Studies of less familiar birds

102. Lammergeier

By I. J. Ferguson-Lees

Photographs by Antonio Cano and Eric Hosking

(Plates 1-8)

IN SOUTHERN EUROPE there are four vultures—or perhaps one might call it three-and-a-half because the remarkable and spectacular Bearded Vulture or Lammergeier (*Gypaëtus barbatus*) is generally regarded as a link with the eagles. The very name "vulture" conjures up a vision of scrawny-necked, bald-faced monsters crowding round a rotting carcase, but the Lammergeier, though still a carrion-eater,

continued ...

is a more solitary bird and far from hideous to look at. Col. R. Meinertzhagen (1959, *Pirates and Predators*) has written:

> "The lammergeier combines extreme grace in flight, an almost regal appearance in his natural surroundings with a cowardice out of all proportion to his size . . . ready to take advantage of any animal in distress, incapable of defending himself against creatures half his own size and frightened at the wink of an eyelid. And yet this bird of despicable character is one of the finest exponents of flight and aerial grace in the kingdom of birds. His poise, his long pointed wings, his torpedo body and his long wedge-shaped tail contribute to give him a greater majesty than any of the true eagles . . . sinister, magnificent and dignified. Seen at close quarters I know no bird so impressive."

Impressive it certainly is and, even if it is not the bold and resolute devil that it has often been made out to be—it used to be credited with carrying off lambs and children, and even throwing climbers to their deaths—its cautiousness cannot detract from it. Indeed, throughout its range in southern Europe and the Atlas Mountains of north-west Africa, in eastern Africa and from Asia Minor through to the Himalayas and China, it will always provide a Mecca for ornithologists. This, if we need one, must be our excuse for beginning 1960 with a species never recorded in Britain.

Inevitably with such a bird, a vast literature has grown up through the years, a lot of it superficial, much of it fanciful and some of it clearly erroneous. Misinterpretations have been copied and exaggerated by author after author. As a result, probably few other species have such a conflicting background of muddled legend and fact, and it is difficult to separate the grain from the chaff. This account is therefore largely confined to our own observations in 1959, with some comparison with those of the late E. H. N. Lowther (*J. Bombay N.H.S.*, 46: 501-508) who was one of the few others to have photographed the Lammergeier at the nest.

In Europe, the Lammergeier is confined to Corsica, Sardinia, Sicily, the Balkans and three regions of Spain. In 1958 Antonio Cano and J. A. Valverde (*Ardeola*, 5: 121-126) found a nest in the sierras of south-eastern Spain and in 1959 invited ten of us to join them in the same mountain area. The 1958 nest was not occupied in 1959, but other pairs were located and on 18th May a Lammergeier was seen to fly into a small cave high on the side of a deep valley several miles long and over a mile wide (plate 2a). This nest proved to contain a single half-feathered youngster. In Europe the Lammergeier seems to lay one or two eggs. In India, according to Lowther, there is often only one, two is the usual and three is very rare, but no more than one young is normally reared. In Europe the nesting-season begins in December or January, but the young may not leave until June or July: some eight weeks of incubation are followed by three months or more in the nest.

In the Himalayas, Lammergeiers breed as low as 1,200 feet and at least as high as 14,000 feet (while a single bird has been seen at 24-25,000 feet on Mount Everest). Our site was at about 5,600 feet, and roughly fifteen hundred feet above the floor of the valley. Most of the drop below was a steep grass-covered rocky slope dotted with pines and various shrubs like *Berberis hispanica,* but the 190 feet under the nest was sheer limestone cliff. The site was more accessible than most: it was easy enough to reach a narrow grassy ledge 30 feet below the cave (plate 3) and from this, with the aid of pitons, ropes and ladders, the nest itself was entered by Cano, Valverde and George Shannon on 19th May. As plates 1 and 4 show, the structure was tucked well into the cave and this is not uncommon; even if there is no cave it is usually sheltered under an overhang (plate 5).

The cave was nearly 5 feet deep, but only about 3 feet 8 inches high above the nest. The entrance was under 6 feet wide—so that the adult Lammergeier, with its huge wing-span of 8½ to 9 feet, had to swoop in on half-closed wings. The nest itself was composed entirely of branches of pine (*Pinus nigra*), oak (*Quercus* spp.) and juniper (*Juniperus communis* and *oxycedrus*) between 16 and 32 inches long, with a thick lining, about a yard across, of pure sheep's wool. There were only a few sticks against the wall of the cave, but the branches were piled more than a yard high on the outside edge, doubtless as levelling. Lowther described the nest in the Himalayas as "a huge pile of sticks, branches, grass, wool, skins, bones or rags" and he also found a large piece of sacking and bits of green bottles, but the only other things in our nest were a few feathers from the adult, a scattering of food and an old rope sandal. The food included two hind legs of sheep with skin and flesh, one fresh and the other less so; 8 old hooves and a freshly regurgitated one of sheep or ibex, as well as an upper mandible and a scapula; the hoof of a donkey; the skull of a dog; and one or two unidentified bones. Eight feet below this nest was an old one in a similar but smaller recess about 3 feet wide and high and 4 feet deep. This was also built up with sticks on the outside edge, but very little wool remained. Two sticks in this were over 3 feet long and 1-1¼ inches thick.

The youngster was lowered in a sack to the ledge below and there examined and photographed (plates 6-8). About two months old, it was able to stand and walk, and probably to eat by itself. The feathers were various shades of dark brown, more reddish below, and extended down the tarsus (plate 7). It would be out of place here to give the full measurements and description, but some account of the soft parts may be of interest. The inside of the mouth was bluish-pink with the distal part yellowish and rough; the gape and the bare skin of the face were bluish-grey tinged with some violet. This

bluishness extended to the base of the bill which was otherwise yellowish-green with the tip blackish (plate 8a). The iris was pale chestnut and the "white" of the eye a vivid orange (plate 6b). Yellowish-white legs were tinged with green and the nails were black (plate 8b). The huge gape is well illustrated in plate 6b: over $3\frac{1}{2}$ inches (92 mm.) from tip to base and nearly $2\frac{3}{4}$ inches (67 mm.) wide. The whole head from nape to tip of bill was almost 6 inches (148 mm.).

Note particularly the hard gouge-shaped tongue on plate 8a, which is probably an adaptation for extracting marrow from bones. There are a number of reasonably well-authenticated cases of Lammergeiers killing wounded animals, but it is primarily a carrion and offal feeder, in the Himalayas even being seen on the rubbish-dumps of the hill-stations. Lowther wrote:

> "It does not . . . fight with other vultures for the tit-bits of a carcase; instead, should it visit one while the filthy meal is in progress, the lämmergeier stands by, looking on till the other vultures have left—and they do not depart until the carcase is cleaned—when it sets about the blood-covered bones of the dead animal, an incident witnessed by a number of observers including myself."

Its Spanish name is *quebrantahuésos* or "bone-breaker", arising from its celebrated habit of carrying large bones high into the air and dropping them to smash on flat bare rock below, so that the marrow (or brains from a skull) can be extracted. This act has seldom been seen by any but the people of the mountains, but Willoughby Verner saw it, and described and illustrated it in his *My Life among the Wild Birds in Spain* (1909), and M. E. W. North (*Ibis,* 90: 138-141) quoted R. E. Moreau on an ossuary in Kenya:

> "Over an area of some forty yards each way the bare rock was littered with white splinters of bone. In hollows they lay in drifts. I could have collected a dozen pailfuls. . . . A few jaw-bones were present, including those of hyrax, klipspringer and reed-buck. This may mean that the skulls had been dropped, which would give access to the brain. Most of the fragments seemed to belong to limb-bones. . . . About $2\frac{1}{2}$ inches was about the biggest diameter indicated."

Meinertzhagen regards the purposeful smashing of bones by this means as still unproven, suggesting that it happens sometimes by accident and that the Kenya ossuary may have been the work of porcupines. Certainly it can be no more than a side-line.

Cano got his photographs in 1958 (plates 5 and 2c) from a hide on a platform only ten feet away. In 1959, however, the photographs on plates 1 and 4 had to be obtained with a 600 mm. lens from the huge distance of 150 feet (plate 2b). This was on 2nd June, so that the nestling was a fortnight older than in plates 6 and 7. In the 11 hours Eric Hosking was in the hide, from 08.10 to 19.12, there were five visits by one of the parents—at 08.45 (40 seconds), 10.40 (20 minutes), 12.55 (17 minutes), 14.46 (6 minutes) and 17.10 (20 minutes). The last visit ended when the second adult arrived, the only time the pair was

at the nest: the first bird at once flew off with a piece of wool and the newcomer followed. The youngster at Lowther's nest was smaller, about 4-6 weeks when he paid the first of his visits spread over 3 weeks. His bird was occasionally fed twice in half an hour, but the interval was generally $1\frac{1}{2}$-$2\frac{1}{2}$ hours with the adult staying 8-15 minutes. It is also interesting to note that at Lowther's nest the rather younger chick was fed partly on regurgitated food, as in the true vultures, whereas Hosking saw no sign of this. In fact, apart from what seemed to be a piece of wool, the 1959 adult brought food only twice, each time in its left foot, and only on the three longest visits was the chick fed. The last time, after picking off morsels for the young and eating quite a lot itself, the old bird finally held the food in front of the nestling until it grabbed it and swallowed it whole. The food appeared to be red meat, but at Cano's 1958 nest sheep and ibex bones (scapulae, femur) and dry dead rats were brought.

The adult is briefly described on plates 4 and 5, and these and plate 1 give the main features well: the black patches extending forwards and downwards in thick bristles like a beard; the dark brown to grey upper-parts with light feather-shafts; the feathered and immensely powerful-looking legs; and the fierce effect of the striking yellow eyes. Many writers have called the under-parts buff or rusty, but in old birds the breast is a deep orange becoming paler on the belly and legs. This colour is conspicuous in flight, contrasting with the dark underwings. In the air, 4 feet long and up to 9 across, it is a monster dragon; its long, narrow, angled wings and long diamond-shaped tail give an impression of dash more like an outsize falcon. Head on, the wings show as arcs with the carpals raised and tips down, the whole effect like an unstrung bow—a striking outline set off by the pale head's contrast with the dark back and a variable black gorget. It hardly moves its wings, just occasionally giving one huge and powerful flap which brings the tips down below the body and seemingly almost touching. The young birds are dark brown (plate 8c) and, according to Lowther, do not assume adult plumage until about 5 years old.

PLATE 1. Adult Lammergeier (*Gypaëtus barbatus*) at the edge of its stick-and-wool nest in a small mountain cave, Spain, June 1959 (pages 25-29) (*Eric Hosking*)

PLATE 3 (*above*). The cave at the top centre holds the nest of the Lammergeier (*Gypaëtus barbatus*); nearly 30 feet below, from a ledge some 160 feet up the cliff, climbers start the final assault (*Eric Hosking*)

PLATE 2 (*left*). The top two pictures show the position of the cave-nest in plates 1, 3 and 4, with the photographer's hide 150 feet away to the left (*Eric Hosking*). The bottom photograph indicates the site of the ledge-nest in plate 5 (*Antonio Cano*)

PLATE 4. Lammergeier (*Gypaëtus barbatus*) at nest, Spain, June 1959. The ten-weeks-old youngster below watches a piece of wool brought by the adult. The old bird is dark brown on the back, wings and tail, with a creamy-buff head and neck and a vivid orange breast (page 29); the striking yellow eye stands out (*Eric Hosking*)

PLATE 5. Adult Lammergeier (*Gypaëtus barbatus*) with young over three months old, Spain, June 1958. The latter left the nest next day. The long black bristles hanging down on either side of the bill give the bird its other name of Bearded Vulture. The pattern of black on the head is well shown below (*Antonio Cano*)

PLATE 6A. The young Lammergeier (*Gypaëtus barbatus*) has been brought down, with the aid of ropes and wire-ladders, to the ledge below the cave-nest (plate 3). Here the remaining close-up photographs were obtained (*Eric Hosking*)

PLATE 6B. The size of the young bird's gape is dramatically shown here. The most colourful part of the dark brown nestling was the circle of bright orange round the chestnut iris (page 28); the bare skin of the face was bluish-grey tinged with violet (*Antonio Cano*)

PLATE 7. The eight-weeks-old young Lammergeier (*Gypaëtus barbatus*) being held by Antonio Cano. This gives a good impression of its size—already 2½ feet long with a wing-span of over 6 feet and a weight estimated at 15 pounds. The remnants of a thick down remain on the neck, wings and under-parts (*Eric Hosking*)

PLATE 8. Close-ups of the beak and foot of the young Lammergeier (*Gypaëtus barbatus*), and (*below*) fully grown and ready to leave the nest, the diamond-shaped tail already developed. Note the hard gouge-shaped tongue which is thought to be used in extracting marrow from bones. The 3-inch hooked bill is greenish, the legs yellowish-white and the nails black (page 28) (*Antonio Cano*)