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THE SOUTH AFRICAN BIRDS OF PREY:

THEIR ECONOMIC RELATIONS TO MAN.

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THE SOUTH AFRICAN BIRDS OF PREY:

THEIR ECONOMIC RELATIONS TO MAN.

BY ALWIN HAAGNER, F.Z.S., &c.

Hon. Secretary S.A.O. Union.

It is with some hesitation that I approach the subject of this paper, as the time has hardly arrived when we can formulate a perfectly correct digest of the economic value of our Raptorial birds. However, as no progress can well be expected without a "commencement," I have endeavoured to work out as correct a statement as our present knowledge will admit.

The enmity with which most of our Birds of Prey are regarded—even by educated men—is proverbial. This ill-feeling extends even to birds of such unquestionable utility as the owls, but in the latter case silly superstitions play an important part in their regrettable destruction. Some while back even the Transvaal Game Protection Association—an enlightened body of enthusiastic sportsmen—went so far as to propose the imposition of a *reward* upon every "hawk" destroyed. As a naturalist, and the secretary of our Bird Protection Committee, I felt it incumbent upon me to write a letter of protest, both from the point of view of the agriculturist and that of the naturalist. I objected to the word "hawk," pointing out that it was too wide a term, and likely to be misconstrued to such an extent that incalculable mischief would be wrought. Whether my protest had any effect I cannot say, but as I have heard nothing further

I believe and hope the matter has been shelved for ever. I would recommend a little more discrimination to our worthy sportsmen; it does not follow, because one member of a Family is a destructive bird, that others of the same group should be so also.

Rapacious birds are slow breeders—rearing only one brood a year in most cases—and large feeders, the young requiring a considerable amount of food.

We can conveniently divide our Birds of Prey into two naturally divergent groups:—

(1) Nocturnal Birds of Prey—Owls.

(2) Diurnal Birds of Prey—Hawks, Falcons, Kestrels, Buzzards, Kites, &c.

The owls are, almost without exception, exceedingly useful birds, so far as the agriculturist is concerned, subsisting chiefly upon small rodents, such as mice, rats, &c. They suffer constant persecution through the sheer ignorance of the average farmer, a persecution which is augmented by senseless superstitions, which are difficult to eradicate. The South African Ornithologists' Union has now taken the subject in hand, and hopes, in conjunction with the Departments of Agriculture and Education, to bring about a better understanding of our birds by the populace.

The economic value of birds has long been recognized in America, which country may be assumed to be one of, if not *the*, greatest agricultural countries of the world.

During recent years the United States Department of Agriculture has recognized this to such an extent that elaborate laws protecting birds of economic value to agricultural pursuits have been promulgated. Similar regulations are necessary in South Africa. Let me say here that very careful and thorough preliminary investigations are wanted, for many of our birds are "local" in distribution, and their diet varies according to the locality or season. To illustrate my meaning: A bird may be injurious in one district where its natural food is scarce, and useful in another where its customary articles of diet are plentiful; again a species may be exceedingly useful in

winter, but harmful in summer. As an instance I may cite the Pied Starling or Witgat spreeuw.

NOCTURNAL BIRDS OF PREY (OWLS).

South Africa possesses quite a large number of owls (Order *Striges*) belonging to the two families, the *Stri-*

Photo. from life by R. H. Ivy.]

FIG. 1.—SOUTH AFRICAN BARN OWL.

gidæ, containing a single genus with two species, and the *Bubonidæ* with six genera and ten species.

Our first bird is the South African Barn Owl (*Strix*

flammea maculata, Brehm). Until recently this bird was considered by most students of African ornithology as identical with the European bird, but Dr. Reichenow ("Vögel Afrikas") has separated it under the above trinomial name, and rightly too, so far as I can judge from the series of these birds in the Transvaal Museum.

This owl is known to the Boers as Dood-vogel (meaning Death-bird), and is looked upon as a bird of ill-omen, the popular belief being that if it screeches on a house-top at night one of the inhabitants is sure to die within a reasonably short space of time. This silly superstition, with slight modifications in certain districts, is also applied to the other species of owls, the Spotted Eagle-Owl for example.

As a matter of fact these two species are amongst the best friends of the farmer, subsisting almost exclusively upon mice, rats, and insects, maybe varied very occasionally by a bird.

With regard to the European Barn Owl (*Strix flammea*)—a very close ally to our bird, and by many not admitted as distinct—its food supply was very accurately worked out by Baron von Schweppenburg, and published in the *Journal für Ornithologie* for October, 1906. He examined 13,100 pellets of ejecta (the undigested portions of skin, fur, &c., brought up by the bird) and found that the owl's nourishment consists of 0·20 per cent. moles, 30·20 per cent. shrews, 0·20 per cent. bats, 0·20 per cent. rats, 23 per cent. mice, 44·30 per cent. voles, 1·50 per cent. birds, and 0·40 per cent. frogs. We thus see that small rodents form nearly the whole of the owl's diet, viz., 98 per cent. Of this, roughly speaking, 68 per cent. are forms harmful to agriculture. This means that, out of every hundred parts of foodstuffs, only thirty-two parts have no bearing upon agriculture. So far as our knowledge of the domestic economy of our bird goes, it does not seem to differ much in its diet and consequently forms one of the best friends the South African farmer possesses. As to the senseless superstitions attached to this bird, we need not dwell upon the

utter ignorance and stupidity which gives countenance to such beliefs. According to L. E. Taylor, this bird "is said to kill a large number of young pigeons in their nests." As this is the only indictment for mischief against the Barn-Owl which I have come across, and as my friend Taylor has not seen it himself, quoting merely from hearsay, I do not think much notice need be taken of this accusation, until stronger and more authentic evidence is forthcoming.

The Grass Owl (*Strix capensis*) is not at all a common bird in South Africa, and is therefore economically not of much account. Still it should be protected as much as possible, as it is very probably as useful as the preceding species. This and the preceding species can easily be recognized by the absence of "ear" tufts and the very pronounced "facial discs," the former bird being of a pearly grey above, vermiculated with grey and brown, while the latter is dark brown above, with a few small scattered white spots.

The Marsh Owl (*Asio capensis*) devours vlei-mice, rats, frogs, lizards, and insects, and is therefore of immense value to the agriculturist. This is a fairly common bird in many districts, inhabiting marshy ground and the banks of watercourses. It is about the same size as the Barn Owl, but is of a browner duller tint and possesses "ears."

The White-faced Owl (*A. leucotis*) feeds largely upon grasshoppers and other insects, but also indulges in rats and mice according to Messrs. Ayres and Oates. This is, comparatively speaking, a scarce bird in the subcontinent.

The Bush Owl (*Syrnium woodfordi*) feeds on much the same articles of diet as the preceding bird, but the staple fare consists, so far as my limited experience goes, of mice and shrews. This is also a scarce bird, and seems confined to the more wooded portions of the country.

The Cape Eagle Owl (*Bubo capensis*) preys upon rats, mice, and birds (Selater). According to the Woodwards, it also feeds upon an occasional spring-hare. According to Ivy it is a bold bird, and will carry away a full-grown fowl, or kill a hare. We can in consequence scarcely call this bird a friend of the farmer, yet probably the good it does very considerably outweighs the bad. This species is dark brown above, mottled with greyish tawny and white, and measures about $19\frac{1}{2}$ inches in length.

The Spotted Eagle-Owl (*Bubo maculosus*) feeds upon a large variety of animals : moles, rats, mice and shrews, frogs and snakes, insects of various kinds, and maybe occasionally a bird. The Woodwards attribute to it depredatory habits, accusing it of attacking domesticated pigeons. This is a fairly common bird in the neighbourhood of my home, and during many years of observing and collecting I have not seen anything to warrant it being classed other than a true friend of the farming community. According to Andersson, it feeds upon rats and large beetles. This bird inhabits the stone kopjes and more open veld, and is a large brown bird mottled with grey and buffish white, also possessing "ears."

The Giant Eagle-Owl (*Bubo verreauxi*) is no absolute friend of the farmer either, and should be bracketed with the Cape Eagle-Owl. In vol. iii., "Birds" ("Fauna of South Africa"), Selater gives its food as follows : guinea-fowls and other birds, small mammals up to the size of a hare, large insects, and poultry. According to Andersson it feeds on small quadrupeds, birds, lizards, and large beetles. This bird is easily recognizable by its huge size (being the largest owl in South Africa) and by its pale horn-coloured bill. Length about 28 inches.

The Cape Scops Owl (*Scops capensis*).—In this tiny owl (length 7 inches) we have the exact opposite of the preceding species, both as regards size and habits ; it feeds almost exclusively upon insects, and is in consequence a firm ally of the agriculturist.

Photo. from life by R. H. Ivy.]

FIG. 2.—A PAIR OF SPOTTED EAGLE-OWLS.

The little Pearl-spotted Owl (*Glaucidium perlatum*) is also easily recognizable, owing to the characteristic spotting, this being white surrounded by a black ring. It feeds on insects, termites, mice, and lizards. Fischer gives its food as consisting principally of locusts, and Blanford of lizards. The Barred Owl (*G. capense*) feeds chiefly on insects (Ayres); Fischer quotes orthopterous insects.

Pels' Fishing Owl (*Scotopelia peli*).—This bird does not affect us much one way or the other. According to Sclater it feeds on fish, but Waller states it also devours guinea-fowls.

DIURNAL BIRDS OF PREY.

This is a large group of birds constituting the Order *Accipitres*, and divided into four families: the *Falconidæ*, *Vulturidæ*, *Pandionidæ*, and *Serpentariidæ*. This group, treated from the standpoint of their economic relations to man, may be divided into three sections:—

- (1) Wholly useful birds.
- (2) Birds partly beneficial and partly harmful.
- (3) Harmful species.

(1) *Wholly useful Species.*

This is not a very numerous group in South Africa, but includes the Kestrels (*Cerchneis*). Birds belonging to this group feed chiefly on mice, rats, and various insects.

The Hobby (*Falco subbuteo*) is a migrant from Europe. According to Marshall and Swynnerton, it feeds on beetles, locusts, and butterflies; according to Andersson, on termites and locusts.

The African Hobby (*F. cuvieri*) is very rare within the geographical limits of South Africa, so it does not affect us economically speaking.

The South African Kestrel (*Cerchneis rupicola*) is generally known to the Boers as the Steenvalk or Rooi-

FIG. 3.—SOUTH AFRICAN KESTREL.

Photo. from life by R. H. Ivy.]

valk. Its food is given in Stark and Selater (vol. iii.) as mice, small birds, and grasshoppers; ants, lizards, locusts, and mice (Haagner); locusts and beetles (Claude Taylor); locusts (Thomsen); locusts and grasshoppers (R. H. Ivy).

This bird is of a reddish-brown colour, with a slate-blue head and tail.

The Larger Kestrel (*Cerchneis rupicoloides*).—According to Selater, vol. iii., "Birds of South Africa," shrews, mice, lizards, and insects form its favourite food. This is borne out by my own experience, and only one specimen of this and the preceding species during many years of collecting—a ♂ skinned on October 14, 1906—contained the remains of a bird. This Hawk's stomach contained the following bill of fare: Two Bar-breasted Finches (*Ortygospiza polyzona*), one lizard, one caterpillar, and some white ants. Mr. Thomsen, the Chief Locust Officer of the Transvaal, gives an excellent account of the enormous good wrought by these birds, in conjunction with the South African and Lesser Kestrels, congregating as they do in large flocks and following the swarms of locusts, devouring thousands of this orthopterous pest to agriculture.

I have seen both this and the foregoing bird hawking flying ants on the wing many a time; so taking all the evidence we have into consideration, I unhesitatingly place them with the wholly beneficial species, as insects form their staple fare.

This bird is larger than the "Steenvalk," and is without the blue head and tail.

The Lesser Kestrel (*Cerchneis naumanni*) is one of the most regular locust-destroyers we have. It is a migrant from Southern Europe, Northern Africa, and Asia, arriving in South Africa about the middle of October. Mr. Thomsen says it is a great locust-destroyer, following the locust swarms in large flocks.

According to Marshall it feeds upon grasshoppers, centipedes, beetles, and hunting spiders.

Photo. from life by R. H. Ivy.]

FIG. 4.—LESSER KESTREL.

L. E. Taylor mentions its food at Irene as consisting largely of red hunting spiders. My own experience gives its diet as locusts, grasshoppers, and termites.

This species is smaller than the "Steenvalk," and has the best part of the wing (in addition to the head, neck, and tail) bluish. Back without spots.

The Western Red-legged Kestrel (*Cerchneis vespertinus*), according to Andersson, visits German South-West Africa in thousands, feeding upon white ants and locusts.

The Eastern Red-legged Kestrel (*Cerchneis amurensis*) feeds upon insects exclusively, according to Sclater.

Marshall gives its food as plant-bugs, water-beetles, grasshoppers, winged ants and winged termites.

Both the latter species are dark slate above and much paler below.

The Cuckoo-Falcon (*Baza verreauxi*) feeds upon mantids, locusts, and other insects (Sclater); chameleons, lizards, and large insects. Although the Woodward state that it sometimes kills fowls, pending further information I have included it among the useful birds.

The Buzzard-Eagle (*Kaupifalco monogrammica*) seems to be a real friend of the farmer, the evidence all pointing to its usefulness. Marshall gives the following as the contents of a stomach of one bird examined by him: One bird, 2 scorpions, 2 large centipedes, 4 larvæ of beetles, 4 locusts, and 130 winged termites. Other specimens contained mainly scorpions and centipedes, and one a small viperine snake. C. H. Taylor gives its foods as consisting of lizards; Heuglin as plant-bugs, orthopterous insects, lizards, and rats. Colour above, slate grey; below, narrowly barred with white and dark grey.

Only a passing reference to the Vultures is necessary, as, owing to their almost exclusive diet of carrion, they

are exceedingly useful birds and do not in reality affect the purposes of this paper. Just to illustrate how a bird may, by force of circumstances, change its habits and customary articles of food, I may mention the recent alteration in the economy of the Vulture. Dr. Gunning drew attention to this matter at the Annual Meeting of the South African Ornithologists' Union in 1906, and since then Mr. C. H. Taylor has given us a couple of serious accounts of its attacking live sheep—though, of course, instances of its killing and devouring sickly sheep and lambing ewes in former times were not exactly rare. As stated in the "Journal of the South African Ornithologists' Union," this change of diet was probably brought about by the large increase in the numbers of the Vultures consequent upon the plentiful food supply during the rinderpest and South African War, and the subsequent falling off of the same supply. Perhaps the simple remedy of shooting a number of them in each district where they have adopted predatory habits may prove effective.

(2) *Birds partly Useful and partly Harmful.*

The Crested Hawk-Eagle (*Lophoaëtus occipitalis*), or Kuifkop Valk of the Boers, is the first member of the group of Accipitrine birds which do both good and harm. The harm they do consists of devouring an occasional fowl or dove, and the good that of killing small mammals, such as rats and mice. In addition to these articles of diet, it feeds on lizards, frogs, and toads. It is easily recognizable by its dark brown colour, and long crest of thin feathers.

The Bateleur Eagle (*Helotarsus ecaudatus*) is easily recognized by its short tail and bright red legs. Its usual food, according to several observers, consists of small mammals and reptiles, but it also feeds on carrion, according to Sowerby and Hutchinson. It has been reported to attack poultry, but the experiences of Layard disprove this, as he says he kept one in his fowl-house

for some time and it did not harm his hens, although it devoured the eggs.

The Southern Lämmergeyer (*Gypaëtus ossifragus*) has also been accused of devouring sheep and lambs, but its food seems to consist almost exclusively of carrion and bones. As, however, this bird is not of much use, I include it in the present group. The Boers call it the Lammervanger (Lamb-catcher).

The Black-breasted Harrier-Eagle (*Circaëtus pectoralis*) is another bird whose reputation is founded more or less upon hearsay. *It is said to prey on lambs and poultry*, but its principal food is doubtless frogs, snakes, and lizards.

The Banded Harrier-Eagle is very rare, and does not concern us here.

The Yellow-billed Kite (*Milvus ægyptius*) is not held in much repute by the Dutch, as evidenced by its Boer cognomen of Kuikendief (Chicken-thief). It feeds on locusts, grasshoppers, small reptiles, frogs and fish. Major Hamilton, of the Government Game Reserves, has stated in the "Transvaal Agricultural Journal" that it is a harmless bird, never interfering with his poultry, so it should really be included in the first group. I insert it amongst the partly-injurious species, pending further evidence on the subject. It is of a sepia-brown colour, and has a distinct yellow bill.

The Black-Shouldered Kite (*Elanus cæruleus*), like the Yellow-billed, should no doubt be amongst the useful birds, but is included here, as it sometimes attacks chickens. Selater says that it "feeds upon rats, small birds, reptiles and insects, while *farmers' wives* say it is outrageously fond of their chickens." My friend Ivy says it is a comparatively harmless bird, feeding chiefly on rats and locusts, although he knows of instances in

which birds of this species have robbed him of a chicken. This is also my experience and that of others — Claude Taylor, for instance, who gives its principal food as rats and lizards. This bird is called the Witte Sper-

Photo. from life by R. H. Ivy.]

FIG. 5.—BLACK-WINGED KITE.

wel by the Boers, and is slate-grey above, the basal half of the wings being black, and whitish below.

The Honey Buzzard is a rare migrant, and does not affect us here.

The Little Banded Goshawk (*Astur polyzonoides*) is perhaps one of the commonest hawks in Mashonaland, and is not rare in the Transvaal. Mice, lizards, small birds and insects, form its diet, according to Mr. W. L. Selater, while Marshall quotes this as consisting of lizards, snakes, locusts and winged termites; so it would appear that the good it does considerably outweighs the harm. It is blue-grey above and white below, with a banded tail.

The Chanting Goshawk (*Melierax canorus*) is the Blaauw Valk of the Boers. It feeds on rats, mice, reptiles and insects, thereby doing good; but, according to Selater, it devours hares and game-birds, thus creating damage. It stands to reason that if the bird attacked partridges and korhaans it would devour fowls whenever an opportunity offered. This bird is slate-grey above, with a white rump, and the tail feathers (except the two centre ones) tipped with white, becoming broader towards the outer feathers. Total length about 20 inches.

The Gabar Goshawk (*M. gabar*) feeds on mice, small birds, lizards and insects, and may be classed economically with the foregoing species.

The Harriers (*Circus*), of which there are five species, all feed upon rats, mice, locusts, grasshoppers, small reptiles, frogs, birds and their eggs, so their utility very probably outweighs the harm they do; and unless actually caught in the act of stealing, they should *not* be ruthlessly shot.

The South African Lanner (*Falco biarmicus*) is reported as being a scourge to the poultry-yard and dovecot. It will, however, eat locusts and grasshoppers, as well as game-birds, snakes, and small mammals. The summing up of the evidence so far points to the fact that this bird is far more harmful to man than useful. It is dark slate

above, mottled with paler; crown of head and cheeks brick-red, below pale fawn.

(3) *Birds wholly harmful.*

This is an exceedingly small group, embracing the eagles and a few of the falcons. Some of the birds here included in the present paper should very probably not find a place in this group, but are included here until further reliable information has been obtained.

The White-backed Eagle (*Aquila verreauxi*) is a powerful bird, called by the Boers the "Dassievanger." It inhabits the mountains, feeding chiefly on rock-rabbits, as its Dutch vernacular name indicates. In addition, it preys upon kids, lambs, and small antelopes. It is black in colour, with a pure white centre to the back, and white rump and upper tail coverts.

The Tawny Eagle (*Aquila rapax*) resembles the preceding bird in habits. It is of a chestnut-brown above and tawny-brown below; tail blackish. The Boers call this bird the Coo-vogel.

The African Hawk-Eagle (*Hieraëtus spilogaster*) feeds on birds of various kinds, being also, according to Ayres, a poultry thief.

The Martial Hawk-Eagle (*Eutolmaëtus bellicosus*) is also a very depredatory species, feeding on kids, lambs, and the smaller antelopes, hares, &c. It is of a dark sepia-brown colour above; head slightly crested; below, brown and white.

The Crowned Hawk-Eagle (*Spizaëtus bellicosus*) is quoted in Selater, vol. iii., as killing monkeys, cats, pigs, lambs and geese, as well as bluebucks and dassies. Ivy tells me that the ground beneath a nest of this bird, in a kloof near Grahamstown, is usually strewn with the

Photo. from mounted specimen by R. H. Ivy.]

FIG. 6.—MARTIAL HAWK EAGLE.

skulls and bones of bluebucks, rock-rabbits, hares, &c. This bird is black above; crest tipped with white; black below, mottled with white, and in addition with reddish on the chest.

Photo. from life by R. H. Ivy.]

FIG. 7.--JACKAL BUZZARD.

The Jackal Buzzard (*Buteo jackal*) does an immense amount of damage, and although it does eat a few locusts

and other insects, lizards, snakes, rats, &c., it feeds largely, according to Ivy's observations, upon game birds such as francolin, pheasants, &c. This is substantiated by Ayres and Butler. It is a pugnacious bird and a great poultry thief. On the other hand, Mr. Harold Fry records that a pair discovered nesting by him in Natal appeared to feed their young almost exclusively on insects, spiders, &c. This bird is black above and rufous below, excepting the abdomen and thighs, which are black, mottled with reddish and white.

The Steppe Buzzard (*Buteo desertorum*) is also a bad poultry thief, although it makes away with a number of noxious insects. According to Distant, it is a great source of trouble to the farmers around Pretoria, and Claude Taylor also reports it as a depredatory bird, killing chickens, ducklings, &c. One of these birds entered my fowlhouse one day, the commotion amongst the poultry attracted notice, and the bird was caught and killed with its claws fastened deep into the back of a full-grown hen. The Steppe Buzzard is light-brown above, the feathers marked with darker shaft-streaks, and a patchy white spot on the nape of the neck; below dusky-brown, barred with white.

The African Goshawk (*Astur tachiro*) is also well known as a poultry-thief. It is a bird seldom, if ever, found away from bush or forest regions. The Woodward's record the case of a full-grown fowl being carried away by one of these birds, and both Ivy and myself have experienced instances of its thieving qualities. Nevertheless, like the majority of our birds of prey, it will feed on grasshoppers, locusts, &c. This bird is dark slate above, and white below, narrowly barred (in the case of the adult) with brown. The flanks and thighs are tinged with rufous. The young birds are spotted on the under-side instead of banded.

Photo, from life by R. H. Ivy.]

FIG. 8.—SOUTH AFRICAN GOSHAWK.

There remains but to mention the three Sparrow-Hawks (*Accipiter*). They are all bold birds, and despite their small size, are inveterate poultry thieves, descending with an oblique swoop, and carrying off ducklings, chickens, and even full-grown fowls. Under normal

Photo. from life by R. H. Ivy.]

FIG. 9.—RED-BREASTED SPARROW-HAWK.

conditions small birds and young game birds would be their main articles of diet.

The smallest of the three is the Little Sparrow-Hawk (*A. minullus*), which is slaty-black above, and white below, narrowly cross-barred with brown, edged with

rufous. The Red-breasted species (*A. rufiventris*) is easily distinguished by the characteristic which gives to it its vernacular name, while the Black Sparrow-Hawk is almost entirely black in coloration.

Anyone who may have authentic information, bearing on any of the birds mentioned in this paper, is requested to communicate with the author (Dynamite Factory, Modderfontein, Transvaal).

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