

tail-coverts. The bill is stouter and has a much more strongly marked and deeper sulcus. I have examined many specimens of *Eud. minor* and the so-called *Eud. undina*, but I never observed the peculiarities above mentioned, which, in my opinion, are of specific value.

3. On the Breeding of the Golden Eagle (*Aquila chrysaëtos*) in North-western India. By W. H. UNWIN, Captain, Bengal Staff Corps.*

[Received March 16, 1874.]

On the 13th of May, 1871, three Goorkhas, soldiers of the regiment to which I belong, brought me a large dark-coloured Eagle, which they told me they had shot near its nest on one of the higher mountain-ranges near the cantonment of Abbottabad, in the Hazára district of the Punjab. They produced at the same time a young bird, also evidently an Eagle, which they stated they had taken out of the nest after shooting the old one. I at first sight supposed the latter to be a large *A. imperialis* in its dark or mature stage of plumage; but a close examination and comparison with the scientific description induced me to alter this opinion, and to believe that the Eagle before me was no less than a specimen, and a very fine one, of *A. chrysaëtos*. I was further confirmed in this belief by correspondence with better ornithologists than myself, and also by data which I obtained while watching the gradual growth of the young bird, and which, at the risk of being tedious, I have given as fully as possible below. These data, though very roughly put together, are, in my opinion, of some value, as they serve to prove most indubitably that the Golden Eagle does (occasionally, at least) not only visit but actually breed within the geographical limits of India.

Before entering on a description of the young Eagle and his gradual development in growth and plumage, I think it well to give a short description of its parent, the situation and structure of her nest, and the general features of the country in which it was found. The Hazára district lies at the north-eastern corner of the Punjab, contiguous to and on the left bank of the Indus, and subjacent to the high mountains which separate the Káshmir valley and its dependencies from the plains. It consists of a number of valleys of different elevations, sloping up gradually from the plains and surrounded by ranges of hills and upland plateaux, which are drained by streams and small rivers falling into the Indus. These lower ranges of hills are of various elevations, from 2000 to 6000 feet; and they and their interlying valleys are overlooked in the upper part of the district by mountains ranging from 7000 to 15,000 and 16,000 feet in height. These different elevations give great variety of situation and climate; and the district thus becomes a sort of debatable land on which the birds of hill and plain both meet, while the hilly and wooded nature of the country and its near proximity to Káshmir

* Communicated by Mr. R. B. Sharpe, F.Z.S.

and Afghánistán make it a resort for many species of birds not often met with in other parts of India.

It is unnecessary for me to give any detailed description of the plumage of the adult Eagle; suffice it to say that it corresponded in every point most exactly with the account of *A. chrysaetos* given in Dr. Jerdon's work.

The site of the nest (which I visited on a subsequent occasion) was well chosen for retirement and impregnability. A deep rugged gorge or ravine ran almost perpendicularly down the eastern face of a mountain nearly 9000 feet high. Its sides were steep and difficult of access, with precipitous cliffs and walls of rock, among the clefts and shelves of which deodars and pine trees of various kinds had succeeded in finding soil enough to cling to. This sort of ground was varied in places by steep slopes, slippery with dry grass and withered pine-needles, and generally ending in a perpendicular drop. The watercourse which formed the bed of the ravine below was quite inaccessible; and the mountain-sides above and around were clothed with dense pine-forest. Guided by the Goorkhas who had brought me the birds, I climbed with much difficulty down the face of the right bank of the ravine until I arrived at the tree which supported the nest. This was a large deodar, growing from a ledge which here ran along the face of the precipice, and overhanging a perpendicular drop of some 150 feet; the tree was of large size and destitute of lower branches, and, especially in such a situation, very difficult to climb; one of my Goorkhas, however, had succeeded in getting up by a small deodar which grew close by and almost touching the large one. In spite of the assistance this afforded the task was a very dangerous one; and the risk was greatly increased by the hostile attitude of the old birds (for both male and female were present), who came closer and closer to the climber with angry swoops, and would doubtless have attacked him had it not been for his companions at the foot of the tree, one of whom at length shot the female eagle as she sailed close past him.

The nest, which was about 30 feet up in the tree, was a solid though rough-looking structure, built of dry and withered pine-branches and other wood. Some of these were of a much greater size than any Eagle would be deemed capable of lifting; and some, from their appearance, must have been broken off the trees in their green state. The whole formed a mass about 6 feet high and 4 feet broad at top, and must have weighed several hundredweight. It rested against the main trunk of the tree, and was supported by and interlaced with the branches in its neighbourhood. The top was littered roughly with grass and roots, which formed a kind of lining for the young bird to rest on.

The latter when first brought to me was not, as far as I could judge, more than ten days old. He was as large as a moderate-sized fowl, and entirely covered with white down, the cere and feet yellow, bill and claws black, irides dark brown.

His gradual progress is noted below in the form of the rough journal which I kept at the time, viz.:—

May 31.—The young Eagle has now been here 18 days, and has grown a good deal in the time. A few dark brown feathers are beginning to sprout among the downy coat on the shoulders, back, and wing-coverts. He eats freely, his food consisting of small birds, which are shot for him daily; they are cut to pieces, and given with the feathers still adhering to them.

June 15th.—Great increase in dark brown plumage. Quills and rectrices are developing rapidly; and the lanceolate golden-chestnut feathers characteristic of *A. chrysaëtos* are beginning to show on the nape and occiput. Is much increased in size and strength, and appears to thrive well generally, but is very impatient of the heat, which has now set in.

July 1st.—Plumage rapidly developing, everywhere showing an exact similitude to that of the mother, with the exception of the tail, which begins to show the white basal ring typical of the Golden Eagle in its first plumage. The central quill-feathers have also their basal half quite white on both webs; this becomes gradually mottled till it passes into the dark brown of the terminal half of the feather. Similar feathers in the mother have their basal halves of a dark grey, densely clouded and spotted with blackish brown. Claws and feet have much increased in power; and the golden brown hue of the head, occiput, and shoulders is becoming very distinct. The bird is now up in the hills with me, and appears to enjoy the cool climate immensely. He frequently utters a loud continuous discordant cry, very difficult to imitate or describe in writing; it is something like *chee-aw, chee-aw, chee-aw*, repeated quickly for half an hour at a time. I observe that this cry becomes louder and more strenuous if he sees any Kite or other raptorial bird passing overhead. Is very quiet and gentle with people who go near him, but made a fierce rush at a small terrier who came within his reach. Is now quite capable of tearing up birds for himself, and gets through a great number in the course of the day.

August 1st.—Has grown a great deal during the past month, and has everywhere assumed the dark brown plumage shown in his mother, except on the inner and lower parts of the thighs and tarsi, where a good deal of white down remains uncovered. The head has assumed its full covering of lanceolate golden-chestnut feathers; and the same colour is apparent on the shoulders and in front of the thigh-coverts. It is everywhere of a darker and richer shade than in the mother, owing probably to its not having been exposed to the weather. The claws are very large and powerful for so young a bird. Feet bright wax-yellow; cere and lips lemon-yellow; irides of a much brighter and clearer brown than when first taken; the tail is large and well grown, with white basal ring well developed. Plumage generally sleek and glossy. Disposition shy and timid, as a rule; but every now and then he shows signs of a fierce temper. I have tried him with various kinds of birds in feeding him, and find that he shows considerable discretion. Any kind of Dove or Pigeon, or Partridge is at once recognized and devoured; he will also accept,

but less readily, Crows *, Jays †, and Mainas ‡, and such like ; but any thing in the shape of raptorial birds, such as Kites, Buzzards, &c., is rejected at once, thereby proving the truth of the proverb that "Hawks pyke not out hawk's een."

September 1st.—Has grown considerably during the past month, and plumage now appears fully developed ; no changes of any importance have occurred in his appearance and habits.

October 1st.—No changes in plumage, but steadily increases in size. Occasionally shows a savage temper with any one who approaches him. The dogs keep at a respectful distance ; but a fowl who ventured within his reach was caught and killed instantly. I occasionally give him a chicken as a treat, and am much struck by his mode of killing it : having seized the victim in his powerful gripe, he makes no attempt at using his beak, but remains with head erect, looking in a defiant manner at any one standing near him, and meanwhile killing the fowl by the simple compression of his powerful talons. Having completely killed it in this fashion, a process which does not take more than a minute, he turns away, still holding it in his grasp, and endeavours to shield it from the sight of observers by spreading his wings over it (this is a peculiarity of all Falcons) ; and finally, using his beak for the first time, he tears it in pieces and swallows them till not a vestige, except a few of the larger feathers, is left.

November 1st.—Is evidently still growing, and is getting more savage in his temper. The cry before alluded to has ceased ; and the bird appears to enjoy the cold weather which has now set in.

January 1st, 1872.—No change in size or plumage has occurred during the past two months. The bird thrives well, but is getting very savage and aggressive in his temper.

March 1st.—Nothing worth noting since last observations were recorded.

May 1st.—Is now nearly a year old, has not grown to any appreciable extent since last autumn ; and plumage remains unchanged ; no signs of moulting at present. Temper very savage, and I have been obliged to secure him by a strong cord fastened to a strap on one of his legs ; he generally rushes to the full length of the cord, and attempts to seize people who approach him. The man in charge of him has no sinecure ; and the office of carrying him from the tree under which his perch is placed for the day to the verandah where he is kept at night is one of considerable danger. He would be more awkward to handle and approach than he is were it not that he appears to regard his claws as his only weapons of offence, not dreaming of using his very formidable beak. This peculiarity is shown, as I have said before, in the act of killing a fowl, which he never touches with his beak until it is to all appearance dead from the pressure of his talons. The loud cry that had ceased last autumn has recommenced, and his impatience of confinement is

* *Corvus splendens* and *C. culminatus*. Common in Hazára.

† *Garrulus lanceolatus* and *G. himalayanus*. Common in Hazára.

‡ *Acridotheres tristis*. Common in Hazára.

much greater, probably caused by the presence of spring and the increasing heat.

August 1st.—The bird has not shown any remarkable changes of any sort since last notes were made.

September 1st.—Escaped from confinement about a fortnight ago, and, though pinioned, managed to get lost down a steep hill-side covered with pine-forest. He was ultimately, after a week's absence, caught and brought back by a villager, who found him sitting in a ploughed field at some distance from the hill he had escaped down. I fear the bird has received some injury during this escapade, as he pines and often refuses his food, and seems weaker, and smaller almost, than he used to be. His plumage has fallen off and become more draggled during the past two or three months. I partly attribute this to moulting, and partly to confinement being more irksome in the summer than in the winter months.

4. Description of a new Species of Woodpecker from British Burmah. By Lieutenant R. WARDLAW RAMSAY, F.Z.S.

[Received April 1, 1874.]

(Plate XXXV.)

The following is the description of what appears to me to be an entirely new species of Woodpecker. I obtained examples of both sexes in a teak-forest, about six miles to the north of Tonghoo, in British Burmah.

GECCINUS ERYTHROPYGIUS, n. sp. (Plate XXXV.)

Male. Head, sides of face, ear-coverts, and occipital crest black, with a red patch on the crown; a superciliary streak running from the top of the eye to the nape whitish, but gradually blending into the yellow of the neck.

Throat, neck, and upper part of breast yellow, with a green tinge throughout. Back, wing-coverts, and upper tail-coverts green; lower back and rump bright crimson, with some of the feathers green at the base.

Quill-feathers brown, the outer web of the primaries slightly suffused with green, and the outer web of the secondaries wholly green on the upper surface. Each feather with eight or nine white spots on either web.

Tail dark brown, with one or two white spots at the base of the feathers. Two centre feathers margined green on both webs. Whole under surface dusky white, each feather with two faint scale-shaped brown lines, which are broader and more distinct on the thighs and lower tail-coverts. Lower wing-coverts white, with two irregular brown bars across each feather, and edged pale green.

The *female* differs from the male in having the head entirely black, and by wanting the superciliary streak. The markings of the wings and underparts are also less boldly defined.



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