the leader checked: wings were thrown aback, great pink feet shot forward—as though to alight—downwards dropped the beak, and he plunged head-first. That is, both beak, head, and neck totally disappeared under water ere his body sat afloat. Next moment the dripping beak reappeared, was erected vertically, and the captured prey (as one could clearly see) was unpouched and gorged! Surely for so apparently clumsy a bird this was a smart performance:—(1) to descry fish under water while yet on wing, and (2) to catch those fish by a flying header? It was a feat worthy of an osprey and (unless you have seen it) incredible for a pelican.

Since then I have witnessed similar performances, though none so strikingly clever and effective as that first spectacle. The pelican, in an ordinary way, swims slowly forward, keenly watching, and with beak one-third immersed; then with a sudden powerful lunge—forward or sidelong—the quarry is empouched. Should the

activity of the prey demand it, the bird's wings are half-opened to give an extra turn of speed.

Often a cordon of pelicans, swimming in column abreast, move slowly along some backwater, all fishing independently. In appearance, such formation might suggest an organised "fish-drive"; but all that is fantasy. The opaque mud-charged waters of Nile conceal from



"MURDEROUS MANDIBLES."—SADDLE-BILLED JABIRU AND STILT.

Sketched at Khor Attar.

(By inadvertence the Stilt is drawn disproportionately big.)

the fish all indication of an approaching enemy. Neither drivers, stops, nor flankers are needed. Besides that, Nile fish are inert and sluggish—retrograde, like Nile geese? Had the pelican to depend upon catching trout, he would starve in a week.

Another striking "fish-eater" here is the wood-ibis, a big stork-like bird, mostly black and white but showing a clear pinkish blush. His long curved mandibles are

orange-yellow and the naked face bright red. This bird abounds on every backwater. Often he stands statuesque, awaiting heron-wise some vision of a moving victim; others stalk slowly about, probing deeply in the shallows. The gullets of those shot are usually crammed with slow-swimming fish — perch, bullheads, and the



"STANDS STATUESQUE."—WOOD-IBIS.

strange half-reptilian creatures (many, it is probable, unknown to science) with which these marshes swarm. The crop of one contained eels and frogs.

White Nile is simply *stiff* with fish. Throw a crust from your cabin-port; instantly you see it in torment, dipping and diving as a score of small fry tug and tear. With rudest tackle, or in two or three casts with a seine-net, our crew kept us daily supplied with fish. Some of these weighed six, eight, and ten pounds and upwards (elsewhere are related combats with much heavier opponents) but could scarce be commended as

comestibles. Their flavour as a rule resembled boiled cotton-wool—with a sprinkling of pins thrown in. Still it was a relief from the everlasting tiang, tinned tomatoes, and guinea-fowl.

Correspondingly the whole Nilotic atmosphere is “blue” with fishers of every order. There are the native savages on bank and boat, plying ceaseless nets, traps, lines—even spears thrown at a venture oft impale a 20-pounder. Then there are swarming ichthyophagi in form of bird, beast, and reptile. Pelicans in droves daily scoop up fish by tons upon tons; there are literally millions of herons, ibises, darters, cormorants, and the rest, that—above water and below—incessantly work the 12-hour shift—unless “previously full.” Amid such society, a sprinkling of otters, ospreys, fish-eagles, and kingfishers scarcely count; but the crocodiles count for much. The daily toll of these huge and voracious reptiles passes calculation. Nowhere else (inland) can there be seen such bewildering variety in the piscivorous orders; yet the victims thrive and multiply exceedingly.¹

I have elsewhere drawn attention to the widely diversified types of equipment designed by Nature to fulfil one and the same purpose. It appears a flaccid and altogether unsatisfying sort of “science” that extols, as “special adaptations,” the merganser’s serrated mandibles, the darter’s backset teeth, and so on, yet ignores the fact that herons, grebes, colymbi, etc., are equally efficient in the self-same pursuit although devoid of all such specialised armament.

In the herons, which secure their prey by a direct bayonet-thrust, there is a curious kink in the vertebrae of the neck; and in the darter this kink is even more pronounced—one of the bones being articulated at practi-

¹ It may be worth passing note that there are on Nile no representatives of the palæartic goosanders, mergansers, grebes, colymbi, or other divers of that ilk. All these hunt their prey by sight and speed alone, and the opaque mud-charged waters of Nile would be abhorrent to them; yet, *per contra*, darters and cormorants solve the problem.

cally a right-angle with the rest. The kink is plainly perceptible in the darter, even when the birds are flying past. At the moment of the thrust being delivered, this cross-set bone straightens out into line, like a released spring, thereby giving increased range, and greater force, to the blow.

Neither of these birds *impale* their prey. A darter, on making a catch, usually brings his victim to the surface—though nothing but the bird's head and neck—



“CROP-FULL”—MID-DAY. WOOD-IBIS AT KHOR ATTAR.

resembling a periscope—appears above-water. It can then be seen that the fish is held *between* the mandibles.

When he feels “cropful,” the darter flops heavily up from the water—leaving a troubled wake like a steam-tug—and, carrying his latest capture, directs a course towards his accustomed perch on some ambatch-bush. Arrived thereat, after having gorged his final prey, he utters—perhaps by way of Grace?—a long low chuckle. Then he spreads himself out to dry.

Among other wading-birds observed on these backwaters of Khor Attar may be briefly summarised:—

Jabiru and hammerhead, godwits, stilts, greenshanks in two sizes, dunlins, ruffs and reeves, common, green, and wood-sandpipers, redshank and plovers of three species; with pratincoles and Asiatic dotterels on the drier ground inland. Buff-backed herons fed on the backs of cattle, precisely as they do in Spain. Raised five snipes and shot two—also a 12-foot crocodile.

Offshore, the waters were literally darkened with ducks. These masses were largely composed of the African white-



"SPREAD OUT TO DRY."—DARTER.



DARTER ON WING.—(Note the "kink.")

faced tree-duck or "whistling-teal" (*Dendrocygna viduata*),¹ together with both our common teal and garganey. The essential difference in flight between the two contingents—shall I call them the Palæarctic and the Ethiopian?—was strikingly contrasted, as seen side by side. Our little European sprinters lifted from water light as summer-butterflies and sped like arrows through the air; whereas our dear little African friend splashes up heavily as a coot, with great ungainly feet hanging below, and his subsequent flight is flopping and laboured. The garganey, of course,

¹ These tree-ducks take at least two years, if not more, to acquire full adult plumage. In adults, the beak has a subterminal patch of blue, with a black nail. They never perch on trees.

is one of the smartest of all our smart European wildfowl : so any comparison with poor *Dendrocygna* is rather cruel. Both teal and garganey whizzed past the tree-ducks as a destroyer overhauls a mud-hopper.

So unwary were all these ducks that they allowed me to stroll past within easy gunshot—*provided always* that I kept to leeward. The moment they got the “wind,” they would spring, though 200 yards away. To illustrate this fact :—At one point a long jutting peninsula projected far into the open water and directly athwart the northerly breeze. On either side thereof sat columns of duck massed some 60 or 70 yards offshore. Purely as an experiment,



“Flops up heavily.”



DARTERS.

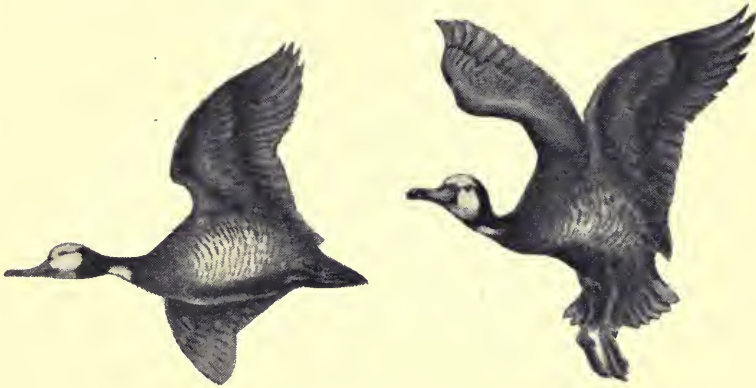
“Suspicious”—(like periscopes).

I walked out to the end, in full view ; not a single duck to windward took the slightest notice ; whereas every one *under my lee* rose in alarm as I advanced.

It is one of the anomalies of animal-instinct that keen-scented wildfowl (and certain big-game too) should fear more what they scent without seeing than what they see without scenting. In this case I had been in view all the time, yet no danger was apprehended till the fowl got a touch of the tainted wind. They had no fear of man ; yet they feared his smell !

The question—Do birds possess the sense of smell?—has long interested me—since earliest punt-gunning days. A reference to our classic authorities on ornithology long ago showed that they all passed over the point in silence,

or, at most, referred to it quite incidentally; and, without such aid from the fountain-heads of science, my own technical knowledge was then necessarily inadequate to form an opinion. During several subsequent years, therefore, I carried out a series of rough field-observations and experiments and published the results in *The Field*,¹ partly in the hope (which did not materialise) of eliciting further light on the subject. Those investigations have led me to answer the question provisionally (and subject to sundry minor modifications and exceptions), as



"Checking to Alight."

WHISTLING TEAL.

"Rising."

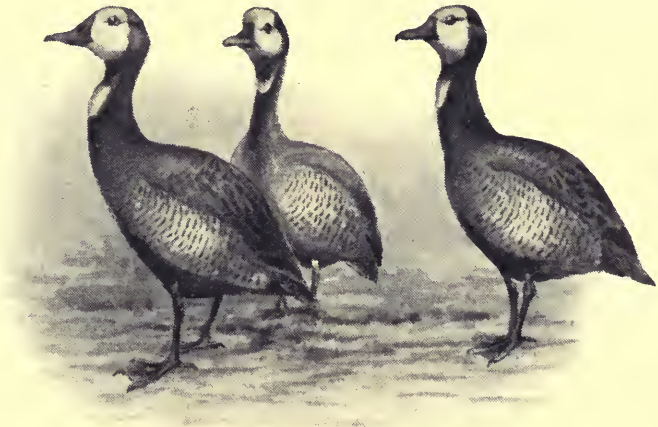
follows:—No birds within my circle possess the sense of smell—(or, if they do, they do not utilise it as a protective faculty)—*excepting* the ducks and geese, and certain of the waders (*Charadriidae*).

Here, on the Nile, I essayed several experimental stalks, all of which corroborated the above opinion in respect, among others, of the following species:—Marabou and jabiru storks, pelican, hagedash and wood-ibis, stone-curlew and spur-winged plover, purple heron and egrets. Eagles and vultures certainly possess no sense of smell whatever, though they have invariably been credited with it in extraordinary degree.

¹ December 30th, 1911, and January 1912.

(III) ELEPHANTS AND BUFFALO

As we sailed leisurely onwards towards Lake No, two incidents befell. The marsh-vegetation along the banks grew gigantic, frequently shutting out our view and usually forbidding a landing. These green walls of papyrus were brightened by the golden-yellow blossoms of the ambatch-bush (*Ædemone mirabilis*) and by huge purple convolvuli; ant-hills were often festooned with the



WHISTLING TEAL.

Stand in formal upright attitudes.

crimson flowers of a creeper, while many riverside trees were draped to their summits in a clinging mantle of lianas, gorgeous in bright-hued blooms. The swamps were carpeted with water-lilies (white, golden, and mauve), and we saw here true bulrushes for the first time.

While passing a point known as the Maya Assignora (associated, I believe, with Mdlle. Tinné), and busy working in my cabin about 3 P.M. I was aroused by excited cries of "*Fill! Fill!!*" (=elephants). About 500 yards to the north, stretched a belt of mimosa-forest and towards this my men, with wild gesticulations, eagerly

pointed. With the prism binocular I presently made out the objects of their ebullition ; but, being hardly convinced, brought a telescope of 35 diameters to bear. Now the Sudanese possess extraordinarily good eyesight and are, moreover, habituated to seeing big-game. Nevertheless, they were, in this instance, mistaken—and well they might be. For a more perfect verisimilitude of a bull-elephant could scarce be conceived than what presently stood disclosed on the object-glass. No detail lacked—not even a tail! The trunk was upraised in the act of tearing down branches. The illusion was complete. Around this “elephant” at short intervals, stood other dark objects each precisely in form resembling an elephant, as those great pachyderms appear when in shade and half-hidden by deep grass. I took a second and a third long spy with the telescope before finally deciding. The suspects, one and all, were conical ant-hills, built in 6-foot cane-grass and set off by forest-shade above ; while the crucial figure which had first arrested attention was a combination of two ant-hills, one half-eclipsed by the other, while from the farther hill arose a tall chimney-like shaft slightly inclined from the perpendicular and vanishing amid the foliage above. A more perfect optical illusion Nature never produced—as the rough sketch may serve to show. My men, unable to use the telescope, remained unconvinced, excitedly reiterating that they still saw elephants. To assure myself that the keenness of savage eyesight does not surpass in power a modern telescope, I now started to examine the whole covert yard by yard—with this strange result. Not 100 yards to the right of the tree-smashing “elephant,” there showed up on the object-glass, dreamily dozing away the midday hours, two great buffalo! I could even catch the intercepted sun-rays at intervals on their horns. Beside and beyond these were other dark objects too indistinct to recognise, but which probably represented a herd lying down. I now fixed the telescope

bearing straight on the buffalo, and on Abdul looking through it he exclaimed at once "*Gamoos!*" But with naked eye, neither he nor the rest could distinguish anything at all.

Next morning (February 7th), after three hours' work ashore, we were under weigh when, at nine o'clock, the cry of "*Fill*" again aroused me. This time there was no mistake. Less than half a mile away, a herd of elephants



THE ILLUSION.

—sixty or seventy, strung out in line—were grazing towards us. The great pachyderms were feeding among cane-grass 6 or 8 feet high, and, in colour, precisely identical with the ant-hills of yesterday. We closed with the bank and watched. The main herd were cows, though among them, three, towering over their consorts, were probably young bulls. But half a mile to westward I spied four more, all good bulls; while between the two groups, half hidden by higher bush, stood a grand old Solitaire. Only once, and that for but a second, did he vouchsafe a glimpse of long curving ivory.

These elephants were pulling up and eating the cane-grass—sedge, or a big jointed-reed (*carex* or *arundo*)—and later on I had opportunity at close quarters of verifying the fact. The herd was attended by kites and grey herons (probably *Ardea melanocephala*), soaring round and pouncing on insects or reptiles disturbed by the grazing monsters. Curiously there were here no white egrets in company. After watching and sketching the elephants for an hour, I fired a shot in the air. The cows closed up at once in a solid phalanx, trunks towering up



TWO OF THE HERD.—ELEPHANT BULL AND COW.

aloft to test the air ; but none of the outlying bulls took the slightest notice.

Closé up to these last the grass had been burnt, so that a direct approach appeared easy—though quite probably it might not have proved so. I wrote in diary :—“For the second time in my life it has been my luck to come across massed elephants in broad daylight, open country, and a strong breeze. On the first occasion, after an hour of absorbing excitement, we secured four elephants aggregating 300 lb. of ivory. This time I am content to leave them in peace, though actually at my mercy.”¹

¹ Subsequent experience in these abominable bogs, with their deep intersecting *khors*, suggests that the attack might not have been so easy as I had anticipated at the time.

Little did I then dream of what the Upper Nile can show in the elephant line!

We saw no elephants here (on White Nile) either in 1913-14, or in 1919, and I believe they are seldom met with at this point—below Lake No—in winter. The accuracy of my census was, however, confirmed by another hunter, my friend Mr Sydney Pearson, who wrote me:—"I just missed you at Lake No; you had only left your gyassa two hours before I arrived. I saw that big herd of elephants that you sketched. The big bull was at the west-end of the herd, a splendid fellow, and there were three other good bulls."

A few hours later we reached Lake No, and anchored at the confluence of the Bahr-el-Ghazal with the Mountain-Nile.



TWO JACANAS AND (*inset*) NIGHT-HERON.

CHAPTER XIX

LAKE NO

THERE is no real "lake" at Lake No. Despite its high-sounding title, Lake No is nothing more than a magnified mere, its limits lost amidst indefinite wastes of papyrus-sudd, its exiguous open spaces everywhere intercepted by island-jungles of tall swamp-plants. We circumnavigated its whole expanse, rarely finding a depth exceeding 6 or 8 feet, and can scarce call to mind a more dismal and less interesting region. Even in respect of wild-life, Lake No is featureless and uninspiring.

Geographically, however, its site is important in two regards. Firstly, it marks the meeting of two great African water-systems—that of Nile, descending from Equatoria, with those from the west represented by the Bahr-el-Ghazal; and secondly, as being the northern gateway of "The Sudd."

Twice we have sojourned at the actual junction—Mogrem, the spot is called, signifying "The Meeting of the Waters"—our vessel moored to one of the marly islets that guard the entrance to Lake No. By what geological process *marl* has intruded in this lacustrine area—(otherwise all swamp or black "cotton-soil")—we know not. The surrounding region is a universal dead-level steppe, but being relieved by scattered mimosa woods, shelters a fair variety of big-game. The swamps form the headquarters of the saddle-backed lechwi and of the situtunga; while the prairies harbour hartebeests, roan, tiang, cob, reedbuck, and oribi, all persistently hunted by

the local savages as already described. An incident of one of these massacres may be worth recording. Within sight of our ship several exhausted antelopes—all, so far as I could see, females and young—were endeavouring to escape by swimming the river, when some of our own crew, overwhelmed by the prevailing blood-lust, seized the pinnace and set forth to cut out a poor *Leucotis* doe. A race ensued and the savages won; our men, nevertheless, seized the game by force. In common justice, I ordered restitution to be made. The fetish of *Might v. Right* is not confined to Central Europe; but in Central Africa the wildest savage (as I see him) at least possesses the virtues of barbarism. None are wholly brutal, albeit modelled in Nature's earliest and crudest mould.

The incident typifies the relationship existing between the aboriginal savage and the intrusive Sudani. Old memories survive alongside a modern *entente*—memories of the era when the Arab was the conquering race; when, in Arab eyes, the pure-bred savage was nothing but dirt, or the raw material for his slave-trade. Arab blood has transformed the Northern Sudan. Its inhabitants are now mainly a mixed cross-breed, corresponding with the Swahili in East Africa. But Arab intrusion never penetrated (save for slave-raiding) so far south as Lake No. The aboriginal savage of this region is independent of Arab ascendancy; yet he subconsciously accepts it. Often the unsophisticated Shilluk, or Dinka, or Nuer, attracted by sheer curiosity, would come and squat down, timorous and open-eyed, beside us, trying to fathom the mysteries of trapping or bird-collecting; but he would be roughly repelled, without the least reason, by our disdainful Sudanese. Of course we intervened, to assure our primitive fellow-subjects that where a Britisher was all were treated alike.

In the native villages around lay the cast-out skulls of game—roan, hartebeest, etc. The latter were chiefly Jackson's hartebeest; but I also noticed some that



SHILLUK IN AMBATCH CANOE—LAKE NO.



TWO LION-CUBS.

were undoubtedly "Neumann's," and, being anxious to procure a specimen or two for myself, I asked their owner—a seven-foot grisly savage with an eagle glance—to guide me to the place where he had killed them. His reply (and I was at pains to understand it) was that the spot was distant three days' journey, and he added:—"I also am a hunter the same as you, and I hunt alone with my dog and spear." A grand old sportsman, surely! Big-game, however, is treated elsewhere, and this chapter intended rather to concern itself with the minor forms of life and with the daily work of field-naturalists.

I remember my first evening at Lake No—it was on February 8th, 1913. By the water-side a low thorn-tree (which was completely enshrouded in a purple-blossomed liana) bore a great stick-built nest, surmounted by a thatch of dry reeds that resembled a haycock. On throwing a clod, out darted from a lateral exit facing the river a hammerhead (*Stopus umbretta*), which I shot. Abdul removed half a cartload of dry reeds and reported the nest empty. I knew better, and directed the dismantling to proceed. Beneath the superincumbent thatch was a double-storied, stick-built structure, and in the lower chamber lay three white eggs, in size and shape resembling a sparrow-hawk's. They now repose in the National Collection. Meanwhile, a fierce family-feud had arisen between three fiscal shrikes close by; and so intent were they on settling mutual differences, careless of my presence, that I secured the trio with one shot from the .410 "Tomtit gun." A mixed bag had been increased by several other beautiful and interesting birds—a catalogue of which would certainly bore the general reader (besides which, some were total strangers to me)—when among heavy cane-grass I almost trod on a wart-hog. The rush of an unseen beast got on Mahomed Maghazi's nerves, and when, a few minutes later, we found ourselves pretty well mixed up with a beautifully mottled copper-yellow snake—(Mahomed swore it jabbed

at him, which was probably true)—that worthy Moslem intimated it was time for him to return to the ship and get dinner ready. Mahomed was little in sympathy with the animal-world. One evening there was a bat in my cabin and I got out a butterfly-net to secure it. "Be careful," screamed Mahomed, "him very long tooth!" . . . I lost that snake in a deep sun-crack, but wound up the evening with an openbill stork, three brace of sandgrouse (*Pterocles quadricinctus*), and, just as dusk fell, with a couple of jackals (*Canis anthus*), evidently paired; for, following one close behind the other, they essayed to trot



A FAMILY FEUD.—FISCAL SHRIKES.

across a grass-glade down which I was returning—weights 16 and 17½ lb.

A striking feature in the Openbill (almost as extraordinary as its "nut-cracker" mandibles) is the nature of what that bird is pleased to regard as feathers. The upper surface is normal, clad in long glossy hackle-like plumes, resplendent with silky metallic lustre; it is those on the belly that attract attention. Each plume terminates in a twisted tip like a bit of shining whale-bone or glittering sealing-wax, quite devoid of the normal web. In this particular openbill, the long overhanging scapulars were of a deep chestnut-brown, finely offset by the rich bronze-green wing-coverts beneath.

In other individuals the chestnut feature was entirely omitted. This was a female, weight 3 lb.; males weigh 4 lb. They are most quarrelsome creatures.

The following year hammerhead's tree had gone—burnt in some grass-fire;¹ but we secured quite a notable prize close by its site. It was February 23rd—a date ever associated in my mind with our triumph over elephants related in *On Safari*. This year it was to be with elephant-shrews! These little creatures have their headquarters among clumps of strong red reed-grass,



SCISSOR-BILL.—“Scissoring.”



OPENBILL.

spending their days in the sun-cracks deep beneath. Amidst this grass, in their run-ways, we trapped three,

¹ The Hammerhead is a shy, reclusive denizen of the swamp; yet in the breeding-season (like rooks at home) sometimes seeks civilised society. Thus, during our voyage of 1919, we found one of their enormous nests—3 feet high by 3 feet broad across the top, though the bird itself is scarcely bigger than our British waterhen—in a tree in the Officers' Compound at Malakal. The birds' nearest neighbour, Captain B. D. Grew, Northumberland Fusiliers (who wore four wound-stripes), told me that the hammerheads had spent four months in the construction of this edifice—January to April, 1918. Both birds worked from dawn till 8 A.M., and again from 4 P.M. till dark—four or five hours daily. This year (1919) no eggs had been laid up to March 9th. A pair of hagedash ibises also nested in these gardens; while at Tewfikia, a few miles south, another pair of hammerheads were wont to nest in the compound till evicted by reason of the matutinal uproar they created! In all nests of the hammerhead the entrance faces due east.

and discovered that (unlike normal shrews, which are insectivorous) these Nilotic shrews feed on grass-seeds. Great was our joy at this capture; but proportionate the abyss of disappointment when that night a sudden hurricane sprang up and blew overboard the cork-setting board with our precious specimens pinned thereon! To repair the catastrophe we decided to remain there and try again. Next morning, alas! though several shrews had been trapped, three were devoured, and all were damaged by some evil beast unknown. Our only perfect capture was a striped rat—perchance he was the delinquent? Eventually we secured more shrews, and while I write this, comes the verdict of the zoological authorities that our elephant-shrews from Lake No belong to a new species, hitherto unknown, though as yet their precise systematic status has not been worked out.

This collecting of the small mammals in wild and unknown countries demands no small degree of field-craft, and close observation too. The creatures being almost entirely nocturnal, one must first presume their existence, since one never sees them in life. Next, amidst boundless scrub and jungle, it needs a sort of subtle intuitive instinct even approximately to locate their hidden homes and haunts and to diagnose their habits. And they leave no trace and but little to guide. Lowe proved a master in this art. Once as we hastened through a deserted Nuer village his expert eye descried evidence of "something new," and as a result, within two days, several "Spiny mice" (*Acomys*) took unwilling seats upon the setting-boards.

In these mice, hair on the hindquarters is replaced by stiff spiny bristles, as though the species contemplated donning the defensive armour of hedgehogs; or, alternatively, were in process of discarding it.

Trapping involves a lot of attention. The traps may cover a wide radius, possibly half a mile away; yet all must be inspected at dawn, otherwise hordes of soldier-

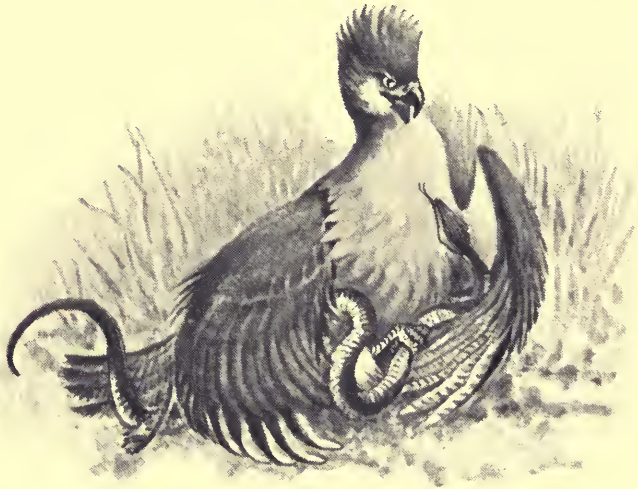
ants and other vermin will appropriate the prizes. To ensure good results, considerable time must be spent at each selected spot; and this was often impossible in an expedition with so wide a scope as ours. Our collections (thousands in number) ranged from buffaloes to butterflies, and even to diatoms! Nevertheless, we trapped quite a crowd of mammals, including not only a varied assortment of rats and mice,¹ but jerbilles, jerboas, ground-squirrels, genets, mongoose, monkeys, ratel, hedgehogs, porcupine, rock-rabbits, bats, and even great gaunt hyænas, both striped and spotted. As an American lady remarked—when we had the pleasure of entertaining her, with her husband (the Rev. David S. Oyler of the American Mission), on board *Candace*—"Well, it's clear you three men are not out here for a holiday."

The broad open prairies north of Lake No (in common with similar country throughout Sudan) form a favourite haunt of bustards. The big species, *Eupodotis arabs*, though visible afar, is much too wary to approach save by stalking with rifle. We secured a few thus, the cocks weighing up to 17 lb., hens 10 lb., besides lesser bustards of two species, Lovat's and Hartlaub's—these latter with shot-gun. On my first voyage (1913), I nevertheless fairly caught one big bustard napping, and killed him with No. 6 at 30 yards. This happened during the scorching heat of noontide, when the bustard doubtless relied on all prudent foes taking a siesta—as he was doing himself. He proved to be the heaviest on our schedule, weighing 18½ lb., and his crop was crammed with locusts and grasshoppers—some still alive.

During earlier voyages, I had been struck by the total absence of grebes (*Podiceps*) from such congenial waters as these. In 1919, however, we twice observed single little grebes, or dabchicks—one close to Lake No on

¹ Rats and mice—I venture the statement on the authority of Mr Roosevelt—constitute 90 per cent. of the known terrestrial mammals of the world.

March 1st, the other a week earlier near Renk. Hereabouts the masses of whistling-teal and other water-fowl that darken the sand-banks are oft interspersed with solid patches in black and white, punctuated by flashes of crimson, that recall the colours of oyster-catchers at home. These patches are all scissorbills, which lie flat asleep all day. Towards dusk they awake to sudden activity, skimming the still surface in every direction, and each bird leaving behind it a clear-cut "wake" where the



"A CERTAIN LIVELINESS."

Serpent-Eagle attacking a Mamba near Lake No, February 2nd, 1914.

curiously lengthened lower mandible rips through the water. By day, their vacated place was occupied by birds of diurnal type—by hordes of chattering bee-eaters, swallows, palm-swifts, martins, and sand-martins, hawking over the river—the last trio conspicuously smaller than European forms; and mixed with these were small terns (whiskered, white-winged, and black), with a few of the larger Caspian and gull-billed terns.

Such was the tropical heat at Lake No, and such (notwithstanding) the terrific energy of my collaborators, who disregard alike the power of the sun and the terror of

the swamp, that my own diary failed to keep abreast of their doings, or, in their absence, to render them any adequate justice. At the time of writing this, both my pals are back again in Africa—Lynes in far Darfur, Lowe somewhere in Nigeria—so I content myself with a mere parenthetic note in small print, *quantum valeat*.

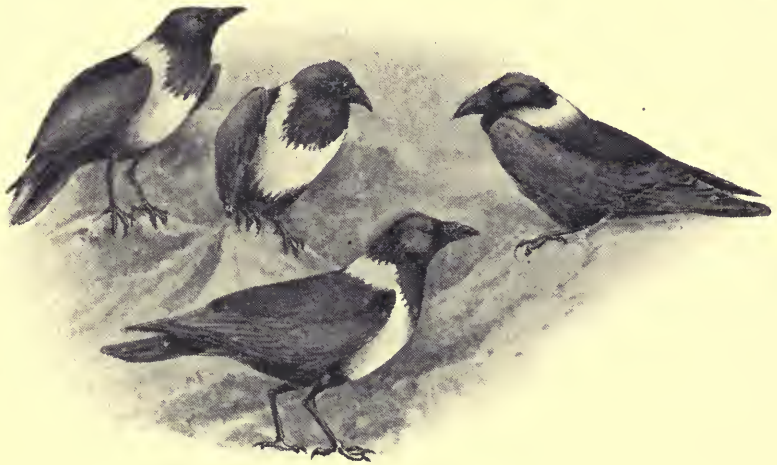
NOTE OF BIRDS COLLECTED AT LAKE NO.

These included at least eight British species:—Sedge-warbler, lesser whitethroat, blackcap, and chiffchaff: redstart, whinchat, swallow, hoopoe, and roller; one European species, the Pallid warbler. Ethiopian forms naturally predominated, and included:—Purple-winged coursers (*Rhinoptilus chalcopterus*) shot in grassy opens amid thin thorn-bush, their bright hues contrasting with the drab tones of their desert congener—they are, moreover, of distinctly crepuscular habit; an unknown aquatic flycatcher of perplexing personality but clearly a resident, since dissection showed it to be on the point of breeding. Its habitat was in the worst of the swamp, and its scientific title proved to be *Muscicapa infulatus*, though no *Muscicapa* ought, I understand, by any recognised rule or regulation, to breed in the Tropics.¹ Then there were the usual infinite varieties of weaver-finches, red-shouldered, black-masked, golden, Ruppell's and other weavers; finch-larks (*Pyrrhulauda*), serins and honeyguides (*Indicator*), a golden long-claw (*Macronyx*), Estrildas and Camaroptera; penduline tit and sunbirds (*Nectarinia*), pririt flycatchers (*Batis*), *Bradyornis*, isabelline wheatear, crombec (*Sylviella*), bulbul (*Pycnonotus tricolor*), fantail warblers of sorts, woodchat, fiscal and isabelline shrikes; long-tailed, Egyptian and Natal nightjars, Rufipennis buzzard, red-naped merlin, serpent-eagle (*Circæetus gallicus*, ♀, weight 4¾ lb.—see sketch opposite), coucals, barbets, woodpeckers, pratincoles, and I reckon not what besides. Many creatures met with hereabouts were total strangers to me, and love at first sight is imprudent, especially when promiscuous.

The southern shores appear to be entirely uninhabited, and are traversed by innumerable deep khors all choked

¹ Mr Butler points out that *Muscicapa aquatica* also does so.

with dense growths of papyrus and swamp-vegetation. It was here, as already related, that we found droves of hippopotami which, abjuring the river, lie up by day in these tangled tunnels. Hence it may befall that, while peering into viewless jungle for some humble *Hypolais*, and a league from the river, the naturalist may find himself within arm's-length of the monstrous bulk of a sleeping hippopotamus.



"EXPECTANT."

Pied Crows outside my cabin-port on *Isis*, Lake No, February 10th, 1913.

The winter climate of the Sudan has been pronounced delightful; yet without questioning the epithet, there are two conditions-*precedent* which must be reserved and understood. First, that the term "delightful climate" may include that degree of fierce sun-heat which characterises the tropics, but which those who have not been in that zone can scarcely realise. True, the merciful North-wind blows—*as a rule*—by day, and *sometimes* at night; and so long as that mercy is vouchsafed the intensity of solar ferocity is tempered and mitigated. It is upon the *permanence of that breeze* that the second implied condition centres. But no such permanence can be relied on: and

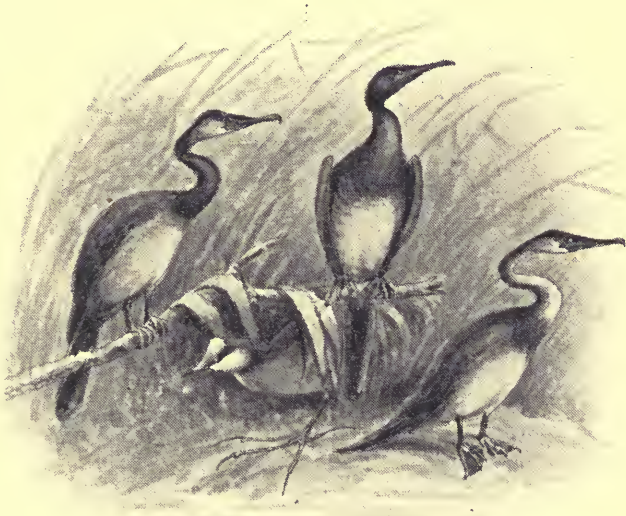
when it fails, . . . words fail likewise. Thrice this year (1914) we suffered grievous disillusionment, and the torments and tortures endured under such circumstance are indescribable. My diary records, "The very air is damp and deadly enervating; yet we stick to our work. We take ten grains quinine nightly (instead of the normal five)."

During the period we lay anchored at Moghrem—the water-meeting of the two great river-systems—we enjoyed opportunity of watching the process by which Sudd is formed and consolidated. Down the main stream came drifting along the perky little water-cabbages (*Pistia stratiotes*), singly, or in groups of two, three, or a dozen. Each individual voyager was no bigger than a saucer, but its prehensile roots reached down a couple of feet below. Slowly one by one they would circle round the semi-stagnant confluence, the various groups gradually coalescing till, in some shallow, the long pendent tendrils found root-hold and the voyage ceased. Within an hour several other units—perhaps a small "raft"—had drifted alongside and joined forces, till a consolidated islet of floating plants, each securely moored, had formed as big as a billiard-table. I particularly remember the size because, at sundown, two jacanas thought it worth their while to paddle out to investigate what game (in the shape of aquatic insects) the new covert might shelter. Next morning, since Nature's processes go on all night, the islet had completely joined up with the shore and occupied a space like the site of a cottage. Twenty-four hours later, five or six cottages might have found room, and the whole accumulation, as I found on examination, was firmly anchored by root-hold to the river-bed beneath. If such results be accomplished in a couple of days, one ceases to wonder that, during centuries, the whole channel of Nile should be blocked for 400 miles by an insignificant water-cabbage.

On the return-voyage, a month later, I looked with interest for my pet islet—it was gone! Nothing nowadays escapes the vigilance of the navigation-patrols.

It is only fair to the water-cabbage to add that it is not the sole criminal. Several other aquatic plants are capable of locomotion and aid in the general consolidation. So far as I saw, the water-cabbage chiefly came down the Bahr-el-Ghazal. It was *um-soof* (tiger-grass—literally “Mother of wool”) and even papyrus that formed most of the floating islets that drifted on the main stream of the Mountain-Nile. Ambatch also, being “water-rooted,” is adept at locomotion.

The mouth of Mountain-Nile—and by the same token the gateway of the Sudd—lies within 200 yards of the marly islet whence emanate these notes. To-morrow at daybreak we propose to ascend it.



AFRICAN CORMORANTS AND JACANA.
(Sketched south of Tonga, Jan. 31st, 1913.)

CHAPTER XX

THE SUDD

THE Sudd as a whole represents far too big a subject to be tackled in this book. It possesses manifold aspects. The Sudd, for example, is one main factor in that maze of colossal problems projected for the further development of Egypt and of the Sudan. The great Equatorial lakes—vast inland seas, Victoria and Albert Nyanza—are condemned (in vaticination) to be converted into humdrum reservoirs. The tropical rains that deluge the “Mountains of the Moon,” along with the outflow from their tropical glaciers, are to be collected and stored at man’s disposal, in order to transform a huge block of Central Africa from waste and wilderness into fertile fields of cotton and corn—spaces only measurable in terms of tens of thousands of square miles. The conception dazzles in its immensity and its romance. The Sudd represents the opposition.

In its course of some 4000 miles from the Victoria Nyanza to the Mediterranean Sea, the Nile at this point (2000 miles from its source, 2000 from its outflow) encounters a vast dead-level area—or, at least, its gradient for 400 miles diminishes to near the vanishing point. In normal lands such a physical condition would result in the formation of an inland sea. But here, in the tropic, a superabundance of moisture and sun-heat combined, stimulate a ferocious fecundity of specialised plant-life that, during ages, has transformed what would elsewhere have been an open sea, into a vast fœtid region of matted and rotting vegetation, submerged and surmounted by

later growths of papyrus and other giant aquatic plants, many of them 20 feet in visible height, but double that if reckoned from their roots.

By a Sudan Government report, the area of the Sudd is estimated approximately at 35,000 square miles—one-third that of the British Isles.

Through this vast vegetable-barrier the waters of the great river have to percolate, spill over, stagnate. In the result one-half of its effective volume is herein lost by lateral distribution and evaporation—the precise wastage is calculated by the engineers to a gallon. It is through this vicious extravagance of life-giving water that the Sudd places itself in stolid opposition to the welfare of millions—Nilotic and other.

After twice traversing its 100-leagues both ways (four times in all), the mental impression left by the Sudd is one long memory of the most melancholy and featureless abomination extant here on earth. Day after day as one crawls southwards through it, the narrow channel—laboriously kept open for navigation—winds in a ceaseless series of bends, twists, and convolutions like the writhings of a wounded snake. Far as the eye can reach, stretch away to either horizon those drear wastes of grey-green papyrus. Rarely, a vision of trees beyond the sky-line, or the distant smoke of a grass-fire, may arouse illusory promise of a “limit.” No, the slender hope vanishes like a mirage—it was, in fact, a mirage—and soon one is plunged again into that slough of sightless Sudd.

The tortuous channel forbids advance through the Sudd by sail; steam is necessary to traverse it, and a stern-wheeler at that. Locally, Nile navigation differs essentially from that art as practised elsewhere. It consists in systematic “cannoning” off one bank, straightening-up on course, then “cannoning” again on the other. The plan involves a constant succession of bumps, violent or otherwise, according as the vessel strikes yielding papyrus or solid mud concealed

thereby. In the more severe collisions a crash and a quiver permeates the whole fabric of the ship, and the sudden jerk sends all loose furniture flying. Frequently one hears an ominous scrunch and scrape as breaking canes grind along the bulwarks outside; presently through an open port intrudes a great bushy papyrus-head, with plumes a yard across. Should such event happen at meal-times, look out for the whole paraphernalia of the table—bottles and glasses, cups, dishes, plates—the whole outfit is swept in common ruin to the floor. Naturally these excitements are accentuated on the downward voyage, when the speed of the steamer is accelerated by that of the stream, and steerage-control is less effective.

Yet worse still is the plight of the traveller whose gyassa is under “towage”—a local euphemism which implies his vessel being lashed, broadside-on, alongside the steamer, the wretched gyassa thus acting the part of a fender or buffer. The lesser craft receives the full force of each recurring impact; her beams and timbers creak and crack under the compression, while everything out-board is swept to destruction. Even ordinary deck-fittings, such as companion-ways, side-rails, shrouds and the like, oft share the general wreckage.

Such drawbacks are, after all, the merest trifles; sinking into absolute insignificance as compared with the comfort and enormous advantage of being enabled to travel *by steam* right through the heart of Africa.

From a naturalist's point of view the Sudd is equally uninteresting—a dreary, lifeless desolation. Day after day the diary contains such records as:—“Not a single note to be made to-day”—or, “Spent the whole day passing through what resembles a hideous canal, the towering papyrus blocking our view on either side. Not even a hippo or a crocodile to be seen; there is neither food for them nor landing-places.” Again:—“Wildfowl are all but non-existent in the Sudd. I have watched

the 'morning-flight' each dawn, and the whole show was limited to an odd string or two of whistling-teal and a few of those black-and-white things that in Ethiopia pass for geese (spurwing and comb). I did, however, notice this morning several shelducks that differed from the ordinary *Casarca* in having conspicuously dark flanks."

Of course in a stretch of 400 miles there occur nameless spots where the stream opens out a bit and where the dull, dead monotony of lifelessness is suspended. Such a place is Shambé, whence sets forth the long overland trail to Rumbek, Wau, and Meshra-el-Rek,



GOLIATH HERON ON WING.

388 miles away in the Bahr-el-Ghazal. In the open waters by Shambé huge crocodiles (accompanied by packs of pelicans, plovers, scissor-bills, stilts, and sand-pipers of sorts) lie slumbering on slimy mud-banks, while hippos

in hundreds gambol, grunt, and blow in the lateral lagoons. Even in the Sudd itself there occur occasional oases of solid ground—(fragments, it may be, of old-time banks)—whereon for a space trees grow and a normal animal-life appears. With these exceptions, there occurs nothing, hour after hour, to relieve the dead blank of dismal swamp—nothing, unless it be the flop-flop of some heron's flight, or the subaquatic activities of darters.

One fine animal-prize unquestionably inhabits the Sudd; that is the Situtunga, a swamp-antelope specialised for semi-amphibian existence, and provided with immensely elongated hoofs enabling it to traverse quaking-bog, oozes, and the thin scum of floating vegetation that conceals impassable deeps. In the Sudd, where non-

specialised man can only progress—if at all—by parlous labour, making good yard by yard, any pursuit of the *situtunga* is humanly impossible. The animal, moreover, is strictly nocturnal in habit, and it is by the merest chance that an odd individual is occasionally sighted at dusk or dawn. Never one did I detect myself. (See sketch of *Situtunga's* hoofs at p. 152.)

Up to the present, the Sudd as a whole has never been explored by trained field-naturalist; nor, at the moment (January, 1915), does such an undertaking appear likely. Scientific research has been brought to a standstill before by such vermin as Mad Mullahs and Mahdis. These, however, were mere fanatics plunged in abysmal ignorance; this time . . .! Whether the intricate recesses of the Sudd shelter fresh forms of beast and bird, fish and reptile, may not be known. Some day, in happier years, the investigation will be undertaken. Such enterprise will, however, require a very special outfit—alike in men and material, especially should the rainy season be included—and that is the epoch which promises by far the best results. For practically nothing is yet known, zoologically speaking, of the summer season in the Sudan, not even on its drier plains. How much more would the difficulty be accentuated in the submerged Sudd?

A summer season spent in the Sudd—what time its sodden breath is poisoned by malaria and reeks with mosquitoes in millions—represents a test of physical fitness and endurance not lightly to be considered. Keeness and enthusiasm will never lack; but constitutions toughened to that sticking-point are ever less abundant.

Our own experience in the Sudd was limited to the outermost fringes of the unknown—we merely “nibbled” it—and that only in winter. Still there are no keener field-naturalists, nor men better qualified for such work, than my two companions of 1913-14. Nothing discouraged

them and difficulties they despised. For all that, the result of our researches hardly induced in my mind any very extravagant ideas as to great store of ornithological treasure hidden away in the Sudd. No doubt in so vast an unexplored area there will some day prove to exist unknown forms of life; but the only known genera to which these dismal swamps appear possibly congenial would be such as crakes and rails, jacanas, bitterns, and possibly some marsh-warblers. This is not the place to record categorically our collections—they will be found enshrined in the *Ibis*; but a few lines on our *modus operandi* may convey some idea of the Sudd and its denizens.

Starting in the pinnace by break of day, we rowed silently along some green wall of papyrus, creeping into each creek, each recess or cul-de-sac of the swamp. One gun stood upright in the bows. The best "hunting-grounds" we found to be where the taller growth gave place to humble flags with a tangle of sedge and bog-plants. The presence of such a spot ahead being signalled by the forward gun, oars were plied yet more noiselessly, and presently the boat swung onwards under helm only. The chief "game" on which for the moment our hearts were set, comprised three sorts of marsh-warbler, all of which—alike in song and general appearance—were new to us, nor did they correspond with any described species. So intensely secretive were these mites that a brief bar of song or a fugitive glimpse was all they ever vouchsafed ere vanishing into the depths of cane, sedge, and swamp-grasses. Even *that* wild excitement might only occur about thrice in a long morning; while to await a reappearance of the vanished Dulcinea (even for a solid hour) always proved fruitless.

As the stem of the pinnace silently stole round an angle ahead, disclosing some favourite lurking-place, the flick of a tiny wing amidst viewless vegetation might

reward the watching gun. Instantly a charge of dust-shot searched the spot. Startled at unwonted report, a second warbler might so far lose its head as to show in flight; but ere flying many yards, it too would be cut down by the second gun, astern. Now, to recover these prizes. The first (if killed at all) must be lying within 6 feet of the water's edge; the second near 30 yards inshore. Both are retrieved; but only at the end of an hour of such work as beggars words to convey. The first step overboard is knee-deep into viscid filth; at the second, some submerged mass of rotting vegetation turns over on its axis and Galláp plunges sidelong in mephitic bog. Meanwhile Baraka, who had boldly made for the outer bird, is in serious difficulties—up to his shoulders—and Abdul is hastily despatched to push an oar within his reach. All this, mind you, happened within the first minute of struggles and dangers that endured for an hour.

Here is one extract from diary :—

“*February* 24.—This evening, cruising in pinnace along and within the swamp-jungle, Lowe and I had the luck, by “calling,” to secure three more of those elusive snuff-brown *Locustellæ*—more secretive than crakes or “snipers.” Whatever they are, they are silent in evening, only singing early; yet to-night these three victims responded to the “call.” We also shot two of the unknown sedge-warblers (“*Acrocephali*,” one of each size), besides a fantail and an isabelline shrike. The amount of mud-wallowing and “sump-swimming” in recovering these seven birds may be imagined.”

Even when shot dead, the victim falls into, and often cannot be found amidst tangled masses of canes and swamp-vegetation (dead, dying, or viciously alive); besides, unless recovered at once, the prize is seized and carried off by coucals. These bush-cuckoos (*Centropus monachus*) are fearless of man and snatch his hard-earned prize when almost within his grasp.

Despite these drawbacks, we finally secured a series of specimens of both species. For us, they differed

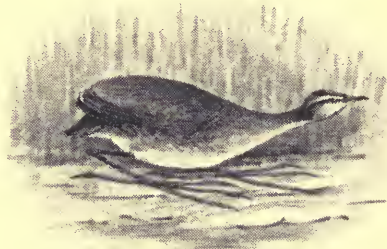
from anything met with previously in our own shorter experience.¹

It may well be observed that, under such conditions, even the tiniest warblers may present as great difficulty to secure as the more imposing trophies of big-game.

Naturally, boundless bogs such as the Sudd are strongholds for those secretive tribes, the crakes and rails; but however often their weird voices may be audible, it is rare that these arch-skulkers show up in person. The first few secured proved to be merely the black water-rails, common all along White Nile; but



IN THE SUDD—NIGHT HERONS.



"MICROFARRA CAPENSIS."

one evening Lowe's eye detected something far in under the fringe of overhung sedge—quite beyond normal vision—and a chance shot, promptly "plugged in," realised a lovely creature, green above, rich purple below, with orange legs and armed as to its quills with a curious spiny process. This was *Porphyrio alleni*, and next day another porphyrio—larger and apparently all black—fell, but in impenetrable Sudd, whence two hours' work failed to retrieve it; thus making the second of its genus similarly lost (see p. 226, *note*). Yet another member of this

¹ Captain Lynes writes me (1920) that the unknown warblers have been distinguished as follows:—

Calamochicla leptorhyncha nuerensis (Lynes), the Lesser Sudd-warbler.

Calamochicla ansorgei, the Greater Sudd-warbler.

order claims mention, inasmuch as, being a South-African, it was here 1000 miles outside its recorded range. This was a tiny jacana (*Microparra capensis*), whose next nearest known habitats are at Entebbe in Uganda and Lake Naivasha in British East Africa, just south of the Equator.¹ Seeing how ill-equipped these little rails appear for lengthened migrations, Lynes suggested that



ABDIM'S STORK (*Ciconia abdimii*).

their presence here, 1000 miles north, may be due to their taking "assisted passages" on the floating islets of Sudd that are incessantly drifting down all these Nilotic waterways, each islet usually tenanted by the common jacanas, by squacco herons, and other birds in quest of water-beetles. Note, that in the Sudd there

¹ Later we fell in with two more of these vagrants, the pair being hustled out of their wonted seclusion by their pugnacious neighbours, the black water-rails aforesaid. When shot, flying over the river, one of these instantly dived and was seen no more. Another record of these miniature jacanas in the Sudan occurs in *Ibis*, 1902, p. 458.

exist water-beetles as big as some rabbits I've seen! There are also water-pythons, water-turtles as big as a cart-wheel, and monitor lizards 6 feet long. All these one sees occasionally; but there is also evidence of things not seen—some of them monsters, as testified by great wandering "waves" moving along without a visible cause.



WHALE-HEADED STORK (*Balæniceps rex*).

[Photo from life.

I find the following note in my diary:—"It seems clear that if any human amphibian is prepared to devote several months to the investigation of this ghastly Sudd, the result would probably ensue that the existence of several unknown species of rails, gallinules, porphyrios, and marsh-warblers might be revealed to science. Personally I am not on it."

The great whale-headed stork (*Balæniceps rex*) ought not to be passed over in silence, though we saw little or nothing of it, its narrow habitat being on the

Bahr-el-Ghazal, a trifle to the west of our hunting-grounds.¹ But we *did* meet here with a new acquaintance of the stork-persuasion, never at this season seen north of the Sudd—to wit, "Abdim's stork," a creature with thunder-and-lightning mandibles not unlike a minor jabiru. These

¹ I have, nevertheless, a note of a *Balæniceps* shot on Lake Kioga, on the Victoria Nile in Uganda, about $1\frac{1}{2}^{\circ}$ North latitude. This is about seven or eight degrees *south* of the normally accepted range of its species.

storks we often saw sitting bunched-up on some ambatch bough, though when in action they were smart enough. One I watched capture two immense creatures that fought hard for their lives. I wonder what they were? Who can say what strange amphibians exist unknown in these eerie lagoons?

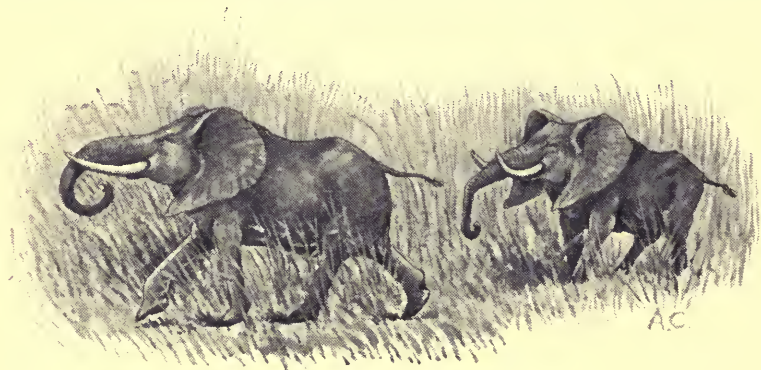


NIGHT-HERONS (IMMATURE)—MIDDAY.
(The halo represents umbrageous foliage.)

February 12.—Thank heaven, after four days and nights, we have cleared the Sudd! Whatever mental joys be derivable from having seen and learnt something of the secrets of the unknown, at least one's eyes rejoice on quitting the dismal swamp and regaining once more the sight of God's earth, with its solid ground, its trees, bushes, grass, and manifold beauties.

ELEPHANTS IN THE SUDD

Postscript.—Above (p. 262) are mentioned the occurrence of sporadic belts of terra firma within the 400-mile swamps of the Sudd. That was originally written years ago, but its accuracy was curiously confirmed during our voyage of 1919. In that year, one hour after sunrise on March 5th, we were summoned by the cry of “elephants”—the exact spot I reserve for my own future investigation. Emerging from heavy cane-jungle on the west bank, there strode in Indian file ten elephants, daintily crossing an open space

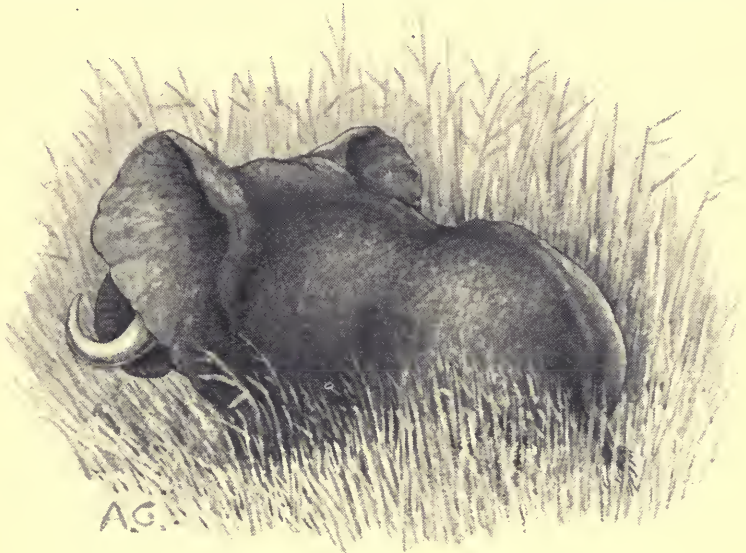


A.—ELEPHANTS IN THE SUDD.—March 5th, 1919.

some 100 yards in breadth. They were mostly females, though two bulls carried curving ivories that looked like 60 to 70 lb. the pair. With measured dignified gait, distinctly imposing and with an almost perky carriage—as feebly attempted in Sketch A—the ten elephants marched across, apparently careless, or unconscious of our presence. Presently quite separate, and far nearer, stood revealed a huge old bull sternon and somnolent. Then, in a flash, this solitaire awoke to a sense of danger—wheeled round facing—and up aloft went trunk and ears outspread. Marvellous was that transformation-scene, possibly beyond all power of human pencil, however skilled. Nevertheless—not shamelessly but with deep sense of shame—I have attempted in sketches B and C to depict what I saw in that moment; first the monster quiescent, then all alert and in explosive mood. Would that trained artist

had seen that sight! Yet even for him the impression must needs be transfixed on memory instantaneously. Not a moment is allowed for second thoughts or contemplation.

Meanwhile on the opposite (eastern) bank, yet another great herd of elephants was reported close alongside, amongst heavy canes. I missed part of this spectacle—since to try to attend to two matters simultaneously spoils both—but crossed the deck in time to memorise a sight I shall never



B.—“SOMNOLENT.”—BULL ELEPHANT IN THE SUDD.

forget. The deep jungle was amove with pleistocene monsters. Down narrow glades it was but glimpses that they vouchsafed; but specially I remember one great bull who, as he turned to go, halted, head erect, to survey for brief moments what manner of modern thing it was that dared disturb his pre-historic repose.

Clearly at this point a transverse belt of solid soil crosses the regions of Sudd. Within a couple of miles, *where the banks were solid*, we had seen sixty or eighty elephants, probably more. On our return-voyage we passed this spot in the dark, but by their trumpeting and snorts we knew the elephants were there.

To tackle elephants in such ground would involve extreme danger. The beasts are secured by strongholds of cane-jungle impervious to man, flanked on one side by the river, on the other by sudd and swamp, every passage and pathway intimately known to them. My own scheme (should it ever materialise) is to lay the gyassa hard by—say a couple of miles down-wind—and then to work-in a shot at close-quarters from the dinghy afloat. The plan might demand some patience.



C.—“EXPLOSIVE.”—THE ELEPHANT GETS OUR WIND.

CHAPTER XXI

BEYOND THE SUDD

(I) A STRONGHOLD OF THE AFRICAN ELEPHANT

THE 150 miles that lie beyond the Sudd—(say from Bohr to Rejaf, where Nile-navigation ends)—consist partly of grass-prairies, partly of tropical forest, but both often set back from the river by belts of intervening marsh. The main feature, however, is that here—after more than 1000 miles of dead-flat plain—we enter a region where rocks, crags, and mountains once more rejoice unwonted eyes. Not since passing the insignificant koppies of Jebelein and Jebel Ahmed Agha (now left 800 miles behind) have we encountered a rock nor even a pebble. Here, at last, the tiresome monotony of level contours gives place, first to low rolling ridges, gradually developing into actual hills, till at Lado and Gondókoro great mountain-ranges converge on Nile. This 150-mile stretch represents to-day one of the remaining strongholds of the African elephant. Nowhere else in the Dark Continent do these pachyderms exist in such abundance as may still be seen along the course of Mountain-Nile.

Now that Khartoum is linked up with London by steam—ocean-liners and “tropical trains” all the way—while from Khartoum onwards the mail-steamers of the Sudan Government carry passengers right through to Uganda (a 1200-mile voyage), even the most timid of tourists may reckon upon seeing such spectacles as herds of wild elephants, and that within some three weeks from leaving Charing Cross! The journey can be made either

through Egypt, following the Nile all the way from Cairo, or alternatively (occupying a few more days) by way of Suez and the Red Sea.

At present steam-communication stops at Rejaf, but it won't stop there long. So soon as steam-connection shall have been carried on to the Victoria Nyanza, the traveller will be able to complete the round-trip up the Nile from mouth to source, and thence by the Uganda railway to the Indian Ocean at Mombasa. At present there remains a trifling gap of 100 miles.

But such a tourist will surely not be justified in describing his luxurious progress as:—"Thrilling experiences on an adventurous journey of exploration; Through the big-game country from the Cape to Cairo." Thus, nevertheless, a fellow-passenger whom we met on a Nile steamer (to all appearance quite innocuous) recorded the exploit of a voyage by steam around the Continent, with a short cut across this corner of it!

As recorded, we met with elephants both to the north of the Sudd and also at one point in the Sudd itself. Such occurrences, however, are exceptional; but once the traveller has emerged from those hideous wastes the spectacle of elephant-herds may fairly be described as an everyday incident, and a few typical instances may be related. Some day, perchance, these records may have a historic value; since it is conceivable that sights such as these—nowadays witnessed almost daily—will, as the years pass by, become hardly credible on the very banks of the most important navigable waterway of Africa. The recent story of the Sudan and its development since this century opened, are among the romances of my lifetime. For I can recall Baker's days among early memories, and while I write (April, 1913) the British Government have guaranteed a three-million loan for cotton-growing.¹ For the moment the project is con-

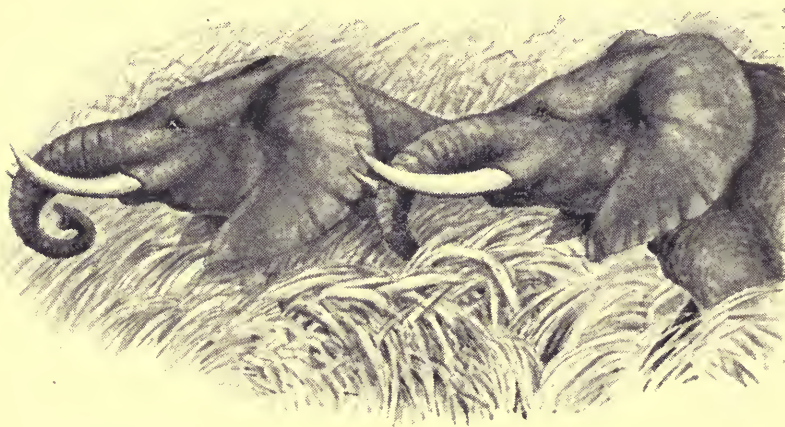
¹ This reads like ancient history to-day—1921; while correcting these proof-sheets, I note that yet further millions are being guaranteed!

fined to the Northern Sudan; but the Upper Nile is bordered for hundreds of miles with black "cotton-soil"—that is, the rich alluvial deposit of countless Nile-floods—and it is permissible to conjecture that the whole area will, within measurable period, be "irrigated" by British capital and enterprise. Then, when corn and cotton have displaced cane-grass and *um-soof*, the elephants must perforce retire to more remote fastnesses elsewhere—if any remain.

A typical encounter occurred south of Malek. A group of elephants were sighted on the east bank a mile ahead, and having got out my telescope and arranged a "rest," I lay on top of the wheel-house and watched every movement. There were seven elephants—four bulls. Six stood huddled together, quiescent in the midday sun; the seventh, a cow, a little apart, idly tore up and munched a mouthful of grass. On their broad backs rode as many white egrets as could find standing-room, and—truly surprising?—the herd was surrounded by native cattle and sheep. It was the single, separated cow that first observed our approach, though not until within 200 yards. She moved forward, gave warning to the rest, and all seven slowly strolled along the river-bank, parallel with our course. Within brief space we were alongside, 60 or 70 yards away, and a more superb view of wild elephants could hardly be vouchsafed. After striving for half an hour to commit their weird forms to paper, I gave a little touch on the steam-whistle. Instantly were outspread those enormous ears—conch-shaped and ribbed—and the seven strode off full-broadside to us, smashing strong canes like matchwood as they ran. There was, however, neither alarm nor violent hurry; the egrets kept fluttering and balancing on their backs; and soon, coming to a deep khor, the elephants pulled up, faced round, and stood watching. I verily believe that ere we lost sight, they had relapsed into slumber.

A couple of miles beyond was a native village, and the same afternoon we saw other two herds of elephants.

February 17th deserves a note:—"At 10.30 passed within 100 yards of twenty-six elephants, mostly cows, all egret-covered, but followed by two fair bulls. The whole shore hereabouts was trampled down, the canes smashed and broken off precisely at the height where succulent growth begins. Ere I had completed this note in diary, a second herd of nineteen was descried, and while still watching these, a mile beyond, stood a cow and calf; while only a few minutes later, and close by the

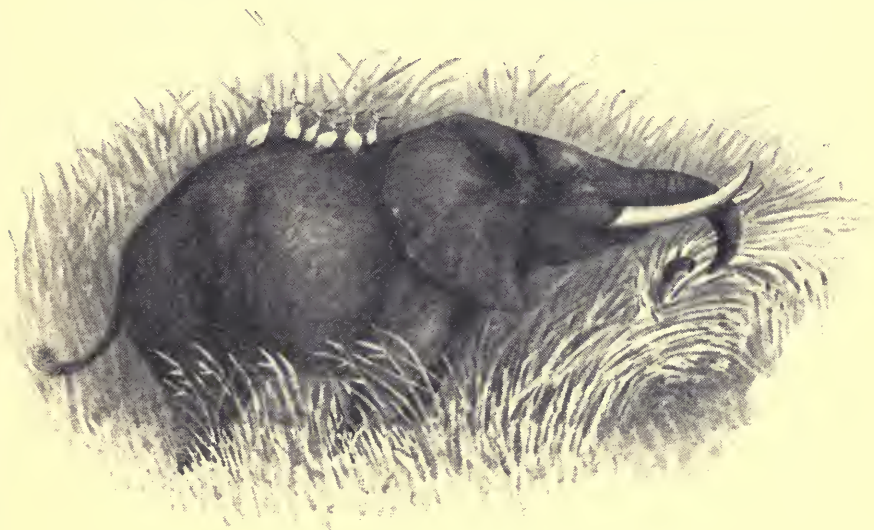


"DISTURBED BUT NOT DISMAYED."
(Elephants near Malek, February 12th, 1913.)

river, I espied the most magnificent bull-elephant I had then seen. His tusks could not have scaled less than 200 lb. the pair. In each case the elephants were attended by egrets (*Ardea bubulcus*); indeed it is safe to say that wherever these birds are seen hovering and alighting among 10-foot canes, there also are elephants, otherwise invisible among the tall covert."

Another interesting interview:—"On west, a herd of thirty, with one big bull, some 200 yards back from bank. When the ship was right abreast the whistle was sounded gently. The herd retired; but the bull—hitherto somnolent—after erecting his huge ears to full stretch

and gazing intently for some ten seconds, threw up his trunk, trumpeted, and charged directly towards the ship. A deep khor, half-way, stopped him and he stood, still furious and screaming, on its further bank; but how interesting would have been the upshot had there been no obstructive khor! A great bull-elephant posed thus in full defiance of man, surely affords as imposing a figure as anything in the animal-world. He stands well over



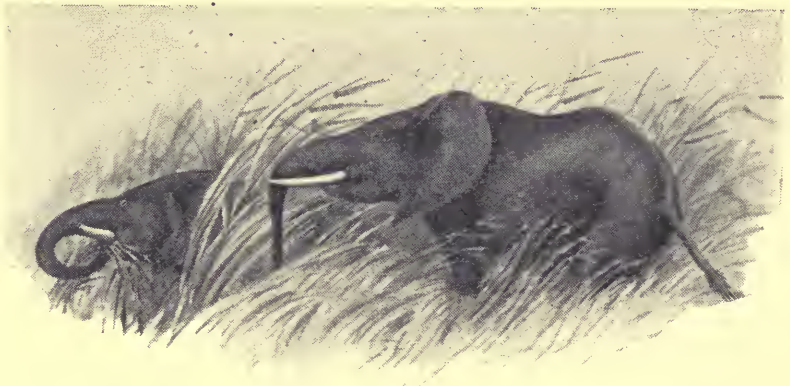
BULL ELEPHANT—200 LB. IVORY.

South of Gondokoro, February 14th, 1913. (Far more egrets rode on his back than I can depict.)

12 feet forward, and the huge ears spread out laterally to a similar width. While their lord thus defied creation, his more timid consorts had turned, and now crept back alongside him.

During this voyage I counted, between the Maya Assignora and Rejaf, and back—say 1000 miles in all—over two hundred elephants within view, and there were very many others besides, concealed in the covert. [In 1919 within the same limits, we counted well over one hundred elephants.]

I landed at many points for the purpose of shooting, and to study and collect birds, and almost everywhere the evidence of the presence of elephants in numbers surprised. In places the forests were regularly devastated, big trees uprooted or broken down, while the more open parts were corrugated, ploughed up and pitted with spoor two feet deep, sometimes covering hundreds of acres. Particularly was this the case near Kenisa where a herd of cow-elephants, enraged and aggressive by reason of the best bulls having been picked out, was known as



ELEPHANT COW AND CALF, NEAR SHEIKH TOMBÉ.

“the charging thousand.” These deep tracks are made, of course, in the rainy season, when the mud is soft and plastic: in winter it is hard as iron.

Here is a note from Gondókoro:—“Within a couple of hours from station the forest is fairly rent to bits by elephants: measured several trees overthrown, 32 to 38 inches in circumference: another, bigger at base, had been torn down at 15 feet above ground, some branches stripped clean of leaf, others left green, as though destroyed out of sheer mischief. Measured the biggest spoor I could find—19 inches across forefoot.”

Naturally, in extra-dry seasons, such as that of 1912-13, elephants are found concentrated on the banks

of the river. In wetter seasons they are distributed far and wide, so long as water exists in the khors inland, and only draw down to the Nile when all else is dried up. That may not occur until the month of March. There are, however, known watering-places a few marches inland in the neighbourhood of which elephants may always be found.

Two curious incidents befell in these woods:—Close in front of our course grew a thick leafy bush among



STRIPED HYENA, SHOT NEAR GONDÓKORO.

waist-deep grass. Though not particularly looking that way, a glimpse of something that quickly vanished behind the bush caught my eye. Had we been at home it might have been the tip of a fox's brush. By retracing a step or two, within a few seconds I circled round behind the bush and at once saw, through a tracery of grass-tops, the outline of a broad flat head; the ears being laid flat a-back, looked small, and I half-thought the crouching beast might be a lioness, so lost no time in placing a Paradox ball between neck and shoulder. The animal proved to be a striped hyena, male, weight 70 lb. This hyena had been lying asleep in the shade,

and my sudden turning-back and coming round the bush from the unexpected flank had taken him unawares.

The second incident I quote from my diary as follows:—"Beyond a belt of tall jungle-grass observed an aggregation of small antelope or gazelles massed together more densely than one usually sees those animals. All were facing jungle-wards. While stalking the group and already within gunshot, I got a momentary glimpse of a cat-like form disappearing behind a tussock, and promptly put in both barrels of the Paradox; one bullet told. The fugitive proved to be a male of the serval or tiger-cat, the flat skin taping 51 inches, of which the tail measured 12 inches. The massed formation of the antelopes now appeared to have been a defensive attitude assumed in the known presence of danger."

(II) MONGALLA

Mongalla, the southernmost Government station in Sudan, does not impress; a few native huts with a scattered bungalow or two is all one may see. Yet this is the capital of a district as big—so we were assured—as France, and all controlled and administered (politically and judicially) by brains that are concentrable within a single white skull. There is nothing out-of-the-way in this; it is, in fact, a commonplace throughout the savage areas of our British Empire. Yet one may wonder how many of the good stay-at-home folk realise such things, or appreciate the services being rendered year in and year out—not only to our country but to the world—by these exiled and isolated Britishers?

The above sentence was penned some few years ago. Since then, in March 1919, I have revisited Mongalla. At that date the Governor of the Province was Major C. H. Stigand—a man whose commanding personality and physique, and alike a charming manner, equally impressed. Stigand stood foremost, *primus inter pares*—

(SELOUS alone outstanding, a unique figure)—among that band of lion-hearted British pioneers who within a lifetime have helped—more, probably, than all the politicians—towards the transformation and regeneration of the once “Dark Continent.” Six months later, alas! gallant Stigand gave his life to the cause of that Continent he had loved. He was killed (October 1919) in one of those recurrent patrols, or “punitive expeditions,” against the Dinkas and other savage tribes—sad to



ELEPHANT COW TEARING UP CANE-GRASS.

say within a few months of his intended retirement after twenty years' active service in Africa.

Sir Frederick Jackson wrote me (January 8th, 1920):—
“Did you know Stigand? I did well, and always regarded him as a Prince among pioneers and hunter-naturalists. Splendid in physique, tall, and strong as a Samson, yet lithe and not muscle-bound; he is the only man I ever knew, or heard of, who beat off a wounded lion with his fist while the beast was chewing his left arm. He had had this rough-and-tumble with a lion, two with elephants at different times, once tossed by a rhinoceros. After he had recovered from the lion-mauling, I said to him: ‘Now it only remains for

you to take on a buffalo and, to be candid, I will back Bos Caffer.' But I was wrong. After that, a buffalo did tackle him but he got through all right. . . . I did not then reckon on MAN; but assuredly we shall learn, when details come through, that it was only *numbers*—overwhelming numbers—that did it." This prediction has proved quite true. Stigand lay surrounded by dead Dinkas. Retribution, it gratifies to add, followed prompt and exemplary.

Delightful are the open woodlands behind Mongalla and full of happy memories. Of big-game the reedbucks show exceptionally fine heads—up to 15 inches—and abound to the extent of being a nuisance, as they often interfere with a more important stalk. There is also a sprinkling of bushbuck, though here, as elsewhere, their nocturnal habits tend to screen these from observation.

Both roan antelope and cob are common enough locally, as is also Jackson's hartebeest, with possibly some few of "Neumann's," of which latter Lieut. G. P. Monk shot an example in 1914. Waterbuck and tiang abound, with some ostriches and buffalo locally. We met with wart-hog and duiker (the latter a little north of Mongalla), oribi and gazelles—the latter, doubtless, of the newly-distinguished "Mongalla" species (*Gazella albonotata*), though I was unaware of its existence at the time.

Giraffe abound; also zebra, Major Stigand informed me, in increasing numbers, herds of fifty or more occurring within 10 or 20 miles of Mongalla—this, the northernmost race of zebra, being characterised by having pure white ears. Black rhinoceros, though relatively scarce according to East-African standard, are also increasing and described as "apt to be truculent," though that may signify no more than their well-understood and characteristic temperament. I struck new spoor of rhinoceros inland of Bohr. Eland have

always been stated to occur at Mongalla ; but I gathered no positive evidence myself.

These forests are a favourite haunt of baboons, and an incident with them further illustrated that strong sense of mutual sympathy that exists in the animal-world. A group of a score sat assembled beneath some heglig-trees, some asleep, others lazily strolling around, their tails carried like pothooks. One satyr-faced "old man" (the biggest I had ever seen, and I had already shot one scaling 82 lb.) sat upright on his haunches, critically examining and peeling a tree-fruit with strangely human action. So immense did he appear that I decided to have his mask. The bullet laid him out—a dark blotch on the sere grass—but ere I reached the spot no blotch remained. He had recovered his legs; but blood-spoor gave the direction, and soon I perceived him staggering with difficulty away. So certain a prey did he then appear that, not wishing to injure the pelt, I refrained from firing a second shot. Suddenly the rest of the troop, which meanwhile had utterly vanished, reappeared, two or three supporting their stricken leader on either side. Being now still more reluctant to fire, the result was that the ambulance squad reached a patch of thick bush, and therein I lost them! A similar incident occurred the following year on the Dinder River ; but, in that case, the view was more obstructed.

At Mongalla we secured two serval kittens, beautiful little creatures but frightfully savage for their size. I gave them to Mr Butler at Khartoum, but, despite all his care and skill, they had both died before my return in the following November.

(III) BIRD-LIFE

In books on African travel one reads rhapsodies on the beauty and brilliance of plumage of tropical birds. The text becomes well-nigh stereotyped. Yet Central African birds as a whole are neither more beautiful

nor more brilliant of hue than our own feathered friends at home. The idea is a pretty little popular illusion.

Like most illusions it has some slight basis of fact. Certainly a tourist steaming along the Upper Nile, under the forests of the erstwhile Lado Enclave, might be forgiven an outburst of rapture. For at frequent intervals he passes by huge trees literally encarnimed



GREY HORNBILL.



DHURRA-FINCH
(*Pyromelana franciscana*)
IN SUMMER DRESS.

by thousands of the most brilliant birds in Nature. These are Nubian bee-eaters, and no preserved specimens can convey even a faint appreciation of their full glory in life. Not only their selected trees but the whole ambient air flashes with these gorgeous creatures, chattering and wheeling, poising and darting in headlong sweeps, their scarlet and emerald-green lustre gleaming like thousands of gems in the fierce African sunlight. Often the assemblage includes three other species of bee-eaters, each vying with the other in an amazing rivalry of bright hues; while as joint-tenants they may

have a whole army-corps of our British swallows. On one such tree, in the midst of the medley, heedless and unheeded, sat a great white-headed eagle; and it is worth note that on the return voyage the same trees were still occupied by the identical throngs, including the eagle.

Other birds whose brilliance here leaps to the eye are the azure-blue rollers, malachite kingfishers, and, possibly, golden orioles; but with them the beauty-list is exhausted. Now since bee-eaters, rollers, golden orioles, and kingfishers are all common to Europe—and even to England—it follows that the Tropic possesses



HEAD OF GREY HORNBILL (*Lophoceros nasutus*).

Shot at Gondokoro, February 13th, 1913.

no outstanding pre-eminence in bird-beauty. The difference lies in the fact that, while with us such birds are relatively scarce, here in Africa they abound.¹

Both species of Sudan hornbills inhabit these forests, the red-billed and the mottled grey hornbill (*Lophoceros nasutus*), the latter of which I chanced not to have seen

¹ There are, of course, many other birds showing brilliant hues; for instance, the fire-finches, pytelias, cordonbleu and other waxbills (*Estrilda*), and some of the barbets occur to one off-hand. But these do not exceed in beauty our own familiar robins, whinchats, and redstarts, blue tits, bullfinches, and chaffinches. Then there are the tiny sunbirds, some of which boast a lustrous irradiance that we can never match at home. The abounding dhurra-finch also in summer assumes a gorgeous crimson-velvet livery; but in winter (when the tourist sees him, and to which season this note refers) is as plain as a London hen-sparrow! Perhaps the crimson-breasted shrike (*Laniarius erythrogaster*) should have been included in the beauty-list. I recollect my first encounter. Something like a tongue of flame flashed through the bush. Such was the intense keenness to possess so wondrous an object that I missed two sitting shots!

before and pursued the first that I saw for miles. These larger birds, by the way, are rather too wild to secure with the "Tomtit gun" (generally I use the Paradox for collecting, but that day had taken the rifle instead, in order to get a gazelle for the larder). The hornbills, as a rule, feed on scorpions, insects, and creeping things; but this one, when first seen, was critically selecting the yellow berries of an evergreen from a branch directly overhead. Such was the *studium sequendi* that, during this chase, we ran into a little group of elephants unseen among thick bush; yet so anxious was I to hold *Lophoceros* in view as almost to miss the rarer spectacle of the pachyderms moving away. When at length I got my shot, the hornbill flew off with his customary flopping, undulated flight, and all looked like a clean miss. I kept an eye on him and in the centre of an open glade, 200 yards away, the bird suddenly wheeled and settled. Thinking this was an odd place for a hornbill to alight, I marked the precise spot and was delighted to find my prize lying dead. This hornbill is plainly plumaged, mottled grey-brown and white; its big black beak, curved and quite disproportionate, is heavily toothed and near the base displays a curious inset plate, as it were of ivory. This was near Gondókoro.

Two other bird-species deserve note: the first a white-browed coucal (*Centropus superciliosus*), the second a smart stoutly-built hawk quite unknown to me. It proved to be a black-shouldered kite in its mottled dress of immaturity, and in no wise resembling one's ideal of a kite. When shot, it was carrying in its claws a purple-headed lizard. Next day I watched another capture a big locust-like beast after a twisting, tortuous pursuit, and sketched him as he perched on a dead stump to devour it.

The white-browed coucal (or bush-cuckoo) is a denizen of these dry woods, but has a first cousin who eschews dry places and seeks his pleasure in reedy marsh and aquatic jungle. On one occasion, when I had landed

to sketch a couple of elephants, I ran into a colony of these purple-crowned coucals—most reclusive birds; yet so fearless of man that, skulking in that dense covert, when in sight at all, they were too near to shoot. While trying to sketch one, distant 6 yards, suddenly it dived under a tangle of elephant-smashed canes and lay sidelong on the ground, peering upwards in terror. A kite was passing over. Bird-instinct was doubly at fault. That coucal feared not man (with a gun), and also clearly failed to discriminate between *Milvus* which is harmless, and *Circus* which is pre-eminently dangerous.

The note of both species of coucal is striking among bird-eloquences. So far as sounds can be rendered in print, it is a repetition of "pop-pop-pop," louder at first and increasing *pari passu* alike in rapidity of utterance and in descending chromatic cadence. Its

highest development is reached by the white-browed coucal, a serenade which everyone with ears must have suffered the livelong night at Mombasa. There, this coucal is called the "brain-fever bird," alias the "water-bottle bird," its note not inaptly comparing with the sound of water gurgling out of an inverted bottle. The sketches of the bird in the act of "bubbling" and that of the kite-affrighted coucal are drawn from life.

The predatory tendencies of the coucal are curious in a bird of the cuckoo class. Not only will it pounce upon



BLACK-SHOULDERED KITE
(*Elanus caeruleus*—Immature).
Shot at Mongalla.

and carry off precious bird-specimens right under the collector's eye, but perches on withy-fences tearing at the strips of hippo-flesh hung thereon to dry by native hunters. This coucal, moreover, with its powerful beak, smashes to fragments the strong shells of the big land-snails so common along White Nile. These it carries to some mound or stump convenient to serve as an



INSTINCT AT FAULT—"KITE OVER" (Bush-Cuckoo).

anvil—among the cane-brakes such mounds are often completely encircled by a ring of broken snail-shells.¹

A charming little bird, specially characteristic of this region, I had well-nigh forgotten. It was the sweltering noontide hour, and, while busy writing up notes on the poop, a low sweet song in minor key caught my ear. Six

¹ In the crop of a coucal of the white-browed species (*Centropus superciliosus*) shot on the Dinder River, Lynes found the remains of a mouse—the femur measuring $1\frac{1}{4}$ inches—while the stomach contained fragments and feathers of a finch. Clearly this is a bird of prey. Among the cuckoo-tribe, by the way, such an organ as a *crop* is normally omitted!

feet behind stood half a dozen choristers, erect in white surplices, each tiny throat swelled with music. For a moment I took the visitors to be the common white wagtails (*Motacilla alba*) suddenly inspired with unwonted song. A second glance, however, showed that the choristers belonged to quite a different species, for they were white-winged wagtails (*M. vidua*), first cousins of the other cosmopolite, yet pure Ethiopians themselves, who never transgress the boundaries of Africa. Their one desideratum locally (besides a tropical climate) appears



ASLEEP IN CANE-JUNGLE.



IN ACT OF "BUBBLING."

to be a rocky environment. In all the 1000 miles of Nile to which geology has denied that constituent, the white-winged wagtail is never seen.¹ The white wagtail, on the other hand, is ubiquitous whether on rock, grass-veld, or desert. But neither he nor any of his tribe (save the above) profess to sing; they do their best at a warble! By the riverside are various species of yellow wagtails, but these present quite too complex a racial problem for my definition. At a water-hole in the scrub I watched

¹ The white-winged wagtail (*Motacilla vidua*) is partially dimorphic, some individuals having *black* flanks, which, in the majority, are pure white. One may notice this when only half a dozen are seen together.

these wagtails feeding among water-lilies, and there was a pretty rivalry in colours between the gorgeous golden breasts of the birds—set off by velvet-black skullcaps—and the golden petals of the flowers.

(IV) REJAF

Rejaf, my “farthest south,” leaves many memories—above all that inspiring vista of Afric’s “Central Divide,” the parting of Nile and Congo, which can be enjoyed after a couple of hours’ ramble along the rocky ridges west of Rejaf koppie. Thence, as from Pisgeh, opens up a glorious breadth of game-country stretching away to the mountains of the Congo, and specially notable as a haunt of two of Africa’s biggest and least-known mammals—the giant eland and white rhinoceros. That Eden, however, is closed to sportsmen by reason of the prevailing “sleeping-sickness.” The only large animals observed were gazelles, certain unidentified hartebeests which were either tiang or topi, and two small herds of Uganda cob, together with much old elephant-spoor.¹ Baboons abounded on the crags; but no vision of the chimpanzee fell within my eye-range, nor even of the more familiar Colobus monkey, or of the giant forest-hog (*Hylochoerus*), all three of which are recorded to exist in these mountain fastnesses. A hawk which I shot on these hills—my most southern point—proved to be a common English kestrel!

Here one meets that amiable tribe the Nyam-Nyams, cannibals, who, being deprived by insular British prejudice of what was reputed their favourite food, have

¹ It was in this region—then known as the Lado Enclave (which was leased for his lifetime to King Leopold of Belgium)—that there was perpetrated that massacre of elephants which a few years ago “staggered humanity.” This occurred during the interregnum between the death of Leopold and the resumption of British control. What the exact slaughter amounted to, there is no means of knowing. Undoubtedly it was indiscriminate and brutal; but much of the sensationalism that trickled into the newspapers read like the quintessence of silliness.

taken to breeding a race of rather pretty little dogs which, we are assured, they regard as quite the next best substitute.¹ As a matter of fact, according to their own assertions, the cannibalism of the Nyam-Nyams was always restricted to eating their fallen foes slain in battle—the liver for choice.

These savages strike rather a fresh note in local types. For they are built in normal human mould, thick-set and in striking contrast with the egregiously lanky and long-limbed Shilluks, Dinkas, and Nuers among whom we had hitherto been sojourning. Nyam-Nyams whom we met were distinctly friendly and inquisitive—also acquisitive, wanting everything I possessed, though “liver” was not specified. Their spears and ornaments were of better finish than those of the more northern savages, and I procured from them (for a few piastres) a hunting-knife of quite elaborate make, its ornamented blade and wire-woven haft bespeaking a degree of manual skill hardly to be expected in such primitive folk.

One fact of purely human interest strikes the observer at Gondógoro and south thereof. Whereas up to this point the Greek trader has monopolised the whole store-keeping and retail business of the Sudan, here the Baboo from far India—so familiar in East Africa—reappears to fill that office. The fact is eloquent of the energy and enterprise of both. The Greek, carrying his goods, has pushed inland 2500 miles from Mediterranean shores; the Indian 2500 miles from Mombasa, or 5000 from Bombay, the last 100 miles of that distance only to be made good by donkey-transport. As fellow-subjects of the Indian, one regretted to hear that the intrusive Greek threatens to oust his duskier competitor.

While collecting birds on the riverside at Rejaf, my companion was photographing native women who

¹ These Nyam-Nyam dogs had quite a vogue in Khartoum, many English ladies keeping them—of course purely as pets and without ulterior object.

came to draw water ; but a young girl in their company, whose costume was limited to a bunch of green leaves hanging from her girdle, resented being "snapped," and with silent dignity stepped aside into the bush. It was a pretty trait, and personally I felt hurt when the girl's elder comrades insisted, in deference to the white man,



CRESTED HAWK-EAGLE. Shot at Rejaf, March 7th, 1919.

on her returning to pose. Her inherent objection to the camera in a land where nakedness implies no shame, seemed to signify some instinctive sense of delicacy, latent though such may be in the conditions of to-day.

[Before finally turning northwards, it is desirable to record the few following species of birds characteristic of this—our southernmost stretch of Nile. These include, the yellow-wattled lapwing (*Lobivanellus senegallus*), Nile plovers and

ringed plovers (*Æg. curonica*), stone-curlews (*Æ. senegalensis*), ruffs, little stints, common and curlew-sandpipers, greenshanks in both sizes, stilts, and once, on March 8th, 1919 (as mentioned later), a single spotted redshank. At Rejaf I collected a crested hawk-eagle, pallid harrier, red-headed barbets (*Lybius abyssinicus*), sunbirds (*Cinnyris erythrocerus*), red-throated pipit (*Anthus cervinus*), serin-finches, golden oriole, and a desert-wheat-ear (*Saxicola deserti*)^o, apparently far beyond his bearings, besides observing a dark-coloured mirafra which "drummed." Among the many forms of brilliantly-hued bee-eaters with which Nature has adorned the Sudan, there is one which appears to be confined to these regions—"beyond the Sudd." That is, the white-throated bee-eater (*Merops albicollis*), a bird of lovely sea-green, characteristic of these rocky regions, but never observed north of the Sudd. Shrikes in Africa are legion; but at Mongalla (and there only) we met with the rather striking white-crowned shrike (*Eurocephalus rueppelli*). Its curious flickering flight—though essentially shrike-like—attracted my attention; the crop of one I shot was crammed with ants, and about half of them walked away so soon as released! The abounding waterfowl on the river remained practically the same as farther north, including the terns (big and small) already specified, and the small unidentified marsh-gulls. Seagulls proper one would scarcely expect to find here in the heart of Africa; yet two species do penetrate even 2500 miles up Nile. Both are British, the lesser blackback and the black-headed gulls; though Sir Frederick Jackson suggests that the latter may include the Ethiopian grey-headed *Larus cirrhocephalus*.

To the above Mr A. L. Butler appends the following note:—There is also found here, though rare, that species of spur-winged plover in which the wing-armature attains its highest development—the white-headed *Xiphidiopterus albiceps*, carrying black needle-sharp spurs an inch in length. The white-throated bee-eater (*Merops albicollis*), while certainly characteristic of rocky regions, is by no means confined to the "south of the Sudd—as above." I have met with it at Jebelein, and on the Upper Blue Nile, Settite, and Atbara; also at Gedaref, and on rocky jebels between the latter and Blue Nile.]

(v) "HELL'S GATE"

The Nilotic landscape in these regions has, as already indicated, completely changed its character. Level marsh and low-lying forest have given place to an environment of rocky mountains. Giant boulders stud the river sides and even project into the unaccustomed



"BALANCING"—(Marabou).

Wing-expanse, 103½ inches; weight, 13 lb.

stream. The change rejoices eyes wearied by 1000 miles of irksome monotony; but it adds a new peril to navigation. Hitherto we had freely and carelessly bumped up against papyrus-barriers, or "cannoned" off marsh-girt banks. With rock, that expedient is dangerous.

This fact was vividly impressed by an incident that occurred above Mongalla, at a point ominously known as

Hell's Gate. Here the narrowed Nile surges through a rock-girt gorge at a speed of eight knots—double its normal velocity. The river, moreover, immediately above the neck of the gorge sweeps round in a right-angle bend, thus doubling or trebling the danger of the transit. On the upward voyage we had forced the passage without an ounce of power left to spare. Coming down, we essayed to "rush it," the steamer's own 10-knot speed accelerated in the above ratio. In the neck of the narrows she struck an unseen rock forward, and, pivoted on this, instantly swung round to starboard. I could see that her bows—pointing westward—would clear; but the *stern*? . . . it appeared absolutely inevitable that *that* must crash into the piled rocks that there projected far into the stream, and around which the pent-up current raged and foamed in the style of a Norwegian salmon-river. All hands hung on tight and tense as the ship swung round, full broadside across stream, towards the danger-point. Luckily the towering top-hamper of these Nile three-deckers had deceived eye-judgment, and the crucial right-angle passed without the expected shock. The length of the *Omdurman* is 130 feet: the breadth of Hell's Gate must be a foot or two more—it was a matter of inches.

We had an almost equally perilous passage downwards in March 1919, only getting through stern-first and at the third attempt, and that solely owing to the cool and skilful handling of our Arab navigators.

Novel and picturesque as are these rock-girt rapids with the swirling stream between, yet the persuasive power of dynamite may here be profitably employed so soon as the Sudan has a few £ (E. or otherwise), to spare.

(VI) HOMEWARD-BOUND

Hardly had we bade farewell—a last farewell—to Governor Stigand, and remote Mongalla had sunk from

view behind its fringing forest, than there occurred two charming episodes in bird-life. The river here is walled-in between precipitous grey banks, all riddled and perforated by the nesting tunnels of bee-eaters—the gorgeous crimson bee-eater (*Merops nubicus*) already described—thousands of which exquisites were now clinging upright on the surface of their mural stronghold. The sun was setting and, in the lurid light, the whole cliff-face appeared aflame with the masses of these encarmined creatures—here in groups, there in dense crimson patches—their radiance intensified, aye, glorified by the horizontal rays of a setting sun! Even our stolid Arab crew gazed in wonderment; but such effects no words may convey.

The second scene followed fast. The sun had already set: bird-life had vanished, but flickering bats and nightjars marked the nightfall; then suddenly, at this unwonted hour, occurred a new irruption of bee-eaters. By hundreds they hawked low on the surface of the river. The incident lasted two minutes and ended as abruptly as it began. Normally bee-eaters (with all other diurnals) close down for the day *before* sunset; to-night a “hatch” of some aquatic insect had induced a brief spell of “overtime.”¹

Next morning, March 9th (1919), afforded an observation in the processes of migration. When approaching Malek (latitude 6° North), we descried ahead an assemblage of storks, composed of equal numbers of the openbill and of Abdim's stork, massed together on a sandy foreshore. The openbills (being residents) sat quiescent while we passed by; but their companions—already infected with a north-bound instinct—took wing while yet afar and, soaring heavenwards in great spirals, soon attained a vertical altitude (finally beyond sight), whence, presumably, they could espy landmarks of their

¹ A bright moonlight night, or even starlight, will nevertheless tempt bee-eaters out on nocturnal adventure, and one hears their characteristic notes as they circle high up in the viewless vault above.

allotted destination, say 500 miles away. At any rate, from that altitude they set their course and proceeded due N.N.E.—to Gedaref? (see *Ibis*, 1905, p. 378). Abdim's stork, though common in winter in this region, I never once observed myself north of the Sudd; but in spring it proceeds northwards (as here indicated) to breed.

The common white stork of Europe winters south of the Sudan—beyond the Equator; for few will ever be seen here before about mid-March. Thenceforward, as spring advances, great mobs of these storks, ever mindful of their "appointed season," pass northward, often halting for a rest—(and a gorge on grasshoppers and locusts)—on these Nilotic plains. But during his hibernal absence, the stork takes care to leave a *locum tenens* in this cousin-like form yclept *Ciconia abdimii*.



ABDIM'S STORK.

By a backwater on the riverside that same afternoon (March 9th) probed a group of four waders. There was a greenshank, two marsh-sandpipers, and . . . a spotted redshank, the latter being the first of this scarce species I had noticed in Sudan (and, incidentally, only the *second* in my life, the earlier instance having occurred only seven months before; to wit, on the Northumbrian coast on the 29th of the preceding August). The spotted redshank is certainly the most graceful of all its graceful tribe. Owing to the extreme length of its legs, with a relatively short bill, its gait and poses when feeding are specifically distinguishable, being even more delicate than those of the "greyhound-like" greenshank. Here we had opportunity of comparing three fine types in close juxtaposition, and *Totanus fuscus* is a type by itself.

Not far from this point (about $5\frac{1}{2}^{\circ}$ North latitude) I saw (in 1913) a crocodile bigger than any that appear even in dreams. The reptile lay sound asleep above a 10-foot bank, head-on to the river, and our ship swept past within a few yards of its snout; but no time was given to seize a rifle ere the vision was lost to view among deep grass. In my diary the *breadth* of that beast is recorded *to an inch*, with an estimate of length; but I will not abuse credulity by giving measurements not verified on the tape-line. Still, the brute appeared to bulk almost as broad as a hippopotamus.



“TAKING THE MORNING SUN.”—WOOD-IBIS.
Hell's Gate, March 8th, 1919.

CHAPTER XXII

KHARTOUM AND OMDURMAN

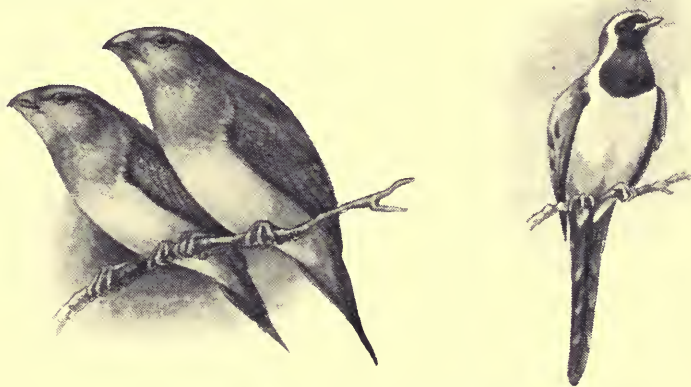
THE outstanding feature of modern Khartoum is its obvious resolve to cast outboard the Dervish ideal and to substitute therefor a British régime. How far this object has progressed is patent to all who remember the very brief annals of the modern city—barely past its majority. True, there remain vacant, imposing sites for squares, and palm-bordered boulevards which yet await the houses that will eventually adorn them; while kites and vultures still supplement, though they no longer fulfil, the duty of public scavengers. The latter fact, however, can hardly be held a reproach, since it is little more than two centuries ago (*vide* Macaulay) that the kite performed that office in the streets of London.

It is graceless to criticise; but surely that noble, league-long Avenue that fronts Khartoum's historic riverside deserves some more resonant title than "Embankment Street"? Oh, the poverty of imagination! And in any case, the term is a misnomer, since an embankment (being unilateral) is no more a "street" than Trafalgar Square is a village green.¹

Cities as such, whether ancient or modern, lie outside the scope of this book. But the traveller in Sudan

¹ During one early morning's ramble around Khartoum, we suffered a double shock. The first was in finding a dead man—drowned in Blue Nile—gruesome enough before breakfast; but the second shock was distinctly worse. At the corner of a block of riverside buildings we read this inscription:—22 STREET. . . . Now let the municipal authorities of Khartoum rise fitly to their occasion!

will necessarily have some days to spend in its capital—Khartoum; and these days (should he have any appreciation of wild Nature) need never be wasted. Khartoum, it should be borne in mind, is desert-beset; hence its palm-shaded groves and its verdant gardens, all stimulated by irrigation, constitute the City a veritable oasis in the desert. So, at least, it is regarded by many (not all) of the feathered tribes, which here revel in unwonted wealth of shade and the luxury of watered lawns. Thus,



SILVERBILLS SUNNING.—Khartoum, January 17th, 1913.

for example, one particular tree grew in our garden. It was of the deciduous order, naked, and of many boles—rowan-like in that respect. In science the name of this tree is *Erythrina brucei*, and it perfects its blossoming ere yet a single leaf has unfolded. Thus, in January, it displays masses of deep-crimson flowers growing on boughs bare of all else, save thorns. This one tree afforded studies of hour-long interest. Around those gorgeous blossoms—as well as on the golden sunflowers hard by—hovered brilliant green sunbirds (*Nectarinia pulchella*), hardly bigger than butterflies, poising in mid-air, while their curved beaks probed each calyx for some tiny insect-prey. Above, on its topmost boughs, perched other three kinds

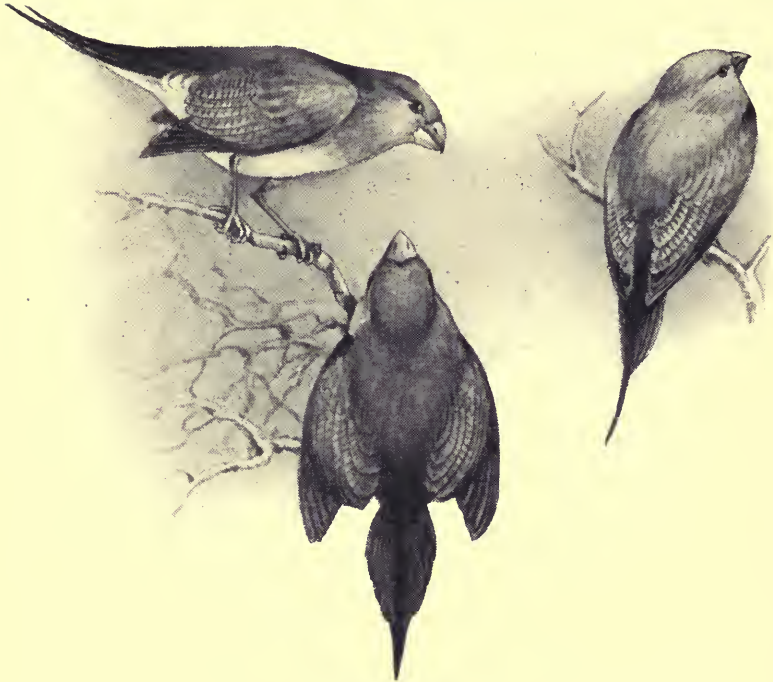
of strange and charming birds. Some of these were colies—the “mouse-birds” of South Africa—which first attract attention by tufted top-knots that shine like liquid gold against an azure sky above. Besides that, the colies would be notable for the extraordinary length of their tails; but both characters are eclipsed by the gymnastic



COLIES ON THE ERYTHRINA.

attitudes they habitually assume. These curious creatures will rest by the hour—apparently at ease—though suspended beneath their perch in a pose that no human athlete on the cross-bar could maintain beyond fleeting seconds. These singular attitudes of the colies, together with their exaggerated tails and arrow-like flight, remind one of parrakeets; and there, right alongside them, on the topmost boughs perch other

“parrakeets in miniature.” These latter are silverbills (*Ædymosyne cantans*), tiny creatures of a freckled mouse-grey—plain enough, yet refulgent in the tropic sunlight—and with black tails sharply cuneate. Already, at the end of February, it was evident that the fancies of silverbills lightly turned to thoughts of love, and the



SILVERBILLS COURTING.

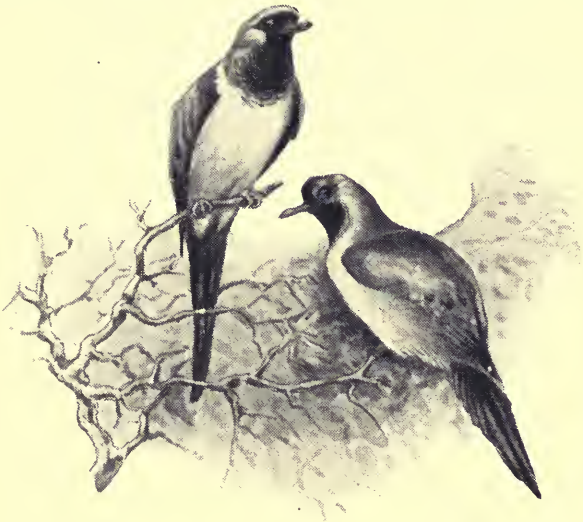
“A Bride worth Winning.”

“Rejected.”

wooing was pretty to watch, though hard to portray. At this first interview, the date named struck me as indicative of their breeding-season; but I presently found that silverbills are deceptive, or at least that I had failed sufficiently to gauge the amorous propensities of our little friends; for in the following December not only were they feeding full-fledged young but also renewing a vigorous courtship at the same time! Thus do silverbills (and, with them, a vast proportion of “Ethiopians”) reject

and despise our European calendars and all the rules that depend thereon.¹

On the apex of our *Erythrina* sat a third fairy-form, completing a charming trio. This last was a tiny African dove, scarcely bigger than a wagtail and known to science as *Ena capensis*. So gentle an epithalamium was he cooing that, although the heaving of his breast was distinctly perceptible, yet no sound reached one's ear



LONG-TAILED DOVES (*Ena capensis*) ON OUR ERYTHRINA.

beyond a few yards' distance. Hard by, at an irrigation channel, two bigger doves (*Turtur senegalensis* and *T. semitorquatus*), with hosts of golden sparrows, serins, and weaver-finches, were busy drinking; while amidst the sunlit foliage around flitted Nubian and masked shrikes, buntings

¹ Silverbills breed continuously throughout the winter, building their domed nests among the feathery foliage of the sessaban trees (*Parkinsonia*), a yellow-blossomed evergreen; and it was pretty to watch their joint labour, as one of the pair worked outside the structure, the other within. In the same trees, golden weaver-finches were also constructing pendent nurseries; though their dates, we thought, fell a trifle later; till, in March, a small snake was observed coiled up near one of their nests, and, on being shot, his gullet was found full of callow weavers!

in lavender and chestnut (*Emberiza caesia*), indigo finches (*Hypochæra ultramarina*), waxbills (*Estrilda*), fire-finches (*Lagonosticta*)—all these three, feathered gems—together with innumerable warblers. These latter, however, in winter are silent. The only local songster at this season is the bulbul (*Pycnonotus arsinöe*), whose triple flute-like trill never wearies the ear, despite ceaseless iteration. Many of our familiar European warblers make their winter-quarters here; but all maintain, not only the strictest silence, but many an unwonted seclusion. Thus, for example, the conspicuous rufous warbler (*Aëdon galactodes*) that in Spanish springtide almost “leaps to the eye,” here skulks so persistently that but for some fugitive glimpse, or the flirt of its boldly barred tail, one might never suspect its presence.¹

Not all creatures, however, appreciate the amenities of civilisation—there are those to which such conditions are anathema; and the little sunbirds furnish an example thereof. When, after the reconquest, Khartoum lay in ruins—when the hateful Sodom-apple (*Calotropis procera*) flourished where streets had stood—the particular sunbird that then adorned a desolation was *not* the pretty “Pulchella” just described, but an allied form, even smaller, the metallic sunbird (*Nectarinia metallica*). But, so soon as reconstruction commenced, and more civilised shrubs—such as Erythrina, oleander, sessaban, etc.—had displaced that emblem of stark desolation, the Sodom-apple, the change at once drove out that tiny barbaric beauty “Metallica,” and its vacated place was re-occupied by its sybarite cousin, “Pulchella” aforesaid.

¹ Following is a list of our British summer warblers observed wintering at Khartoum:—Chiffchaff and willow-wren; also icterine warbler (*Hypolais pallida*), blackcap (and also orphean) warblers; lesser whitethroats in swarms, redstart, whinchat, and wheatear; swallow, sand-martin, and swift. Sedge- and reed-warblers have also been recorded, and the garden-warbler more rarely. Red-throated pipits (*Anthus cervinus*) abound, with tree-pipits in lesser evidence. Some of the above, of course, are not strictly warblers. None will accuse the swift of *that* quality.

Nevertheless, though banished from the precincts of the city, "Metallica" still clings to the deserts immediately outside, wherever its beloved Sodom-apple (as well as the thorny tundub-bush, *Capparis aphylla*) is allowed to survive and flourish.

Kites are almost a civic institution at Khartoum. All day long they, with other big birds of prey (vultures,



SUNBIRDS (*Nectarinia pulchella*).—ON BLOSSOM OF ERYTHRINA.

eagles, and falcons), soar and circle amidst the palms, and in the beautiful gardens of the Palace, kites become well nigh a nuisance; for they nest in every tree, coolly conducting their parental duties in utter disrespect of "tea and tennis" proceeding immediately beneath their aerial nurseries. At home, a few years ago, we had a "Kite Committee" charged to protect the half-dozen pairs of kites which then survived on British soil, maintaining watchers at each nest by day and night. In Khartoum some would rather subscribe to exterminate the kites!

That epochal autumn of 1918, when empires and

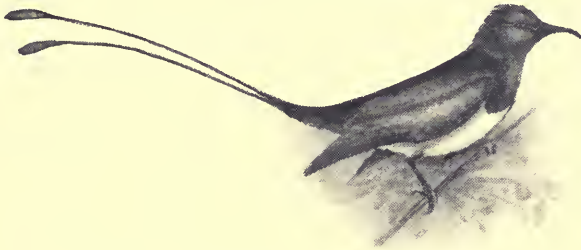
kingdoms were toppling over in consecutive ruin, found the author (with other greybeards) panting to resume the interrupted activities of life. Four long years "on the chain"—practically *interned* at home—whetted desire, and no sooner had Germany surrendered than, on November 12th, we started to engineer a new venture in the Sudan. The obstacles encountered were appalling and the scheme perhaps premature, not to say precipitate; but we got there—precisely how, I hardly remember. There survives a hazy recollection of being asked by a high official, "Are we to understand, Mr Chapman, that this expedition of yours to the Sudan is of urgent national importance?" My reply—that I had never put it quite so high as that, but that (at my age) I regarded it as of "urgent zoological importance"—clinched the matter; passports were granted. Next came the ocean-passage—surely an insuperable obstacle? Some doubt if the P. & O. possess a heart; but they do . . . for I penetrated that organ and am grateful. The rest of the obstacles we seemed to take in our stride and finally got through. It was, of course, "long-sea" all the way, mine-dodging for 3225 miles from the Nore to Port Said—4000 by our devious route: and our equipment included "paravanes" rigged from either bow, with a 4.7 quick-firer astern; boats, moreover, swung outboard to provide for all contingencies.¹

Thus we reached the Sudan; but should, nevertheless, have been finally stranded had not the Sirdar, General Sir Lee Stack and gracious Lady Stack (*cuyos pies beso*) found time, amidst manifold anxieties, for kindly compassion and shelter. It is to their aid and hospitality not only that some small zoological results were achieved—many of the above notes having been collected in the gardens of the Palace—but also that a way home was

¹ The big ocean-liners all retained the fantastic camouflage of the war days; moreover—to record a trifle (*olim meminisse placebit?*)—the lunch that was served on board the British-India s.s. *Ormara*, as we steamed down the Thames, was the first *square meal* we had seen for years!

opened for us . . . when subsequently—(on March 18th, 1919)—the outbreak in Egypt cut off Sudan from the outer world, and, for the time, utterly closed every homeward route.

[Having digressed so far, I may as well complete the yarn:—The “Northern Gateway” being thus closed, we essayed the Eastern; and after a terribly rough week on the Red Sea—aboard a coaster, crammed with pilgrims for Mecca (very high), cattle, and crowds of other passengers—we finally (my brother and I) reached Suez, and thence Port Said by rail, passing on the latter journey certain marvellous monuments of British



THE BARBARIC BEAUTY (*Nectarinia metallica*).

energy during the strenuous days of war; particularly El Kantara, on the Canal, the military base whence was organised the conquest of Palestine and Syria. Port Said proved a cul-de-sac, crammed to every roof with crowds all homeward-bound yet never a vacant berth aboard the huge troopers, transports and liners that daily passed our doorstep—each a swarming hive of massed humanity (in khaki). At length, in exhaustion and despair, we had “signed-on” at the British Consulate as stevedores aboard a tramp bound to Leghorn—at a shilling a month! Then, at the eleventh hour, a true *deus ex machina* descended and a great 12,000-ton New Zealander, the *Ruahine*, found steerage room (fourth class) for *one*—and two desperate men jumped at the chance. Thus we reached home just in time to catch an April trout—(in a snowstorm . . . and a spring-salmon when that snow melted!)]

To return to Khartoum and its historic palace. Therein still remains one human link with the tragic past. When a cruel temperature oft soared beyond 110°, GORDON'S

faithful old body-servant, Hassan, was wont at frequent intervals to bring us delicious iced refreshers. Yet, however oft he appeared, gigantic Hassan never failed to symbolise in person the bridging of that gulf between the Sudan of yesterday, with its black and blood-stained story, and the peaceful Sudan of to-day.

Worthy of remark it is, that during five years of world-wars and rumours of wars, yet throughout the Anglo-Egyptian Sudan never a dog moved its tongue against British rule—striking testimony to the administration of the Governor-General, Sir Reginald Wingate, who, from the reconquest in 1898 till after the outbreak of European War, directed the affairs of this vast Dependency—and equally of his successors in that high office. That the Sudan caused us no anxiety during those crucial years is an achievement no less valuable than many a more spectacular victory. Far away in remote Darfur, it is true, the semi-independent Sultan, Ali Dinar, thought he saw opportunity to fish in troubled waters—thought, perhaps, that the 450 miles of interposed deserts provided sufficient protection. But Ali miscalculated. A photograph I saw at Khartoum—somewhat gruesome—indicated that Ali is incapable of further mischief. His features were of Baggára type—to our eyes, somewhat brutal and truculent, not altogether unlike those of the Khalifa, whose portrait (also taken as he fell on his final battlefield of Gedid) is also extant at Khartoum. One result of Ali Dinar's precipitancy is that Darfur now forms an integral part of the Anglo-Egyptian Sudan; and Captain Lynes and Mr Willoughby Lowe, it may be added, are at present investigating its zoology!

The Palace of Khartoum overlooks Blue Nile: hence it enjoys not only the delightful retreat of Gordon's shady gardens beyond (whence many of these ideas emanate), but in front commands a broad stretch of the river. From our windows, each dawn revealed an ever-changing panorama of bird-life; the polyglot assemblages

on the opposite shores, including a considerable proportion of that manifold wealth of waterfowl, great and small, web-footed or "hen-footed," that characterise the Upper Nile. At midday these aquatic hosts were replaced—or reinforced—by crowds of thirsty kites and vultures (Neophrons) which, with a few stray eagles—chiefly *Aquila rapax*—spent the blazing hours in desultory bathing along the shores. It was curious to observe how completely the openbill storks dominated the small vultures and kites, which scuttled away before those great ugly mandibles.

Sometimes we made expeditions by steam-launch for the "evening-fighting." The sandgrouse-shooting within reach of Khartoum needs no new description, and this year the abnormal heat (combined, it may be, with a full moon in mid-March) precipitated the departure of the ducks. Already, at the date named, the bulk of the pintails and wigeon had disappeared, while towards the end of the month almost all, save a few garganey, had passed on northwards; but whoever knows the garganey, with its lightning speed, will admit that a very few shots are ample reward for an hour or two's vigil. A feature of these quiet evenings on White Nile was the assembling of migrating wagtails—gorgeous creatures whose breasts of burnished gold literally coloured the foreshores.¹

OMDURMAN

Omdurman itself presents to me neither charm nor interest—no more than, say, the Arab quarter of Aden. But only a couple of leagues away—across clean open desert—lies Jebel Surgham, the scene whereon between sunrise and noon was decided the fate of the Sudan.

Jebel Surgham itself is but a rocky koppie, one of

¹ I remembered capturing similar wagtails aboard the M.M. s.s. *Djemnah* in mid-Mediterranean, April 10th, 1906, as recorded in my *Bird-Life of the Borders* (p. 126). The coincidence of dates is noteworthy. These Khartoumers would be due at the same spot—off Crete—at a corresponding period.

hundreds not dissimilar scattered throughout the deserts. Twice we have encamped on its plutonic slopes at the precise spot whereat, on that (to them) fatal First of September 1898, the Dervish hosts spent their last bivouac. At dawn, from the rock-ridge above, where the Kalipha's "Black Flag" flew on the decisive day, it was easy to "reconstitute" the whole tragic scene with its stirring incidents and *once* critical moments. Three miles northward, low and dark, lies the Kerreri range, and it was upon the interposed plain that the Kalipha, greatly daring, challenged British power. The result is visible to-day. For miles in all directions, the desert is scored and punctuated by long lines of head-stones, each denoting a dead Dervish—fanatics; yet brave men who faced death for the faith that was in them. As such we must respect them; none the less is it true that the only good Dervish is a dead Dervish. To-day (1919), after more than twenty years, the graves of the fallen Emirs, Osman Azrak, Yakub, Bishara, and other mighty men of war, are still marked by white stones and adorned by white flags fluttering from bamboos—still renewed, still venerated. But the only animate objects within sight are the big, plover-like desert-larks (*Certhilanda*) and perhaps, away to the southward, a troop of gazelles.

The ravine where the 21st Lancers were ambushed by Osman Digna and his Hadendowas lies behind, towards the river—a dry torrent-bed, shallow, and surprisingly insignificant. Nowhere does the exposed rock-formation exceed a yard in vertical height; nor does its breadth average a dozen yards. That 3000 armed men could find concealment in so puny a ditch bespeaks the fieldcraft of that wily Arab chieftain. On the other hand, one realises at a glance how easy it was for the charging Lancers to overlook the danger. From 200 yards' distance, the paltry khor is practically invisible, its lip hidden by bent-grass and dwarf mimosa-scrub.



BATTLEFIELD OF OMDURMAN, 1919.
Grave of the Sheihk-el-Din—still decorated with White Flags and Bamboos,
21 years later.



ON THE BATTLEFIELD OF OMDURMAN—GRAVES OF DERVISH EMIRS.
From Jebel Surgham—Kerreri Heights in background.

[To face page 310.]

CHAPTER XXIII

BLUE NILE AND DINDER RIVER

(1) BLUE NILE

DIFFERING from its twin-stream, White Nile—which traverses desert sand and level steppe—the Blue River is mountain-born and bred. Springing from Lake Tsana, 6372 feet above sea-level in Abyssinia, Blue Nile drops more than 4000 feet during a course of less than a thousand miles. Hence, even in its lower and flatter reaches, Blue Nile runs on a relatively steeper gradient, and is enclosed between well-defined banks often 20 or 30 feet in height.

The traveller ascending Blue Nile has scarcely left Khartoum ere he quits Sahara and enters upon a region of alluvial “cotton-soil,” which needs nothing but irrigation to assure perennial crops. During the dry season, it is true, these richer lands display but little external difference—they *appear* arid and barren enough. But no superficial view affords sufficient criterion. The wealth of soil is demonstrated when once one comes to see the comparatively tiny patches which have already been experimentally irrigated, and contrasts their green luxuriance of cotton, maize, and other crops alongside the sterile desolations which surround them. During our sojourn here in December 1913, Lord Kitchener of Khartoum inaugurated the first “Barrage” of Blue Nile, a work which—despite interruptions then unforeseen—bespeaks the dawn of agricultural developments, the limits of which the future only can define.

The period of the flood-season on this hill-born stream being a month earlier than that of White Nile, the Blue River falls in earlier in autumn, and by November navigation has ceased. The new railway, however (Khartoum - Sennar - Kordofan), carries one 235 miles south to Sennar in a twelve-hours' run. We reached Sennar after dark, and slept in the straw-thatched shanty that does duty for a "station hotel." I remember that night; for, lying awake, a big beast with cocked ears that might have been a hyena—or a brontosaurus—suddenly stood in the bright moonlight within our open doorway. A shooting-boot was the nearest available missile and the turmoil it created awoke my companions, who thought I was afflicted with nightmare—but *they* had not seen the apparition. Of course, it was only a pariah dog on the prowl; but I resent such intrusion in the small hours. Next morning—with far less trouble than a portentous document in Arabic would seem to imply—we fixed up a contract for camelry with the local sheikh and set forth on the ride to Singa, 50 miles south.

The country traversed was all flat plain—to the eastward (across the river) lay continuous forest; on our side, all cultivation, and densely populated by Arab tribes whose wealth in cattle was surprising. Each morning as we rode forward, the country was enveloped in clouds of rolling dust emanating from countless droves coming down from the arid interior to water at the river. The land seemed amovè and, since we were told that these herds only drank every second day, the total aggregate must be double what one sees.

Such detail may seem irrelevant to the scope of this book; but nowadays almost everywhere one must pass through an intermediate zone of semi-development—or tentative development—ere reaching the "unspoilt wilderness" beyond. And even in this otherwise uninspiring region we enjoyed two striking object-lessons in bird-life.

As each evening deepened towards dusk, there appeared from off the ocean-like expanse of stubble upon our right—that is, west—what resembled dusky clouds, composed of millions of wheeling, revolving, palpitating atoms, now rising in air, anon shooting down earthwards as by a single simultaneous volition. These were weaver-finches (*Quelea ethiopica*, with bishop-finches, *Pyromelana franciscana*, *Hyphantornis galbula*, and possibly other species) bound for their roosts in the forests beyond the river. Each separate cloud might occupy half a mile of space, followed in unbroken succession by others no less extensive. One evening I minuted the procession—there were armies passing in front, others overhead, equal numbers behind, as far as eye could reach in either direction. It lasted fifty-five minutes! As these hosts crossed the river some dipped to its surface—presumably for an evening drink upon the wing. Now birds of prey, as a rule, shun contact with such massed formations; but here predatory instinct had divined a method of exploiting the opportunity. Grey goshawks (*Melierax*) and falcons hovered attendance on the wealth of flying food. By a “demonstration in force” from above, alarm was spread through the ranks. The whole flight dipped and the lower strata were thus forced by hundreds into the water beneath. Then the strategists coolly helped themselves—each to a double prize, right and left! Whole battalions, it might appear, perished aimlessly; since Nature never reckons of the individual life. Yet nothing, in fact, was wasted. The crocodiles, with hordes of predatory fish and other sub-aquatic carnivores, saw to that.

Riding onwards in glowing twilight, the thought occurred that when Lord Kitchener's barrage has materialised and this whole region has been reduced to a granary, auxiliaries more potent than goshawk or falcon will be required to hold in check these myriad armies of grain-eating finches?

In the second instance, other birds, while guiltless of

potential crime, yet suggested an ornithological problem. Simultaneously with the weavers, there also "flighted" other armies, obviously of the plover persuasion, and also in numbers beyond all arithmetical computation. These proved to be ruffs and reeves. But whence do such numbers emanate? And where are they bred? I have visited some few of the summer haunts of the ruff; a hundred pairs may breed here, a thousand elsewhere. But here we have them in *millions*. There must remain regions unknown whither these amazing hosts retire to nest each spring. Till I saw them thus in the Sudan, no suspicion of the extreme abundance of the ruff as a species had ever dawned upon me.

At midday the ruffs resort to the islets and sand-banks of the river, and a remarkable anachronism it is, in mid-winter, to see their hosts split up over a hundred miniature battlefields! The ruffs, of course, at this season boast none of their nuptial finery; yet everywhere are champions challenging each other, ruffling and fluffing-up in mock defiance exactly as is their vernal custom in far-away northern lands. Thirty odd years ago I defined this phenomenon as "Pseudo-erotism"—(*Bird-Life of the Borders*, 1889, pp. 91 and 102-3).

ENEIKLIBA

To us, when we reached Eneikliba, the place was nothing more than a camping-ground after a 17-mile ride from some other nameless spot. But we discovered thereat a wooded swamp that proved well-nigh a bird-paradise. Probably it had once formed an ancient channel of the river, though now lying several miles inland. Enclosed amidst dense belts of tamarisk and giant sedge there lay broad pools of stagnant water, and from their foetid surfaces uprose in gnarled fantastic arches the roots of forest-trees. An altogether eerie aspect pervaded this semi-submerged forest. Its canopy of over-

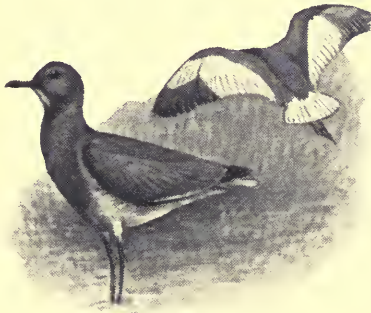
hung foliage, with broken lights, lent a quality of mystery to the great contorted roots beneath—as seen in shade, their convolutions resembled the writhings of some huge saurians of geologic period.

Upon each stretch of open water floated flotillas of ducks—pintail, wigeon, shoveler, teal, garganey, pochard (probably *Nyroca*)—while the shallows and foreshores teemed with waders, varying in size from giant marabou and



DOVES IN THE DUSK.

crowned cranes down to the tiniest stints (*Tringa minuta*); and the trees above were crowded with fish-eagles, storks, open-bills, egrets, ibises, and the rest of that Ethiopian ilk. It is unnecessary here to catalogue the whole assembly; though a few of the less usual deserve a note. Black-tailed godwits were probing up to



WHITE-TAILED LAPWING.

their ears in rotten ooze, and with them an avocet—the only bird of its kind I ever saw in the Sudan. Together with innumerable ruffs and reeves, were greenshanks, green and marsh-sandpipers (*Totanus stagnatilis*), as well as the curious white-tailed lapwing (*Vanellus leucurus*), a counterpart—save in

colour—of our familiar peewit at home, but striking in respect to its marked “assimilation to environment.”

Detailed investigation of a focal point such as this would obviously entail a sojourn of some days; but any

lengthened sojourn local circumstance forbade. It was the old, old cry—water. Water, in African travel, ever represents the inexorable limit, and here there was none. We had been forewarned that, although there were wells at Eneikliba, yet the water was too horribly foul even to wash in. We had therefore brought with us one full day's supply for man and beast, and that quantity marked the rigid limit of our stay. We worked every available hour, and consoled ourselves with the hope that on the return-journey, a month or so later, we should contrive to engineer a more thorough exploration. Again the Fates flouted us. A month later we found the conditions at Eneikliba entirely changed; the water had evaporated and not a tithe of the birds remained. Twice a promising chance had been lost, though the fault was not wholly ours.

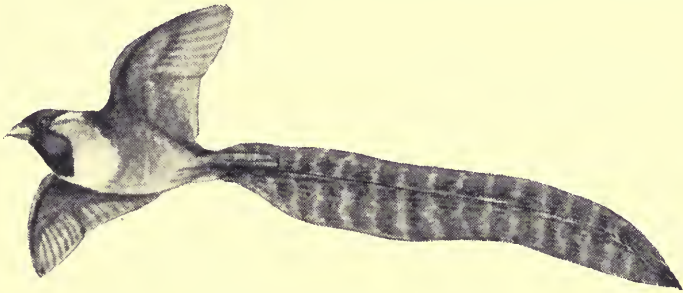
This wooded swamp of Eneikliba recalled in its main features these bird-resorts in Andalusia that we had discovered forty years before and described in *Wild Spain*—La Rocina de la Madre, and the Lagunas de Santolalla—spots that subsequently became the Mecca of wandering ornithologists. Here, at Eneikliba, another generation may find a minor Medina! The date for its exploration should be *before* Christmas, and the primary consideration a good water-supply; or alternatively, during the breeding season, whenever that may fall.

On the eve of a New Year we encamped on a bluff overlooking Blue Nile and, after dining on spatch-cocked guinea-fowl, slept *à la belle étoile*. I remember watching the stars pale to the dawn that ushered in A.D. 1914; but little did we—or anyone else in the civilised world—dream of the calculated outrage that that year of Our Lord was destined to see precipitated.

Beneath our camp on "Blue Nile Bluff" nestled deep tamarisk woods wherein we enjoyed profitable days collecting. Among notable prizes here were a pair of

booted eagles (*Aquila pennata*), a species not previously recorded in modern Sudan though familiar to me in Spain. Both these eagles (now in the Khartoum Museum) were in the *dark* phase of plumage—that is, their undersides were deep chocolate-brown—for this species is guilty of a colour-dimorphism. Later, near Singa, I recognised one of the light-breasted type; so that both forms occur in the Sudan.

[One morning as dawn broke a violent cachinnation of many guinea-fowl led me to go and see what the row was all about. Perched in double and triple tiers around the clay ridges of a sort of “wash-out” facing the river, were assembled



PARADISE WHYDAH-FINCH (*Steganura paradisea*).

half the “poultry” of the parish—their long necks on full stretch and all vehemently protesting against *something*. By advancing in flank, I perceived the cause of the uproar to be a big spotted hyena, with half-grown cub, drinking at the precise spot whereat the “guineas” were wont to water. That morning I flushed two tiny button-quails and shot a fledgling bush-shrike or bru-bru (*Nilaus afer*)—a little index serving to show that that species must *nest in November*. My morning’s bag further included a paradise whydah-finch (*Steganura paradisea*), no bigger than a sparrow, but with a tail two feet long! a woodchat shrike, also two African white-winged tits (*Parus leucomelas*), and a black bush-robin (*Cercotrichas podobe*), in figure not unlike our homely redbreast, but of strictly sombre dress—to my shame, I must add that it was singing merrily. A curious bird shot here was an insectivorous kingfisher which, belying its name,

prefers the dry thorn-bush and eschews rivers altogether. Its title, I believe, is *Halcyon chelicutensis*. Another and somewhat rarer acquisition was a robin-chat (*Cossypha verticalis*), lovely in contrasted hues of black and white, chestnut and orange. This is a regular bush-skulker, slipping about horizontally through the densest foliage after the manner of a warbler. In a lateral ravine a colony of bridled bee-eaters (*Merops frenatus*) was established in a steep clay face; though whether they were already breeding or not, the lack of excavating implements prevented our proving. There were wart-hogs in these woods, but their rootings were normal—not the curious four-square rootings observed later on the Dinder River.]

(II) DINDER RIVER

The distance between Blue Nile and Dinder being but twenty odd miles, we lightly thought to accomplish that transit in an afternoon's march. But African travel—especially by camelry and with wide rivers to cross—prepostulates contingencies and inevitable delays that one is apt, foolishly, to ignore. Hence, for the second time within a fortnight, we found ourselves “benighted” midway and perforce obliged to weather out another night in the forest, without a rag of cover, bite, or sup! and subjected to a temperature that would scarce have shamed Shackleton in the Antarctic. Moreover, our gallant explorers of the Frigid Zone do not suffer the intermediate contrast of 100° in the shade at noon! It is one of the many paradoxes of Africa that whereas—in regions such as this—the midday sun well-nigh suffocates with fiery heat, yet at midnight the degree of cold may chill and cut like a razor.

The Dinder shares with many another African river the character of being intermittent. In summer, after the Abyssinian rains, it rushes down in turbulent torrent 200 yards across; in winter (when we were there) its course is a sand-bed dry as Sahara, and its waters confined to scattered pools often miles apart.

These sequestered water-holes, stagnant and befouled, represent for long months the sole resource of a thirsty world—whether human or *feræ naturæ*. Upon them the Arabs with their herds entirely depend; in them camels and cattle plunge and wallow, while womenfolk wash clothes the livelong day. For drinking water, wells are dug in the sand 50 yards below each pool; but even so (and after being filtered and boiled) the quality is distinctly dubious. It is worth remark that the private ownership of each such petty “well” is universally respected. No one poaches his neighbour’s water.



GRIVETS RECONNOITRING.



GRIVETS DRINKING.

To us, of course, it was the “outbye” water-holes, those far remote from human disturbance, that alone proved attractive. Thither resorted thirsty crowds, and thereat a sequence of pageants in wild-life continued both by day and by night. Most of these pools lay beneath a high impending bank and, by lying hidden amidst its labyrinth of roots, we commanded the scene at close quarters. Green grivet monkeys oft shared our retreat, quite unconscious of our company though within arm’s-length. The air rustled with the coming and going of feathered multitudes in ceaseless succession. Doves of different kinds and in countless numbers dashed to and fro on lightning wing; there were drongos, bush-chats, and

buntings, pytelias, fire-finches, and cut-throats (feathered), wood-hoopoes, warblers, coucals, glossy starlings — in short, the whole passerine population. Within a given minute, weaver-finches in timorous clouds swept down a score of times, alighted for half a second, then as instantly, in mighty flutteration, rose again—*too nervous to drink!* But nervous they may well be—and with reason. For these sequestered water-holes, few and far between, afford Utopian hunting-grounds to eagles, hawks, and raptors of every denomination. Here



BUSH-CUCKOO (*Centropus Superciliosus*).
Coming Down to Drink.

violence reigns supreme and tragedies are incessant. Suddenly, round some bush-clad point, flashes a hawk (*Melierax gabar*), whips into the terrified crowd, clutches one victim ere it can gain shelter; a second which, in panic, had grazed the ground—a smart right-and-left within 6 feet of our eyes! Then a great white-headed eagle flaps slowly by, bearing, suspended from bushy talon, what appears a table-cloth. The eagle directs an upward course to some tall tree, where for the next half-hour we can watch him dismembering his victim—a spoonbill, probably, or a great white egret, for *Aquila non capit muscas* (and table-cloths still less).

Through and through that helpless, hapless throng—all rounded-up, remember, by *thirst*—there sheer peregrines and lanner-falcons, dealing death and destruction while

you watch; there are eagles too, also goshawks in two sizes, and fierce harriers, together with the small fry of the fleet—"destroyers"—such as the dashing merlin (*Falco ruficollis*), kestrels of sorts, and manifold forms of death, each with piercing eye, a lightning speed, and ready talon.

Beneath, in the depths of the pool, lurk hungry "water-wolves" (*Hydrocyon*), along with shoals of other voracious fish—not to mention crocodiles—each ready to engulf any and every living creature that ventures within their reach; or—as oft haps—is forced down in panic upon the deceptive surface. This explains why the martins and the bejewelled bee-eaters (though ever busy insect-hawking over the pools) are careful to preserve a margin of safety; yet even so, Mr Butler records having seen bee-eaters fall victims to a flying leap from under water (*Ibis*, 1905, p. 349).

Such scenes of ordered violence and bloodshed—striking to us denizens of *tamer* lands where the full barbarity of the prime has almost ceased to obtrude—represent, nevertheless, nothing more than Nature's schemes for the survival of the fittest, the struggle for existence, etc., in full view and actual operation. Anarchy, or the tyranny of the strong, are perhaps the best definitions.

In these respects Nature's methods run in the main on rough and ready—not to say barbarous—lines; but curious discrepancies appear. Thus a troop of grivet monkeys, emerging from the bush-clad bank opposite, cross the glowing sand; they move with mincing step, and every few yards a sentry will stand bolt upright to reconnoitre. Yet almost overhead, conspicuously posted on a tall tamarind-tree, sits a great white-headed eagle. Him the monkeys utterly ignore; and the neglect is reciprocal. Why does the eagle refuse so soft a chance? One can only assume that, unlike the Arabs, he is not Pithecophagous, and, moreover, that the monkeys

are aware of the fact—[a perplexing epithet that! but it is quite all right and sounds scientific]. The eagle sits regardless, while the grivets, in full view, spreading wide their forearms, squat flat in fantastic attitudes on the open sand to drink their fill. These attitudes may be impossible to portray; and the annexed attempts to do so very unwise. . . . There are, however, occasions when self-confidence is misplaced, and the thirsty grivet is snapped up by a crocodile.

One night three elephants visited our home-pool and the spoor of giraffe approached but never quite



GRIVETS DRINKING—DINDER RIVER.

touched it; otherwise the larger animals were here confined to reedbuck, oribi, doubtfully duiker, gazelle, and wart-hog,¹ with hyenas and troops of baboons. Our activities were chiefly confined to birds and the minor mammals, of which latter we secured, *inter alia*, a Ratel, male, 26½ lb., porcupine, jerbilles and jerboas—little cinnamon-hued sprites with big ears, immensely exaggerated hind-legs, and long tufted tails. One of these captured, Mr Oldfield Thomas has described as

¹ A wild boar of unascertained identity has long been reported from Sennar. We saw nothing of it; but many rootings of wild pigs noticed on the Dinder River were curiously square, as though cut with a spade. Rootings such as these I noticed nowhere else.

new to science, *Taterillus gyas* (*Ann. and Mag. Nat. Hist.*, 1918, p. 150). There were also ground-squirrels, pretty striped creatures of 2 lb. weight, that lived in holes and eschewed arboreal haunts. They sat up exactly as our British squirrels do, to eat with their fore-paws, and when alarmed stood bolt upright to reconnoitre, balancing on their tails. That appendage is dead-flat, the long lateral hair directed horizontally outward, more



BRIDLED BEE-EATER (*Merops frenatus*).

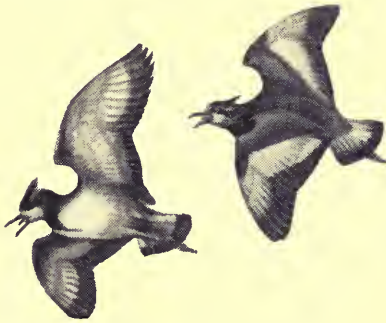


PARADISE WHYDAH-FINCHES.

like the plumes of an ostrich than the tail of a mammal. Small hares, weighing $3\frac{1}{2}$ to $3\frac{3}{4}$ lb., were numerous, and we also caught striped rats, spiny mice, and other members of that innumerable tribe.

Beyond the dry bed of Dinder, lay forests more striking in their tropical luxuriance than any on White Nile. Huge trees jostled each other, many smothered in parasitic growths resembling a tracery of knotted ropes stretching aloft, or pendent in infinite bights like the rigging of an old-time "East-Indiaman." Cactus-like creepers adorned with orange and crimson blooms spread from trunk to trunk; and there were scansorial

brambles, mistletoes, lianas, and matted prehensile climbers that often shut out the lights of heaven. And amidst all this riot of plant-life, abounded denizens equally perplexing. Something that might have been a scrap of a rainbow flashed by. I fired, and the victim was a bridled bee-eater—*Merops frenatus*; then a flutteration in the vast canopy overhead attracted attention. This time it was a trio of golden-winged bats that fell. Next a flute-like whistle lured, and a third shot produced an ebony-hued shrike whose



RED-WATTLED LAPWINGS
(*Sarciphorus tectus*).

crimson breast gleamed like a flame of fire. *Laniarius erythrogaster* is his title, and besides the flute-like note, he also chatters like a magpie. But such wealth of bird-life will not be described. Not since the epoch of the Ptolemies—or before it either—have those “home-coverts” of ours resounded to such

a fusillade. Sometimes by night the bag would exceed twenty brace, including emerald-green parrots, babblers, barbets and barbatulas, serins, sunbirds, woodchat and shrikes of a dozen species, waxbills, pytelias, colies, hoopoes and wood-hoopoes (*Irrisor* and *Scoptelus*), fire-finches and whydahs with such exaggerated tailpieces that, when on wing, they resembled squirrels volplaning—for the rest I must refer to the “official catalogue.”¹ There may be sportsmen who will smile at such enthusiasm for “tomtit-

¹ A pearl-spotted owlet (*Glaucidium perlatum*) proved to be the first recorded from the Sudan: and we also obtained honey-guides (*Indicator*), wryneck, and a fresh kind of swift (*Cypselus horus*), near Eneikliba. Red-wattled lapwings (*Sarciphorus tectus*), as sketched, abounded on the drier plains—vociferous as peewits at home. A nest of a woodpecker (*Mesopicus goertan*) contained a single big fledgeling on December 22nd.

shooting"; yet it demands accurate knowledge, judgment, and quick decision always to select the desideratum—that is, the specimen which counts.

For the National Collection at South Kensington we brought home from the Blue Nile and Dinder rivers upwards of 500 specimens of bird and beast. I will here confine my remarks to half-a-dozen of my favourite Raptores.

RUEPPELL'S VULTURE.—One of these extremely handsome vultures perched on a tree 100 yards from our camp and I got him with rifle. This species is one of the rarest of vultures in the Sudan; we only shot one other—in Kordofan. Dimensions:—

	Weight.	Length.	Expanse.
Male (adult) . . .	14 lb.	41 ins.	100 ins.
Female ,, . . .	16 ,,	42 ,,	102 ins.

WHITE-HEADED VULTURE (*Gyps occipitalis*).—These also belong to the aristocracy of their caste. We shot them both on Dinder, Blue, and White Niles—common everywhere—and found four nests of this species, all in trees, as under:—

- 1913. February—Two nests, each with half-grown "squab."
- 1914. ,, 28—Nest with half-feathered young.
- 1914. ,, 14—Full-feathered nestling, weight $6\frac{1}{2}$ lb., expanse $46\frac{3}{4}$ ins.

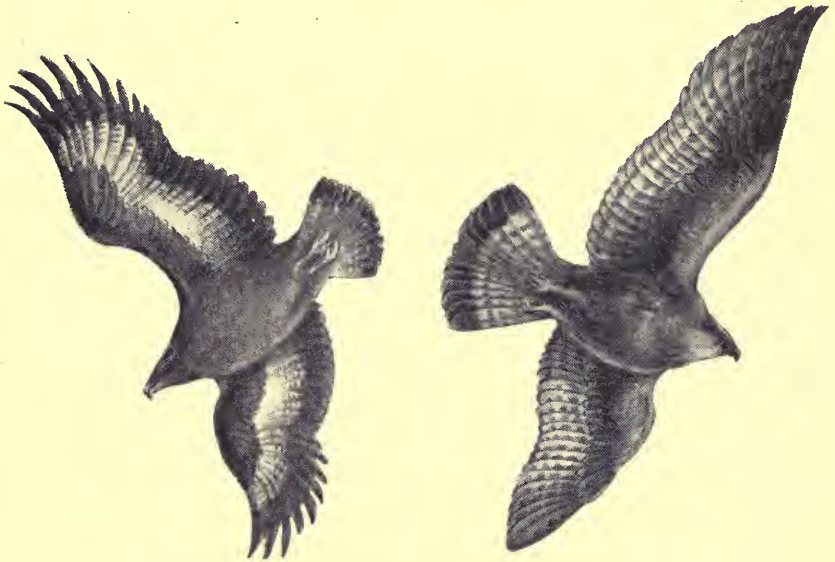
	Weight.	Length.	Expanse.
Male (adult) . . .	8 lb.	32 ins.	84 ins.
Female ,, . . .	9 ,,	34 ,,	88 ,,

WHITE-BACKED GRIFFON (*Gyps africanus*).—A pair were shot on Dinder, but seen nowhere else in the Sudan. Recognisable by the white "mirror" between the wings, similar to that in Bonelli's eagle. Dimensions:—

	Weight.	Length.	Expanse.
Male (adult) . . .	$7\frac{1}{2}$ lb.	35 ins.	85 ins.
Female ,, . . .	8 ,,	38 ,,	88 ,,

HARRIER - EAGLE, white-breasted (*Circaëtus gallicus*). Harrier-Eagle, dark-breasted (*Circaëtus cinereus*).—The first-named, our old friend—the serpent-eagle of Spain, we shot both here and on White Nile, also in the Red Sea Province. But on the Dinder we came across another eagle obviously

of the same persuasion, though entirely dark beneath. The first of these was posted on a high tree, and being half-crested, I mistook it for a buzzard. Its bluish-white feet and legs (bare above knee) were extraordinarily rugged, clearly specialised for seizing and holding slippery prey such as snakes, lizards, etc. The crop of this one, however, contained only chameleons. It had the same huge owl-like eyes as the *Culebrero* in Spain. Male: weight, 4 lb.; expanse, 70 inches.



CRESTED HAWK-EAGLE—SOARING.

BOOTED EAGLE—SOARING.

CRESTED HAWK-EAGLE (*Lophoaëtus occipitalis*).—Common. This species presents a strikingly handsome appearance as seen on the wing, the bold white bar across the undersides being very conspicuous. In the booted eagle this area is actually *darker*, as the rough sketches of both birds here juxtaposed, may serve to show. Dimensions:—

	Weight.	Length.	Expanse.
Male (adult) . . .	2 lb.	22½ ins.	50 ins.
Female „ . . .	2½ „	23 „	49 „

BOOTED EAGLE (*Aquila pennata*).—Blue Nile. First of

their kind obtained in the Sudan since the reconquest. Dimensions:—

	Weight.	Length.	Expanse.
Male (adult)	1½ lb.	20 ins.	48 ins.
Female „	2 „	21½ „	48 „

RIVER-EAGLE (*Haliaëtus vocifer*).—Common everywhere. Male 4½ lb., female 6½ lb. Feet very pale yellow; cere and bare face yellow. Irides hazel; beak dark-horn.

WHITE-FOOTED EAGLE (*Aquila albipes*, *ut supra*, p. 110).—Common on the wooded plains. Several shot between Blue Nile and Dinder. This is the eagle which experts identify with *Aq. rapax* in its dark phase. I cannot agree, and have therefore given it the above provisional title for convenience meanwhile. Irides pale yellow.

WAHLBERG'S EAGLE (*Aquila wahlbergi*).—This must surely be only a smaller edition of the last; for, though we shot one on the Dinder River, I did not notice any difference beyond a slight crest and its smaller size—weight under 3 lb. against 4½ lb. in *Albipes*. Our specimen is the first obtained in the Anglo-Egyptian Sudan.

TAWNY EAGLE (*Aquila rapax*).—The commonest and most widely distributed of the true eagles of Africa—alike on mountain or wooded plain—but always eschewing Europe. We met with it not only all over the Sudan, but wherever we have travelled on the African Continent. Though of compact eagle-build, and habitually killing its own game, yet the tawny eagle is never averse to act the part of a scavenger, constantly attending camps and “kills,” and content to share a carrion-feast with the vultures. This character alone (in my view) suffices to distinguish the tawny eagle from the white-footed forest-eagle (*Aquila albipes*) just mentioned, which disdains such orgies. The tawny eagle is subject to great individual colour-variation, our Sudan specimens including many of these gradations. Main specific characters are (1) the long tail, usually plain; and (2) the short powerful legs which, in the flesh, barely reach beyond base of tail. Between December and April we found several nests, all in trees, and the completed clutch numbered three eggs—dull white, sparsely spotted. One eyry was built

atop of the vast accumulations of sticks formed by glossy starlings (*Lamprocolius*), and alongside the eggs lay two dead doves. Average dimensions:—

	Weight.	Length.	Expanse.
Male (adult). . . .	4½ lb.	26 ins.	60 ins.
Female „	5¼ „	27 „	66 „

THE ARAB TRIBES OF THE BLUE NILE AND DINDER

The courtesy of these pastoral folk was charming. They are wholly illiterate, but their industry and skill in rude handicrafts surprises. In architecture they are experts in utilising wild Nature's productions, and their primitive houses could scarce be exceeded in comfort, having regard to climatic conditions. By using vegetable fibres and flexible boughs, they dispense with nails or cord. Bundles of bound-up canes provide door-posts and lintel, while the yellow halfa-grass of the wilderness, neatly interwoven in rain-resisting style, completes roof and walls—windows are not required. What their "municipal" arrangements (if any) may be we know not; but they live in ordered communities, each village having its sheikh who dictates and regulates without discussion or dissatisfaction. One incident struck me as incongruous. A local sheikh on the Dinder (who was most assiduous in attending to our comfort and requirements) kept assuring me that I was welcome to shoot whatever big-game I might find within his jurisdiction. It was kindly meant, but having a full licence from the Anglo-Egyptian Government, such local permission seemed superfluous? Fine points in diplomacy lie outside my scope; so I acknowledged the courtesy not only in thanks, but (what was more to the point) by suitable presents of "meat."

In the open country, or in the byways of the forest, all the Arabs we met would halt, dismount, and salaam. One day I remember being held up in thick forest by a stiff thorn-fence. While seeking a way through, suddenly

a native appeared from nowhere, rushed up, broke open a passage, and then guided me to an opening in another fence beyond; it was apparently a sort of "drove-road." I recall many such acts; all evidently springing from pure inherent good-heartedness.

BIG-GAME OF BLUE NILE AND DINDER

On their upper waters (and especially along the foothills and the uninhabited frontiers of Abyssinia), Blue Nile and Dinder include some of the best hunting-grounds of Sudan. Within a few marches of Abu Hashim on the Dinder, or beyond Suleil on the Blue Nile, there are found most of the big-game proper to Sudan. But since—with a single exception (the Tora hartebeest, and perhaps the koodoo)—all are equally common to White Nile, and have already been described upon that river, further detail is unnecessary here.

Elephants on Blue Nile are notoriously poor in ivory, and, locally, both they and buffalo largely inhabit impenetrable jungles of cane-grass that grow along both these rivers.

For an excellent and detailed description of big-game hunting on the Blue Nile and Dinder, the reader may be referred to Mr W. B. Cotton's *Sport in the Eastern Sudan* (London: Rowland Ward, 1912).



BATELEUR EAGLES—SOARING.

CHAPTER XXIV

THE WHITE ANT

THE insignificant termite—throughout Africa miscalled an “ant”—is one of the Powers of that Continent. Outside the tropical area, the earth-worm the world over is Nature’s greatest agriculturist; for year by year it transposes the exhausted subsoil from below and the refreshed superficial crust, to the extent—so Darwin tells us—of ten tons per acre.¹ But in the Tropics the earth-worm has no place. A sun-baked surface hard as adamant defies his feeble fossorial efforts. But Nature has provided a substitute no less efficient. What the earth-worm accomplishes for man in the Temperate Zones, that the termite performs in the Torrid. By their means, alternately in either case, the refreshed and fertilising crust is buried deep beneath an exhausted subsoil; with automatic regularity the two strata change places. Thus, and thus only, is the sequence of plant-life (which connotes that of all life) maintained and assured.

Throughout the length and breadth of Tropical Africa the operations of the white ant stand patent and conspicuous to view—they challenge attention. The landscape is dotted with ant-hills. They stand ubiq-

¹ On the tidal sandflats of the Northumbrian coast, Mr George Bolam has estimated that the sand-worms (locally known as lug-worms) shift yearly as much as 887 tons per acre. See his *Birds of Northumberland and the Eastern Borders*, p. 642.

uitous, mostly sub-rounded cones of 5 or 10 feet in height, but some mountainous piles of 20 feet and upwards; others of pyramidal form or sharply pinnacled spires. There are regions—as near Lake Baringo—where they spring up tall and straight as factory chimneys, and in the Bahr-el-Ghazal there is a form that takes the shape of giant mushrooms. But, big or little, never a white ant is to be seen near them, or taking the slightest interest in his reputed architecture. How is this? He belongs to what I called—while blindly groping about for an answer to that question—“The Unseen World” (*On Safari*, p. 258). While white ants obviously exist around one in untold myriads, how comes it that one never sees a single individual? An answer to the question unfolded quite by chance. Being held-up in camp by a “touch of fever,” I was constrained during several days involuntarily to study the *modus operandi* of the termite. First a very gentle movement at the foot of the tent-pole caught my eye. For a while I gave the trifle no thought till its very continuity aroused interest. Then gradually the details of a methodical plan of campaign developed. Grain by grain, an army of termites were carrying up the subsoil from below and plastering it on the tent-pole. Each allotted burden, being carried upon the labourer’s head, concealed from view the bearer beneath. The separate pellets each appeared to be ascending spontaneously—rising of their own volition. But so soon as each had reached its allotted position, there it was deposited and its troubled journey ceased. These pellets (though I did not know that at the time) are already rendered adhesive by a glutinous secretion exuded from the jaws of the builders; and thus inch by inch the termite constructs a concealing and protective fortification—a sort of tunnel—as he ascends. During the first day the tent-pole was encased in a mastic compost to a height of 12 inches good; and, since work proceeds all night without cessation, by next morning

the sheathing stood well over 2 feet above ground-level.¹

Give the termite and his confederates a couple more days and that glutinous encrustation would have reached the roof-pole. Thereupon the unseen army within would commence to devour the tent-pole itself—since dead wood forms their exclusive *menu*—and presently down would come the whole outfit in common ruin. Whatever termites decide to devour—so it be in sight—they first conceal in this encasement of plastic soil ere commencing a ligneous meal. And ere that meal is finished—so thorough-going are their methods—there will remain nothing more than a hollow cylinder, the simulacrum of what had been a tent-pole, or tree, or a telegraph post!

Despite his gigantic achievements in construction, the termite is an exceeding feeble folk; very immobile, and (except during a transient winged phase) stone-blind. His sole safety is subterranean; never does he appear on the surface whether by day or by night, and even in darkness, his work—albeit done above-ground—is yet subterranean. The paradox is explained by his patient processes of sapping and mining, while camouflaged all the time by that particle of earth's subsoil that he bears aloft, umbrella-like, in his jaws.

One evening the corner of a leather guncase had been left haplessly projecting some 4 inches beyond the protection of a green canvas ground-sheet (this material being ant-proof). By morning the termites had completely eaten away those overlapping inches, besides devouring a corresponding length of stout leather strap. Kit-bags, boots, everything in fact, if left within their reach, will inevitably be destroyed. A few lines above, I specified *dead wood* as their exclusive menu. That was a slip, for

¹ So strong is this glutinous secretion in the material of ant-hills that, when worked up with water, it forms an excellent surface for a hard tennis-court.

here we perceive that leather is also included ; though the white ant draws the line at green canvas.

Throughout the African forest one sees trees by the hundred coated or streaked with this grey earthy cement. Every dead tree or fallen bough is certain to be so enveloped—and eaten. Hence the wreckage of the forest quickly disappears. But even vigorous living trees frequently display a winding streak of grey mud ascending their boles. For so marvellous is the instinct of the termite for detecting the neighbourhood of *dead* wood, that he is able to diagnose the existence of decayed branches far overhead ; and to these unerringly leads that covered sap, though the work involves building a tunnel 30 or 40 feet high. It may be that he works on “speculation”?

In open country, outside the forests, termites practise their veneering arts upon lowly bush and shrub, or even condescend to encase a few blades of dry grass here and there ; the general effect of the earthy encrustation in these latter cases resembling a sort of petrification.

Hence the white ant does properly belong to the “unseen world,” for he lives, works, and feeds everlastingly under cover, and never sees the light of day ; indeed, as already stated, the termite is stone-blind. He is still “underground” when at the summit of a lofty tree, for he has carried the ground up with him.

One of the most charming of books is Professor Henry Drummond's *Tropical Africa*, a work replete not only with the true spirit of science but with the dual saving graces that so adorn, if they do not always characterise, treatises on such subjects as these, to wit—a lightsome touch of humour, with a solid substratum of common-sense. For biological details regarding not only the “white ant” but a whole host of mimetic insects—stories that read like romance—I would earnestly beg any reader who has felt interested in my own feeble yarn, to refer to that delightful book. It was published more

than thirty years ago (in 1888), and as an example of its learned author's methods in field-research, I commend to some who nowadays masquerade as "zoologists," Professor Drummond's prescription of "the *only way*—with patience and reverence—to study Nature."¹

Incidentally, the life-history of the white ant suggests another instance of the frequent failures in animal-instinct. Here we have a lowly insect, one of the most feeble and defenceless of creatures, yet instinctively enabled to outwit and set at defiance a whole host of enemies presumptively of far higher intelligence than itself. To them—from the human being downwards to bird and reptile—the termite represents an important item in their daily diet; yet by its infinite industry in "enamelling," in constructing tunnels and encrustations—though done in full view—the termite succeeds in evading their intentions and their appetites. Reasonably one might expect that, during ages, the termite-devouring animals, or some of them, would have detected the secret—have realised how defenceless the poor termite really was, how easily his flanks might be turned, his fortress captured. But no; although the termite prosecutes his labours under their very eyes, neither beast, bird, nor reptile—with two exceptions—have discerned his secret, or availed the wealth of food-supply that lies open for their exploitation.

The two exceptions are the aard-vark (or ant-bear) and the pangolin (*manis*), each specialised for breaking into their fortresses and devouring the termites.

¹ *Tropical Africa*, p. 110. Please read also p. 162—the upper half—and the story of "Chirombo" at p. 169.

While passing these proofs through the Press, I saw—alas! this gem of scientific writing priced in a second-hand book catalogue at *Three-and-sixpence!* Rather a sad commentary on public interest in Nature's ways?—especially when one reads simultaneously of popular novels, or autobiographies of the merest transient interest, commanding thousands of pounds.

CHAPTER XXV

THE MINOR ANTELOPES AND GAZELLES OF SUDAN

(I.) THE REEDBUCK

My first view of a reedbuck in the Sudan was on Blue Nile above Singa—a full-grown ram, unconscious of my presence, stood full-face on a bluff above, and about 100 yards away. His appearance left a clean-cut impression. The second seen—on the “Western Bend” of White Nile—corroborated that impression. On this latter occasion, the animal was bounding off, straight-away from me. In both cases the set and form of horn was clearly seen to differ essentially from that of the reedbucks of South Africa with which I was already well acquainted. Here, in the Sudan, the horns started to rise in a gentle upward curve—a sort of “bulge”—*before* assuming the semi-circular sweep that is common to both races alike. In short, there existed a “double bend.” I have no desire to exaggerate the difference so defined: still it must be considerable to catch the naked eye at 100 yards.

There followed a check: for the horns of the first two reedbucks actually shot in no wise agreed with these anticipations, nor with the typical form at all. There was no “double bend”; on the contrary, these horns were straight, short, and thick-set, but in profile sharply hooked forward like those of a chamois; or rather, on the lines of the equatorial type of reedbuck known as the Bohor. Having already shot the latter in East Africa (see *On Safari*, p. 55), I naturally concluded that these two first-

shot Sudan reedbucks must belong to the "Bohor" race, and that there also co-existed another species with the "double bend."

All these self-imposed doubts were promptly closed down so soon as we had secured a couple of first-class reedbucks of the "double-bend" type, and, incidentally, by shooting (under the misapprehension that we had here *two* species to deal with) one or two others of the presumed "Bohor" form. It then became clear that the latter were merely immature examples of the former



Transvaal. (15 $\frac{3}{8}$ in. by 6 in., tips 12 $\frac{1}{2}$ in.) Equator—"Bohor". (9 $\frac{1}{2}$ in. by 6 in., tips 3 in.) Sudan. (12 in. by 4 $\frac{3}{4}$ in., tips 8 in.)

HORNS OF REEDBUCKS—(In my collection).

—that is, of the typical reed buck of Sudan, the only species we found in that country, and which, when fully adult, *does* develop the double bend, as is admirably illustrated in Rowland Ward's *Records of Big Game*, 6th ed., p. 225. The English name there given, however, I venture to regard as misleading. The animal is quite distinct from the "Bohor" type, and should be called the Sudan reed buck (*Cervicapra sudanensis*). The incident at least shows how easy it is to be deceived, and how necessary to avoid jumping to premature conclusions ere ample evidence and a sufficing number of specimens have been obtained.

The biological status of the reed buck group presents a curious evolutionary problem. In CERVICAPRA we have

a clearly defined genus spread throughout the length of Africa from Sahara southwards to the Cape. But while the most northern and the most southern types (though specifically quite distinct) clearly approximate most closely *inter se*, yet we find these two races separated by a broad zone of interposed forms which (while also closely agreeing *inter se*) are both radically different from (and also physically inferior to) their congeners on north and south respectively. Assuming that all such changes spring from evolution—and limiting that term *ad hoc* to developments that import advantage—(or, say, “adaptation to changing circumstance”)—we are confronted with a paradox; for in the present case development is neither continuous, nor intergraded, nor consecutive, but precisely the reverse. The tangle might be dissolved were it permissible to assume that the type originated on the Equator, but subsequently succeeded in discovering more favouring environment as it spread away therefrom in either latitude. But I am getting beyond my depth.

After all, what advantage does the possession of horns, as such—be they bigger or less—confer on the antelope-tribe? Of course there is the quality of beauty, be it for sexual adornment or otherwise. But, except in that sense, do those horns subserve any useful purpose, economic, offensive, or defensive? I have seen no evidence of that. One witnesses little bouts between the males, but they are mostly mere sham-fights and rarely pressed home; besides hornless animals indulge equally in such diversions. Nature herself is in no positive mood in this matter, since in some cases she has granted horns to both sexes; in others, only to one—the male. The acme of her uncertainty is exemplified in such instances as that of the abounding Thomson gazelle—the familiar “Tommy” of East Africa—wherein some females are horned, others hornless. Where Nature cannot decide, surely I shall not presume to speak.

The ethics of Nature are oft inscrutable. Our present

problem presents a double example. First, in this Sudan reedbuck, we find a clear (and deceptive!) dimorphism as between younger animals and their own parents. For in the young the horns assume a shape and set which is totally different from that acquired when at full maturity. This involves not merely a change in the horn itself but in the solid bone-core of the skull. Secondly, these horns during immaturity so exactly mimic in form those of adult reedbucks of a totally distinct and geographically distant race (the Bohor), as to deceive the very elect!¹

Again, it might appear well nigh impossible—at least as we blindly regard such things—that solid bone (being an integral part of the skull) could continue during several years to alter its shape. But it does do so. We had, of course, previous evidence of the fact in the gnus and many other antelopes; while recently I discovered that a similar development occurs with the horns of the desert gazelles of Sudan. The annexed sketch shows the form of horns in the Isabelline gazelle during its period of immaturity.



ISABELLINE GAZELLE.
Very young male.

Reedbuck are essentially nocturnal in habit. The following summary of their daily lives is extracted from my diary:—"They feed early and late but lie up by day. On dull cloudy mornings some reedbuck may remain visible in the open for an hour—or even two—after sunrise; but on bright hot days they seek shelter earlier—often by dawn—couching in the deep grass, preferably beneath a bush or a tree, when the horns may reveal their position to an extra keen eye. If they drink in the morning it must be before day-dawn; but in the evenings I see

¹ The case is even stronger, since in the interposed zone of Equatoria, there co-exist not one but *two* quite distinct species of reedbuck (the Bohor and Chanler's), both of which affect the short, thick-set, and heavily hooked type of horn, though geographically placed midway between the two long-horned races on either side of them—*i.e.*, on north and south respectively.

them regularly wending their way towards the river, grazing as they go; but they never reach the water before it is dark. One often hears their characteristic whistle, long after one can see anything.

“To-day (February 15th) being heavily overclouded and with a cool breeze, we detected a good reed buck ram feeding in the midst of open grass as late as 8 A.M. Ere the stalk had developed, however, he had completed his breakfast and was already moving off towards covert—unluckily for him, right in the direction of the unseen stalker! This was a patriarchal old ram, but one horn had been broken off short, half-way up; the other only taped 10 inches, the tip being much worn down. Younger beasts carried better heads. Our best on White Nile measured 12 inches, but in Upper Nile, beyond the Sudd, we taped one at Mongalla of 14½ inches, and heard of others better; their irides are rich dark brown.”

(II.) BUSHBUCK

We met with the harnessed bushbuck (*Tragelaphus scriptus*) all along the White Nile beginning near Jebel Ahmed Agha; also on the Sobat and Zeraf; and, beyond the Sudd, as far south as we went—that is, as far as the Sudan extends.

The harnessed bushbuck is a strikingly handsome species, very dark chestnut-brown, appearing at a distance almost black in body-colour, adorned with conspicuous stripes and spots of white. This of course only applies to the males, females being tawny. Strictly nocturnal in habit, and spending the day amidst the heaviest covert, the bushbuck is less seen in proportion to its numbers than any other antelope, though its bark is often audible at dusk and dawn.

In Eastern Sudan—that is on the Blue Nile and Atbara with their tributaries—the bushbuck belong to the Abyssinian race (*Tragelaphus decula*).

The correct Arabic name is *Abu nebahh*, or "The Father of barking"; but my Selim-Baggára shikari, Baraka, has a special little term of his own for bushbuck—*Le-képp*. On the Settite, the Hamram name is *Hūs*.

Measurements of two Harnessed Bushbucks.

	Horns.		Shoulder height.	Weight.
	Length.	Circ.		
A . . .	12 $\frac{3}{4}$ ins.	5 $\frac{1}{2}$ ins.	30 ins.	108 lb.
B . . .	11 $\frac{1}{2}$ "	5 $\frac{1}{4}$ "	29 "	105 "



ORIBI BROWSING.

(III.) ORIBI

Every day in the game-country of Sudan one may see the oribi singly or in twos and threes. Often when one has no hostile intent, it delights to spend an easy hour watching his ways and elegant grace of motion. Although, like most antelope, the oribi habitually *grazes* and sometimes stretches up a slender neck to pluck off some tassel of grass overhead, yet I have also frequently noticed them *browsing* on the green leaves of low mimosa-bush, assuming the while charming attitudes as they deftly snatch some succulent cluster from amidst a maze of vicious thorns.

Often during the heat of the day one may walk almost

on top of oribi, so closely do they then lie in the deep grass—usually a doe with her fawn.

On the Dinder River, near Kamisa, oribi were almost the only kind of larger game, and I put in an occasional morning's still-hunting in the woods on either bank of that river. Sometimes one might spy the game afar, grazing in an open glade; another would steal gently away, low and inconspicuous, just beyond range. But it would not travel far, and with care a silent approach was often possible. How difficult that is in the tangle of an



“CAUGHT NAPPING”—ORIBI.

African forest goes without saying. Even your barefoot guide may crack some recreant twig or rustle a sun-dried leaf. Pray that such mishap befall not at a crucial moment; also that your way be not intercepted by fallen leaves—they are fatal.

When undisturbed, or thinking itself unseen, the oribi crouches low, half-hidden by tufted grasses, or lost amid the chequered shade of overhung boughs—undistinguishable as a wood-sprite from his environment.

All oribi killed on the Dinder happened to be females, and being anxious to secure a local male, I spent several days in fruitless search. Probably over a score of oribi were sighted, sometimes two and even three together; but all were hornless.

I mention these details because, shortly after returning home, at a meeting of the Zoological Society (May 19th, 1914) there were exhibited examples of *hornless male oribi* shot on this same Dinder River in 1903. It was also stated that Sir S. Baker and von Heuglin had both been aware of the existence of this phenomenon. I have, however, been unable to find the reference—Baker, in fact, never mentions the oribi at all. Still, in the light of the above note, it is conceivably possible that some of the many hornless oribi seen on the Dinder may have been males; without shooting them, it would be impossible to decide the point.



GAZELLE ON ZERAF RIVER.

On the Dinder the local name for oribi was *digdig*, which at first was misleading. One evening after sundown I saw a pair of small blue-grey antelopes playing together, and was only prevented from securing them by the failing light. At the time, I imagined these were true

dikdiks; possibly, however, they may have been the little blue duiker of Sudan (*Cephalophus abyssinicus*), since Mr Butler tells me he has never met with dikdiks on the Dinder. Captain Lynes also put up another tiny antelope, a mahogany-coloured beast, from a bush at his very feet; but was only armed with a collecting-gun.

(IV.) GAZELLES IN THE SUDAN

Of the seven species of gazelle found in the Sudan, four frequent exclusively the desert-regions of the north and east; while the other three (two of them closely allied) favour forest and bush farther south.

Two of the desert-forms—the ariel and addra—are comparatively large animals, corresponding in size with Grant's gazelle in East Africa; the rest are smaller, comparable with Thomson's gazelle.

The following table roughly summarises their respective sizes, distinctive marks, and distribution¹:—

Desert-Gazelles.

Species.	Size.	Weight.	Height at Shoulder.	Lateral Band.	Distribution.
Addra .	Large	120 lb.	36 ins.	None	West of Nile
Ariel .	"	100 "	34 "	"	East of Nile.
Isabelline	Small	45 "	24 "	Faint	"
Dorcas .	"	45 "	24 "	Less faint	Both sides Nile.
<i>Bush-Gazelles.</i>					
Red-front .	Medium	60 lb.	28 ins.	Black	Both sides Nile, south of 13° N.
Heuglin's .	"	60 "	28 "	"	Eastern Sudan, south from Kassala.
Mongalla .	"	60 "	28 "	"	Both sides Nile, south of Sobat.

The ariel, a big upstanding animal, and the little Isabelline gazelle characterise the Eastern Sudan—that is, the area between the Nile and Red Sea littoral; but since our experiences with both these are narrated later, no more need here be said. The range of Heuglin's gazelle lies along the extreme east of Sudan, bordering on Eritrea, hardly extending beyond the Atbara on the west.² On the north Heuglin's gazelle

¹ While following the accepted classification, I am yet doubtful whether the two gazelles, Dorcas and Isabelline, should rank as separate species, the differences between them being confined solely to the "set" of their horns. I notice that a distinguished zoologist, Mr R. I. Pocock, holds that "Far too many species have been admitted to the genus *Gazella*."

² General C. T. Blane informs me that in 1920 he met with black-banded gazelles, which were presumably Heuglin's (also koodoo), on the Dinder river, a little above Abu-Hashim.

is found as far as Jebel Mokram, near Kassala, but no farther, since exactly at that point it is replaced by the Isabelline and Dorcas gazelles. Southward it crosses the Settite but, somewhere in the neighbourhood of Gallabat, gives way to the red-fronted gazelle. For these details I am indebted to Bimbashi O'Callaghan, of the Egyptian Army, for some time stationed at Kassala, and my cabin-mate homewards in 1914.

Elsewhere in this book are given several instances of singularly interrupted distribution. Two curious examples occur among the gazelle-tribe along the western bank of White Nile.

From El Dueim, a village on the White Nile 120 miles south of Khartoum, starts the old-time caravan-route winding away across the deserts for 130 miles to El Obeid. The traveller at first crosses a bush-clad riverain belt of 15 miles in breadth, upon which strip all the gazelles seen are red-fronted. But at that precisely defined point the red-front stops dead; and beyond it, all the gazelles are Dorcas! The latter species then occupies by itself a stretch of 100 miles, across to a place called Taweel, 115 miles west of Nile. Thereat the Dorcas stops as abruptly as it began and the red-fronted gazelle reappears.

Each species restricts itself exclusively to its own apportioned zone, and never are the two seen intermingled.

The second, and parallel instance, refers to the addra gazelle, and by a curious coincidence occurs in precisely the same region—that is, in the deserts west of El Dueim.

Now to every big-game hunter in Sudan the addra represents a prize; but a prize not to be gained save at a stiff price. To reach its desert-home involves a long and wearisome trek by camelry into Sahara—save in the single isolated case about to be mentioned.

At this one particular spot—west of El Dueim—there runs, parallel with White Nile and 40 miles inland thereof, a narrow belt of land whereupon a hand's-breadth of addra are found, flourishing in splendid isolation! This segregated strip is but 10 miles in breadth. Before reaching it, never an addra is seen; nor, after traversing its 10-mile extent, will another be met with for 150 miles to the westward!—that is, in winter. On the second day out from El Dueim the traveller reaches the solitary koppie known as Jebel Shuwei, and this hill marks the longitude of this narrow scribe whereon the addra dwells.¹ The explanation of such facts—or of geographical distribution generally—lies beyond the range of a field-observer (or of anyone else).

Bush-Gazelles

The red-fronted is the common gazelle of all the bush-country both of Blue and White Niles, extending to the verge of the Northern Deserts. Nowhere really abundant, yet it is broadly distributed, usually in pairs or small groups—never in big herds such as one recalls in East Africa of its cousin, Thomson's gazelle.

Whilst up the Zeraf River in February 1914, I recognised at once a difference between the local gazelles and the ordinary red-front. These Zeraf gazelles showed a distinct white blaze on the forehead, between the horns, and the black lateral stripe appeared thinner and less conspicuous. That year, unfortunately, a little "scrap" was raging with some turbulent Nuers up the Zeraf and (though granted special permission to collect birds) we were forbidden to shoot the larger game. Hence I

¹ During the *rainy season*, Mr Butler tells me he has seen Addra scattered all along the desert-route from Jebel Shuwei to the Sahara. But when, in spring, these big gazelles retire therefrom, they still leave in "splendid isolation" that 10-mile breadth of their kind which finds permanent quarters around Jebel Shuwei.

suffered the mortification of encountering a beautiful new species, quite close, without being able to secure a specimen. But having passed our word, never a rifle-shot did we fire on Zeraf. These Zeraf gazelles belonged presumably to the species known as the Mongalla gazelle (*Gazella albonotata*)—sketched at p. 342.



ARIEL—(By E. Caldwell).

CHAPTER XXVI

THE RED SEA HILLS

THE mountain-ranges which flank the Red Sea from Suez to Bab-el-Mandeb are more or less familiar to the traveller eastward of Suez, since their serrated skylines and apparent sterility shock his sight during several days' voyaging. Probably that traveller regards his deck-chair—with iced drink at elbow—as infinitely preferable to any prospect of adventure amidst such repellent scenes. Certainly from a distance they gave me that impression; yet in these very hills I have spent one of the most enjoyable periods of my life!

These ranges, at the point of our investigations, reach elevations of but little exceeding 5000 feet, and even that rising from a basal plateau of 3000 feet. Farther south, on the borders of Eritrea, they attain nearly double that height.

Naturally the fauna of this rugged and elevated region—dew-drenched nightly by mists from the Red Sea—differs essentially from that of those arid and low-lying levels of southern Sudan which have hitherto engaged our attention. The typical big-game of the hills comprises ibex and ariel, with some smaller gazelles, klip-springer and Salt's dikdik, also Nubian wild asses on the plateaux. In bird-life, the characteristic species encountered here for the first time included the lammergeier, with various fresh forms of eagles and vultures; also new types of hawks, kites, and ravens. There are francolins as big as blackcocks and tiny rock-partridges

hardly heavier than quail; of all these, together with the minor feathered fauna, we treat later.

SINKAT

Our investigations commenced at Sinkat, close by the "Divide" that separates the watersheds of Nile and Red Sea respectively. Sinkat, by the way, became for seven months (in 1883-84) a focal point in the story of British enterprise—and of some British bungles!—in the Sudan. With that aspect, however, we are not concerned. At the date of our arrival (March), a chief characteristic was the ubiquitous evidence of a marvellous bird-migration—half the feathered population were hastening past, all in through-transit for Europe. Every bush for miles around seemed filled with British or Europe-bound warblers—blackcaps and redstarts, common and lesser whitethroats, Blandford's, orphean, rufous, barred, and garden-warblers—silent songsters hastening northwards day by day; while, high above, the heavens were streaked with files of migrating storks and cranes, and bands of buzzards (*Buteo desertorum*), all amove. Besides these impetuous travellers daily hurrying past, there were also of course the residents, including lovely creatures such as the rosy-breasted shrike (*Rhodophoneus cruentus*), met with here for the first time; bush-robins, sun-birds, and dozens more—I dare not catalogue them here.¹

Farther afield, on the slopes of the encircling hills, we chanced on charming rock-gardens—patches of fawn-coloured sand inset amidst crude black boulders, but adorned with lavender-like shrubs and by the delicate tracery of the acacias, ever graceful albeit somewhat hypocritical in their cruel armour of needle-pointed

¹ I have spoken of "silent songsters." Certain of the above species, however, by intermittent song, proclaimed that they had reached, or were approaching, their *incunabula*. These included bush-robins, orphean, rufous and Blandford's warblers, also desert-larks, etc. On March 19th we found a nest of woodchat (*Lanius paradoxus*) with five eggs; another of grey shrike with young (*Lanius leuconotus*) a week later, besides others.



BETWEEN SINKAT AND SARROWIT.



ON THE PLATEAU OF SARROWIT.

[To face page 348.]

thorns. Here also the aforesaid "British warbler" was ubiquitous; but one also saw creatures never seen at home—strange frilled lizards dart about the rocks, other lizards in gaudy array of orange, blue, and white; and there were jerbilles, rock-chats, pipits, and wheatears, all of desert types. Along the barren slopes above, quested tawny and serpent-eagles; and higher still, around mist-wreathed peaks, circled larger eagles—imperial eagles, that kept the timid gazelles amove. From among gaunt boulders issues a harsh call-note—is it a hyrax? No; that note comes from a pair of rock-partridge (*Ammoperdix*) sprinting up the steep slopes beyond; next a patch of low scrub holds a brace of Salt's dikdik, and from a rugged ravine jumps a great striped hyena—a wild country, but the gateway to regions wilder still.

SARROWIT

After a fortnight's bird-collecting at Sinkat, we set out by camelry through the rock-defiles that lead to Erkowit—the Simla of Sudan—40 miles away to the south-eastward. Midway, however, the fascination of a lonely highland plateau induced us to encamp thereat. This Eden of ours, known as Sarrowit, lies 3404 feet above sea-level, entirely inset amidst hills of weird and fantastic skylines. Within this circlet lay rolling stretches of a stony conglomerate—hornblende and porphyry, black and lustrous—embedded as by some Titanic roller, but barren of plant-life save sparse tufts and patches of a silver-bearded grass that fluttered in the breeze—the "tabbes-grass," I imagine, of Schweinfurth (*Hordeum*).

These petrified downs were traversed by "khors"—meaning, in this case, broad shallow depressions whose sandy beds were often irradiated with a wealth of colour, in striking contrast to their bleak environment. Amidst a nucleus of low thorny scrub, grew dwarf cacti and flowering aloes, sansevieria, and euphorbia—the whole

aflame with the spikes of red-hot poker, yellow acacia, and golden-blossomed yuccas, with many a flower unknown. Some of these khors resembled "streets" of brilliant colour-relief amid the forbidding desolation on either side. Another feature of Sarrowit was the fantastic jebels that studded this highland plain, some of them composed of giant monoliths piled in such fashion as apparently to outrage the laws of gravity.

It was here that we encountered the Ariel—a game-animal as fascinating in form and figure as hunter can hope to meet. Its favourite haunts were the mountain-faces which, in dark shaly terraces, encircled the plateau, or upon the intervening foothills.

As each dawn broke herds of ariel grazed within sight of our camp and amazingly conspicuous they were. In colour the ariel is extremely pale. Quite one-half of his person is, in fact, snowy-white; while the rest is of lightest fawn, almost straw-colour. Thus, on the dark iron-stone tracts, the ariel-herds stand out most conspicuous objects, challenging attention at a couple of miles. Naturally, when feeding in the sandy khors, their pale colour harmonises better with the surroundings—there, in the glare of an African noontide both animal and environment oft share a hue of "liquid sunlight."

So powerful a factor is sunlight that even the gaunt black areas of quartz and ironstone rock (together with any ariel upon them) may partake equally of the false colour, intensified by mirage and the dancing heat-haze. A further deception is superadded by the thousand tufts of dothering-grass aforesaid (*Hordeum*), which lend a quivering motion to the solid earth and increase the optical illusion.

During the hot noontide ariel lie down to rest, and one sees the harsh black stone-beds studded with yellow patches. These are spots from which the animals have scraped away the surface-stones, so as to rest upon the soft sand beneath. Their "siestas" the ariel select with



DRAGON-TREE (*Dracæna*) AND CARAIB (*Bucerosia*), NEAR SARROWIT.
Our Camelry passing beyond.



BALANCED BOULDER, NEAR SARROWIT.
(Pied Crow's Nest in "pot-hole" near the top.)

[To face page 850.]

such circumspection that rarely or never can they be approached unseen, though I cannot remember ever having seen them post a sentry.

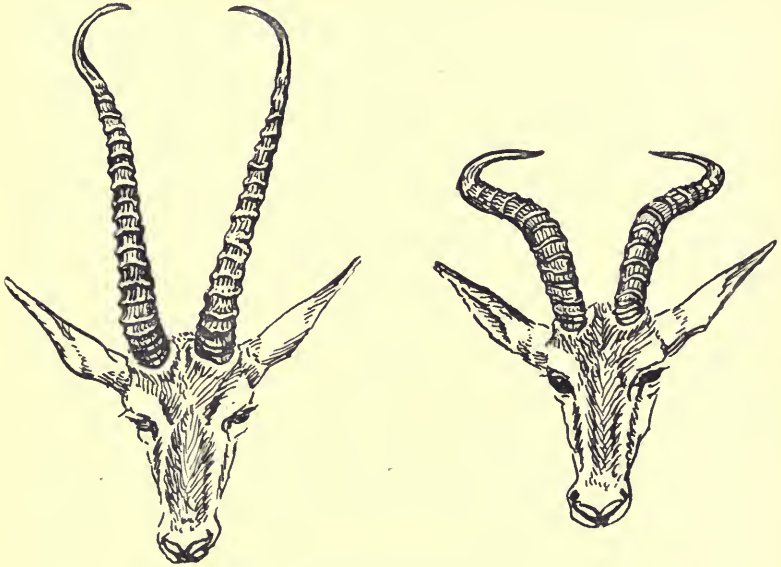
Conspicuous as they are, ariel are always difficult of access. If regarded solely from a sporting point of view—(which is against the unwritten laws of Africa)—ariel-stalking would undoubtedly rank in the very first class,



ARIEL—THE MIDDAY SIESTA.

the mutual advantages and disadvantages being so equally balanced. Many stalks fail; others develop in delightfully unexpected ways. Some of these stalks took us right into the heart of the hills—5000-foot piles of dark shale, bare of all vegetation save the dothering-grass and a tiny blue-blossomed thistle (*Blepharis*) that peeped from under stones. Our first success, I remember, occurred when a troop incautiously filed over a skyline 600 yards ahead. To exploit the opportunity involved hard running, so as to “cut them out”; but Lowe took on

the job and secured a good buck. My own first chance followed, and I believe I owe it to a little string of Arab donkeys that were grazing in a bush-clad khor, that I "got in," unobserved, to a herd of ariel on the rock-ridges beyond. I selected what appeared to be the longest-horned and, for the second barrel, another good head as they bounded over the crest. Both fell, but the



HEADS OF ARIEL.

Somali type, 20 $\frac{1}{4}$ inches.Sudan type, 14 $\frac{1}{2}$ inches.

first proved to be a doe, the females carrying horns almost as long as their mates, though thinner. Those of this doe taped 12 $\frac{1}{2}$ inches as against 13 $\frac{1}{4}$ in each of the two bucks obtained that afternoon.

The ariel of Sudan belongs to the typical race, but its horn-development never approaches that of its Somaliland cousin. The horns of the latter (differentiated as *Berberana*) frequently exceed 20 inches in length, but are subject to great irregularity and lack of uniformity. They are, moreover, straighter and devoid of the singularly graceful recurved sweep that distinguishes Sudan



THE RED SEA HILLS.
Typical Ibex and Ariel Country.

[To face page 352.]

heads. The latter are recorded up to 16 inches, but the great majority average under 14 inches.

Among hundreds of heads examined through the telescope, I only detected three that appeared substantially to exceed the latter measurement. Fate, in two of these cases, proved unkind. The first I undershot twice, standing full broadside at 300 yards; although, after the first failure, I had raised the "sighting" and, moreover, at the time, was shooting in my top form! The next evening, after long and patient "spying," we detected two extra big heads in a herd of a hundred—the best a real champion, but so restless, that after our hour's hanging on the flanks of the troop (alternately crawling, running, and stalking), he deliberately left his companions and went off alone. As dusk was falling, I essayed a long shot at the second-best, which proved to be my best for that year, taping $14\frac{1}{2}$ inches with an inside spread of just under 9 inches.

There is no water among these sterile hills, and both ariel and the smaller gazelles must be nearly as independent of that element as are the ibex.¹

That last remark, however, necessitates a note on the totally different climatic conditions that distinguish these Red Sea hills from the far interior Sudan. In both regions the winter winds blow fresh and strong from N. or N.E. But here, among the hills—the reverse of the case on arid Nile—its cool breath comes *saturated with moisture*. So damp was the atmosphere at Sarrowit that we were compelled to keep all change-clothing buried in our camp-beds!—an experience that recalled long-past days on the "high fjeld" of Norway, but almost incredible in high-dried Sudan. Often before sunrise the dark hill-slopes glistened wet, as it were after a heavy thunder-shower; and we noticed the crude rocks coated with a sort of film of eocene plant-life—mossy or crypto-

¹ Nevertheless, we found the bladders of ariel shot in afternoon, and even at sunset, filled with water!

gamic—evolved (so it seemed) solely from moisture alone. Is it possible that that film suffices to provide both food and drink to specialised creatures? So strong blew the moisture-laden breeze all day that if any light article—say a sponge—were carelessly laid down, it would only be recovered (if at all) after a race of a hundred yards!

The supply of moisture provided by a breeze may suffice for the needs of gazelle and other non-bibulous beasts, but is no sort of use for thirsty hunters, and our water-supply proved a ceaseless scourge. Its sources lay a double day's journey distant, and for its transport hither we were dependent on Hadendowa camel-drivers; and these Hadendowas—the same formidable “Fuzzies” who in 1884 broke our squares at Teb and Tamai and who, under Osman Digna, ambushed the 21st Lancers at Omdurman—are in peace-time the most sullen and incompetent of savages. I write this with equal sorrow and conviction; for, wherever I have travelled in Africa, I have ever got on the best of terms with the local native. But between me and a Hadendowa (though fellow-subjects) there has never existed, nor ever will, a single scrap of human sympathy. The tribe are reputed expert camel-men, and their standard of intelligence tallies with that of their evil beast with its “sculptured sneer.” Stolid and apathetic, they are incapable of graceful sentiment, and one's best efforts towards friendship elicit no spark of reciprocity.

In curious contrast stands the fact that from all the other Arab tribes among whom we sojourned—including the notorious Baggára—we met with marked courtesy and friendship.

One extraneous point should be stated in favour of the Hadendowas. Physically they are among the finest of the Arab tribes—big, broad-built men with splendid muscular development.

So short at times was the water-supply that one



AMONGST THE RED SEA HILLS.
Landscape near Sarrowit.



HEADS OF ARIEL.
Shot at Sarrowit, March 1914.

[To face page 354.]

morning good Mahomed Maghazi told me (the camelry not having arrived) that our choice lay between (1) a wash, and (2) coffee for breakfast. Now I must have *both* . . . and I got them. For, having first splashed my face in the wash-basin, we made coffee with its contents afterwards. My two companions, luckily, still remain unaware of this outrage! Even after boiling, the water was bitter—I refer, of course, to *unused* water.

Ariel are distinctly migratory and at this period (March-April) were moving northwards; nor among the thousands seen, do I recollect observing any fawns. A corresponding counter-movement occurs in autumn when, after the rains, vast herds of ariel pass southward towards the Atbara and beyond. They are among that class of wild animal that seasonally shift their ground, higher or lower, according to pasturage. Thus hundreds may be seen in a locality which a month later is deserted; though the abandoned haunt may then be reoccupied by gazelles, which also wander afar, but whose requirements differ.

Another predisposing cause for seasonal movements—perhaps more potent even than food-supply—is a seroot-fly of sorts, which in spring invades the higher grounds in ferocious swarms which drive both game and Arab herdsmen, along with their flocks, pell-mell from the hills.

If it be permissible to hazard a tentative opinion based solely on such narrow limits as personal observation afford, I would suggest that such animals as ariel, which seasonally shift their pasturage between higher and lower levels, become the more predisposed to extend their migrations, since a mobile habit grows.

The ariel, with a wide migratory range, has developed two very distinct forms; to wit:—the Sudan type, and that of Somaliland. The extreme divergence between these two has never been adequately recognised. If the reader

compares my description (as above) of the ariel in Sudan with those of our standard authorities, he must perceive at a glance that the two versions differ diametrically, chiefly as regards the personal appearance of the animals, but, in minor degree, respecting its haunts and its habits.

It is with reluctance that one seems—even superficially—to place oneself in quasi-contradiction to other and thoroughly reliable observers, whose opportunities of study have been as great or greater than my own. I do not, in fact, do so, since the areas differ; but the accepted descriptions of the “aoul” in Somaliland differ so diametrically from my impression of the “ariel” in Sudan that the point is worth raising. Thus in the *Book of Antelopes*, vol. iii., and in Rowland Ward’s *Great and Small Game of Africa* (both standard works), I find the following epithets applied to the ariel:—“Heavy—clumsy—coarse—thick-set—ungraceful—lacking in grace and beauty—heavily-built—sheep-like,” etc. They amaze me, but may nevertheless be correct; if so, there must exist an unparalleled divergence between two local races of one species. The ariel of Sudan can only be described in terms precisely the reverse—as my rude sketches may serve to show.

One other point in this connection. In my book *On Safari* (p. 126), I recorded seeing certain unrecognised gazelles at Lake Elmenteita in British East Africa, which were confidently identified by my Somali gunbearer, Elmi Hassan, as “aoul” (=ariel); but the very descriptions of the “aoul” just quoted, convinced me that Elmi must have been mistaken. But now, after having seen the animal in life, that conviction is shaken. The Equator seems a long way south of the ariel’s known range; but when the vast deserts that separate the administered areas of British East Africa from Somaliland and Abyssinia become zoologically better known, it may conceivably be found that ariel, on occasion, do wander



No. 1. NEST OF DESERT-LARK (*Certhilauda alaudipes*), SARROWIT.
April 9th, 1914.



No. 2. NEST OF DESERT-LARK (*Certhilauaa alaudibes*).
On Saltings near Coast, April 14th.

across them, and that my unknown gazelles of September 1904 at Elmenteita were, in fact, ariel.¹

It was, by the way, the same Elmi Hassan who was afterwards with SELOUS, and who was badly injured by a wounded buffalo on the Northern Guaso Nyero, British East, as related by Selous in an article entitled "My Last Buffalo" (*Field*, June 8th, 1912). In Mr J. G. Millais' excellent "LIFE OF F. C. SELOUS," the name is inadvertently misspelt "Elani."

BIRD-LIFE ON THE DESERT HILLS

However grateful be our memories, yet 'twere idle to deny that these Red Sea ranges are in truth but a barren upland, and that nothing save abounding enthusiasm would ever wrench from them the full secret of their hidden treasures. To claim that such qualities characterised our expedition of 1913-14 is no egotism on the part of its feeblest member.

An outline of the zoological features of THE DESERTS has been given in a previous chapter; a few local details are added here under specific heads:—

CURVED-BILL DESERT LARK (*Certhilauda alaudipes*).—This big lark is equally distributed on highland and lowland alike—and in the deserts of the interior. The photos (facing pp. 356 and 358) by Captain Lynes show its method of nesting.

Photo. No. 1.—Nest built in low scrub-bush in the desert, its base just touching the ground below: ready for eggs on April 9th at Sarrowit, 3500 feet.

Photo. No. 2.—Another nest on saltings near the coast. Built alongside a hummock, and sheltered beneath the wreckage of a sand-smothered shrub. Contained two hard-sat eggs, Port Sudan, April 14th.

SAND-LARKS (*Ammomanes*).—There are two species. The larger, *A. deserti*, big as a skylark, pale unicolorous sandy-brown; the second,

¹ Sir F. J. Jackson questions this, and his doubt well-nigh signs the death-warrant of my conjecture. He suggests that the unknown animals may have been impala, which at that time were "so harassed in their bush-haunts by the Wandorobo that they took to the plains and spent the whole day in the open."

A. arenicolor, a delicate pale cinnamon-hued bird. Its wings are slightly darker-tipped and the tail more rufous, with sub-terminal bar; but these are the only "blemishes" in an otherwise uniformly bleached and desert-like plumage.

A notable characteristic of these two desert-dwellers—and one which they share with the species next to be described, the ant-chat (as well as with the black wheatear, *Dromolæa leucura*)—is the habit of barricading the entrance to their subterranean homes with a banquette of pebbles outside, as shown in the photographs annexed. In Spain this curious custom has gained for the black wheatear its Spanish title of *Pedrero* (= "Stone-mason").

Photo. No. 3.—Nest of *Ammomanes deserti*, placed deep under a stone—for shade; and, for coolness, facing N.E. towards the prevailing wind. This nest, on April 9th, contained two young of about three days' growth, clad in erect fluffy white down—Sinkat, 2900 feet.

Photo. No. 4.—Another nest of the same species, but situate inside a rock-cranny. It was ready for eggs on April 9th. Very large pebbles, it will be seen, surround its entrance.

ANT-CHAT (*Cercomela scotocerca*).—This bird has also adopted the curious habit of piling up a banquette of stones outside its front door—as shown in section-sketch at p. 365. This nest (built of dry grass and lined with goats' hair) was placed far in beneath an earth-fast rock, the entrance-slit barely wide enough for the owner to squeeze through. The rampart numbered 130 pebbles! This was near Erkowit, 4000 feet, where the ant-chat was common; but, though we found several nests—(some betrayed by the pebbles outside)—no eggs were laid up to the date of our leaving the hills on April 10th.

CRESTED LARK (*Alauda cristata*).—Like *Certhilauda*, this is universally distributed throughout the desert-regions—along the littoral, on the mountains, and in the interior deserts alike. Yet though a true desert-denizen, it is less prone to assume an assimilative desert-dress.

The crested lark is a much earlier breeder. On the coast I found occupied nests as early as the first week in February (1919), these being very slight structures built on open desert, though often sheltered by some projecting stone or by the root of a sand-smothered shrub. The eggs invariably numbered two and were boldly spotted.

At Erkowit, 4500 feet, one pair had already hatched their young on April 6th, though three days later another pair were busy building.



No. 3. NEST OF DESERT-SANGLARK (*Ammomanes deserti*).
Sinkat, April 9th.



No. 4. NEST-CRANNY OF DESERT-SANGLARK.
Note Banquette of Pebbles. Sarrowit, April 9th, 1914.

[To face page 358.]

On the deserts of the interior I have notes of finding two similar nests at Jebel Surgham and one at Jebel Gerein on February 14th and 26th respectively; as well as others of the abounding short-toed lark (*Calandrella brachydactyla*).

LICHTENSTEIN'S DESERT-BABBLER (*Argya acacia*).—Another of the desert-types clad in sand-hued monotones, but in figure, a slim, smart-built bird; equally common on high ground or low, on coast or far inland, and gifted with a resonant musical whistle which sounds farther away the nearer you approach the performer. A nest at Sarrowit, 3500 feet, contained on March 28th two turquoise-blue eggs, like large hedge-sparrow's. Being built in the very heart of a horribly matted thorny acacia, 8 feet high and 20 feet across, the twin



RAVEN (*Corvus umbrinus*) ON HEAD OF ARIEL—SARROWIT.

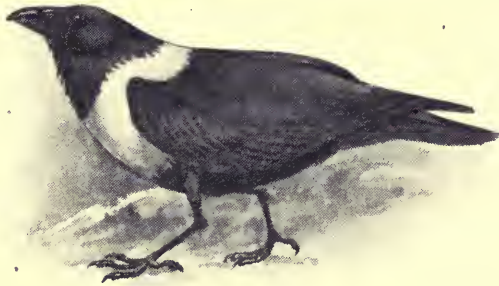
treasures cost lacerated hands and arms to secure, the thorns recalling (Lynes writes) the "indurated malice of the sword-broom and pin-cushion gorse in Spain."

CROWS AND RAVENS.—Our camp at Sarrowit was attended by a retinue of pied crows and ravens, the latter of the brown-necked species, *Corvus umbrinus*; whereas at Erkowit, though only 20 miles away, all the ravens belonged to that weird, broad-winged form distinguished as *C. affinis*—sketches of both kinds annexed. The "brown-necked" ravens were all as black and as glossy as our British ravens, and their nesting-habits precisely the same. In April I put one raven off her eyry which, by sign, evidently contained ravelets; and situate exactly as our Northumbrian ravens nest—in a cavern, with overhung rocks above and a sheer face below. Three weeks earlier, on March 18th, Lynes had found another nest with three eggs in a *heglig* thorn-tree at Sinkat—a strongly-built stick nest lined with camels' hair.

The pied crows (*Corvus scapulatus*) were also breeding in the hills. One nest on March 29th, with two young, was in a "pot-hole" of a gigantic granite boulder, a regular *kaaba*, 18 feet high, that lay stranded on the plateau; a second, the next day, was built in a thorn-tree and contained five speckled blue-green eggs.¹

Blue rock-doves, paler than ours, bred in isolated jebels, and so also did crag-martins and white-rumped swifts; while in the mimosas turtle-doves (*Turtur roseigriseus*) had eggs by early in April.

The above represent some few of the chief types of bird-life among the hills. Many other species could be added—coursers, stone-curlews, sand-grouse, pallid harriers, eagle-owls (*Bubo cinerascens*), a single little owl (*Athene noctua*) rather beyond his true latitude, and falcons,



PIED CROW—SARROWIT.

but will conclude this chapter with following note from diary:—
 "Throughout the sandy and rocky deserts of Northern Sudan one notices, region by region, corresponding changes in the depth of monotone colours, darker or paler, prevalent in bird and beast. Thus on the tawny deserts beyond Omdurman both *Certhilaudas* and *Pyrrhulaudas* are markedly paler than those on this darker Erkowit plateau; while an intermediate phase (of different ground-colour) occupies the Red Sea littoral. Another eloquent example of graduated adaptation to altering environment is afforded by the sandy-hued *Ammomanes*; and hardly less so by the desert-babbler (*Argya*), both of which are found alike on sandy and on rocky deserts, and in each locality exquisitely corresponding with their immediate surroundings."

¹ Near the Iron Gates on White Nile, two pairs of pied crows had built a twin eyry in a 15-foot thorn-tree, and the owners sat incubating hardly a foot apart. This was on March 12th, 1919.



ONE OF THE "KHORS" NEAR SARROWIT.



RAVEN'S EYRIE NEAR SARROWIT.



OUR CAMELRY TREKKING TOWARDS
ERKOWIT.



IN THE HILLS NEAR ERKOWIT.

CHAPTER XXVII

AN AFTERNOON WITH ARIEL AND IBEX

(SARROWIT)

ONE afternoon (April 9th) we had set out, Lowe and I, with the special object of securing two first-class ariel bucks for my collection. Several herds were sighted—some were obviously inaccessible; others proved to be so. Then, after a series of complex and interesting manœuvres, we “got in” to a troop of about sixty paused on a sombre shale-slope, and of three good bucks that stood separate, I secured what appeared to be the best at an estimated range of 275 yards.

An hour later, a great black jebel rose on our front, and Lowe thought he detected game on its hither face. A prolonged scrutiny with the glass satisfied both of us absolutely that the suspected objects were merely the jagged tips of uptilted rocks catching the last rays of a sinking sun. I am convinced that there was no mistake about that. At the same time we both realised that the lowering sun, drooping beyond the hill, was producing strange and illusive colour-effects. Those crude black iron-stone rocks seemed to melt into a glowing mass of molten alabaster, with a haze of liquid false-light interposed between it and ourselves. Being satisfied that the hill was untenanted, we continued advancing across open slopes diagonally towards it. Upon arriving within some 300 yards, however, a slight movement simultaneously caught our eyes, and a second survey from this point showed that, after all, the hill was actually full of game!

An optical illusion more extraordinary than that which

then confronted us, I never remember to have seen. Inert and statuesque among lustrous rocks, stood scores and scores of wild animals—phantom figures blending like spectres into their background and seeming to share its hues, or at most but a half-shade lighter. So far as they were visible at all, these ariel appeared but as



ARIEL.

silhouetted outlines, shadowy and unreal as simulacra. We felt as though we saw right through them.

For a realistic glimpse of the scene I am here hopelessly attempting to describe in cold print, see Millais' beautiful drawing of springbok on South-African veld—(*A Breath from the Veld*, p. 26). The circumstances are totally different but the effect is analogous.

Considering how extremely wild we had hitherto found

the ariel, it seemed inexplicable that a big troop should now stand thus—inert and careless, though in full view and actually within long-range rifle-shot. Lowe suggested that the animals were conscious of being half-invisible—protected by phantasmagoric effects. Possibly that was so; I did not dare myself to delve so deeply into animal-perceptions.

For several minutes—till eyes ached—we sat, drinking



"AS HE FELL" (Ariel).

in this phenomenon through the spy-glass. Neither horn nor hoof stirred the while.

In that unreal atmospheric confusion it was impossible to select; so we advanced obliquely, to pass their flank on our left. Still nothing stirred; till we almost walked into a single master-buck (that we had never seen) straight ahead—a real beauty. Leisurely he trotted back past our position—a sort of spook amidst spectral boulders—and presently, close by the main herd, relapsed into quiescence. At 200 yards he appeared a translucent patch against half-opaque rock. I must have covered his ghost-like form with absolute accuracy; for the buck dropped

stone-dead where he stood and never a kick. I sketched him as he fell.

It was an afternoon of surprises and, at the shot, yet another surprise ensued. The main body of ariel—then half behind us—would, one might naturally expect, have taken a direct flight over the ridge in their rear; but no! they deliberately selected a line of retreat across the open strath whereon we sat—thus passing us diagonally, in single file, and not over 100 yards distant.

When that spectral buck fell (my second that afternoon), I had remarked to Lowe, "that closes our account with ariel"; but this new temptation proved too strong. As one handsome head after another slowly nodded past us, I selected the best and fired—wrong, I admit; but Nemesis stood at my elbow and a bad shot resulted—too far back. The crippled ariel sought escape in a deep and rugged ravine that led up into higher hills beyond. But the pursuit had one delightful sequel; for it brought us face to face with four ibex, a ram and three does grazing on the terraces of a big black jebel some 500 yards away. The necessity of firing a final shot to retrieve our crippled ariel precluded any chance with the ibex which otherwise might have been stalked.

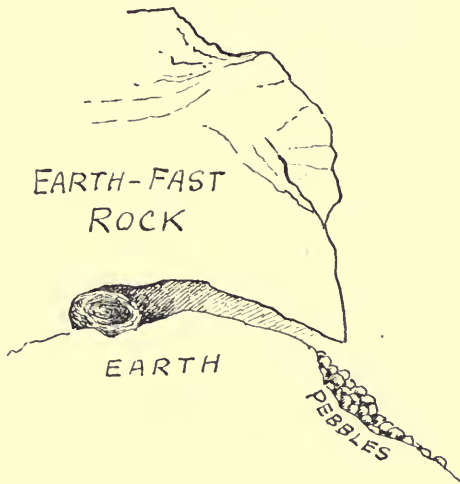
The incident brings into vivid perspective the rugged nature of the ground into which ariel penetrate.

The three ariel bucks shot this evening all carried good heads—beyond the average hereabouts; yet none of them much exceeded 14 inches.

One word in conclusion on the ethics of the African hunter of to-day. No longer, as a rule, does he permit himself to stalk, or to kill, merely for the gratification of so doing. The spirit of the Shikar Club—interpreting modern reason and commonsense—breathes loftier sentiments. In the back-veld, the sacrifice of a head or two of game is necessary, on occasion, to feed a camp or safari; otherwise, ambition in the modern rifleman in

Africa is (or should be) confined to selecting a few specimen trophies and nothing more.

That is the rule, generally stated. But it must have certain exceptions, and these should be clearly defined. To the hunter-naturalist, for example, trying to solve problems of local races, such narrow limits may involve leaving work but half-accomplished, problems still unsolved. Again, the relative abundance or scarcity of a species may fairly be allowed to bear—that is, to those who can be trusted, and who appreciate moderation. I find myself virtually apologising for killing *eight* ariel in a region where they then existed in thousands and presented truly delightful and complex problems in stalking. Under the Game-ordinances of the Sudan I was entitled (on my two years' licences) to shoot twenty-four. Every one of my selected eight were brought home as valued specimens; but, even so, I own to some sense of blood-guiltiness in killing those eight.



SECTION-SKETCH OF NEST OF ANT-CHAT.

(Described at p. 358.)

CHAPTER XXVIII

THE RED SEA HILLS (*continued*)

BESIDES ariel and ibex, we have among these hills the Isabelline gazelle. Far less numerous than the ariel—indeed quite scarce at this season (March-April)—these little beauties were even wilder than their bigger cousins. We had at first no hostile intent, and indeed paid no attention to them; yet the only acquaintance they would vouchsafe was a vision of tiny tawny forms skipping like hares over the rocks some half-mile ahead.

I remember one morning when we (Lowe and I) were patiently pursuing a troop of impossible ariel and incidentally pushing forward three of these unconsidered rock-jumpers. For hours the latter kept manœuvring on our front—never within three gunshots. We were paying them no sort of attention, and had ascended a long rock-ridge that ran athwart our course. While advancing, left-handed, along its broken crest, we perceived, in a sudden dip, the trio halted and gazing steadfastly backwards—obviously expecting us on the level below. Then I decided to seize the opportunity and have a specimen of Isabella, but not even the telescope availed to distinguish any difference in size or sex between the three red specks amidst grey boulders. I chanced it and fired at the central speck. The bullet, striking at base of neck, practically decapitated an adult female gazelle, with horns of $5\frac{1}{4}$ inches.

It was noontide, and from the blistering heat we sought shelter under an overhung rock while preparing

the head-skin. Soon an assemblage of carnivorous birds (quite unusual in this region) attracted our interest. To this fact, indeed, is due the insertion in our narrative of what would otherwise have been but an everyday incident. First to appear were a pair of eagles, conspicuous by their double-banded wings and striking form of tail. These, however, we at once recognised as tawny eagles (*Aquila rapax*), in one of the many-varying



AMONG THE CRAGS BY SARROWIT.

phases peculiar to that species. They soared around and departed without alighting. Next came two or three of the huge and repulsive Nubian vultures (*Otogyps nubicus*), which we also recognised (having shot them on Blue Nile) by their downy white undersides; these vultures are practically featherless beneath, save that long dark shafts protrude naked through the fluff.

With them, however, arrived two other giant brutes, similar as regards the last-named feature, but dark—practically black in plumage, contrasting with the washed-

out drab of their companions, and whose snow-white heads displayed black blotches on the auriculars. These were quite unknown to us—and remain so.

Next appeared other huge vultures, also new. Hardly such giants as the Nubians, these last-comers were of a bright tawny colour and, even as they flew, one saw in the fierce sunlight that each feather was boldly shaded—that is, streaked darker down its centre. By the authorities on Ethiopian ornithology I understand these are regarded as Griffon vultures; but knowing the Griffon intimately in Spain, I feel confident that no vultures such as these ever soar in Iberian firmament.

From beneath our rock-roof we enjoyed for an hour an entrancing scene in African bird-life. Below in the stony glen lay the dead gazelle, its white belly glistening in the sunlight, while around, grave ravens and neophrons stood like sextons. Close overhead soared and wheeled the giant vultures just described—their naked necks *full-stretched earthwards* and huge *hanging talons* balancing flight as, undecided, they swept to and fro in endless aerial evolutions, wondrous to witness. The human eye, by virtue of its arresting retina, is enabled to follow the whole process of flight. But by no mechanical means can such pictures be portrayed—whether by pencil or camera. The mazy confusion of immense winnowing wings—quills each widely separated and uptilted—often strangely foreshortened, in ceaselessly changing perspective and intricacy of angles—these things defy all attempt to depict. The pencil is useless, but the camera is still worse; its instantaneous action produces nothing but an amorphous smudge, inconducive of any intelligible idea or impression. Such scenes, in short, fall within that category of Nature's pictures that can never be fully appreciated save only through the eye itself.

Some suspicion pervaded their minds, for none of the bigger vultures dared to dine, and presently all alighted

on a sloping table-rock across the gully, only their ghoulish heads and necks in sight.

We shot a pair of the big tawny vultures, and, as their skins are now in the British Museum, their specific identity ought to be determined, though that is not consequential.¹ Their dimensions were:—

	Weight.	Expanse.
Male	16½ lb.	98 inches
Female	18 „	102 „

We had not the luck to secure, here or elsewhere, a specimen of the big *black* vulture, above described. Possibly they may be the young, or a colour-phase of the Nubian.

Two curious incidents attended our efforts to secure a few specimens of the isabelline gazelle. I had shot that one female; but a couple of good bucks remained wanting. As already mentioned, we found these little creatures not only scarce, but wild beyond all words. Again and again they mocked most careful endeavour. One morning we had followed a party of four over many a mile of stony hills and flats—never within a quarter-mile—when they drew up not far from a troop of ariel. The latter we no longer needed; but it soon became obvious that their proximity served in some subtle way to allay the extreme suspicion of their smaller cousins. The latter actually allowed us to cross a shallow dip in full view. Then a crawl across cruel rocks, sharp-edged as broken glass, brought me within range—(in parenthesis, I may mention that years before I had entered a resolution in my hunting-diary:—“Never again crawl for gazelle, they’re not worth the labour.” Here, however, it was a case of “No crawl, no gazelle.”)

Again I could distinguish no sign of sex, and it was by pure luck that I selected a male for my mark—and a small mark a gazelle offers at 200 yards! The bullet,

¹ I understand that these vultures have been identified with an Indian race, *Gyps fulvescens*. Such solution scarcely seems likely?

however, struck so precisely correct on shoulder that even through the telescope-sight I witnessed its single convulsive bound in air, and then the dead gazelle-lying, belly uppermost, on the rocks. In my experience of sighting through a telescope, that is a somewhat unusual incident.

Very nearly on this occasion did I bring off the right-and-left; for, the survivors pausing a further hundred yards ahead, a second bullet overshot by but the merest hair's-breadth.

Despite the two shots, the troop of ariel still stood



ARAB SNARE FOR CATCHING GAZELLES.

unalarmed, broad on our left, and beyond an intervening ravine. As we advanced towards the dead gazelle—thus opening out the ravine on left—we at once descried what appeared to be an ariel lying dead in its depths. While examining this with binoculars, the animal began to struggle, and we then realised that it was caught in a snare which effectually tied up both its hind legs in a bunch. As often as it regained its feet, the poor beast promptly fell full broadside on the ground and, soon becoming exhausted by its struggles, lay prostrate. It proved to be a doe, and so badly injured that we were obliged to kill it.

It had now become obvious that it was to this ensnared ariel-doe we owed our success with "Isabella."

The incident formed one more pretty instance of animal-sympathy, several of which are elsewhere recorded in this book. The free ariel had been "standing-by" their companion in distress, and a side-wind of sympathy had somehow spread at second-hand to the quartette of Isabellas. The latter, from their position, could not themselves have sighted the prostrate ariel, since it lay deep down in the glen, below their line of vision. But some subtle bond of electric telepathy arrested their feet.

We carried the little "Isabella" down to the spot where the ariel lay, and were already busy off-skinning the game when we perceived two natives, with a dog, watching us from a ridge beyond. Thinking they might probably be the legitimate owners of the snared ariel, we hailed them to come down. No sort of notice did they take. We therefore sent one of our men to bring them in. They were Hadendowas, one of them grizzly with age. I have before expressed my opinion of these surly savages, and this interview confirmed it. Had these two read and marked my most caustic notes on the subject, they could not, by their demeanour, have better corroborated their cogency. Not a sign of recognition or friendliness did the loutish pair evince; not even of gratitude when we gave them the meat of both antelopes.

Admittedly by every principle of right—as we understand such—they were entitled to the ariel. But not even elementary sentiments of justice reign in these regions where might is right and possession the only title. By chance we had happened first on their captured prey: that we should surrender it to its lawful captors was an idea that never penetrated their skulls. These Hadendowas, in fact, never even expected the return of their snare! Once, for half a second, I thought the eyes of the older savage sparkled at the prospect of "meat"; if so, it was the most transient glimmer, and quite uncertain at that. Not a gesture of gratitude escaped them, and personally I left them to their butchering with the

same feeling of disgust as one turns from some foul vulture.

The exact form of the snare is shown in annexed sketch. Snares are strewn about the places where—(as shown by their scraped-out beds)—the ariel are accustomed to spend their midday siesta. Any animal setting its foot down within the loop is probably caught, and then tripped up by the crooked branch attached.

Another primitive form of trap we noticed. This was intended to capture hyenas. A roughly-built stone enclosure was erected at the base of a cliff or escarpment and baited with bones. Any animal entering released a falling trap-door behind, and was thus left a prisoner.

This isabelline gazelle was a fine young buck, but had not attained a "head" of that supreme quality which alone satisfies a hunter. The lateral stripe (just as in the doe shot a few days before) was ill-defined—practically of the same depth of fawn-colour as the back, with a paler zone interposed midway. It had been feeding on the small red berries of a kind of berberis—a fruit on which we noticed that Cholmley's sand-partridge (*Ammoperdix cholmleyi*) also feeds.

A difficulty in selecting good heads of Isabella is presented by their immensely long ears, which practically conceal the horns from view at long range. Another specific character is worth note. During immaturity the horns are of totally different shape from those of adults. From a very thick base, the horns incline sharply backwards, then hook strongly forwards—closely resembling, in fact, the horns of a reedbuck ("Bohor" type)—during babyhood. (See sketch at p. 338.)

The efforts we made to secure a real trophy of irresponsible "Isabella" shall not be recounted. By my diary I see I fired three shots, each at 300 yards, and each a narrow miss. A fourth, at a big upstanding buck (nearer, but half-hidden among rocks), seemed to strike fair; yet, such is their incredible vitality, that this gazelle

limped, staggered, and struggled across a broad basin. For 500 yards he was in full view. Again and again he stumbled. Momentarily we watched for his collapse, but, alas! we never recovered him. The spoor beyond led clear enough for hundreds of yards; then—just over the crest of a ridge—blood-sign stopped all at once. Not another speck could we pick up. Then we spread out in line, searching hill and hollow for half-a-mile ahead, but all in vain—nothing could be seen. Thus my last shot of 1914 in Africa resulted in a melancholy disappointment.

The finest specimen of the isabelline gazelle obtained by us in 1913-14 was shot near Sinkat by Mr Willoughby Lowe. Its horns measured $10\frac{5}{8}$ inches and it is now in the British Museum.

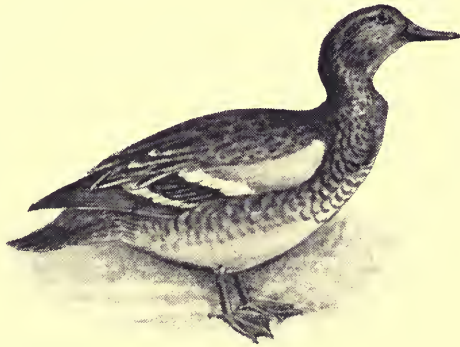
The extreme tenacity of life possessed by gazelles (and shared by antelopes) almost passes understanding. Many instances in point could be cited, but that such detail makes unpleasant reading.

One incident, however, may be narrated. We were following up a wounded ariel, which being shot through the neck left a conspicuous blood-spoor. Presently we descried it stretched on the ground ahead—apparently dead, as, although its back was still upright, the head and neck lay extended and lifeless. Hard by, an eagle sat perched on a rock. This eagle we required for a specimen, and while Lowe prepared to stalk it, I crept up to the prostrate ariel. Lest it might be alarmed by the shot—to make assurance doubly sure, so to speak—I seized the ariel by the horns. For five seconds I thought it actually dead; then fear lent it new life and a desperate struggle ensued. Such was the strength evolved that I was dragged here and there and, though able to retain my hold, was glad enough when assistance arrived. This ariel was a buck, and would weigh about 120 lb. I weigh less than 160 lb. myself!

The following corroborates my own estimate of Hadendowa character. A high official of the Govern-

ment, while riding from Kassala towards Sinkat, was approached by a Hadendowa with a verbal petition for the release of his brother who was undergoing a sentence of two years' imprisonment for manslaughter. (He had killed his man in some tribal row.) One of the two years had already been served; and, after consideration of the case, the petition was granted and the unexpired period of the sentence was remitted. Thereupon, without sign of joy or gratitude, or even a civil word of thanks, the petitioner turned and left! He was, however, brought back by a member of the Staff, and on his boorish demeanour being pointed out to him, sullenly raised a hand in half-salute.

In a maze of mental obfuscation, this Bœotian tribe seems to imagine itself (so far as we can follow such mentality) a race wholly independent of Turk and Egyptian, or of British rule alike. There exists in this passive contrariety no healthy index of manly "self-determination," but merely dogged mental stagnation and atrophy.



GARGANEY—YOUNG DRAKE.

Shot December 31st, 1913. In the featureless plumage of first year . . .
a phase seldom or never seen in Europe.

CHAPTER XXIX

ERKOWIT

BEYOND Sarrowit the encircling heights close in and jebels of fantastic form adorn the sky-lines—solitary pyramids or grouped pyramids, varied with sphinx-like monsters of every conceivable eccentricity. As the altitude rises the euphorbias, which on the lower levels had been but bushes, develop into forest-trees; and flowering shrubs multiply visibly. Yuccas, cacti, and aloes with gold and crimson blooms, red-hot pokers, and many an unknown plant brighten the landscape; while minor blossoms of more homely type—wild lavender, pink and yellow moss-crops, begonias, wild geraniums on the cliffs, maidenhair fern, mesembryanthemum, etc.—gratify unwonted eyes.

In a wild rock-gorge we lunched beneath a shade-tree that suggested a blend of palm and cactus; it was a "giant yucca," 10½ feet in girth! Among these hills flourishes a weird outlandish-looking thing well named the dragon-tree (*Dracæna*), a vegetable nightmare shown in photo. at p. 350; and there is the spiny cactus-like caraib (*Bucerosia*), with tall sansevieria or hemp-aloes, tree-lobelias, and bushes that resemble arbutus. Trees (properly so called) include hornbeam and fig, the latter often clad with wild vines and with a red-berried mistletoe; besides ilex and wild olives reminiscent of Spanish sierra. Clearly we were entering a New World.

The first glimpse of Erkowit, as it suddenly flashes into view from the neck of a rugged pass, recalls Norway. The half-vertical slopes are identical, save that here

euphorbia replaces the northern pine ; the same red-roofed wood-built houses, some gaily painted, and all raised on stone pillars, peep through a similar rude environment of dark foliage, with lichen-clad boulders broadcast.

Erkowitz lies sheltered in a basin-like depression, encircled by serrated peaks rising to 5000 or 6000 feet in height. Most kindly the Sirdar, Sir Reginald Wingate, had placed a luxurious "rest-house" at our disposal, and from its verandahs we surveyed a scene almost Swiss-like.

A feature of this mountain-region was its eagles—and eagles, with all big birds of prey, have ever attracted me. Of the eagle-tribe we had already in the Sudan secured or safely identified no less than ten species, to wit :—

- (1) Tawny eagle (*Aquila rapax*).
- (2) White-footed forest-eagle (*A. albipes*, supra, p. 110).
- (3) Wahlberg's eagle (*A. wahlbergi*, new to the Sudan).
- (4) Booted eagle (*A. pennata*, new to the Sudan).
- (5) Crested hawk-eagle (*Lophoaëtus occipitalis*).
- (6) White-headed river-eagle (*Haliaëtus vocifer*).
- (7) Serpent-eagle—white-breasted (*Circaëtus gallicus*).
- (8) Serpent-eagle—dark-breasted (*C. cinereus*).
- (9) Bataleur eagle (*Helotarsus ecaudatus*).
- (10) Osprey (*Pandion haliaëtus*).

Besides these ten, I felt convinced of having recognised a golden eagle (*Aq. chrysaëtus*) on White Nile, as mentioned at p. 168 ; and among these Red Sea hills we also observed large dark eagles which we believed to be imperial eagles. Should these two assumptions be correct, our census of Sudan eagles would reach the round dozen.

The great euphorbia-clad ranges that encompass Erkowitz are daily, hourly surveyed and plundered by these majestic Raptores—how defenceless denizens survive is an obscure problem. The lives of the big francolins and dikdikis, of young ibex, klipspringers, and gazelles must be held on a day-to-day tenure. At certain outstanding crags that commanded accustomed fly-lines, we



ON THE WAY TO ERKOWIT.
(The Author with Mahomed Maghazi.)



EUPHORBIAS, NEAR ERKOWIT.

[To face page 376.]

spent interesting and exciting hours—always with some new experience, often with a noble trophy or two. Besides the better-known species, there were among the eagles shot here, others entirely strange to us. Two in particular were of true eagle-build, massive and thick-set, feathered to the toes and, both in form and equipment, of the type of the golden eagle, though on smaller scale. The following description of these eagles I wrote down carefully on the spot, immediately after death:—

DARK ERKOWIT EAGLES.—Far more massive than either the tawny or white-footed forest-eagles, both in build and colour resembling golden eagles; legs feathered, and very long—extending, when in the flesh, beyond tip of tail. Irides hazel; feet bright yellow.

No.	Sex.	Weight.	Expanse.	Remarks.
No. 1.	Male.	4½ lb.	62 ins.	Tail short, barred, or blotched
„ 2.	Female	5½ „	74 „	„ „ „

At the British Museum this pair have been identified with the Steppe-eagle (*Aquila nipalensis*) of southern Russia and India, and I will not doubt but that that determination may be correct. If it be permissible to express a tentative opinion without either offence, or controversial—much less polemical—intent, I suggest that the scientific process of diagnosing unknown creatures rests upon a somewhat unsatisfying basis. That process consists in producing some dozens (or hundreds) of similar skins from all parts of the earth, and then fitting the new-comer into some niche or other which may appear to correspond more or less closely with its own status; but without any regard being taken of the life-conditions and habits of the living subject. To my mind, these latter essentials are of vital import: yet, in the process described, they are ignored—indeed in many cases are wholly unknown.¹ Presumptively, the verdict may be correct;

¹ It would almost appear a misuse of the term “zoology” to apply it to the methods impugned. The mere mechanical function of sorting-out dry skins (as though birds or beasts were inanimate things like foreign postage-stamps) would more accurately be defined as “dermatology.”

but obviously there exists no certainty whatever, far less proof. At best, such method is but an approximation to correctness; and "approximation," as I have already defined it, is not strictly science, but speculation. Dried skins alone—each rigid as an old boot—afford no sufficient criterion. In my humble view, until the eagles—or vultures—or any other group whatever—have been closely studied *in life* by competent field-naturalist, any hard-and-fast definition of their status is not only premature but mischievous.

Eagles, of course—equally with my other favourites, the wildfowl—ever present the most strenuous opposition to being systematically "studied in life." That, however, is no sort of excuse for trespassing beyond the bounds of ascertained facts; and, until their life-histories have been so investigated, I question the value of antecedent classification. Much water will flow down Nile ere we shall be able specifically to diagnose these Sudan eagles, and many other difficult genera, whether in the Sudan or elsewhere.

Another magnificent Raptorial whose existence we had hardly suspected in the Sudan—the lammergeyer—came gliding along below the crests of these hills, always holding a course parallel with their contour, and never an effort of those mighty wings to be detected from the bird's first appearance a mile ahead till it vanished behind some distant shoulder far behind—truly a striking object-lesson in the powers of aviation. The laws of gravity do not count.

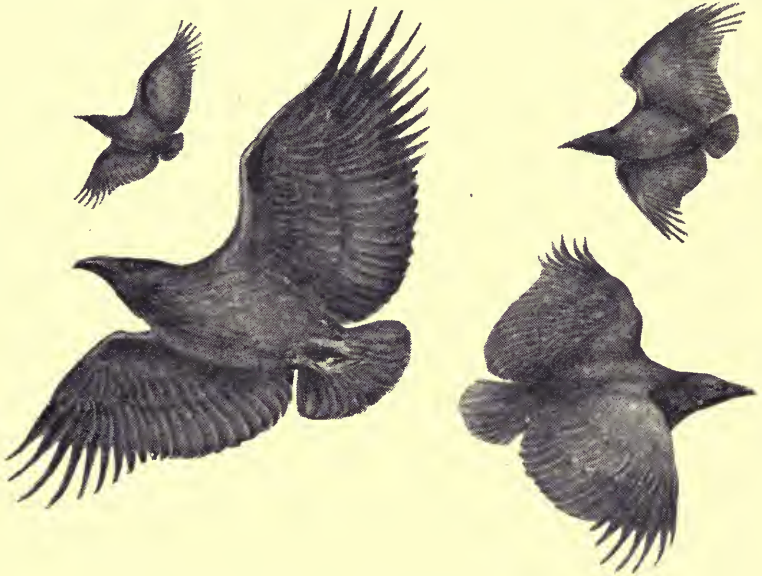
By ill-chance the lammergeyer never passed within range of our prepared posts; and such opportunities as it did vouchsafe caught the hapless hunter unawares and totally unarmed for such heavy game—for to tackle the great bearded apparition with a .410 would be the equivalent of a torpedo-boat challenging a super-dreadnought. Though failing to bring home a specimen, we had opportunity to notice that its underside was

white, instead of the rich russet hue which distinguishes the lammergeyer in Spain and in India.

A specific object in these hills was to obtain the big black-maned Abyssinian baboon: and extraordinary-looking beasts these baboons were. A heavy dark mane, pendent from head, neck, and shoulders alike, enveloped the whole body as with a pelisse—save only the naked, hairless stern. At a distant view they resembled giant poodles! The baboons went in troops and were common enough; oft towards nightfall their unearthly shrieks and howls re-echoed from crag to crag. Yet we failed. For that lapse the blame falls solely on me, as the big-game expert of our triumvirate. My excuse is that after nearly five months' strenuous campaigning, physical powers had begun to flag; moreover, the chosen strongholds of the baboons lay leagues away amidst rugged and precipitous regions. My two colleagues—both fresh as at the start—enjoyed various interviews both with baboons and lammergeyers; they reported the former as by no means difficult of access; but being armed themselves rather for *Zosterops* and *Cinnyris* (=feathered treasures so minute that a brace will pack in a Bryant & May match-box!), no sort of chance with the great hirsute Cynocephali ensued. By such big and powerful beasts, no argument short of a rifle-ball, will be admitted. This double failure (with black-maned baboons and lammergeyer respectively) was a severe disappointment, but I contented myself with the resolve to retrieve *both* during the following winter when SELOUS was to join me. That, however, was not to be. Fate forbade.

These woods were the home of the great Erckeli francolin, a game-bird as big as a blackcock, very clamorous at dawn, and often flying up to perch on the euphorbias, or on an upstanding boulder. The cocks weighed $3\frac{1}{2}$ lb., females $2\frac{1}{2}$ lb.; one of the latter, shot on April 4th, was ready to lay, which shows that this is their

breeding-season. There were also the smart little rock-partridges (*Ammoperdix cholmleyi*), which we had already shot near Sinkat, and also in those terribly barren shale-mountains, the Gamilab hills, that shut in Erkowit on the south. Lynes penetrated afar into this Gehenna of Gamilab, and reported deadly nightshade as its typical plant! But he added therein several new species to



BROAD-WINGED RAVENS (*Corvus affinis*) AT ERKOWIT.

our collections, *inter alia*, the brown rock-pipit, *Anthus sordidus* (what a libellous name!), *Emberiza cinerea*, *E. septemstriata*, and others of which the note is mislaid.

Around our camp soared, croaked, and chuckled Broad-winged ravens (*Corvus affinis*)—eerie, wraith-like creatures with long necks and an immense crinoline-like expansion of the secondaries, so exaggerated as almost to coalesce with the short and rounded tail—as shown (I think fairly accurately) in the sketches annexed. Many of their notes were harsh and corvine enough; but others sounded soft and confidential—almost musical, like the soliloquies of our ravens at home.

Alongside these ravens soared kites; but kites conspicuously different from our customary camp-scavenger. All kites have white heads, but in these a bold dark blotch covered the auriculars—recalling the head of a marsh-harrier. A broad band, lighter than usual, also extended across the underwings, and their tails were rather more deeply forked than these of the everyday kite. I remember seeing a kite on Blue Nile that I mentally noted as *Milvus regalis*; now, I conclude, it was merely a wanderer of this Erkowit type.



ERKOWIT KITE PERCHED ON HEAD OF ISABELLINE GAZELLE.

In retrospect, Erkowit leaves the impression of a place apart—half outside our world of to-day, in some sense a survival of long departed ages. Much of its fauna and especially of its flora appear prehistoric, antediluvian—witness those wraith-like ravens, the monstrosly coiffured baboons, the dracæna and caraib, and the lammergeyer—to me ever reminiscent of the Pleistocene with its flying-dragons. Worthily to treat such subjects lies beyond my power; yet visions of gorgeous butterflies flit through the mental retrospect; of strange insects and yet stranger reptiles and beasties; there were jumping jerbils, and jerboas with exaggerated femurs and bushy hare-like feet; hares which appeared all ears; spiny mice, and unknown bats which yielded

unknown parasites. Lizards—some fiercely frilled, others of daring patterns—leered from rock-crannies or darted across burning boulders amidst which snakes also, in assorted sizes, glide from view. One of our ophidian captures proved to belong to a race previously unknown in Africa, whether specifically or generically, his nearest relatives inhabiting Syria and Persia. *Contia africana* is the title allotted to this scaly prize of 400 millimetres. I recall a nerve-trying hour when (not having the faintest idea whether the captive belonged to the deadly sect or



HEAD OF ERKOWIT KITE.

otherwise) we were inducing him to leave a receptacle which was empty and enter a second which was half full of methylated spirit. The latter concoction, he knew, was not healthy for serpents; but he had to go, and now has the honour and glory of being a "Type." The abounding reptile-life predicated the presence of the

mongoose. One we shot in the act of chasing a lizard; another, of a sandy-fawn colour, was lost, wounded, in a rock-recess, or might almost certainly have proved to be *Herpestes gracilis*.

Erkowit is not a big-game country. A few gazelles with klipspringers and dikdik are found here, while hyenas and jackals abound. But ibex do not frequent the immediate neighbourhood, though farther south these fine game-animals are numerous. Our original programme had included an expedition to the ibex-country among the Karora hills, lying on the Eritrean border—"Bluebell Mountain" (so called because that homely flower flourishes on its dew-drenched heights) being our destination. These hills lie within two or three days

camelry from Tokar. The plan, however, had to be abandoned owing to an unanticipated circumstance. A biting fly of seroot type, but even more vicious, at this season invades the hills on such scale as to drive man and beast pell-mell to lower regions. Not even a camel can withstand the attack of these flying terrors. Two friends (Messrs Gerald Legge and Wormald) had completed an expedition to the Karora hills just in time; they found plenty of ibex, though good heads distinctly scarce, and were lucky in securing one specially fine specimen of 43½ inches.

APPENDIX ON BIRD-LIFE.

Bird-notes at Erkowit, supplementary to observations recorded from Sinkat and Sarrowit, above:—

Desert-buzzard.—Migrating north in bands, end March.

Red-eyed sparrow-hawk (*Astur sphenurus*).—One shot.

Desert-eagle-owl (*Bubo ascalaphus*).—

Weight, ♂ 5 lb., ♀ 6¼ lb.

Rock-thrush (*Monticola saxatilis*), and *M. cyaneus*.

Ethiopian thrush (*Turdus pelius*).

Bee-eaters (*Merops apiaster*), migrating north in bands, April 5th.

Colies (*Colius macrourus*—Sinkat).

Bonelli's warbler.

Blandford's warbler.

Saxicola leucopygia.

Black-throated and black-eared wheatears.

Black-tailed ant-chat (*Cercomela melanura*).

Brown ant-chat (*C. scotocerca*).—Nesting as described above, p. 358. These two may possibly prove to be but dimorphic forms of one species.

Crombec (*Sylviella*).—Nest complete March 26th; two eggs, April 4th.

Bulbul (*Pycnonotus arsinoë*).—Eggs early in April; fledgling same date.

Green-backed bush-warbler (*Cameroptera brevicaudata*).

White-eye (*Zosterops abyssinicus*).—Resemble willow-wrens with white circlet round eye; weave fairy-like cup-nests $2\frac{1}{2}$ inches in diameter, and decorated with white cocoons. These are built in the arbutus in March; eggs pale blue; several broods hatched early in April.

Sunbird (*Cinnyris abyssinicus*).—Nest pendent, eggs early in April.

Cretzschmar's bunting (*Emberiza caesia*), also *E. cinerea* and *E. septemstriata*.

Tree-pipit (*Anthus trivialis*.)

Tawny pipit (*Anthus campestris*), also *A. sordidus*.

Golden weaver-finch (*Hyphantornis galbula*).—Nest with two fledglings, April 5th.

Great spotted cuckoo (*Oxylophus glandarius*).—Migrating north, end of March and up to April 7th.

Pearl-spotted barbet (*Trachyphonus margaritatus*).—A strikingly handsome species; common in wooded valleys; seen nowhere else.

Pygmy woodpecker (*Jyngipicus obsoletus*).

Nubian woodpecker (*Campothera nubica*).



NESTS OF WHITE-EYE (*Zosterops Abyssinicus*).

CHAPTER XXX

AFRIC'S CORAL STRAND *RED* (*SEA COAST*)

(I) "BIG-GAME FISHING"

As the big liner steers an intricate course through outlying coral-reefs, the voyager speedily realises that he approaches a New World. The sea-birds around his ship first bespeak that fact, and the translucence of the depths beneath transcends anything that may be seen in Europe. At five fathoms—or even at a dozen—minute details of the sea-bed are recognisable. Then, on the mirror-like expanse of the inner seas—sheltered by reefs outside—he sees strange blotches which, like islets of the Sargasso, dot the tranquil surface. The precise nature of these islets is revealed so soon as one of them is seen to dissolve under a series of violent eruptions—as though a torpedo had exploded in its midst. Each "islet" is merely a mass of surface-basking sardines; and this particular assemblage some submarine beast of prey of terrific speed and power is gulping down by bucketfuls. Should the spectator be an angler, the ambition to hold one of these predatory monsters on rod-and-line follows spontaneously.

Neither technical knowledge nor experience entitle the author to enlarge on this subject of "big-game fishing." I merely took a hand at it for a few odd days, and formed the opinion that when the world shall have resumed a peaceful course, this wild sport (despite drawbacks presently to be specified) may come to rank among the more exciting that rod-and-line have to offer.

Already in *Unexplored Spain* (p. 300) we have referred to this subject. For within the Straits of Gibraltar, and on the adjacent coasts, tunny of 100 to 150 lb. and upwards are captured by Spanish fishermen. Hitherto, however, no British angler has given attention to opportunities offering so much nearer home.

While disclaiming expert knowledge, I may still relate what I saw of this sport and of the methods employed. Armed with a 7½-foot rod, as stiff as a poker, and a reel holding 200 yards of line, the angler rows out to a favourable spot—usually near a harbour entrance, and early morn or late afternoon for choice. But, after all, the most essential element is the local fisherman in attendance. This swarthy functionary makes fast his “dug-out” (provided with store of live sardines kept in floating basses alongside) to your anchored boat. By handfuls this silent savage hurls sardines broadcast over the sea. So soon as a submarine attack thereon develops, he deftly chucks more and more handfuls, and instantly on these being seized a *baited hook* follows. Wondrous smart, however, is barracouta, or albacore, or bonito to detect the difference. Lure after lure (with a hook in it) is disdained, and hopes sink low. Then a lucky cast is rewarded by a fearsome lunge and a firm hold. Up to this point the rod has been lying neglected on the thwarts, the bight of the line being held midway in the professional hand. Now the angler takes charge; the slack is reeled-in and a terrific struggle ensues. The initial sensation is as of being attached to a runaway rhino—by a pack-thread—for a stout barracouta goes “fair mad” on realising the loss of liberty, plunging and ploughing the seas, or diving to the depths in turn. Despite strength or skill, the rod-point is dragged from the perpendicular—time and again its tip touches the sea. Ten minutes of this hurly-burly and it becomes a question of sheer endurance—will the angler or the captive first give in from sheer exhaustion? The fight

continues, but presently on shortened line; sometimes the furious fish may dart beneath the keel; each such dangerous dash must be deftly countered, or a smash is certain. Then, at the crucial moment—when success, however remote, begins at last to figure as a conceivable contingency on the horizon—right then *may* come a yet mightier swirl, and a 10-foot shark has engulfed the whole show—the played-out barracouta, sardine, hook, and all! Snap goes the line, but never a sign of emotion does the swarthy face of your ghillie betray, nor do his lips emit a sound.¹

That hazard is one main drawback—the risk of having a hard-earned booty snatched from one's grasp at the last moment; but other mischances impend—as when the deep-diving barracouta carries the running-line athwart some jagged coral-reef far below; thirdly, the double rows of sharp teeth in the captive's jaws may (and oft do) cut the line during a prolonged struggle.

The barracouta is a terribly strenuous opponent—violent is the only epithet that befits those tremendous lunges that wellnigh tear the rod from one's grasp.

Barracouta run to 40 lb. or upwards—possibly far more. My first scaled but 18 lb., though he had fought like eighty, and my biggest 26 lb.; but I have held—for a space—sundry monsters far heavier. One in particular, I remember, for he leapt like a salmon—or, better, like a porpoise; and towed us half-a-mile to seaward. Albacore and bonitos (yellow-spotted) we also landed; both strong fighters but not to compare with barracouta. When luck and line hold, the barracouta at least needs no gaff. His long tapering run aft (mackerel-like), with a tail like a screw-propeller, afford admirable hand-hold,

¹ A shark caught by hand-line from our ship, the *British-India* s.s. *Berbera*, measured 9 feet 10 inches and weighed 235 lb. Its stomach contained the skull with a lot of hair and skin of a camel. There are, of course, sharks much bigger than that.

and it fascinates to watch the combined coolness and skill with which your swarthy ghillie lifts him inboard.

The "chances" taken in this big-game fishing bear a far greater ratio of risk than occurs in any other form of sport with the rod. The odds are always heavily in favour of the game—or, at least, against the angler. The use of a rod at all is, in fact, a mechanical handicap. The native who fishes for his livelihood uses a *hand-line* only, and that (given a pachydermatous palm) is pecuniarily more profitable.

To the fearsome joys described, an added interest is ever provided by the strange and exotic bird-life that surrounds the angler afloat.

(II) BIRD-LIFE ON THE RED SEA COAST

Swarms of seagulls attend our boat and seek to share the sport, wheeling, screaming, and dipping down to snatch up the sardines chucked seaward as lures—sometimes, too (less circumspect than barracouta!), seizing the *baited hook* and being thus hauled ignominiously aboard. The great majority of these gulls are at once recognised as total strangers—Ethiopians—and, by appearance, of two distinct species. We took them to include Hemprich's gull; but eventually they proved to belong to the white-eyed species (*Larus leucophthalmus*);

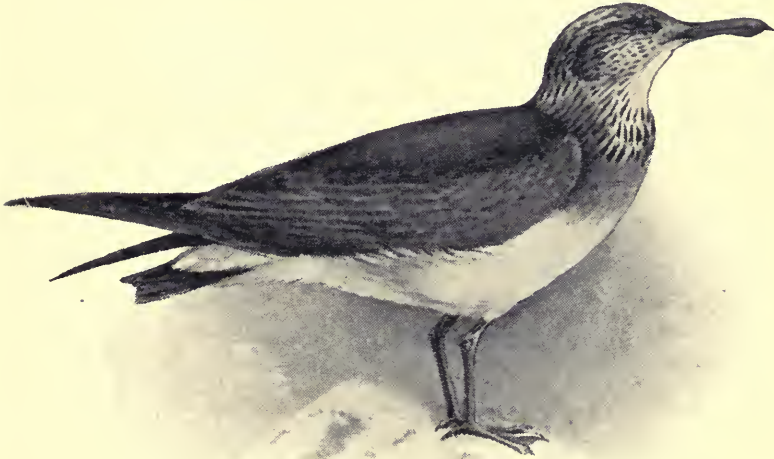


the adults, being black-headed and altogether darker than the young, caused temporary confusion. The sketches may serve to show the difference. The only other gulls present were a score or so of lesser black-back and herring-gulls, together with a few of our equally familiar British black-headed gulls—the favourites

of the Thames Embankment—all three immature. We did, however, shoot a "Hemprich" gull.

On all the sheltered waters, over the sardine-shoals, poised,

hovered, and screamed big crimson-billed terns (*Sterna caspia*), and the yellow-billed *Sterna bergii*, plunging headlong, often half a dozen simultaneously, into the waves. There were smaller terns also (*Sterna saundersi*), equally busy. Somehow, the sardine in these waters seems to have rather a thin time? Nevertheless he flourishes amazingly and survives all persecution in acres upon acres! Another strenuous fisher—though he went for bigger game—was a great black ivory-billed



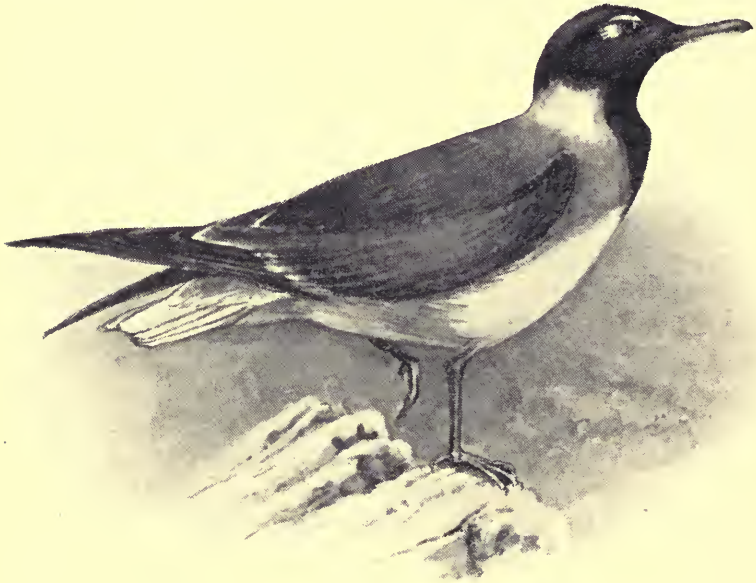
WHITE-EYED GULL (*Larus leucophthalmus*)—IMMATURE.
Note slightly forked tail.

gannet, rather a weird-looking fowl, locally known as the booby (*Sula sula*); and the osprey also occasionally treated us with a superb exhibition of piscatorial skill—plunging completely beneath the waves, and re-emerging amidst flying spray with a 2 lb. bonito suspended from his claws. It was remarkable that these eagle-fishers—elsewhere so wild and solitude-loving—were here amazingly tame, sitting unconcerned on the mast of a fishing-boat, or on a telegraph-post, while we passed below.

As regards the terns, by the way, all the above remarks must be taken as referring exclusively to the spring season.

In midwinter, I do not recollect seeing a single tern on this coast, though the gulls then carried on "business as usual." The terns had clearly sought hibernal attractions elsewhere.

Amidst the feathered crowds assembled alongshore, one notices waders—curlews, whimbrels, ruffs, redshanks, dunlins, ring-plovers,¹ sandpipers, etc.—including, of course, some of my favourite "globe-spanner" class. These, however, I did not trouble to identify, since a lifetime's study of these wanderers



WHITE-EYED GULL (*Larus leucophthalmus*)—ADULT.

has convinced me that merely casual observations of brief duration help hardly at all. Nothing short of patient study, prolonged over continuous periods, avails to solve such world-wide problems as these birds present, and for that there was no opportunity. An analogous case also occurred, as follows. Here, on the Red Sea coast, we encountered (for the first time in my experience) certain egret-like birds known as "reef-herons." Among the few specimens shot, some were spotless white, some deep-grey or of a dull sap-green hue all over, while

¹ Lynes found the Kentish plover (*Egialitis cantiana*) nesting near Port Sudan—three eggs, hard-sat, April 14th, 1914.

others displayed every intermediate gradation of speckled or mottled dress; even their legs and feet agreed in the general mix-up of colours. Clearly to a tyro these reef-herons presented problems beyond any hope of settlement within brief days or weeks. These, therefore, I passed over to await the time when some naturalist on the spot shall have leisure to work out their life-history and plumage-changes throughout the year.

TROPIC-BIRD (*Phaëton ethereus*).—Hardly had we entered Ethiopian waters than, in mid-Gulf of Suez, on January 10th, 1913, a *Tropic-bird* in exhausted condition boarded our s.s. *Gaika*. To me this species had always been associated solely



TROPIC-BIRD, GULF OF SUEZ—January 10th, 1913.

with the seas of the Southern Hemisphere, and its presence in such latitudes as this seemed amazing—almost scandalous? Butler at that date had never received a specimen. But the romance was short-lived. Later on, the Tropic-bird was discovered breeding on rocky islets in the southern Red Sea—particularly on Dahlak Island, near Perim. So the glory of my discovery quickly vanished.

Inland from Port Sudan we have thrice spent several days examining the scrubby bush-jungle of the "Maritime Plain." In its main features, however, the bird-life here resembled that at Sinkat, etc., already described, and a list of the local species would be superfluous. Some, however, had not been previously recorded, such as, e.g., *Sylvia mystacea*, *S. nana*, the blackstart, blue-throat, and blue mountain-thrush (*Monticola cyaneus*);

while the through-transit of Europe-bound migrants was a daily and striking phenomenon during March and April. One amusing incident may be related. A rather striking little warbler had outmanœuvred the ornithological acumen of our triumvirate; it agreed with nothing in our knowledge. On reaching Khartoum, we submitted the puzzling prize (?) to Mr Butler. He let us down gently, merely inquiring:—"Is that not a female of the British blackcap?" That is exactly what it was; but, none of us three having before seen a blackcap *in winter*, that familiar little songster gave us a bad throw.

Sandgrouse here (as elsewhere in Sudan) are wont to pass over high each morning on their way to water. One evening our landlord informed us he had that day shot "eighty pieces of sandgrouse." Such a bag clearly indicated smart shooting, but illusion vanished when he expressed disappointment that his best single shot had only realised *eleven pieces*, against *fourteen* on a previous occasion!



FOOT OF TROPIC-BIRD.

In these tropical seas exist fish other than predatory monsters and a thousand-fold more beautiful. Peer over the rim of any coral-fringed creek and what a scene in fairyland the crystal depths reveal—Nature run riot in a blaze of flashing prismatic radiance. Each pool teems with creatures that glance and gleam in iridescence and as instantly vanish like shattered fragments of a rainbow. No written words serve to convey an idea of such colour-effects—one unit alone is plainly clad—in vertical black and white stripes, arranged zebra-fashion: the rest defy description.

FLAMINGO BAY is an inlet sequestered among the coral reefs (which here extend 16 miles out to sea) and lies north of Port Sudan. On east and north the coral is overlaid with sand, forming desert dunes, half-clad with a lowly salt-scrub, and enclosing lateral lagoons in some of which mangrove-bush (like a rhododendron) grows in salt water. Our Arab crew had kept assuring us we should find these inner lagoons alive with birds. The flamingos were there right enough—a dozen or two; and these, with a few Goliath and reef-herons, spoon-bills, and waders proved to be the chief items in a bird-life by

no means striking. The date was February, and my reason for mentioning the spot is a suspicion that at the *proper season* these mangrove-swamps and dunes may prove to form a site of highly interesting breeding-colonies.

We had seen a few ospreys and noticed their "dining-tables" at intervals along the shores; presently we found a nest. It was erected upon—in fact, completely smothered—an isolated mangrove-bush in mid-water, and was built of gnarly mangrove-stalks, a yard across, and lined with seaweeds, bladdered fuci, and sponges—which latter also grow in these seas. This was quite an unusual site, for the ospreys, as a rule, nest on the ground alongshore, wherever some dead root or other wreckage has held up the drift sand to form a hummock. This, I read, is also their habit in America. I shot one osprey and a spoon-bill, which measured:—

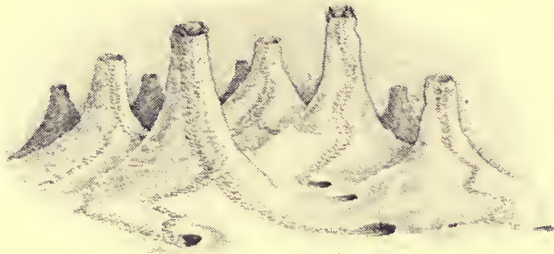
	Length.	Expanse.	Weight.
Osprey . . .	21½ ins.	62 ins.	3½ lb.
Spoonbill . .	40 "	55 "	3 "

In Arabic the osprey is *Abu gedaf* (= "Father of claws"). Our Arab crew, however, were delightfully hazy on nomenclature. They reasoned that, since osprey and heron both ate fish, and both were birds, there could be no difference! "*Lo mismo da,*" as a friendly Spanish mountaineer once expressed precisely the same idea. For the flamingos, our Arab pearl-fishers seemed to have no distinctive name, nor did they know whether they nested here—highly improbable, since neither sand nor coral would serve as building material.

Flying-fishes abound in these seas—though the term is rather a misnomer, since no fish really "flies." They merely *glide* on outspread "planes" till the initial impetus is exhausted. Still there were other fish here that seemed to renew that impetus by a series of ricochets from the surface. Again, we noticed others—garfish of sorts (*Hemiramphus*?)—which shoot from the sea at an acute angle, and after an aerial course akin to that of an arrow, re-enter the water without leaving a ripple at either end. A fourth type—shoals of these in company—scurries along the still surface; but these certainly employ a propellent power, since they leave behind them troubled "wakes," as it were of a convoy of destroyers. Presumably all

those various creatures have been catalogued and classified, and it may be unwise, even cursorily, to allude to things—however striking—of which one has no technical knowledge whatever. Thus, for example, alongshore one comes across colonies of weird land-crabs, which build regular villages of pyramidal watch-towers, upon the apex of which each crustacean owner basks in the sunshine; but each alert, on the approach of danger, to slither down sidelong to the refuge of his burrow just below.

To me the most striking observation recorded related to the big desert-larks—*Certhilaudas*. These I have already described (pp. 28 and 357), yet am bound to add this further note.



A COLONY OF WATCH-TOWER CRABS.

Here, on the coast, the local race was conspicuously distinct in colour-plan from my recollection¹ of those of the interior deserts, being of a clear pale *grey* (which is a *cold* colour), as against dun or drab (which is *warm*).

Apparently, in this instance, Nature had admitted a slight slip! That is, she had in practice failed to fulfil her principle. For it is obvious that these dove-grey *Certhilaudas* of the littoral would better assimilate with the blue-grey shingle of the desert than do their sandier colleagues of that ilk—and *vice versa*. The two ought to change places!

Here, on the coast, the *Certhilaudas* were preparing to nest

¹ A recollection corroborated a few days later on the deserts beyond Jebel Surgham, though hardly so strongly as I had anticipated. On the true desert, the *Certhilaudas* were distinctly *sandier*, yet showed a faint cast of grey on mantle, nape, and crown.

a month or more earlier than is their wont inland. Those first seen to-day (February 7th) were a mated pair, their dashing, erotic pursuit, in rapid turn and twist, with flashing "hoopoe-wing" and harsh grating note—followed by a sweet epithalamium—were charming to watch. Alas! I had to "collect" both at one shot while they were yet engaged in gentle



GULLS IN THE RED SEA.

dalliance; and the same day found two nests, already complete save for the interior lining. Little "dug-outs" each, the site half excavated in the sand, half overhung by a starveling desert-shrub. Eggs would have been laid in each by mid-February, and one month later we found fledged young on wing

In the coastal region, the crested larks are also earlier in nesting, having eggs by the first days of February; and a similar remark applies to the finch-larks (*Pyrrhulauda*).

Such detail may appear small. It is small. But it is only by small degree and by close field-observations that Nature's secrets will finally be elucidated. There is no short-cut.

(III) THE CORAL ISLANDS OF THE RED SEA

The coral islands which stud the Red Sea, though they lie right alongside our British-India route, have never been explored by British naturalist. During a whole century—since the visit of Hemprich and Ehrenberg in 1827—no zoologist whatever has set foot on these islands, save only Heuglin in 1861—all respect to his enterprise. Hence certain recent notes made thereon by a young naval friend, Lieutenant H. Dale Nichol, R.N., who spent two war-years patrolling the Red Sea and its islands aboard H.M.S. *Espiegle*, are certainly of sufficient interest to summarise here.

Certain islands received special attention by *Espiegle*, including those of the "Farisan group," an archipelago which extends for miles along the Arabian coast, and of which the Farisan Islands are themselves the largest. Though entirely waterless, both these and many smaller islands proved to be stocked with gazelles—apparently a diminutive or stunted race of the typical Arabian gazelle (*Gazella arabica*), reduced in size by starveling diet. It seems, indeed, remarkable that any herbivorous animal can support life at all upon such barren arid rocks. Apparently they feed on seaweed. A doe weighed on Farisan only scaled 10 lb.—about one-third of a normal weight; all, moreover, carried very short stumpy horns, strongly recurved forward and rather resembling those of a baby reedbuck (Bohor) than a gazelle. That, however, may be either merely an index of immaturity, as already pointed out at p. 336, or a proof that semi-starvation precludes the attainment of complete "maturity." The hoofs of these gazelles were almost worn away by traversing the sharp coral. Kamaran, the southernmost island (lying

half a mile offshore and extending to 15 miles long by 6 broad), also held gazelles, which during the midday heat lay-up under overhung coral cliffs by the shore. Twenty miles north, on Entufash Island (10 miles long, and 15 from mainland), the gazelles had an additional choice of shelter in mangrove swamps.

Bird-Life on the Coral Islands

Throughout the year flamingos and pelicans abounded on reefs and islands alike; but no evidence of their breeding thereon was obtained, and the main interest of these notes centres around the birds which did nest and the eggs of which were brought home. These specimens have been examined by Mr A. L. Butler, hence (even though full data were not available) little doubt can exist in the following identifications:—

REEF-HERON (*Ardea gularis*)—Found nesting on 10-foot mangroves on Entufash Island; also on Kotunbul¹ where there grow stunted trees never exceeding 8 feet; and on East Komari—the latter a flat coral isle covered with dense bush and cacti (prickly pear). In each case the reef-herons' nests resembled those of pigeons, but were larger; and the eggs pale greenish-blue. East Komari, though but half a mile in circuit, entirely waterless, and 4 miles out at sea, was shared by thousands of doves—the only islet of this group where doves were seen to breed. The two neighbours, however—doves and herons—maintain strictly separate colonies. Some terns (*Sterna anæstha*) also breed on East Komari, and a small snake was killed thereon.

SPOONBILL (*Platalea leucorodia*).—On Kotunbul spoonbills built their nests—untidy bundles of sticks—on the low stunted trees aforesaid, usually within 3 or 4 feet of the ground; other nests were on the rocks or on low samphire-like bushes.

GREEN BITTERN (*Butorides atricapilla*, or *brevipes*).—Among and beneath tumbled rocks only a few feet above sea-level on

¹ Kotunbul lies about 100 miles north of Kamaran. It has a red lava peak about 300 feet high with a crater-like formation (the caves of which swarmed with bats) on one side, and flanked by sandy beaches and coral reefs on the other. The whole islet is but a mile in circumference.

Kotunbul, were nesting small dark herons resembling night-herons with telescopic necks closing down into their shoulders. The nests were built of grass and rushes, with a few twigs; eggs four in number, like those of the reef-herons close by, but smaller and of a deeper blue. All were hard-sat. These birds were green bitterns.

SANDGROUSE.—Several shot on Kamaran and other islands, coming down to drink at the wells in the dry season; some, however, breed there since young were caught hardly able to fly. These sandgrouse may have been *Pterocles lichtensteini* or possibly *Pt. exustus*.

FARISAN FALCON (*Falco concolor*).—This hawk is characteristic of the Red Sea islands, the Farisan group in particular being a main stronghold—hence I venture to christen it in that name. On Kotunbul Island, these small dark-grey falcons were numerous and several nests found. "These were mostly," Nichol writes, "simply depressions in the sandy debris accumulated in angles or shallow clefts in the rocks; but others had built up fairly big bundles of twigs. One nest contained three young, another three eggs, and a third, one egg. They were certainly late-nesting."

The eggs brought home are of kestrel type, though paler than average British specimens. Butler writes:—"I should say these were certainly eggs of the beautiful little dark-grey *Falco concolor*. I thought so directly I saw them, and the eggs agree well with Heuglin's two figures and measurements. He writes: 'Not rare on the uninhabited rocky islands of the southern half of Red Sea. Their breeding-season is July-August and the nest very simple—the two to three eggs lying on an underlayer of sand in a cranny of the rock. Occasionally, however, we found some surrounded by dry twigs. *Falco concolor* lives mostly in pairs or families; but we have observed three to six pairs together on cliffs of quite limited extent.'"

HEMPRICH'S GULL (*Larus hemprichi*).—The gulls' eggs brought home are all of kittiwake type—that is, of a dull stone-colour speckled with chocolate-brown and submerged markings of pale slate-blue. These, Butler has no doubt, belong to Hemprich's gull, since they agree precisely with Heuglin's

coloured plate and measurements, and the Arabian coast is the stronghold of that species.

Nichol describes the *incunabula* from which his specimens were collected, as "faint hollows in the sand surrounded by rushes; but in no case was there a sign of seaweed or other nest-material being used."

Presumably the white-eyed gull (*Larus leucophthalmus*, the most abundant at Port Sudan) must also breed hereabouts. Further south Sir Geoffrey Archer, K.C.M.G., H.M.'s Commissioner for British Somaliland, tells me that both species nest together—the white-eyed gull breeding openly on the sand flats as terns do—and that, the eggs being surrounded by a ring of seaweed, the nest is conspicuous afar; whereas Hemprich's gull prefers to lay in cover, however slight, but provides no nest at all.

TERN (*Sterna anæsthesa*—Lesser sooty tern).—The eggs brought home, collected on Jinnabiyat Islands, are of a brighter and warmer stone-colour than those of the gulls and with smaller reddish-chocolate specks. Some examples are long, almost oval, and resemble those of sandgrouse rather than terns. Mr Butler regards them as belonging to the above species, the parents also answering to the description of that bird which Heuglin found breeding abundantly near Jeddah—which is close to Jinnabiyat—and in the same month (June). The terns' nests were placed close together in low undergrowth of heathery type. A few doves and some gulls also nested on Jinnabiyat.

It is noteworthy that the observations recorded by Lieutenant Nichol correspond in singular exactitude with the long-preceding experiences of the three foreign naturalists above cited.



OPENBILL STORK.

CHAPTER XXXI

THE NORTHERN GATEWAY OF SUDAN

KHARTOUM TO EGYPT

SUDAN lies desert-beset. From no direction is there access save across 100-league deserts—unless, indeed, the traveller approaches, as by a back-door, from Central Africa and the Equator.

The Eastern Gateway (Chapter II.), as a study in desolation, was striking enough—in places even appalling—but the approach by way of Egypt easily surpasses it. No single day's journey within my experience ever impelled sensations such as did this one—the Northern Gateway of Sudan.

“A region of emptiness, howling and drear,
Which man hath abandon'd from famine and fear ;
Which the snake and the lizard inhabit alone,
With the twilight bat from the hollowed stone ;
Where grass, nor herb, nor shrub takes root,
Save poisonous thorns that pierce the foot ;
A region of drought where no river glides,
Nor rippling brook with ozier'd sides,
Where reed-girt pool nor mossy fountain,
Nor shady tree, nor cloud-capt mountain
Is found to refresh the aching eye.
But the barren earth and the burning sky,
And the blank horizon round and round,
Without a living sight or sound,
Tell to the heart in its pensive mood
That *this*—is Nature's solitude.

A 'still small voice' comes through the wild,
(Like a father consoling his fretful child)
Which banishes bitterness, wrath, and fear,
Saying—' *Man is Distant, but God is Near.*'”

[PRINGLE.]

It is when the homeward-bound traveller quits the Nile at Abu-Hamed (559 kilometres north of Khartoum), and thence cuts directly across the chord of the river's great western bend that the acme of desolation is reached.

No adequate adjectives exist, superlatives sound paltry—even had the supply not been exhausted in attempting the previous description. Nothing short of a personal view can convey a living sense of the hideous outrage of these 232 miles of Nubian Desert.

Throughout the whole of that distance reigns a solitude and a deathly silence that is speechful. Horizon succeeds horizon, each in turn a sweeping, swelling, sun-scorched void, unbroken save by mountainous masses of wind-sculptured sand, or by protruding jebels of plutonic rock, black as Erebus; but never a vestige of water, or of life, or of green thing. I find in my diary one note of a solitary thorn-tree, alone and leafless, mocking the deadly spaces.

Abhorrent to every human sense, there yet exists a sort of abstract fascination in this "howling wilderness." That morning I awaited the dawn, watched the cruel sun rise over the rim, watched all day till he dipped in a panoply of hues that for brief moments glorified—almost beautified—the whole horrid abomination of desolation.

At intervals during the transit the whole earth within the circlet of vision was sand, sand, sand—nothing but glowing, glistening, red-hot sand; anon over the rim peered the blue outlines of distant mountains, perhaps 100 miles away by the Red Sea.

The ten "stations" have no names—only numbers. There are no places in the desert capable of bearing a distinctive name—they are merely water-tanks for the supply of the engines, the water brought by other engines for the purpose. From "Station No. 6" there branches off a side-track to a gold-mine. More important, however, than problematic treasure is the rather less problematic fact that the big Barbary wild sheep (*Ovis lervia*) may

be met with on desert jebels a day or two's camelry beyond the mine (Um Nabardi)—in particular, at Jebel Raffit.

The whole course of the track is punctuated by bones that protrude from the devouring sand: great big bones—not all camel-bones—lie here in scattered units, elsewhere in piles, marking where some caravan has perished in mass. Eloquent these in their silence, bespeaking the murderous mission of the desert.

At salient angles, fences flank the line to save it from being swallowed up bodily by engulfing sandstorms; as, on North-British lines, similar safeguards are provided to hold back the driving snow.

It was here that, in 1898, Kitchener drove through his desert-railway—pushed it forward complete at the rate of a mile a day—

“O'er sandy deserts, scorched and dun
Stretched boundless 'neath a fiery sun”—

to the reconquest of the Sudan. Thirteen years earlier (in 1885) the foredoomed Gordon-relief Expedition—or its “desert-column”—had traversed the desert afoot, only to reach Khartoum too late; its gallant efforts and yet more gallant lives sacrificed to vacillation at home.

How easy to-day is the transit; between dawn and dusk a corridor-carriage on a tropical *train de luxe* conveys you across this Gehenna, which but a score of years ago demanded weeks of labour, resolution, and suffering to traverse. The least imaginative mind must perforce try to recall those scenes—the slow plodding trek, trek, trek, man and beast day after day sweltering ankle-deep under a tropic sun that blistered, the furnace-like rays from above reflected and intensified by the molten sands below; the agonies of thirst, of parched lips and torrid tongue; of aching eyes pelted by whirling “sand-devils” that cut and sting like molten shot and actually chisel-out the hard volcanic rock; so the traveller struggled through—or sometimes ended short.

British troops have won through—some of them; others lie there still.

Once the nearer sand-ridge bore traces of tiny water courses. They seemed inexplicable; but a kindly railway official explained:—"That was the rain that fell here last August (seven months ago); before that, five years had elapsed without a shower." So short an interval, however, is exceptional. The average period between rainfalls, we were assured, may be put anywhere between a dozen and a score of years. In this Nature seems inconsistent; either leave rain out of her scheme altogether, or send it where it may refresh!

During the whole day's vigil I saw but three wild creatures—three ravens, birds which need water daily but whose powerful pinions enable them to forage hundreds of miles beyond their base of supply. Vultures also patrol the waste, though I saw none. Twice or thrice, while passing isolated koppies, traces of foot-prints in two sizes crossed the line. Possibly hyenas occupy these crags and some of the smaller fox-tribe, such as jackal and fennec; though how they sustain life there at all is not apparent in a cursory survey.

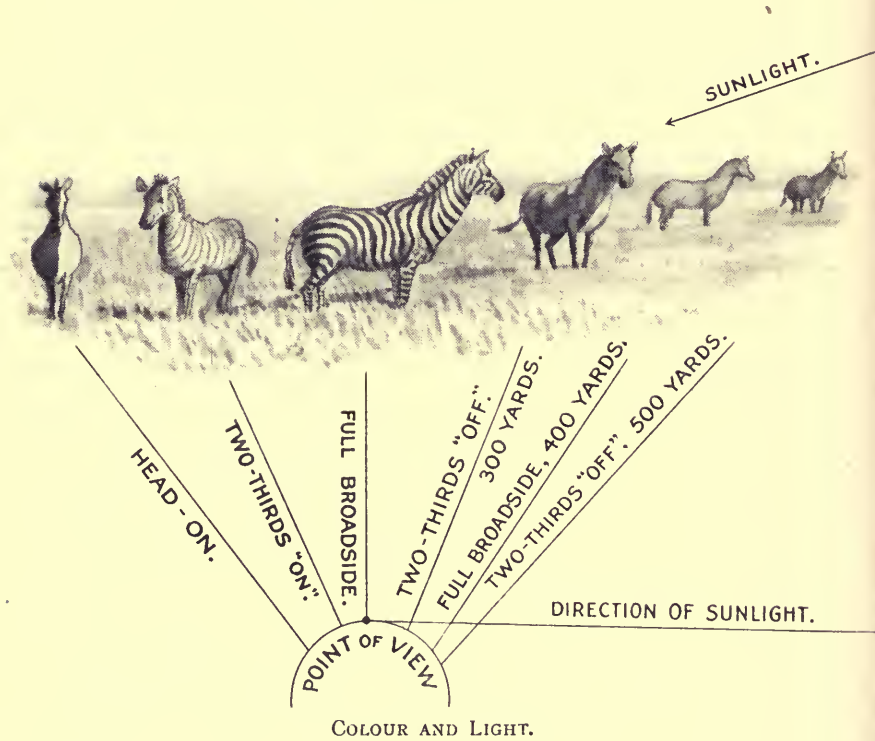
Besides the three ravens, we also saw two solitary camels, and once a camel-caravan in charge of two wild Bedouins—that was all in 232 miles.

It may emphasise the desolation of this vast void, if we compare the above with the "Eastern Gateway of Sudan" (p. 20). In the latter—that is, along the desert-railway from Red Sea to Nile at the Atbara—there exist at least some evidences of life, however insignificant. There are ibex in the naked hills and one sees, maybe at long intervals, bands of gazelles, a hare or two, and other creatures that bespeak the survival of some minute growth of plant-life, albeit none be visible. There are, moreover, birds such as coursers, sandgrouse, shrikes, none of which are independent of water. Few, indeed, are their numbers; the most careful outlook might not

detect more than one or two living creatures per hour of train-journey. But here, in the Nubian Desert, the watcher might not see one in a week—or a month!

Such is the Northern Gateway of the Sudan ; for at Wadi Halfa we strike the Nile once more ; Egypt proper begins, and here we bid—

“FAREWELL TO SAVAGE SUDAN.”



APPENDICES

A

THE GIANT ELAND (*TAUROTRAGUS GIGAS*)

IN BAHR-EL-GHAZAL

(*From Notes by Sydney J. Pearson, F.R.G.S.*)

THROUGHOUT the great province named Bahr-el-Ghazal there roam a limited number of herds of this, the biggest of Afric's antelopes. These few herds, moreover, are chiefly confined to the "iron-stone" regions where water is either very scarce or absolutely non-existent. Water, in short, presents a grave and persistent obstacle to the pursuit of this thirstless animal. The giant eland being himself independent of water, his chase involves carrying from camp to camp whatever water is required for man and beast. In proof of this independence, the following incident may be cited. We had commenced this venture with several one-day attempts to overhaul a herd by spoor; all of these proved futile, partly because a twelve-hour day does not allow sufficient time; but largely through the adventitious interference of swarming giraffes. Therefore I decided on organising a more extended expedition into the territories of the Djur Chief, Dud Majok, where eland, I was assured, were more plentiful, giraffes less so. For this venture I selected a Jaalin Arab and four of the local chiefs, including a son of Majok, and his wakil, or deputy; also two donkeys, one laden with provisions for six days, the other with *girbas* or water-skins holding six gallons each. We had, besides, the canvas bottles and gourds for myself and men. It was upon this occasion that I was brought up against the complete indifference of the eland for water. On the second day out

we reached a so-called "water-hole," upon which we had relied to renew our supplies. It proved to be merely the filthy remnant of a shallow swamp, half an acre in extent, and defiled both by game and baboons. The elands we were following, about forty strong, though passing close by the puddle, never actually touched the water at all. It was lucky for us that they had passed it by, since otherwise such a crowd would have consumed every remaining drop. We had actually to halt for a couple of hours awaiting the departure of two buffaloes which rolled and wallowed in the already noisome stagnation. We were constrained, nevertheless, to refill our empty *girbas* and water-skins with such foul fluid as remained.

To revert to the earlier, one-day efforts, already noted as futile. Although often following spoor for hours and sometimes overhauling a herd to find that it consisted only of cows and young beasts, yet more often we were defeated by the abounding giraffes. In fact the whole venture sometimes degenerated into a sort of "giraffe-drive," with a score or more of these tall beasts scattered in a broad half-circle in front, and as many more on either flank. When a giraffe, on this hard iron-stone ground, breaks into his lumbering canter, the clatter of huge hoofs resounds for miles around, and gives alarm to every other game-beast from dikdik to giant eland.

Of the hardships of those six days and nights in the "iron-stone" forest, sleeping on a bare ground-sheet and suffering pangs of thirst never previously conceived, details are unnecessary; rather let me attempt a brief summary of what we were able to observe of the habits of our giant quarry. Its total indifference to water has already been named; nor did any evidence of the eland's ever *grazing* come under our observation. Here and there along their track some grass had been cropped; but since we never saw elands do this, and since there were also present many *tétel* (Jackson's hartebeest), it seemed probable that the latter animals were responsible for what little cropped grass there was. The elands, whenever under view, confined themselves to *browsing* on the foliage of certain trees and shrubs—one in particular, a *Gardenia* with a waxy-looking leaf not unlike the tube-rose. Often the ground along their course was strewn with the branches and twigs of this shrub. The elands—like everything else, man, bird, and

beast—are also specially fond of the fruit of the “lulu tree” (proper name unknown). That season was now over (March) and only a few rotting specimens (not unlike horse-chestnuts) lay scattered on the ground. But beneath each tree the trampled grass, spoor, and sign of elands clearly indicated how lovingly they had lingered at such spots during the period of ripe fruit. The trail of the eland-herds—owing to this profusion of broken branches (but not to actual *spoor*, which is bad to pick up in the dry season)—was as easy to follow as that of a herd of elephants; though on the hard iron-stone outcrops it was difficult to advance in silence. In actual shape the foot-prints of eland closely resemble those of buffalo.

One herd we followed during four days, on several occasions getting in close enough to realise what magnificent animals we had before us, and twice I got a glimpse of the champion bull—a beast such as never in my life before had I set eyes on. Naturally I had come prepared for *something great*; but the first actual view through prism binoculars fairly carried me off my feet. The giant eland, proportionately speaking, is not so heavily built as the commoner species, nor is the dewlap so extravagant; but his great stature—17½ to 18 hands—the massive wide-spread horns, the huge bulk and shaggy mane, with the deep black neck offset by its contrasted margin of white—all these features combine to present a picture of wild animal-life such as I had never dreamed to see.

A characteristic of the eland family is that the master-bull of a herd—contrary to the custom amongst most African antelopes—permits the presence of two or three (or more) young bulls running with the herd. These proved a source of recurrent annoyance since my trackers insistently urged me to shoot one of them—thus incidentally providing them with meat, and also terminating their trials in this terrible waterless land. But my motto (and inspiration) was *aut gigas aut nullus*, and we held on. These younger bulls, nevertheless—and the cows alike—presented lovely studies when watched at close quarters. In bright sleek coats and jet-black muzzles glistening with moisture, and with full liquid eyes they seemed, when reaching up into the foliage above, to be built on lines to the full as graceful as those of the lesser antelopes and gazelles. We sometimes had to wait an hour while these laggards lingered

behind the herd. At length, after four days' patience and continuous spooring straight on end, the chance arrived. The quality of the trophy secured, the photo annexed clearly shows. His horns taped $39\frac{1}{2}$ inches straight.

The operation of skinning presented a quite unexpected difficulty, owing to the intrusion of swarming hordes of highly aggressive bees. The slightest moisture in this arid land attracts bees in millions—even such exiguous moisture as exudes from human brow and arm. Upon this great flayed carcase they settled in seething layers, and off-skinning became impossible save under the reek and pungent smoke of half a dozen bonfires of greenwood alighted to windward. Even so, all hands were stung and stung again, and personally I was soon driven to the shelter of a mosquito-net with eyes, mouth, face, and arms swollen and aching with hundreds of poisoned shafts.

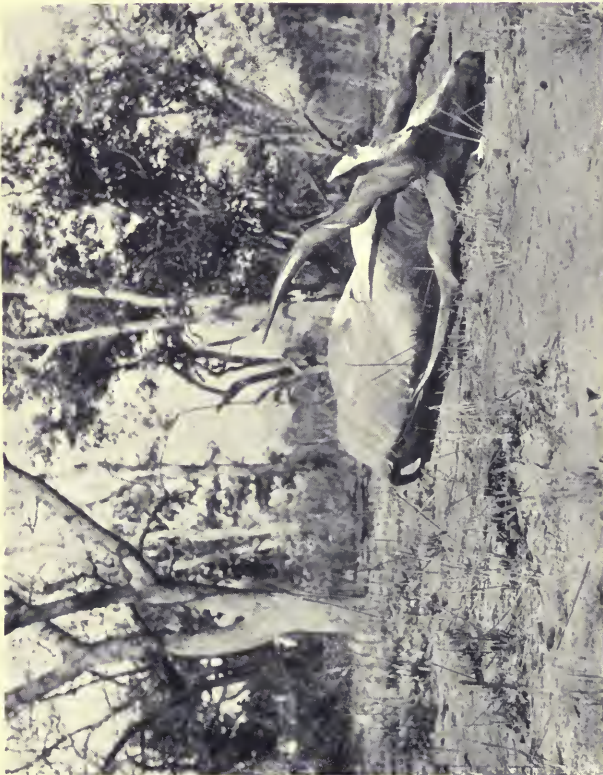
One point to the credit of the ferocious bees we gratefully recall. When in the final days of this venture provisions ran out and rations fell to vanishing point, the bees' nests in hollow trees supplied most acceptable stores of wild honey.

The results of this expedition Pearson had described at the time *in lit.*, April 27th, 1913:—"I had a fairly good time, but should have done better had I not cracked up. Ten days out from Wau I was poisoned by the water which was frightfully contaminated by baboons—four days of dysentery while on trek, seventeen more in Rumbek=twenty-one in all. Thence to Shambe on the Nile I was carried on the heads of Nyam-Nyam porters—104 miles; but it is 388 miles in all from Meshra-el-Rek to Shambe. However, I got the giant eland (a topper) and white rhino, besides one elephant and five kinds of antelope that were new to me, making seven new species in all.

"There are strange and weird creatures in Bahr-el-Ghazal: Balæniceps plentiful, but weirdest of all a Frenchman whom (with his ? wife) I found in a nuggur right in the middle of the Sudd. He asked me if he was likely to get a lion there! He had two waterbuck heads quite 12 inches long, two baby tiang, and a vilely smelling croc skin rolled up in a ball. . . . Giraffe are an abominable nuisance in Bahr-el-Ghazal; the bush is stiff with them, and they are continually going off with



GIANT ELAND.



GIANT ELAND (*Taurotragus gigas*).

Horns 39½ inches—Shot in Bahr-el-Ghazal, 1913, by Sydney Pearson.

yards of telegraph-wire round their necks. The line to Rejaf is perpetually out of order through them and the elephants. The latter abound. We saw many herds, but had to avoid them, so as to get the white rhinoceros.

“The Bahr-el-Ghazal is a hard country to work—terribly hard. A crawl of 50 yards on the ‘iron-stone’ takes more out of you than 300 yards in British East; and the game is *wild*, the giant eland particularly so.

WHITE RHINOCEROS (*RHINOCEROS SIMUS*)

“This great pachyderm is far from plentiful in the Bahr-el-Ghazal—much less so than is the case farther south in the erewhile Lado Enclave. During my trek right across the whole Bahr-el-Ghazal province in 1913 I only saw three. That small experience is too little to judge by, but it left an impression that the white rhino is not so aggressive nor so liable to sudden outbursts of fury such as we well know characterise his ‘black’ cousin in East and Central Africa. Here the local natives exhibit little or no fear of the rhinoceros.



WHITE RHINOCEROS.
(Note the square mouth.)

Both the spoor and the sign of this species much resemble that of elephant. My specimen I secured by following the spoor from a water-hole where the beast had wallowed and, during the stalk, noticed that its method of feeding was entirely by grazing and not by browsing on trees and thorns as we see the black rhinoceros do. The difference in bulk was also very marked, the white rhinoceros appearing enormous—I should say nearly twice the cubic measurement of the other.”

A feature in the anatomy of the white rhinoceros merits mention. In the skull of this animal (*Rhinoceros simus*) there occurs immediately in front of the eyes a sort of double bony

projection which entirely prevents its seeing straight ahead—indeed in life, when these projections are enfolded in thick hide, its view in that direction would be intercepted up to an angle of, say, 45 degrees. In the common black rhinoceros (*R. bicornis*) the projection, though present, is less pronounced, and would not prevent the beast from seeing *almost* straight ahead.

[It remains to record the melancholy fact that, within a few days after revising the proofs of the above, my friend and neighbour Mr Sydney Pearson passed away—on May 30th, 1920. His death at the age of sixty was, moreover, directly attributable to the hardships undergone during the expedition here described: those befouled “water-holes” of Bahr-el-Ghazal introduced the germs of what proved a fatal disease. Such is the toll that Africa exacts from her devotees, even the strongest. Personally I owed Pearson a deep debt of gratitude: for once, when on the threshold of undertaking a big expedition (alone), an attack of fever precluded my completing its final organisation. Pearson (though fully engaged on similar preparations for himself) at once took the business in hand and, on my recovering, I found every detail—to the last pin—prepared and ready for a start. *R.I.P.*]

B

COLOUR-PROTECTION

CONSIDERED CHIEFLY IN RELATION TO WILD BEASTS AND BIRDS OF THE SUDAN

That the Almighty should have so created and clothed His creatures as not only to conceal the harmless from possible enemies, but also to render the predatory less visible to their allotted prey, is a theory so fascinating as at first sight to captivate the imagination. Therein lies the danger of theories. This one, certainly, all who love the study of Nature thirstily drank in. But not all proceeded to put its tenets to the test and corroboration of field-observation.

Those who did so at once began to detect inherent fallacies; and later to wonder if, by some confusion of thought, another

Principle of Nature's had not been mistaken for "colour-protection." I refer to the general assimilation of creatures to their environment—the "Influence of Environment"—a principle which does not necessarily involve "protection" at all.

Nearly thirty years ago, in *Wild Spain*,¹ I pointed out certain inconsistencies of this theory in relation to specific instances. A kindly critic (I think it was Grant Allen) chastened youthful presumption as it were questioning a fiat of Darwin. Meekly I accepted the rebuke and have not "erred" since. But all the time I have felt not only that my facts were correct beyond dispute, but also that Darwin had never stated the reverse, nor sanctioned the mountainous mass of poetic nonsense that, since his day, has been ever accumulating on totally inadequate foundations. For that, it is not Darwin who is responsible but the speculative writer at second-hand who, with brilliant pen (but without field-experience), expands and embroiders Darwin's more simple nucleus. Darwin drew his inspirations from the field as well as from the study, and here is one thing he *did* say:—"As the accumulation of isolated facts is apt to become uninteresting, so the habit of comparison leads to generalisation . . . hence arises, as I have found to my cost, a constant tendency to fill up the wide gaps of knowledge by inaccurate and superficial hypotheses" (*Voyage of "Beagle,"* p. 506).

None can ever fill those gaps; but my own conclusions—based on half a lifetime's attention to the subject, in many climes and under all conditions by day and night—lead me to believe that "colour-protection" (though undoubtedly a minor component among Nature's schemes) is yet so limited in scope and so constricted in operation, that for the purposes of this chapter I propose to deny its existence. That is, to presume *ad hoc* its non-existence; to start with a "clean slate," and then to examine the comparatively trifling number of cases in which the principle is operative.

In order to clear the decks and avoid the manifold pitfalls and deceptions in which this question has become enshrouded

¹ *Wild Spain*, by Abel Chapman and Walter Buck, 1892, pp. 112-15. After three decades I cannot alter or improve the passages cited, and would beg readers who possess that book to refer to them.

(especially the fatal fault of loose definition), I suggest laying down the following rules and exceptions as axiomatic:—

Axioms.

1. That absolute immobility, on the part of the object itself, is essential; or, to put it in other words, that the slightest movement, even of a part, is fatal to the value of any protective principle.

[Obviously this limits "colour-protection" almost exclusively to the lowlier and less mobile forms of life; nor is it an unduly overstrained deduction to add that an absolutely immobile creature is thereby protected, regardless of its colour.]

2. That however closely a creature's colours may happen to agree with those of its habitual environment, still that fact in itself alone has no bearing on "protection" *unless* the creature in question is (1) conscious that its colour (and equally its immobility) are factors making for its safety; and then (2) purposely acts upon that knowledge.

3. That any analogy drawn from domestic creatures, or from animals in captivity is, at least presumptively, deceptive. To understand Nature's ways, you must go to Nature herself.

4. That under no conditions whatever was "colour-protection" ever designed by Nature—even so far as it goes—as against modern MAN. Nature never contemplated cordite.

5. That indistinctness of colours or colour-patterns as seen *from a distance* has no relevancy whatever. Such conditions merely concern the limitations of human eyesight. Moreover, no large animal needs protection from natural enemies at, say 500 yards, as is apparently assumed—nor at 300, rarely (if ever) even so far as 100 yards.

6. That such terms as "shadow stripes," "counter-shading," and the like are, as used, chiefly fantastic and artificial. Shadow presupposes covert, and in proportion as an animal is hidden from view by intervening obstacles, or the shade of them, so its local colour becomes immaterial.

Exceptions.

7. That exception be made of certain females during their breeding period, together with their young until mature; also,

in the case of the *Anatidæ* (ducks and geese), to the males while undergoing "eclipse" and temporarily flightless.

8. Also of certain creatures of nocturnal habits which, by day, are naturally somnolent and secretive and some of which certainly select environment that harmonises with their own individual coloration—immobility, nevertheless, remaining their main safeguard and protection (as is also the case with those mentioned in No. 7 above).

Should the logic of these axioms be accepted—and I challenge their contradiction—it follows, I submit, that whatever degree of protection be afforded by colour alone (if any) is so slight as to be all but absolutely negligible.

Colour.

In addition to the axioms, far more precise definitions are required of what is meant by the terms "colour" and "protection." Such definitions lie quite beyond my powers to formulate. The dictionary describes colour as being "not a material existence but a sensation"—and with that I agree. Thereafter, however, the technical diagnosis dives deep into "waves of light," into "ether-waves" in recurring billions, and similar terrifying formulæ that may be as true as they are obscure. For our practical purpose those terrors are irrelevant. The least scientific can differentiate colour into two distinct categories. There is the crude type that offends the eye when some barn-door is overplastered with posters—VOTE FOR SMITH—in capitals half-a-yard high and emblazoned in red and blue, orange or green. That must be the "colour" of colour-protectionists, or of those who visualise wild Nature as though it consisted of stuffed effigies in glass cases?

Secondly, we have Nature's colours, subtle and elusive, changing with each changing phase of light and shade, of passing cloud or transient sunshine, and varying with the varying angles of impact; subject, in short, to every passing atmospheric effect. Nature's colours never assume a fixed and material quality; but are a reflex, relative and conditional.

* *Protection.*

Here again there is a dangerous looseness of expression that is quite incompatible with scientific accuracy. Against

what dangers—or under what conditions of danger—are the defenceless creatures supposed to require this protection? An answer to that question must involve consideration of the general conditions that govern the “struggle for existence” in African forest and veld; in short, a study of the psychology of the wilderness. Thus, for example, before we can accept this theory of colour-protection as presented, we must first constrain ourselves to regard the lion and his fellow-carnivores as habitually rampaging far and wide in broad daylight, instinct to kill at sight from sheer blood-lust, and customarily charging herds of herbivores from untold distances. That, of course, may be the popular view and reads so pretty. Those, however, who have studied the lion in life know that such ideas are merely fabled fallacies—not to say romantic rubbish. By day the big carnivores are not beasts-of-prey at all; that function they confine to the night—when colour counts not, and when *scent* leads them to their prey. On the rare occasions when herds of antelopes or zebras do—perhaps once in their lifetimes—chance to set eyes on a disturbed lion astir in daylight, no sign of alarm do they evince; no panic seizes them, nor (so far as we can judge) do they recognise in the unwonted apparition—however near—an enemy at all. Some watch with curious eyes; others continue grazing. I assume, of course, that the “wind” is right.¹

One point in this controversy demands clear emphasis at the outset. In the main, those who uphold this theory of colour-protection are (if that be the right term) “cabinet-naturalists”—many of them men of high intellectual and scientific attainments, of broad views, but of comparatively limited field-experience. While the opposition, with a few notable exceptions, consists of a handful of humble field-observers, unknown in the scientific world, but who eschew theory and draw their deductions at first-hand from the life.²

¹ Cases in point are given in the present work at pp 67, 104, 174-75; also in *On Safari*, pp. 124-25.

² The few exceptions include F. C. Selous, whose *African Nature Notes and Reminiscences* contain two chapters on this subject which deserve to be read and read again by all who wish to master its complexities; and, secondly, Theodore Roosevelt, who kindly sent me his article “Revealing and Concealing Coloration in Birds and Mammals,” published in the *Bulletin*

To carry the war straight into the enemies' camp (which, I read, is a sound military maxim), our friends, the enemy aforesaid, have quoted against us several big-game hunters as conforming to their theories.

The reply is that there have always been hunters—many of them “hard-bitten” and highly skilled in their craft—who neither profess to study natural phenomena nor aspire to any living interest in the animals they hunt beyond securing “record heads”—more's the pity! Such men, on reading articles propounded by our acknowledged authorities, and clothed in terms as precise as they are fascinating, not unreasonably mistake hypothetical propaganda for proved facts. In blind faith they accept a mere thesis as an established law of Nature. Who is to “cast the first stone”? The delinquents include personal friends, and were I allowed, without offence, to impute blame, it would be on the lines that, when these innocent “Babes in the Wood” enjoy subsequent opportunities to put that blind faith to the test, the whole subject is utterly forgotten!

Now, should any self-conscious culprit read my book, let him forgive me straightaway; let him admit that the above is the simple truth; and promise to remember my humble hint!

Let every hunter in African wilds realise that it is in this twentieth century a bounden duty incumbent upon him to add, so far as in him lies, to our knowledge of an animal-fauna which, while still in the full glory of existence, may to future generations be but as a closed volume or a dream that is gone.

Well, we start with a “clean slate.” Inscribe in one corner all that array of lowly life—reptilian, crustacean, insect, and other—which spends its ephemeral existence practically sedentary. Such a schedule comprises caterpillars and chameleons; tortoises, tree-frogs, snails; wood-lice; bats and butterflies at rest; moths, mantis, stick-insects, and thousands more of that ilk. The sole protection of most of these lies virtually in

of the American Museum of Natural History, New York, August 1911, which is almost equally illuminative, but presenting to British students a difficulty in that many examples are selected from transatlantic subjects which may not be so familiar to ourselves. Another notable name is that of Major C. H. Stigand. Alas! that all these three should already have passed away.

immobility (aided in certain cases by mimicry), whereby to escape detection by their foes. It is their feebleness that forms their safeguard; though whether in their eocene intelligence they realise that fact lies beyond my scope. Their rigid immobility points the conclusion, though it falls short of proving it. I am content to leave the question at that and give them the benefit of the doubt.

Immobility is the essence of the whole question. The giant elk, in his smoke-grey pelt, assimilates so exquisitely with forest-shades beneath the pines, that he may very easily escape detection, though he stand 6 feet high, his position known, and within 100 yards of the hunter; but one flick of a white-fringed ear betrays him. So, as I write this at my window, with eyes glued to the foolscap, the flight of a passing heron, or plover, or gull, the capering of a rabbit 200 yards away across the river, unfailingly attracts attention.¹ Nothing that *moves*, even though but a part—an ear or a tail—is protected, be its colour what it may. As a general rule the reverse holds true—that a creature, provided it remains stationary, is unlikely to be discovered. To this latter, however, there are exceptions. For example, so conspicuous are the white facial adornments of waterbuck, sable and roan antelopes that, even when standing at gaze in absolute quiescence, although concealed among thick covert, these animals will often be detected thereby, despite the otherwise general harmony of their hues with those of the bush around.

The zebra has customarily been selected as an illuminative example of the principle of colour-protection. Precisely why, it is difficult to understand, since scarce an animal on earth is more conspicuously coloured—a “thunder and lightning” pattern, to borrow Dr Drummond’s description. Possibly the selection lent occasion for a sort of gladiatorial display in dialectics; since there are controversialists who revel in Herculean feats, such as squaring the circle or demolishing (on paper) the granite rocks.

Their contention is that beyond a certain distance—say

¹ It may be of interest to mention that during upwards of a score of years, I have kept systematic notes of the birds identified from the said window. It overlooks North Tyne and a wide sweep of country—moor, wood, and water. At present the list exceeds ONE HUNDRED species.

500 yards—the conspicuous stripes of the zebra become indistinguishable, or “melt into monotone.” Quite poetic; though in plain prose I prefer to explain the phenomenon by the simple fact that human eyesight at such distances ceases to recognise minor detail. But by what process of mental athletics can that everyday fact be construed into evidence that thereby the zebra is rendered less visible?

Consider how such phantasies work out on the open veld. There, in full view, stands your zebra—more probably twenty, forty, or a hundred zebras, covering acres of ground—striped or “melted monotone” according to distance. The colour matters not a whit; the animals are, of course, as easy to see at 500 yards—or at 5000—as are cattle or ponies on an open down at home. For zebras are big upstanding beasts, over 13 hands high and bulky of build, conspicuous to the most moderate eyesight. Moreover, they are not *all* “melted monotone,” even at the 500-yard range. Only those that happen to be facing the light, while full broadside to the observer, could be described so; those which stand broadside-on to the light show up silvery-white; others posed athwart the light appear coal-black! No two necessarily agree—*suum cuique colorem*, varying with the angle and impact of the light. But let their colour be what it may, none can fail to see them, save the blind. See sketch at p 437.

Will any theorist dare contend that in an English landscape cattle or sheep are “colour-protected”? No: because such a proposition would conflict with common knowledge and with common-sense alike. But the case of the zebra on African veld differs in no way whatever—nor does that of any large animal (beast or bird) in full view, far or near, so it be within the range of vision.

Zebra, moreover, are not the sole denizens of the open plain. That group to the right—or left, it matters not—are hartebeests, red as foxes; and nearer the fringing forest graze a dozen impala, redder still; while beyond stands a column of brindled gnus, these last of a clear slate-blue, which in African sunlight stand out conspicuous as a string of marble statues at a couple of miles. Each of the four species display totally different colours and all clearly distinguishable by eyesight.

They cannot *all* be "colour-protected." Big objects on open ground can never be concealed by colour. Whether your zebras be striped or unstriped, whether the objects be red impala or blue gnus, white oryx or black buffaloes—there they stand distinct to be seen up to the limits of human vision.¹

None need go to Africa to learn these elementary truths. Watch the sheep on a Northumbrian moor, or on "Hampstead Heath," or on open downlands anywhere else. It is a breezy day, with clouds continuously coursing across the sky. During alternate periods of sunlight, the brown bosom of the moor is everywhere flecked with snow-white flocks; now a passing cloud shuts off the sunshine and the landscape is fleckless, unbroken umber-brown. But the sheep are all there still. A moment before, in the river far below, had stood a heron, showing white by contrast with dancing blue waters. Look now and you see nothing. Has that heron gone? No; the binoculars reveal him still standing statuesque; but the passing shadow has momentarily blended bird and stream into a common monochrome. Stated so, in terms of fell or veld, the matter appears to resolve itself into a mere truism. But when truth has been dethroned—distorted and perverted to prop up some nebulous hypothesis—it becomes necessary to restate elementary facts in terms no less forceful than were truth itself the paradox.

Naturally in forest or among bush, animals are less easily detected than on open veld. That is simply because they are then partly concealed from sight—sometimes entirely! Any protective contention arising therefrom rests on a double confusion, which may be crystallised thus:—

- (1) That the eye can distinguish colour or detail *at a distance* as clearly as when close at hand—as who would sing:—

No distance lends enchantment to *my* view
Nor paints *my* distant zebras blue.

- (2) That the eye can distinguish with equal facility things

¹ I feel tempted to ask, against what danger are these creatures presumed to be protected at 500 yards? Again the theorists would be constrained to evoke either their pet "Lion-Rampant" *ex* Heraldry—(*NEC Leo Africanus*)—or cordite; both items barred by axiom! But both points have already been mentioned.

which are partly concealed and those which are fully in sight—a proposition which, as Euclid would say, is absurd.

The zebra, as above suggested, is probably the worst prototype of their propaganda that colour-protectionists could have selected. The Sudan, had they known it, supplies at least three examples infinitely better qualified to support their thesis.

These three are the sabre-horned oryx leucoryx, the addra gazelle, and the ariel. Designed by Nature each to exist on arid Saharan wastes where no rain refreshes nor tree survives; where wiry bents and the desiccated foliage of dwarf thorn-scrub alike share the hue of death—call it *feuille-morte*—where no shade protects from sunrays pitiless as the breath of a furnace—thereon these three desert-forms agree in copying to perfection the drear monotony of their environment. Exquisitely does bleached pelage reflect that deadly monochrome. A similar rule applies to the minor denizens of Sahara—to the jerboas and jerbilles, the sand-larks (*Certhilauda* and *Amnomanes*), the coursers, sandgrouse, and the rest. Nature herein could not have more effectually fulfilled—more servilely copied—the ideals of our theorists. Her protective-colouring is perfect. But does it protect? No; not in slightest degree, nor under any conceivable conditions.

Consider the degree in which these highly specialised desert-forms are “protected”—or, at least, rendered inconspicuous—by their assimilation to environment. First I will cite the testimony of two independent field-observers. A Sudan correspondent of *The Field*, speaking of the period immediately subsequent to the reconquest, writes:—“The herds of addra and white oryx roaming over the Deserts of Kordofan often numbered 200 to 300 head and were easily studied, since, of course, in those days they were seldom hunted with firearms. Their colouring is in no sense ‘protective’; on the contrary, one’s first impression is of a white animal that can be spotted a long way off” (B. C. C., *The Field*, June 15th, 1915). Mr Norman Smith, who twice traversed these Deserts of Kordofan, penetrating 230 miles west of the Nile, also writes me:—“Both animals would be far safer in other colours. The

snow-white stern of the addra often caught my eye at a mile and more; indeed at distances where my eye could in no way define the object, though a white patch on the horizon at once told me it was an addra. The same applies to leucoryx though in less degree, its pale coat not being a perfect white." As regards the ariel, my own experiences are given in the chapters on the Red Sea hills, and need not be repeated.

To the above testimony, Mr A. L. Butler adds the following convincing remark: "Addra are the most extraordinarily conspicuous things I've ever seen wild—and they know it! A herd of them is just as conspicuous as a line of white linen clothes hung out to dry—oryx leucoryx nearly as conspicuous, though not quite so. If the colour of these animals subserves any special purpose, I should say it was to enable them to sight and recognise their kind at great distances on the vast open expanses over which they roam. Moving or motionless, an addra is a *white flag*." (See photo. at p. 30.)

Once more, the question is pertinent—against what enemies are these desert-antelopes supposed to require protection? They have no natural enemies. No big beasts of prey share their sterile solitudes—the absence of water assures that.

A curious exception to the assimilative rule deserves passing reference. On these same Saharan wastes of Kordofan, and alongside their desert-hued denizens, there also occurs a great dun-red hartebeest (*Damaliscus korrigum*) that on the neutral-tinted environment stands out like a chimney-sweep!¹

In the Sudan we have the lechwi and the white-eared cob, in both of which antelopes the sexes differ in colour. The female in each case is tawny—by theory, she "blends with the sere grass"—the male being dark, is "concealed by the new-burnt veld." But since the two sexes naturally associate, only *one* can be protected at one time. The other, presumably, is "given away"? Dozens of similar instances—where the sexes differ essentially in colour—occur to the mind off-hand. But

¹ Discussing the poetic ingenuity of an American theorist who argued that a crow, by reason of the gloss on its black plumage—"its rainbow sheens," to quote precisely—was thereby rendered invisible, Mr Roosevelt writes:—"There is no more use arguing than if it were stated that a coal-scuttle planted in the middle of a green lawn was inconspicuous." Mr Roosevelt's language was as breezy as his life!

each of them is destructive of any principle of colour-protection.¹

To consider categorically the whole class of mammals is obviously impossible; hence I will here confine my remarks to a single additional example, and brief at that, since SELOUS has already pointed out its absurdity. I refer to the series of show-cases in the British Museum at South Kensington, designed to illustrate this phantasy of colour-protection—white Arctic foxes and ermines in the act of stalking white grouse or white hares. Exquisitely executed as they are, these groups constitute, nevertheless, a monument to colossal ignorance in high places; conveying, in Selous' words, "an entirely false view of the struggle for life as carried on in the Arctic regions, for they convey the idea of carnivorous animals hunting their prey in a bright light and by eyesight alone." The continuous darkness of an Arctic winter is forgotten or ignored, and the actual habits of the creatures in life distorted to suit the exigencies of a theory. I will only add two supplementary remarks of my own:—(1) That creatures inhabiting snowy regions (even temporarily, as grouse at home) do not normally spend their time upon the surface, but beneath it; and (2) that when actually exposed upon the surface, such creatures—even although white—are virtually as visible as they would be in any other colour. Whatever object, animate or inanimate, large or small, protrudes above an unbroken contour of snow at once catches the eye—be it, say, but the point of a jagged stone or the tips of a tuft of rushes, either enveloped in drifted snow. I recall a remark of a Scottish whaler in Spitsbergen seas. Speaking of polar bears, he described the ice-floes as "black with them"—black with white bears! Though wrong in the letter, the picture is virtually correct and apposite. Practical Peterhead can give points to scientific South Kensington.²

¹ Grass, by the way, is not always sere; nor does a burnt veld long remain black. It is turning green "while you wait." But neither lechwi nor cob is ever green.

² When attending the unveiling of the *Selous Memorial* at the British Museum on June 10th, 1920, I observed that the labels on these show-cases had been altered from "colour-protection" to "adaptation to environment." This is presumably in deference to the criticisms of our great explorer-naturalist, and is correct so far as it goes. The initial false inference, nevertheless, remains unchanged.

In Africa—(ruling man out of the account)—the chief enemies of the defenceless animals are the big Carnivora; but since these hunt by night, when colour counts not, and by *scent* which excludes the need of sight up to the penultimate moment when, at close quarters, the chase passes “from scent to view,” any protection afforded to the feebler by colour alone can only be of infinitesimal value. Personally, I doubt if it count at all. The point has been so clearly elucidated by SELOUS that I will not labour it. See the two opening chapters of his *African Nature Notes and Reminiscences*.¹

A vast proportion of the muddle and misapprehension that befogs this question has arisen from the system of regarding what are purely human standards as applicable to the totally different conditions of wild-life. The true protection accorded by Nature to all her creatures ought to be patent enough: it is in everyday evidence to the hunter-naturalist, yet is ignored or overlooked by the scientific. That “true protection”—(although absolutely relevant to our subject, forming indeed an integral, even though collateral, part thereof)—is yet another story: it involves consideration of the whole psychology of the wilderness, a subject quite too extensive to enter upon in this place. Briefly, however, Nature’s protection may be stated to include, *inter alia complurima*, highly specialised development of the senses of Sight *both by day and by night*, of Scent and of Hearing, intensified beyond compare; and all these three combined with a patience and a ceaseless vigilance that passes human understanding. Take the sense of scent alone. We humans virtually possess no such sense—certainly none whatever in protective sense. We are constrained to employ watch-dogs, setters, etc., to make good both that deficiency and equally that of our paltry powers in hearing! But is it known—or, if known, is any adequate weight attached to the

¹ A typical illustration of the arguments used by science as against Selous’ conclusions is afforded by the following extract from *The Field* of November 23rd, 1912:—“If it be true, as Mr Selous says, that predatory animals are mainly dependent on scent, it must mean that a lion deprived of sight would have almost as good a chance of survival as another with vision unimpaired.” How can one deal with such special pleading? It cannot be called argument, being neither logical, consequential, nor relevant, but apparently mere blind obsession to a preconceived formula.

fact—that there are wild animals—predatory and defenceless alike—capable of detecting the presence of other animals, by *scent alone*, up to a mile, or two miles, even at three miles' distance? Instances in clear proof of the longest of these distances are given in my *Wild Norway* (1897).¹

Again, to glance for a moment at the specialised power that lies in Sight. Consider the telescopic vision of a vulture soaring in the arc of heaven, far beyond human ken—though he spans 10 feet across the wings!—yet able at that vast altitude instantly to detect blood-stains where a wounded animal has crossed the desert—say 10,000 feet below. Consider, also, as showing how faulty and unsatisfying is our knowledge of such matters that only a few years ago—and even to-day, for all I know—our standard works on ornithology invariably attributed such feats of the vulture to its amazing gifts of *scent*. It was left to the author to point out that neither vultures nor eagles (or practically land-birds of any kind) possess any perceptible powers of scent at all—*The Field*, December 1911 and January 1912.² Such factors as these are of vital import in considering such questions as the safety, the maintenance, and the protection of animal-life. Surely they ought to have been examined, if not explored, before embarking in wild speculations on *colour* as a protective?

Every wild creature on earth is protected by the consciousness that from hour to hour, by night as by day, its life depends

¹ Whether the term "*scent*" meets the case or not, at least our tongue provides no other. Such long-range perceptions may be attributable to causes or to emanations unknown and impalpable to us. Thus, on our Northumbrian moors, we have certain insects (as, *e.g.*, the oak-eggar and fox-moth) the males of which detect the presence of a female up to quite incalculable distances. Carry in your pocket a captive female and soon the moor for miles to leeward will be occupied by a procession of male pilgrims to the shrine. Modern discoveries in "wireless telegraphy," and similar marvels of practical science, suggest the thought that there may yet remain undiscovered other cryptic elements in the atmosphere, other physical laws, or physical senses affecting the animal-world, hitherto unsuspected and undreamt of by us. That lower world has enjoyed its "wireless" for ages before Marconi was born.

² I am not overlooking the experiments of Darwin with condors in South America; nor the observations of Tristram (*Ibis*, 1859, p. 280) or of Baker (*Nile Tributaries*, p. 492). See also Newton's *Dictionary of Birds*, p. 1017, Note.

upon its own alert and ceaseless vigilance, and by the specialised gifts (as above) that serve to render that vigilance effective. None of wild breed risk ridiculous chances on "colour."

THE PSYCHOLOGY OF THE WILDERNESS

"Audi Alteram Partem."

Were it conceivable — perhaps in a day-dream — that somewhere in outmost recess of the veld, there might be encountered a brindled gnu in responsive mood, his sentiments would probably take these lines:—"You poor humans will never understand us wild beasts until you come effectively to recognise the full cleavage between "instinct" and "intellect" —that is the gulf that lies between us. The latter endowment you coolly assume constitutes you the superior race—no greater illusion on the veld! True, it enables you to devise weapons, implements, and schemes that partially compensate for your physical inferiority —without those extraneous appliances, you would put up a very poor show. For you have neither strength, speed, nor endurance; your eyesight is negligible—save for your glass-eyes [? binoculars]—your hearing simply contemptible; while as for *scent*, you know not what it is. We observe that you have noses, but believe they are intended as ornaments. At any rate, their functions are obsolete from disuse. Thus it comes that your intellect is your handicap. It leads you to waste nine-tenths of your waking life upon profitless and irrelevant trivialities — such, for example, as reading silly newspapers or writing yet sillier books; discussing politics . . . or polemics . . . or Pussy-foot pranks . . . trinomialism, priority in nomenclature, colour-protection, and a thousand similar banalities. You are so clever that you *imagine* whole categories of things that in the wild-world of the veld don't exist, and don't count. Thus do you degenerate. Now compare our case. Our instinct recognises but a single interest, one Law of our Being — that of self-preservation (unaided). With singleness of purpose, we gnus—and equally all our neighbours—concentrate every ounce of our energies, every hour of our lives by day and night (thereby incidentally perfecting our physical equipment) to that one paramount object. You are constrained to employ dogs and sentries

[? police] to protect you while you take your ease; with us each unit is a trained and tireless sentinel. I have spoken.”—With a wild fling of his heels, the whirl of a bushy tail, and amidst a cloud of dust, my shaggy visitor vanished o’er the veld.

Pondering on this message from another world, the conclusion suggested itself that other factors had escaped the insight of my brindled friend. First comes, foreknowledge of death; secondly, another pertinent factor which we humans are wont to diagnose as “nerves”—or, more accurately, the total lack of either in the wild-world. No wild beast is appalled by the knowledge that one day (or one night) he must pay the final debt of Nature. What does fill his life with terror is the fear of loss—or restriction—of physical freedom or liberty.

It is the darkest hour. . . . Suddenly the silence is shocked by a rush and an appalling roar. One of his company has paid that penalty—caught and killed by a lion. The survivors scatter. But not far. Within 100 yards all halt, all rejoin, awaiting their missing messmate. He never rejoins; but a subtle, subconscious instinct presently leads the survivors to place a rather wider interval between themselves and such alarms—but *not* (as they see the matter) of death. Then, forgetful of peril, all resume their briefly interrupted feed. Whether these alarmed animals know, or know not, that that particular lion has temporarily ceased to be a beast-of-prey, has ceased to menace their safety, is beyond my introspection to define. In effect, they recognise the fact.

Next consider “nerves.” The lives of all these herbivores are spent in the midst of alarms, exposed day and night to instant danger. The incessant vigilance required to guard against such perils becomes a sort of second nature; hence no wild-beast is afflicted with “nerves”—a distinct advantage over man. Picture as a parallel some prosperous city-merchant obliged, on his daily route to the counting-house, to traverse suburbs infested by hungry hyenas, leopards, wolves . . . with a sprinkling of lions lurking about the wooded squares. A month of such mental anxiety would wear down the most portly Alderman to a wreck! But not even so would that Alderman be so silly as—in a new drab suit (or other sartorial camouflage)—to entrust his safety to “colour-protection.”

The Clean Slate.

So far, not one single large and active animal of Africa (or elsewhere) has found place upon our slate. There is merely inscribed upon an insignificant corner thereof the names of that inchoate and mostly invertebrate crowd of lowly insects and reptiles whose immobile lives are spent restricted within narrowest limits. And let me repeat that, even for these, it is *not* COLOUR which constitutes their main protection, but chiefly their rigid immobility—sometimes combined with mimicry and with “shamming dead.”

The Green Caterpillar.

That green caterpillar upon a green leaf is a type writ large in this gallery. He seems to symbolise the whole theory. But are you *sure*?—even about *him*? Spend a mid-summer's morn in quiet observation among the woods—plant your deck-chair in some shady nook beneath the lush foliage of July, and you may soon begin to doubt the *bona fides* of even your green caterpillar. Not for long will you lack evidence that within the radius of a stone's-throw from your retreat there are breeding, say a dozen pairs of blackcaps, garden-warblers, white-throats, willow-wrens, robins, each responsible for a hungry brood of four, six, or eight fledglings, the whole callow crowd all clamouring for just such delicacies as the green caterpillar. Each tree overhead, you observe, is a “preserved covert,” beaten thrice an hour; every bush and branch is searched; each leaf scrutinised separately, above and below, and by eyes that know what they seek. That green caterpillar is bound to be caught be he never so green. His colour, after all, offers but scant “protection” from keen and persistent eyes trained to his undoing, and searching within a handbreadth of his refuge a dozen times a day? How then does he escape? Not because he is green; but because the supply exceeds the demand, and multitudinous survivors number enough and to spare to stock the world. Still, by all means, retain the green caterpillar on the slate; for he is a thoroughly typical example of the great “Principle of Colour-Protection.”

In conclusion, let me place in apposition two examples

illustrative of the diametrically opposite methods in which subjects such as this are approached. In the *Proceedings of the Zoological Society* (1915, p. 679), a highly elaborate article sets forth the precise angles and distances at which "colours or colour-patterns blend or become oblitative." With meticulous exactitude the details are worked out in centimetres and millimetres. [To be of value I suggest that such measurements should be made in miles rather than millimetres; and the experiments conducted, not under the roof-lights of a museum, but under the open roof of heaven.]

Secondly, I quote a pertinent remark of Roosevelt's:—"No amount of ingenious closet-guessing can take the place of trained first-hand field-observation undertaken, not to twist facts into the support of a theory, but with the ability and purpose to find out the truth" (*African Game-Animals*, vol. i., p. 78).

C

COLOUR-PROTECTION IN RELATION TO BIRDS

That "Every colour and every colour-pattern on every creature has been expressly designed by Nature for the protection and well-being of that creature"—or words to the like effect—may be taken, I imagine, as summarising the creed of colour-protectionists.¹ My own proposition is a direct negation of the statement. The issue, therefore, is clean-cut and precise.

A slight initial difficulty is that my case involves proving a negative. An affirmative is easily supported (and thereby mistaken by the credulous as proved) by adducing a few dozens or a few scores of instances that may appear to substantiate its thesis, while ignoring hundreds, or thousands, that are adverse. The opposite rule applies to a negative. Absolute proof of the latter would involve citing all creation; but, since neither the slopes of Ararat nor the space of an encyclopædia are at my disposal, I am content to select certain specific bird-groups as sufficient for the purpose.

¹ If memory serves me aright, the words quoted, or similar words, occur in an American treatise on this subject.

First let us take wildfowl. For a full half-century I have followed the wildfowler's craft, afloat and ashore, and with equal enthusiasm as gunner and naturalist alike. Hence it is physically improbable that many men now living can speak from a longer experience.

The outstanding character in winter wildfowl would seem to need no new description; yet some measure of re-description is necessitated when we have to combat fallacies such as this. Briefly put:—Wildfowl, as a rule, are creatures of large size; they comprise, in fact, some of the largest flying-forms extant. Secondly, they include groups of every conceivable colour, many of them strikingly conspicuous afar; such, for example, as the wild swans and geese, pelicans, flamingos, shelducks. Thirdly, wildfowl are highly gregarious, accustomed to assemble in masses that are commonly computable by the hundred, more often by the thousand units. Fourthly, the selected homes of these masses are invariably upon open waters, on shallow foreshore, or tidal estuary—all three situations as flat as a floor and totally devoid of a scrap of covert or concealment. Fifthly (and incidentally), most wildfowl are of such clamorous disposition that for a mile around, their raucous cries proclaim both their presence and their precise position.

Now, unless this quintuple combination of characters be disputed or denied, it is obviously incompatible with any conceivable creed such as that above quoted. Even were it possible to accept a proposition that large and conspicuous objects—assembled in solid masses—on open spaces where they literally challenge attention—and where no means of concealment exist (even were it sought, which is never the case)—are nevertheless invisible to the scientific eye (through concealing colours or otherwise), we should yet have to swallow the further inference that their united clamour was equally inaudible to scientific ear.

As regards colour alone, here are a couple of extracts from my wildfowling diary:—"February 25th, 1918. This morning at 8 A.M. two thousand brent-geese sat 'parliamenting' on the slob a mile to the westward. In the low rays of the rising sun they showed up white as seagulls. At 4.30 P.M., with the sun straight behind them, these same geese appeared black as coals. . . . Towards noon sighted two wild swans to the south-

ward—that is, under the sun ; this pair also looked coal-black, *nigro simillima cygno* ; but, just as our course took us out of the direct line of light, so the swans changed alternatively to piebald and presently to their normal snow-white.”

Wildfowl on open coast present a precise analogue with big-game on open veld. It is the old fable of the zebra in another guise. Colour, whether of fur or feather, is no concrete quality but merely the slave of changing conditions of light and shade. Those who believe that, in either case, these big and conspicuous creatures are “obliterated” by their colours, must themselves be blind—whether optically defective, or mentally obfuscated !

I have selected a British example or two, so that any doubter can go and test the facts for himself at home and without the trouble of going to Africa.

In the Sudan precisely the same phenomena are repeated, but on larger scale, Sudan being a land of vast voids and of proportionately vaster aggregations of wild creatures. The setting, moreover, is more impressive since the atmosphere is brighter and more refulgent. Can an army-corps of pelicans, or flamingos, that carpet many acres and gleam a brilliant rose-pink against murky waters—or can a mile’s length of golden-crowned cranes tall as schoolboys and radiant in contrasts of black-and-white with maroon-red—conceivably be held to be “obliterated” by their colours? Enough, however, of the colour-chimæra.

There is, nevertheless, in Sudan one species—and one only—which completely fulfils the stipulations of *all* my axioms at p. 412, and which therefore is fairly entitled to be called “colour-protected.” I have been warned—(this parenthetically)—that the admission of a single exception upsets my contention. That may be so, but I do not agree. This is no mere *ex parte* argument, arguing for arguing’s sake and suppressing what may appear adverse ; but an honest attempt to get right down to *facts*—which are, after all, the only true basis of science.

The bird in question is the squacco heron, a member of the egret-tribe, all of which (including our subject), when seen on wing, appear pure white. But whereas all the others habitually alight on open foreshore or ooze, and thereon continue walking about white and conspicuous as ever : in the reverse, the

squacco at the instant of alighting folds up those snow-white wings beneath a pendent mantle of mouse-brown coverts and scapulars, with the result that the bird, as by magic, vanishes from view. Its sudden disappearance is startling; but that effect alone would not fulfil all the axioms. Beyond that—and in marked contrast with the stated habit of its white congeners—the squacco (1) invariably selects for alighting the very spot which best lends itself to purposes of conceal-



SQUACCO HERONS (*Ardea ralloides*).

Availing both concealing coloration and immobility simultaneously. (Note that when on the wing these herons appear practically white.)

ment—say some patch of spiky dead reeds or grey-green flags; and (2), having settled, at once assumes an upright pose of rigid immobility.

So exact, then, is the blending of the bird with its environment that, even should one have kept an eye fixed on the precise spot, it is still difficult to disentangle that bronzy-brown upright form from the bronzy-green reeds that half-conceal it. Were it conceivable that the colour of an object were reflected in its shade, then the colour of the skulking squacco is precisely what one would expect in the shade of sere flags or grey-green reed.

Thus the squacco heron is not only conscious of the value of its concealing coloration—and equally of immobility—but deliberately and habitually avails itself of both advantages. I know of no other bird to which this remark would apply with equal force; and it is written after close observation of it, and its congeners, during three winters on the Nile.

To this, Mr A. L. Butler appends the following convincing corroboration: "So remarkable is the way in which this species becomes invisible upon closing its wings and alighting, as you describe, that in at least two Indian languages I can remember,

it (or at least the almost identical Indian form *grayi*) goes by the name of the 'invisible bird.'

In Telugu . . .	<i>Gudi konga</i> = 'Blind heron.'
In Tamil . . .	<i>Nuli kuruvi</i> = 'Blind bird.'

"Owing to paucity of language, the word meaning 'blind' is also used to express 'invisible,' by transference."

[One pertinent question suggests itself. What benefit, after all, does the squacco heron secure? None of its congeners adopt tricks of concealment or elusive tactics of any kind; yet all flourish equally—the squacco with its perfected scheme of colour-protection, the others, "naked and unashamed," in spotless purity of white. What bearing, if any, has colour on the well-being of these, or any other creatures? Answers to that problem lie beyond the scope of a book concerned mainly with facts.]

A paradox in parallels is afforded by another Sudan bird, the white-tailed lapwing (*Vanellus leucurus*), equally colour-protected with the squacco, so far as perfect assimilation to environment goes, but which has not learnt to appreciate the virtue of quiescence, or perhaps may have discarded the lesson? One quality without the other is valueless. If asleep or motionless, the keenest eye might overlook a score of these drab-hued plovers on the drab bogs they frequent. But never are they motionless; the whole company keep on the move, snapping at a water-insect here, a slug or snail there; and movement gives them away. Inconspicuous as they are on the ground, yet on rising these lapwings show nearly all white (see Fig. at p. 315)—in which respect also they resemble the squacco.

The deduction follows that this Sudan lapwing—admirably adapted as he is for concealment—disdains scientific theory and relies upon his own vigilance for safety; also that, in his said judgment, he has the concurrence of every other wild beast and bird, save only the squacco heron! The latter may either be testing a new experiment or, alternatively, clinging too long to a safeguard that already all the rest have found fallacious.

If we are to believe this pretty fable about colour-protection—to accept its studied fakements as a masterpiece

of modern zoological science—there remains another aspect that needs a moment's examination. Not only are the defenceless presumed to be protected against potential enemies, but the enemies also, that is the Raptorials, are camouflaged in turn. Now in the Sudan raptorials abound—man, bird, and beast alike prey on feebler neighbours. Along the Nile stretch predacious multitudes in serried ranks unbroken for thousands of miles. The main objectives of these bandits are virtually identical. In order that they may live, ten, or a hundredfold their numbers of other creatures must die daily—flesh, fish, reptile—with all the host of strange amphibian beings that abound in mud-charged shallows and reed-studded swamp. True, it is a



“RIPPLING PLUMES.”

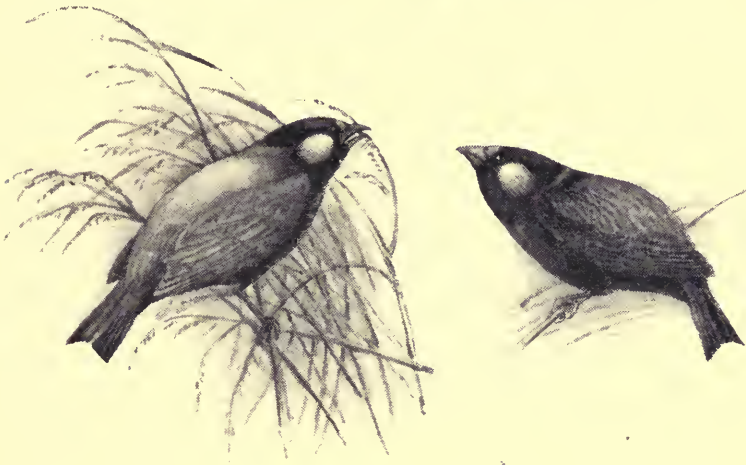
“soft-job”; but, even so, when objectives are equal, why should the aggressors be arrayed in diametrically opposite colours? There are, for example, four species of ibis; two are white, the other two black. The same rule applies to the herons, egrets, storks—to the whole category. By theory, if the white are specially equipped for their work, the black must be

proportionately handicapped. In practice, both succeed equally. The white prosper; the black never lack. Colour does not count.

The common British heron is extolled as a masterpiece of concealing coloration. His dappled array of pectoral plumes, it is claimed, so admirably resemble rippling water as to deceive the very fish themselves. Well, the British heron is equally common here on Nile—ripples and all; but here he finds two cousins—keen competitors in piscatorial pursuits—but which, instead of rippling plumes, display solid dark waist-coats of deep maroon-red. They, too, find no difficulty in getting their daily bread; nor do the egrets, which are snow-white; nor the openbill, which is glossy black. None have rippling plumes designed to deceive; yet towards

dusk one sees the whole crowd "full-up" and all beaks agape.

No single section of animate Nature in the Sudan more demonstratively illustrates the working of that principle, "The Influence of Environment," than do the denizens of the Desert. Already in the chapters descriptive of the deserts are given instances of wondrous assimilation between living creatures and their inanimate surroundings—the desert-larks, for example (*Certhilauda*, *Pyrrhulauda*, and *Amonmanes*). None of them,



FINCH-LARKS (*Pyrrhulauda*).

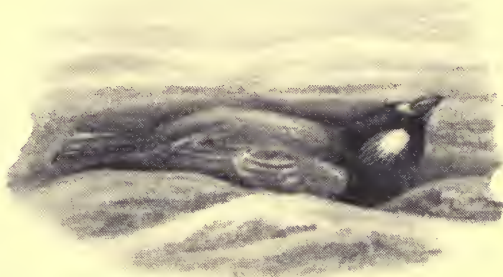
"Cinderella of the desert."

"The proud beauty of the corn-lands."

however, recognise a protective value in their own coloration, or attempt to exploit the quality as a personal safeguard. The black-headed finch-lark (*Pyrrhulauda*) is a typical illustration. On the rich cotton-soil this bird is richly arrayed in warm chestnut and black; on the littoral barrens in neutral grey. But on the open desert—though colour-patterns remain identical—every vestige of a positive hue has vanished, replaced by merely milky apologies for colour, faded and washed-out in consonance with the surrounding Sahara. One character, however, all three types retain—the proud beauty of the corn-lands and the faded Cinderella of the desert alike. All are jet-black on under-surfaces and heads;

and the latter danger-signal not the most sedulous care can conceal.

While traversing the naked sands of the desert, a company of these finch-larks may startle the wanderer by suddenly springing underfoot *from nothing*—like the stones of Deucalion. At once a suspicion of “colour-protection” suggests itself; yet the idea fails to materialise when brought to the test. Those birds had simply caught us napping. Not even an ornithologist can be for ever intently scanning a void of sun-scorched sand. But mark them down and then stroll past their new position. Truly the deception is masterly, a triumph of Nature’s art.



“PROTECTION THAT FAILS TO PROTECT.”

Each bird squats flat in a tiny furrow; each washed-out mantle corresponds to a shade with the sand flush alongside it—one almost descries sand-ripples reflected on coverts and scapulars. But there the deception fails; for a velvet-black head and snow-white cheeks reveal the little skulker’s secret. Besides, the next “ornithologist” to come along will be of the kind with piercing eye and ready talon that misses nothing—the desert-harrier (*Circus pallidus*). Admittedly it is a great effort, and should any reader regard my case as unproven, let him inscribe *Pyrrhulauda* on the slate. For myself I cannot accept “Protection” that just fails to protect.

Where, in the outer desert, fancy suggests that the limits of all life have been left behind, you encounter the big bifasciated desert-lark (*Certhilauda*), in colour sandier than the sand itself;

yet never to be overlooked since its own activity arrests attention. With legs as long as a plover, for which (or a courser) you may mistake it, it runs as fast as you can walk, and when it finally rises, displays broad white-barred wings that recall those of a hoopoe. *Certhilauda* remains associated with some of the most desolate scenes on earth; yet (though synchronistic) he is never invisible no rwhat is tenfold more important—does he ever dream that he is so.

One more example of reckless reasoning and I am done. It refers to a bird-genus with which I have long been intimate—the Divers. These, it is argued, by virtue of being white beneath, are thereby rendered invisible to their prey—*i.e.*, the fish that swim below. Now whatever rules may regulate the eye-powers of subaquatic creatures, we anglers at least are well aware that those of fish are keen in the utmost. Yet it has been seriously contended that the big sea-divers (*Colymbi*), the goosanders, guillemots, or grebes, will—merely because they are white below—escape detection by fish swimming beneath them [a cormorant or a darter, by parity of reasoning, because they are black?] The whole proposition, besides being initially absurd, rests upon a total misconception of the life-system of these specialised birds and a failure to grasp the measure of their subaquatic capacity. Professional divers such as the *Colymbi* will cover the length of Regent Street in three or four dives, and that at a speed that is probably double or treble that of the fish themselves. The contest is a matter of speed, and the fastest wins. But never a thought do these masters-of-the-art waste upon the few paltry dozens of scared fish which—having already observed their enemy swimming right overhead—have long ago sought secure shelter. The diver, being no fool, only commences his search for prey when well beyond eye-range of his point of submersion. Even a human fisherman is careful so to present his lures that the quarry may see them, but not himself. It is only when the angler's invitation has been rejected that he moves forward, exposing himself to the recusant in the expectation of finding more complacent victims farther on.

Certain morals suggest themselves—that before formulating academic rules, a sympathetic insight into the conditions of wild-life is essential; secondly, that the application of human

standards in such cases simply misleads; while thirdly, the underlying creed that for every visible effect there must exist a cause which is humanly explicable, is untenable.

A vast percentage of what has been written on this subject had better be regarded as poetic. It reads so prettily, a sort of romance in natural history that appeals to the lay imagination—impossible, therefore (the seeds once sown), entirely to eradicate from popular belief. The observations of humble hunters and field-naturalists count for nothing against the pretty imaginings of graceful and authoritative pens.



"AM I INVISIBLE?" (PURPLE HERON.)

Postscript.—While busy rewriting this chapter—(probably for the twentieth time during twenty years)—I read an American treatise on the subject, entitled *Concealing Coloration in the Animal Kingdom*, by Mr Gerald H. Thayer. In America, we know, they don't do things by halves, and we have grown accustomed to "big-stick" methods in varied and sometimes useful developments. This book, however, seemed

to me to top the summit. I must correct the remark that I read it; for at the sixtieth of its 250 odd pages I gently laid it aside—asphyxiated by the magnificent audacity of its assumptions (in prose and colour alike—lurid colours, "laid on with a trowel"), and by the nature of what its author is wont to mistake for argument. The ultimate impression left by perusal of those sixty pages was that, beyond the Atlantic, are found men prepared to *prove* "TO ORDER" any conceivable proposition; and thereat personally I left it. Subsequently, however, relief came when I read in

another and authoritative American publication (*The Auk*) a review of Thayer's work that runs as follows:—

“By skilful jugglings we are shown how anything and everything may be rendered inconspicuous, usually by artificial means or under artificial conditions. . . . This method of persuasion, while it appeals to the public, is—there is no other word—simply charlatanry, however unwitting.”

Yes, that is the correct definition—the only definition (though I would have hesitated to employ it unsupported) —“CHARLATANRY.”



COLOUR AND SHADE.

Are both Giraffes the same Species? (See p. 89.)

INDEX

- AARD-VARK, 334
 Abdim's stork, 267, 268, 296, 297
Acomys, 252
Acrocephali, 265
 Addax, 5, 31
 Addra gazelle, 5, 26, 30, 32, 98, 343
Adenota leucotis, 5, 8, 132, 133, 137, 164
 vardoni, 154
 Administration of country, 280
Ædemone mirabilis, 242
Ædon galactodes, 304
Ægialitis cantiana, 390
 dubia, 113, 293
Agama colonorum, 115
 Agricultural development on Nile,
 311
Alauda cristata, 358
 Albacore, 386, 387
 Ali Dinar, 308
 Allen, Grant, 411
 Aloes, 349, 375
 Alopex kestrel, 124
 Altitudes, 15, 21, 311, 347, 349, 376
 Ambatch-bush, 242, 258
Ammomanes, 27, 30, 357, 360, 433
 arenicolor, 358
 deserti, 357, 358
Ammoperdix cholmleyi, 349, 372, 380
Anas sparsa, 51; *A. undulata*, 51
 Anatomy of white rhinoceros, 409
 Animals conscious of their colour-
 surroundings, 420
 Animal-sympathy, 50, 91, 100, 157,
 158, 184, 185, 283, 370, 371
 Ant-bear, 334
 chat, 283, 358, 383
 Ant-hills, 244, 330
 Antelope, Hunter's, 81
 Antelope, roan, 69, 84, 88, 95, 99
 sable, 9, 98
 "triangularis," 162
 Antelopes of Sudan, minor, 335
 semi-amphibious, 150
 voiceless, 132
Anthus campestris, 384
 cervinus, 293, 304
 sordidus, 380, 384
 Ants, biting, 233; soldier-, 253
 Ant, the white, 330
Aquila albipes, 110, 327, 376
 chrysaëtos, 168, 376
 nipalensis, 377
 pennata, 326, 376
 rapax, 63, 110, 309, 327, 367, 376
 wahlbergi, 327, 376
 Arab cultivation, 52
 Arabs, 13, 74, 248, 295
 Arab-tribes of Blue Nile and Dinder,
 328
 † Archer, Sir Geoffrey, 399
Ardea bubulcus, 276
 gularis, 397
 melanocephala, 245
Argya acaciæ, 359, 360
 Ariel, 30, 343, 350, 351, 359, 361
 Somali type, 352
 Sudan type, 352
Arundo, 245
Asio capensis, 118
 Assimilation to environment, 18, 164,
 315, 337, 360, 394, 411-436
 Ass, wild, 33, 347
Astur sphenurus, 383
 Atbara, 14, 22
Athene noctua, 360
 Avocet, 43, 315

- BABBLER, Lichtenstein's desert-, 359, 360
 Babblers, 117, 227, 324
 Baboons, 283, 290, 322, 379, 406
 Baggára Arabs, 13, 37, 66, 71
 Bahr-el-Ghazal, 71, 93, 258, 405
 Baker, Sir Samuel, 21, 38, 91, 96, 121, 144, 198, 210, 223, 224, 225, 274, 342, 423
Balaniceps rex, 268, 408
Balanitis egyptiaca, 101
 Barbary wild sheep, 32, 401
 Barbet, pearl-spotted, 384
 red-headed, 293
 Barbets, 117, 227, 255, 285, 324
 Barracouta, 386
 Barrage, first on Blue Nile, 311
 Bateleur eagle, 329
Batis, 118, 255
 Bats, 120, 121, 250, 296, 381, 397
 golden-winged, 324
 Bee-eaters, 61, 66, 67, 117, 127, 254, 284, 293, 321, 383
 bridled, 318, 323, 324
 nocturnal, 296
 Nubian, 284, 295
 white-throated, 293
 Bees, wild, 73, 122, 408
 Beetles, 70
 water-, 268
 Begonias, 375
Berberis, 372
 Big-game on Blue Nile and Dinder, 329
 Bills of birds (specialised), 60, 237
 Birds, breeding season of, 11, 226
 Bishop-finch, 284, 313
 stork, 115, 116
 Bitter melon, 83
 Bittern, green, 397; little, 58
 Blackcap warbler, 255, 304, 392
 Black-shouldered kite, 286, 287
 Blackstart, 391
 Black water-rail, 266
 Blane, General C. T., 343
Blepharis, 351
 Bless-buck, 81
 Blood-tapping by savages, 209
 Blue mountain-thrush, 391
 Blue rock-doves, 360
 Blue-throat, 391
 Bolam, George, 330
 Bone, alteration in growth of solid, 338, 372
 Bonito, 386
 Bontebuck, 81
 Booby, 389
 Booted eagle, 317
Bradyornis, 255
 Brindled gnu, 9, 424
 "Bru-bru," 317 (= Bush-shrike)
Bubalis, 93
 nakuræ, 94
 neumannii, 94
 tora, 94
Bubo, 124, 227, 360, 383
Bucerosia, 375
 Buffalo, 71, 99, 101, 178, 211, 212, 242, 282, 329, 406
 haunts and habits of, 189
 Bulbul, 255, 304, 383
 Bullheads, 236
 Bulrush, 242
 Buntings, 304, 320, 384
 Burning of grass, 17, 120, 142, 173, 210, 218
 Bushbuck, harnessed, 102, 339
 Bushbucks, 132, 282, 339
 Bush-chats, 319
 Bush-cuckoo, 58, 265, 286 (= Coucal)
 gazelles, 343, 345
 lark, 59, 147, 208
 a new, 148
 robin, 317, 348
 shrike, 317
 warbler, green-backed, 383
 Bustard, Hartlaub's, 120, 253
 large, 69, 99, 120, 253
 Lovat's, 70, 120, 253
Butastor rufipennis, 62, 109, 121, 255
Buteo desertorum, 62, 121, 348, 383
 Butler, Mr A. L., 19, 33, 51, 63, 121, 122, 146, 159, 176, 212, 225, 255, 283, 293, 321, 342, 345, 391, 392, 397, 398, 399, 420, 430
Butorides atricapilla, 397
 Butterflies, 17, 381
 not preyed on by birds, 18

- Button-quail, 317
 Buzzards, 62, 108, 121, 348
 CABBAGE, water-, 203, 257
 Cabinet-naturalists, 161, 414
 Cacti, 76, 349, 323, 375, 397
Calamochila leptorhyncha nuereensis,
 266
Calandrella brachydactyla, 359
Calotropis procera, 304
Camaroptera, 255, 383
Campothera nubica, 384
 Cane-grass, 135, 192, 245
 Cane-rat, 63
Canis anthus, 250
 Cannibals, 71, 290
Capparis aphylla, 305
 Carab, 375
Carex, 135, 155, 245
 Caterpillar, problem of the green, 426
 Cat-fish, 225
Centropus monachus, 58, 255, 265
 superciliosus, 286, 320
Cephalophus abyssinicus, 342
Cercomela melanura, 383
 scotocerca, 358, 383
Cercotrichas podobe, 317
Certhilauda, 27, 28, 310, 358, 360, 394,
 433, 434
Cervicapra sudanensis, 336
 Chameleons, 326
Charadrius asiaticus, 113
 Charlatanry, 436
 Chat, black-tailed ant-, 383
 rock-, 349
Chenalopex, 11, 42, 44, 46
 Chiffchaff, 255, 304
 Chimpanzee, 290
Ciconia abdimii, 297
Cinnyris, 284, 293, 379
Circaetus cinereus, 325, 376
 gallicus, 254, 255, 325, 376
Circus pallidus, 434
 Civilisation, advance of, 56
 Climate and health, 15, 37, 256, 353
 Closet-naturalists and systematists,
 161, 414
 Cob family, 10, 154
 Uganda, 290
 Cob, undetermined, 172
 Vaughan's 176
 white-eared, 5, 8, 132, 133, 137, 151,
 164, 171, 180, 282, 420
 Cobra, 122
Cobus defassa, 125, 126, 127, 128, 130
 elypsiprymnus, 126, 127
 Colies, 117, 301, 324
 Collecting, art of, 252
 extraordinary, 206
 Colobus monkey, 290
 Colour-dimorphism in plumage, 317,
 327
 effects, 4, 24, 67, 296, 349, 361, 373,
 392, 401, 413
 protection, 18, 164, 394, 410
 in relation to birds, 427
 variations in plumage, 317, 327
 Comb-geese, 47, 114
Contia africana, 382
 Cormorants, 43, 58, 60, 258
Corvus affinis, 59, 124, 359, 380
 capensis, 118
 scapulatus, 360
 umbrinus, 59, 359
 Cotton-soil, 2, 149, 247, 259, 311
 Cotton, Mr W. B., 329
 Coucal, 58, 255, 265, 287-8, 320
 (= Bush-cuckoo)
 Coursers, 255, 360, 403
 Crabs, watch-tower, 394
 Crakes and rails, 266
 Cranes, 42, 46, 51, 112, 138, 348
 crowned, 43, 45, 113, 142, 315, 429
 demoiselle, 43
 Crested hawk-eagle, 292, 293
 lark, 22, 358, 395
 Cricket-warbler, 28
 Crimson-breasted shrike, 285
 Crocodiles, 57, 113, 114, 136, 137, 139,
 237, 261, 262, 298, 313, 321
 Crombec, 17, 255, 383
 Cromer, Lord, 13
Crossarchus zebra, 115
 Crows, 140, 256, 359, 360
 Cuckoo, bush- (*see* Coucal, *centropus*)
 great spotted, 384
 Cultivation, native, 209
 on Nile, 311, 312

- Cultivation on Nile, by Arabs, 53
 possibilities of, 259
- Curlew, 42, 390
 sandpiper, 43, 113
 stone-, 70, 114, 293, 360
- Cut-throat (feathered), 320
- Cypselus horns*, 324
- DABCHICK, 253
- Dahlak Island, 391
- Damaliscus*, 80, 93; *korrigum*, 420
- Darfur, 308
- Darters, 43, 52, 58, 60, 111, 113, 140,
 237, 239, 240, 262
- Darwin, Chas., 10, 98, 330, 411, 423
- Deadly nightshade, 380
- Death, foreknowledge of, 425
- Dendrocygna viduata*, 239
- "Dermatology," 377, *note*
- Deserts, the, 20, 29, *et passim*
- Dhurra-finch, 284, 285
- Diagnosing new species, 377
- Dicrurus*, 109, 227, 319
- Dikdik, 342; Salt's, 347, 349
- Dimensions of birds, 139, 141, 142,
 253, 294, 325, 326, 327, 328, 369,
 377, 379, 383, 393
 of elephant, 277, 278
 of fish, 223, 224, 225, 236, 386, 387
 of game, 107, 130, 159, 204, 232,
 277, 278, 279, 280, 282, 283, 322,
 323, 336, 339, 340, 343, 352, 364,
 366, 383, 396, 407, 408
 of snakes, 230
- Dimorphism in plumage, 317, 327
- Dinder river, 14, 311, 318, 328, 329
- Dinkas, 13, 71, 209, 282
- Distribution of animals, singularly
 interrupted, 344
 geographical, 9, 10, 111, 113, 344,
 345
- Divers, the, 435 (*Colymbi*)
- Diving birds, 49, 60, 234
- Dogs, natives', 210, 249, 312
 Nyam-Nyam, 291
- Dongola, 31
- "*Doratoceros triangularis*," 162
- Dothinger grass, 349, 350
- Dotterel, Asiatic, 113, 140, 239
- Dove, blue rock-, 124, 360
 long-tailed, 300, 303
 spot-winged, 67, 227
 turtle, 360
- Doves, 22, 61, 67, 109, 300, 303, 319,
 397, 399
- Dragon-tree (*Dracæna*), 375
- "Dried-skin science," 378
- Dromolæa leucura*, 358
- Drongos, 109, 227, 319
- Drumming of bush-larks, 147, 293
- Drummond, Professor Henry, 333,
 416
- Ducks, British, on White Nile, 40, 315
 pairing for life, 50
 white-faced tree-, 59
- Duiker, an unknown, 144, 148
 of Sudan, little blue, 342
- Duikers, 137, 282, 322
- Dunlin, 43, 239, 390
- Dust-devils, 218
- EAGLE, Bateleur, 329, 376
 booted, 317, 326, 376
 crested hawk-, 124, 326, 376
 "dark Erkwit," 377
 golden, 168, 376
 harrier-. *See* "Serpent-eagle"
 imperial, 349, 376
 serpent-, 254, 255, 349, 376
 "Steppe-", 377
 tawny, 63, 91, 108, 110, 124, 327,
 349, 367, 376
 Wahlberg's, 327, 376
 white-footed forest-, 110, 327, 376
 white-headed river-, 61, 63, 72, 110,
 116, 143, 285, 320, 321, 376
- Eagle-owl, 124, 227, 360, 383
- Eagles, 62, 108, 305, 309, 320, 321
- Ears, drooping, 98
 length of—in different antelopes, 98
- Earth-worms, 330
- Egrets, 52, 58, 60, 61, 63, 112, 228,
 275, 276, 315
- Eland, 98, 162, 189, 282
 giant, 5, 290, 405
- Elanus cæruleus*, 286, 287
- Elephants, 5, 76, 93, 99, 101, 180, 242,
 286, 290, 322, 329, 409

- Elephants, a stronghold of, 273
 in the Sudd, 270
 massacre of, 290
 trees uprooted by, 278
- Elephant-shrews, 251
- Elmi Hassan, 357
- El Obeid, 32, 344
- Emberiza casia*, 304, 384
cinerea, 380, 384
septemstriata, 380, 384
- Eneikliba, 314
- Environment, assimilation to, 18, 164,
 315, 337, 360, 394, 411-436
 influence of, 22, 23, 315, 411, 433
- Erkowitz, 349, 375
- Erythrina brucii*, 300, 305
- Estrilda, 255, 285, 304
- Ethics of Nature, 337
 of sport, 365
- Ethiopian bird-life, 108, 136
- Euphorbias, 349, 375
- Eupodotis arabs*, 69, 253
- Eurocephalus rueppelli*, 293
- Eve, a dusky, 228
- Evolution, 337
- Expanse of wings, 139, 140, 141 (and
see dimensions)
- Falco ardesiacus*, 124
cenchris, 124
concolor, 398
ruficollis, 255, 321
- Falcon, Farisan, 398
 lanner, 109, 320
 peregrine, 109, 110, 124, 320
- Fantail warbler, 118, 255
- Farisan Islands, 396
- Fashoda, 135
- Fawns of gazelle, 68
- Fennec, 27, 403
- Field-observation, 427
- Finch, bishop-, 313
 fire-, 285, 304, 320, 324
 indigo, 304
 larks, 22, 227, 255, 395, 433
 serin, 227, 255, 293, 303, 324
 weaver-, 58, 60, 313
- Fire-flies, 136
- Fiscal shrikes, 249, 250, 255
- Fish, 138, 140, 223, 236, 237, 393, 398
 cat-, 225
 dimensions of, 223, 224, 225, 236,
 386, 387
 lung-, 140
 predatory, 313, 321
 rainbow-coloured, 392
 "water-wolves," 321
- Fish-catching birds, 60
- Fishing, Shilluk's method of, 138, 223,
 237
- Flamingo, 43, 52, 392, 397, 429
- Flamingo Bay, 392
- Flies, seroot, 55, 77, 233, 355, 387
- Flight-shooting, 44, 45, 309
- Flowers, wild-, 17
- Flycatcher, pririt, 118, 255
- Flying-fish, 393
- Food of gazelles, 372, 396
 of partridges, 372
 problem (of Nile-wildfowl) 45
- Foreknowledge of death, 425
- Forests, destruction of, 142
 of Kordofan, 108
- Fox, desert-, 27
- Francolins, 115, 120, 124, 347, 376
 Erckeli, 379
- GADWALL, 51
- Game-laws and licences, 214, 215
 preservation, 215
 regulations, 159, 166
- Gannet, ivory-billed, 389,
- Garganey, 40, 43, 51, 109, 239, 309, 315
- Gazelle, Addra, 5, 26, 30, 32, 98, 343
 Arabian, 396
 Ariel, 30, 343, 350, 351, 352, 359, 361
 bush-, 343, 345
 desert-, 25, 34, 343
 Dorcas, 25, 26, 32, 343
 Heuglin's, 26, 343
 Isabelline, 25, 26, 338, 343, 366, 369,
 372, 381
 Mongalla, 131, 282, 343, 346
 red-fronted, 68, 102, 131, 343
 Thomson's, 26, 337
- Gazelles, 10, 67, 99, 101, 280, 290, 310,
 355, 403
 of Sudan, 335, 342

- Geese, diving power of (temporary), 49
 Genets, 253
 Geographical distribution of birds, 111, 113
 Geographical distribution of mammals, 9, 10, 344, 345
 Giant eland, 5, 290, 405
 forest-hog, 290
 Giraffe, 84, 85, 89, 92, 99, 101, 142, 180, 231, 282, 322, 405, 408
 reticulated, 89, 205
Glaucidium perlatum, 324
 "Globe-spanners," 111, 390
 Glossy starling, 30, 117, 124, 320, 328
 Gnu, brindled, 9, 424
 Godwits, 42, 112, 140, 239, 315
 Goliath heron, 52, 112, 114, 139, 262, 392
 Gondókoró, 273, 278
 Goose, comb-, 47, 114, 138
 Egyptian, 42, 44, 46, 48
 spur-winged, 42, 46, 47, 138
 Gordon, a memento of, 308
 Goshawk (*Melierax*), 108, 114, 121, 313, 321
 Grant Allen, 411
 Grass-fires, 17, 120, 142, 173, 210, 218
 Gray, Dr, 160
 Great spotted cuckoo, 384
 Grebes, 253
 Green bittern, 397, 398
 sandpiper, 315
 Greenshank, 43, 122, 115, 239, 293, 297, 315
 lesser, 140
 Grey hornbill, 124, 285
 Griffon, white-backed, 325
 Grivet monkey, 76, 319, 321
 Ground-squirrel, 253, 323
 Guinea-fowl, 62, 70, 124, 317
 Guinea-pigeons, 109
 Gull, black-headed, 293, 388
 Hemprich's, 388, 398
 lesser black-backed, 293, 388
 marsh-, 43, 293
 white-eyed, 388, 389, 395, 399
 Günther, Dr, 162
Gyps africanus, 325
 "fulvescens," 369
 occipitalis, 325
 HADENDOWA Arabs, 14, 310, 354, 371, 373
Halcyon chelicutensis, 318
Haliaëtus vocifer, 327, 376
 Hammer-head, 117, 239, 249
 Hamram Arabs, 14
 Hares, 27, 63, 70, 103, 323, 381, 403
 Harpooning hippopotamus, 198, 210
 Harrier, desert-, 434
 marsh-, 62, 116, 121
 pallid, 140, 293, 360, 434
 Harrier-eagle, 325, 326
 Hartebeest, Jackson's, 69, 81, 82, 93, 248, 282, 406
 korrigum, 32, 81
 Nakuru, 94
 Neumann's, 94, 249, 282
 of Sudan, 93
 Swayne's, 94
 Tora, 82, 94, 329
 Hawk, black sparrow-, 63
 red-eyed sparrow-, 383
 eagle, crested, 292, 293, 326
 Hawk-moths, 19
 Health and climate, 15, 37, 256, 353
 Hedgehog, 115, 253
 Helmet-shrikes, 124
Helotarsus ecaudatus, 329, 376
Hemiramphus, 393
 Hemp-aloes, 375
Herodias alba, 60, 115
 brachyrhynchus, 60
 garzetta, 60
 Heron, black-headed, 58, 70, 115, 245
 buff-backed, 58, 239
 Goliath, 52, 112, 114, 139, 262, 392
 grey, 139, 432
 night-, 58, 63, 64, 246, 266, 269
 purple, 58, 117, 429
 reef-, 390, 392, 397
 squacco, 58, 64, 114, 233, 429
 white, 60, 115
 Heuglin, von, 97, 160, 342, 396, 398
 Hippopotamus, 57, 72, 136, 179, 193, 210, 256, 261, 262
 spending day on land, 200, 202, 256
 strikes ship, 72, 193
 sub-aquatic grunts of, 204
Hippotragus equinus, 95

- Hog, giant forest-, 290
 wart-, 72, 119, 232, 249, 282, 318, 322
 Honey-guide, 103, 227, 255, 324
 Hoofs of antelopes, specially adapted,
 150, 152, 161
 Hoopoes, 61, 117, 255, 320, 324
Hordeum, 349, 350
 Hornbeam, 375
 Hornbills, 61, 62, 67, 117, 124, 284,
 285
 Horns, advantage of possessing, 337
 alteration in shape of, 338, 372
 measurements of, 68, 107, 130, 134,
 159, 169, 177, 187, 188, 191, 208,
 364, 366, 373, 283, 407, 408 (*see*
 also dimensions of game)
 Hunter-naturalists, duty of, 137, 365
 Hunting by natives, 129, 168, 198, 209,
 214, 249
Hydrocyon, 321
 Hyena, spotted, 98, 123, 253, 317
 striped, 123, 253, 279, 349
 weight of, 279
 trap for, 372
Hyphantornis galbula, 313, 384
Hypochaera ultramarina, 304
Hypolais pallida, 304
 Hyrax, 122
- IBEX, 21, 347, 353, 361, 383, 403
 Ibis, glossy, 49, 58, 60
 hagedash, 58, 59, 233, 251
 sacred, 55, 56, 58, 233
 wood-, 235, 238, 298
 Icterine warbler, 304
 Ilex, 375
 Immobility, value of, 119, 134, 416,
 426
 Impala, 9, 357
Indicator, 103, 255, 324
 Indigo-finch, 304
 Influence of environment, 22, 23, 315,
 411, 433
 Instinct at fault, 60, 61, 287, 288, 334
versus intellect, 425
 Inter-relations in wild-life—crocodile
 and water-fowl, 113, 139
 lion and his prey, 67-104, 107, 174-75
 pelican and fish, 235
- Interrupted distribution, 344, 345
 Iron-stone forest, 406
 Irrigation, 311
Irrisor, 117, 118, 324
 Isabelline gazelle, 366
 shrike, 255, 265
 wheatear, 255
 Ismail Pasha, 39
- JABIRU, saddle-billed, 112, 226, 235
 239
 Jacanas, 58, 61, 112, 246, 257, 258,
 266, 267
 Jackals, 27, 144, 250, 403
 Jackson, Sir F. J., 162, 281, 293, 357
 Jackson's hartebeest, 69, 81, 82, 93,
 248, 282
 Jebel Ahmed Agha, 64, 78, 122, 166
 Shuwei, 345
 Surgham, 309, 394
 Jebelein, 57, 122
 Jerbilles, 27, 253, 322, 349, 381
Jyngipicus obsolutus, 384
- KARORA HILLS, 382
 Kassala, 24, 344
 Kenisa, 278
 Kestrel, alopec, 124
ardesiacus, 124, *note*
 English, 290
 lesser, 124
 Khartoum, 15, 20, 23, 36, 299, 307
 Khor Attar, 233
 Filus, 127
 Khors, 64, 349
 Kingfisher, insectivorous, 317
 malachite, 285
 pied, 65
 Kink in neck of herons and darters,
 237
 Kitchener, Lord, 4, 311, 402
 Kite, black-shouldered, 286, 287
 Erkowit, 381, 382
 swallow-tailed, 145
 Kites, 91, 120, 140, 245, 299, 305, 309,
 381
 Klipspringer, 347
 Koodoo, 6, 98, 329, 343
 Kordofan, 24, 32, 55, 64, 73, 102, 108

- LADO ENCLAVE, 273, 284, 290
Lagonosticta, 304
 Lakes, equatorial, 259
 "Lalôb," 101
 Lammergeyer, 347, 378
Lamprocolius, 117, 124, 328
 Land-crabs, 394
 Land-snails, 288
Laniarius erythrogaster, 285, 324
Lanius leuconotus, 30, 348
 paradoxus, 348
 Lanner, 109, 320
 Lapwing, red-wattled, 324
 white-tailed, 43, 315, 431
 yellow-wattled, 292
 Lark, bush-, 59, 147, 208
 crested, 22, 358, 395
 desert-, 28, 310, 348, 357, 394, 433,
 434
 finch-, 22, 395, 433
 sand-, 27, 30, 357, 360, 433
 short-toed, 359
Larus cirrhocephalus, 293
 hemprichi, 388, 398
 leucophthalmus, 388, 389, 390, 399
 minutus, 43
 Lavender, 375
 Lechwi, saddle-backed, 5, 93, 130, 132,
 137, 149, 247, 420
 Zambesi, 150
 Legge, Hon. Gerald, 94, 98, 383
 Leopard, 64, 123
Leptadenia spartium, 26
 Lesser white-throat, 255, 304, 348
 Lianas, 242, 249
 Lichtenstein's desert-babbler, 359
 Light, effects of, 416
Limnotragus, 150
 Lion, 66, 78, 101, 103, 107, 124, 133,
 174, 197, 231
 unrecognised in daylight, 67, 104,
 113, 174, 414
 Little owl, 360
 stint, 113, 293, 315
 Lizard, frilled, 349, 382
 monitor, 268
 Lizards, 18, 115, 124, 286, 349, 382
Lobivanellus senegallus, 292
Locustella, 265
 Long-claw, golden, 255
Lophoaëtus occipitalis, 326, 376
Lophoceros erythrorhynchus, 62, 117
 nasutus, 124, 285
 Lowe, Willoughby, 127, 143, 146, 170,
 181, 189, 206, 208, 212, 252, 255,
 265, 266, 308, 351, 361, 362, 373
Lybius abyssinicus, 293
 Lynes, Capt. H., 118, 120, 123, 133,
 189, 200, 255, 266, 267, 288, 308,
 342, 357, 359, 380, 390
Macronyx, 255
 Mahdi, a minor, 53
 Mahdiyyism, 39
 Mahmud, the Emir, 33
 Mahomed Maghazi, 36, 230, 249
 Malek, 275
 Mallard, 51
 Mamba snake, 230, 254
 Mangrove-bush, 392
 Manis, 334
 Mantis, 18
 Marabout, 43, 90, 94, 112, 139, 141,
 294, 315
 Marl, 247
 Marsh-gulls, 43
 harrier, 62, 116, 121
 sandpipers, 140
 warblers, 264
 Martins, 254, 321
 - Massacre of game by natives, 216,
 248
Melierax gabar, 63, 122, 320
 polyzonus, 114, 118, 121, 313
 Mentality of the savage, 222
 Merlin, red-naped, 114, 255, 321
Merops albicollis, 293
 apiaster, 383
 frenatus, 318, 323, 324
 nubicus, 284, 296
 Mesembryanthemum, 375
 Meshra-el-Rek, 262, 408
Mesopicus goertan, 324
Microparra capensis, 266, 267 (jacana)
 Mice and rats, 253, 323
 Mice, spiny, 252, 323, 381
 Migration, "assisted passages," 267
 of ariel, 355

- Migration of birds, 309, 348, 383, 384,
 389, 392
 of storks, 296
 of wagtails, 309
- Millais, Mr J. G., 357, 362
- Mimetic insects, 416, 426
- Mirafra*, 59, 146, 208
 drumming, 293
sobatensis, 147, 148
- Mistletoe, 324, 375
- Mitchell, Mr Francis, 107
- Mongalla, 280, 294
- Mongalla gazelle, 131, 346
- Mongoose, 115, 253, 382
- Monitor lizards, 268
- Monk, Lieut. G. P. de B., 94, 282
- Monkeys, 73, 253
 Colobus, 290
 grivet, 76, 321
- Monticola cyaneus*, 391
saxatilis, 383
- Mosquitoes, 37, 55, 57, 133, 263
- Motacilla alba*, 289
vidua, 289
- Moths, hawk-, 19
 keen scent possessed by, 423
- Moult in ducks, 50, 239; geese, 49
- Moulting season, 12
- Mountain-thrush, blue, 391
- Muscicapa aquatica*, 255
infulatus, 255
- NATIVE CHARACTER, 169, 292, 328,
 354, 371
 costume, 292
 population, 214
- Natives hunting, 129, 169, 209, 370
- Naturalist-hunters, duty of, 137, 365
- Nature's ethics, 337; methods, 321;
 slip (?), 394
- Nauclerus riocouri*, 144
- Navigation, on Nile, 16, 260, 261, 294-5
- Nectarinia metallica*, 255, 304
pulchella, 300, 305
- Neophrons, 140, 309
- Nesting of birds, 118, 146, 226, 249,
 251, 255, 303, 317, 325, 327, 348,
 357, 358, 359, 360, 379, 383, 384,
 390, 393, 394, 397, 398
- Neumann's hartebeest, 94, 249
- Newton, Professor Alfred, 41, 423
- Nichol, Lieut. H. Dale, 396, 398, 399
- Nightjar, long-tailed Egyptian, 118, 255
 Natal, 255
- Nightshade, deadly, 380
- Nilais afer*, 317 (Bush-shrike)
- Nile, angling on, 223
 Blue, 14, 311
- No, Lake, 38, 247
- Nomenclature, 130, 160, 188, 377
- Non-bibulous beasts, 96, 353, 354, 406
- North wind, 37, 256
- Nubian deserts, 20, 401
 wild-ass, 33
 woodpecker, 384
- Nuers, 13, 71, 200, 211, 228
- Numida pitlorhyncha*, 70
- Nyam-Nyams, 71, 290
- Nyroca*, 315
- Ædicnemus affinis*, 70
senegalensis, 70, 114
- Ena capensis*, 300, 303
- Oleander, 304
- Olives, wild, 375
- Omdurman, 14, 39, 299, 309
- Ototragus lechee*, 150, 154
megaceros, 5, 93, 130, 137, 149
- "Oom-suff," 135, 155
- Openbill, 42, 58, 59, 112, 250, 296,
 309, 315
- Oribi, 91, 132, 180, 282, 340
- Oriole, golden, 285, 293
- Ornaments, native, 230, 291
- Orphean warbler, 304
- Oryx beisa*, 6, 98
leucoryx, 5, 30, 32
- Osman Digna, 310
- "Osprey," plumes, 115
- Osprey, 376, 389, 393
- Ostriches, 93, 143, 205, 282
- Otogyys nubicus*, 146, 367
- Ovis lervia*, 32, 401
- Owl, eagle-, 124, 227, 360, 383
 little, 360
 short-eared, 118
- Oxylophus glandarius*, 384
- Oyler, Rev. D. S., 207, 217, 253

- PAIN, effect of on animals, 227
 Pairing for life, ducks, 50
 Pallid harrier, 140, 293, 360, 434
 Palm-swift, 109, 254
Pandion haliaëtus, 376
 Pangolin, 334
 Papyrus, 55, 135, 136, 179, 242, 258, 260, 261
Parkinsonia, 303
 Parrots, 61, 324
 Partridge, Cholmley's rock-, 347, 349, 372, 380
Parus leucomelas, 317
 Pearl-spotted barbet, 384
 owlet, 324
 Pearson, Sydney J, 246, 405, 410
Pelecanus onocratulus, 114; *rufescens*, 114
 Pelicans, 43, 114, 131, 138, 234, 262, 397, 429
 diving from the wing, 234
 mode of fishing, 234
 Penduline tit, 255
 Perceptions of animals, 363
 Perch, Nile, 138, 225
 Peregrine falcon, 109, 110, 124, 320
 Petherick, John, 160, 193, 231
Phaëton ethereus, 391
 Pied crows, 140, 256
 Pigeons, guinea, 109
 Pigmy woodpecker, 384
 Pike, Mr Arnold, 204
 Pintail, 40, 43, 50, 309, 315
 Pipit, brown rock-, 380
 red-throated, 293, 304
 tawny, 384
 tree-, 304
Pistia stratiotes, 203, 257
 Plants, armed, 3
Platalea leucorodia, 397
Plotus, 58, 113
 Plover, Egyptian, 43, 292
 Kentish, 113, 390
 ringed, 113, 292, 390
 spur-wing, 43, 61, 113, 114, 115, 139, 293
 spur-wing, white-headed, 293
 Plumage, dimorphic, 317, 327
 Pochards, 51, 315
 Pockock, Mr R. L., 343
Podiceps, 253
 Polar origin of life, 48
 Population, of Sudan, 20, 391, 392, 399
 rapid increase in, 214
 Porcupine, 253, 322
Porphyrio alleni, 266
 an unknown, 226, 266
 Port Sudan, 20, 391, 392, 399
 Possibilities of Sudan, 259, 274, 312
 Pratincoles, 239, 255
 Prickly pear, 397
Prinia, 118
Prionops, 124
 Pririt flycatchers, 118, 255
 Problem of food (Nile wildfowl), 45
 (grain-eating finches), 313
Protopterus æthiopicus, 140
Pterocles exustus, 398
 lichtensteini, 398
 quadricinctus, 118, 120, 250
 Punitive expeditions, 213, 281
 Purple-winged coursers, 255
Pycnonotus arsinöe, 304, 383
 tricolor, 255
Pyromelana franciscana, 284, 313
Pyrrhulauda, 27, 255, 360, 395, 433
Pytelia, 285, 320, 324
 Pythons, water-, 268

 QUAIL, button-, 317
Quelea æthiopica, 313

 RAILS, 58, 64, 266
 Range of species, 10
 Rat, cane-, 63
 Rat-snakes, 122
 Rat, striped, 252, 322
 Ratel, 253, 322
 Rats and mice, 253, 323
 Raven, broad-winged, 124, 380
 brown-necked, 359
 Red-naped merlin, 255
 Red-hot pokers, 350, 375
 Redshank, 390; spotted, 293, 297
 Redstart, 255, 304, 348
 Reedbuck, 91, 132, 133, 180, 208, 282, 335
 Chanler's, 338

- "Reef-heron," 390, 397
 Rejaf, 38, 273, 277, 290
 Repeating-rifle in sport, 206
 Reticulated giraffe, 89, 205
 Rhinoceros, black, 282, 410
 white, 5, 290, 409
Rhinoptilus chalcopterus, 255
Rhodophoneus cruentus, 348
 Roan antelope, 69, 84, 88, 95, 99, 107,
 130, 132, 282
 Robin, bush-, 248, 317
 chat, 318
 Rock-chat, 349
 doves, 124, 360
 partridge, 347, 349, 380
 rabbits, 123, 253
 thrush, 124, 383
 Rollers, 61, 117, 255, 285
 Rook, 118
 Roosevelt, Col., 137, 160, 188, 253,
 414, 420, 426
 Rosy-breasted shrike, 348
 Rowland Ward, 151, 188, 336, 356
 Ruffs and reeves, 42, 140, 239, 293,
 315, 390
 Rufous warbler, 304, 348
 Rumbek, 262
- SABLE ANTELOPE**, 9, 98
 Sacred ibis, 55, 56, 58, 233
 Saddle-backed lechwi, 5, 93, 137, 149,
 247
 Saddle-billed jabiru, 112, 226, 139,
 235, 239
 Sahara, Great, 1, 20, 24
 Salt's dikdik, 347, 349
 Sand-devils, 402
 grouse, 28, 109, 118, 120, 250, 309,
 360, 392, 398, 403
 larks, 27, 30, 357, 360, 433
 martins, 254, 304
 partridge, Cholmley's, 372
 pipers, common, 239, 293
 curlew-, 43, 113, 293
 green, 239, 315
 marsh-, 140, 297, 315
 wood-, 239
 storm, 54
 Sansevieria, 349, 375
- Sarciphorus tectus*, 324
Sarciordornis melanonota, 47
 Sassaby, 81
 Savages, 2, 12, 13, 65, 71, 209, 217,
 222, 299, 381
Saxicola deserti, 293
 Scavengers, bird-, 140, 327
 Scent, problems, 99, 240
 sense of, in birds, 240-1
 in mammals, 414
 Scissor-bills, 140, 251, 254, 262
Scopus umbretta, 117, 249
Scotornis climacurus, 118
 Seagulls, 293, 388, 394, 395, 399
 Secretary-bird, 205, 231, 232
 Self-preservation, instinct of, 425
 Selous, F. C., 18, 94, 154, 281, 357,
 379, 414, 421, 422
 memorial, 421, *note*
 Sennar, 312
 Serin-finch, 227, 255, 293, 303, 324
 Seroot fly, 55, 77, 233, 355, 383
Serpentarius secretarius, 231
 Serpent eagle, 254, 255
 Serval cat, 280, 283
 Sessaban trees, 303, 304
 Settite, 14, 340, 344
 Shabluka hills, 32
 Shambé, 262, 408
 Shamming dead, 426
 Shark, 387
 Sheep, Barbary, 32, 401
 Shelducks, ruddy, 42, 48, 262
 Shilluks, 13, 71, 127, 129, 138, 142,
 168, 209, 226
 Shoveller, 40, 61, 315
 Shrews, elephant-, 251
 Shrike, bush-, 317
 crimson-breasted, 285, 324
 fiscal, 249, 250, 255
 grey, 30, 348
 helmet-, 124, 227
 Isabelline, 255, 265
 masked, 303
 Nubian, 303
 rosy-breasted, 348
 tchagra, 227, 229
 white-crowned, 293
 woodchat, 255, 317, 324, 348

- Shrikes, 117, 127, 293, 324, 403
 Silver-bills, 227, 300, 302
 Singa, 335
 Sirdar, the, 306, 376
 Situtunga, 150, 152, 247, 262
 Smith, Mr Norman, 188, 419
 Snakes, 122, 201, 230, 249, 303, 382,
 397
 Snipes, 239
 Sobat-lark, 146
 Sobat River, 37, 86, 127
 Sodom-apple, 304
 "Sont," 135 (*Acacia*)
 Sounds audible under water, 203
 Sparrow, 22 ; golden, 303
 hawk, little black-, 63
 red-eyed, 383
 Spears, 65, 70, 291
 Species, manufacture of new, 162
 "sub-," 27, 69, 93, 188, 205, 343
Spiloptila clamans, 28
 Spiny-mice, 252, 323, 381
 Sponges, 393
 Spoonbills, 42, 61, 140, 392, 397
Spreo pulcher, 30
 Spur-wing plover, 43, 61, 114, 115,
 139, 293
 Squirrels, ground-, 253, 323
 Stack, General Sir Lee, 306
 Stalking, 8, 34, 85, 86, 98, 99, 105,
 351, 369
 Starling, glossy, 30, 117, 124, 227, 320,
 328
Steganura paradisea, 317
Sterna anæsthera, 397, 399
 bergii, 389
 caspia, 389
 saundersi, 389
 Stigand, Major C. H., 280, 282, 295,
 415
 Stilt, 112, 235, 239, 262, 293
 Stints, little, 113, 293, 315
Stomoxys, 78
 Stone-curlew, 70, 114, 293, 360
 Stork, Abdim's, 267, 268, 296, 297
 bishop-, 115, 116
 saddle-billed, 139
 whale-headed, 268 ; white, 297
 Storks, 58, 61, 112, 269, 296, 315
 Storks, migration of, 296, 348
 Striped rat, 252, 322
Struthio molybdophanes, 205
 "Sub-species," making and naming
 of, 27, 69, 93, 188, 205, 343
 Sudd, the, 38, 93, 203, 259, 263, 268,
 270
 growth of, 257
Sula sula, 389
 Summer in Sudan, 19
 Sun-birds, 117, 227, 255, 285, 293, 300,
 304, 305, 324, 348, 384
 Sun-flowers, 300
 Sunrise, 4, 167
 Survival of the fittest, 138, 321
 Swallows, 254, 255, 285, 304
 Swayne's hartebeest, 94
 Swift, a new, 324
 palm-, 109, 254
 Sword-hunters, 14
Sylvia mystacea, 391
 nana, 391
Sylviella, 117, 255, 383
 Sympathy, animal-, 157, 184, 283, 371

Tabanus, 55, 77
 Tamarind-tree, 64
 Tamarisk, 314
Taterillus gyas, 323
 Tchagra, 227, 229
 Teal, 40, 239, 315
 whistling, 59, 136, 137, 138, 143
Telephonus remigialis, 229
 Telescope-sight, 156, 370
 falls into Nile, 195
 Temperatures, 15, 256, 318
 Tenacity of life (antelopes), 373
 Termite, the, 330
 Tern, black, 254
 Caspian, 43, 254, 389
 gull-billed, 43, 254, 389
 lesser sooty, 397, 399
 whiskered, 254
 white-winged, 254
 yellow-billed (*S. bergii*), 389
 Thayer, Mr Gerald H., 436
 Thirstless beasts, 396, 405
 Thistle, blue-blossomed, 351
 Thomas, Mr Oldfield, 322

- Thorns, 3, 29, 185, 201, 328, 349, 359, 401
- Thrush, blue mountain-, 391
Ethiopian, 383; rock-, 383
- Thryonomys*, 63
- Tiang, 5, 57, 80, 82, 91, 92, 99, 101, 180, 282
stalking, 86
- Tit, penduline, 255
white-winged, 317
- Topi, 81, 85
- Tora hartebeest, 82, 94, 329
- Totanus fuscus*, 293, 297
stagnatilis, 140, 315
- Trachyphonus margaritatus*, 384
- Tragelephus decula*, 339
scriptus, 102, 339
- Trapping small mammals, 211, 252, 253
game by natives, 211, 372
- Tree-duck, white-faced, 59, 239, 240, 241
- Tree-pipit, 304
- Trees overthrown by elephants, 278
- Tringa minuta*, 113, 293, 315
- Tristram, Canon H. B., 423
- Tropic-bird, 391, 392
- Tufted duck, 40
- Turdus pelius*, 383
- Turtles, water-, 268
- Turtur roseigriseus*, 360
semitorquatus, 303
senegalensis, 308
- Twin nest of pied crows, 360
- UGANDA, cob, 290; railway, 274
- Under-water sounds audible, 203
- Unseen world, the, 331
- Vanellus leucurus*, 43, 315, 431
- Vegetation, 3, 10, 17, 19, 29, 55, 57, 64, 76, 135, 201, 242, 256, 260, 323, 348, 350, 375, 403, 406, 407
- Victoria Nyanza, 259, 274
- Vines, 375
- Voiceless antelopes, 132
- Voices of antelopes, 132, 339
- Vossia procera*, 135
- Vulpes famelicus*, 27; *zerda*, 27
- Vulture, black, 369; tawny, 369
griffon, white-backed, 325
keen sight of, 423
Neophron, 140, 141, 309
Nubian, 91, 146, 367
Rueppell's, 325
white-headed, 91, 124, 141, 325
nests of, 146, 325
- WAGTAILS, white, 22, 289
white-winged, 289
yellow, 289, 309
- Warbler, barred, 348
blackcap, 255, 304, 348, 392
Blandford's, 348
cricket-, 28
fantail, 118, 255, 265
garden-, 304, 348
grass-, 118
icterine, 304
marsh-, 264
orphean, 255, 304, 348
pallid, 255, 304
reed-, 304
rufous, 304, 348
sedge-, 255, 265, 304
Sudd-, greater, 266; lesser, 266
willow-, 304
- Warblers, British, wintering at Khar-toum, 304
- Ward, Rowland, 151, 188, 336, 356
- Wart-hog, 72, 119, 232, 249, 282, 318, 322
- Water-buck, 57, 69, 72, 84, 98, 125, 131, 180, 282
pale rufous, 129, 130
- Water-cabbage, 203, 257
lilies, 242, 290
pythons, 268
rails, red-legged, 64
turtles, 268
wolves, 321
- Wau, 262, 408
- Waxbills, 285, 304, 324
cordon-bleu, 285
- Weaver-finches, 58, 60, 117, 119, 255, 284, 285, 303, 313, 320
finch, golden, 384

- Weights of animals, 250; baboon, 283; buffalo, 187; hippo, 194; hyena, 279
 antelopes, 100, 106, 130, 340, 396
 birds, 110, 114, 139, 141, 142, 143, 250, 253, 255, 294, 325, 326, 327, 328, 377, 379, 383, 393
 fish, 223, 224, 225, 236, 386, 387
 Whale-headed stork, 268
 Wheatear, 304, 349
 black, 358
 black-eared, 383
 throated, 383
 desert-, 22, 293, 349
 Isabelline, 255
 Whimbrel, 42, 390
 Whinchat, 255, 304
 Whistling teal, 59, 136, 137, 138, 239, 240, 241, 254
 White ant, 330
 White-eared cob, 5, 8, 132, 133, 137, 151, 164, 171
 White-eye (*Zosterops*), 383, 384
 White rhinoceros, 5, 290, 409
 White-throat, common, 348
 White-throat, lesser, 255, 304, 348
 Whydah, Paradise, 317, 323, 324
 Wigeon, 40, 50, 309, 315
 Wild-ass, 33, 347
 boar (of uncertain identity), 322
 Willow-wren, 304
 Wingate, Governor - General Sir Reginald, 308, 376
 Woodchat, 255, 317, 324, 348
 Wood-hoopoes, 117, 118, 320, 324
 Wood-ibis, 235, 238, 298
 Woodpecker, Ethiopian, 117, 324
 Nubian, 384
 pigmy, 384
 Worms, earth-, 330; sand-, 330
 Wryneck, 324
Xiphidiopterus albiceps, 293
 YUCCA, giant, 375
 ZAMBESI, LECHWI, 150
Zamenis, 122
 Zebra, 9, 282, 414, 417
Zosterops abyssinicus, 379, 383



SQUACCO HERON FLY CATCHING.

University of California
SOUTHERN REGIONAL LIBRARY FACILITY
405 Hilgard Avenue, Los Angeles, CA 90024-1388
Return this material to the library
from which it was borrowed.

I NON-RENEWABLE

ILY/TTB

REC'D LD-553

JUN 02 1993

NO'

IA

FO
NC

LF

DUE 2 WKS FROM DATE RECEIVED

DI

LD
LIB



3 1158 00376 9337

BW

SK
255
S9C3

UC SOUTHERN REGIONAL LIBRARY FACILITY



A 001 328 298 3



ty of California
ern Regional
ary Facility