

Hartebeests in Ethiopia

Melvin Bolton

In this report on his field survey of Ethiopian hartebeests, two of which—Swayne's, now extinct outside Ethiopia, and the tora—are in the *Red Data Book*, Melvin Bolton describes the known populations and recommends the appropriate conservation measures. His most encouraging discovery was a population—unfortunately in a heavily cultivated area—of at least 500 Swayne's hartebeest, bringing the estimated total for this subspecies to 600–700. His study shows that it is not always easy to ascribe all hartebeests to the three main subspecies or races, and he describes two intergrades with distinctive features. The field work was helped with small grants from the FPS and the WWF.

The hartebeest is still one of the more widespread of large African antelopes although no longer occurring in parts of its former range. If, as some authorities believe, all the forms of *Alcelaphus* are conspecific then *A. buselaphus* extends from Senegal in the west to Ethiopia in the east and south to the Cape. In Ethiopia three distinct subspecies or races are found: *A. b. lelwel*, *A. b. tora* and *A. b. swaynei*; the last two are in the IUCN *Red Data Book*. For convenience in presentation, all Ethiopian hartebeests will be considered under the headings of these three subspecies.

Tora Hartebeest

A reddish fawn animal with horns which diverge widely outwards from the pedicle then upwards, so that in front view they present a shape often likened to a curly bracket lying on its side, the tora hartebeest occurs in eastern Sudan and north-western Ethiopia. The northern and southern limits of its range in Ethiopia are not precisely known, nor is it known whether any significant seasonal migration takes place across the Sudan border.

In February 1971 I could find no evidence of hartebeest in the country immediately north of the Taccaze River but political unrest in the province of Eritrea prevented investigation westwards to the Sudan border. In 1969 a small herd of *tora* was reliably reported seen from the air south of the Taccaze River, close to the foothills of the main Ethiopian plateau. In 1970 a soil survey team saw a few hartebeests in the general area of Metakil (11°00' N 36°30' E) near the Balas River but the observation was not recorded at the time. In May 1971, during nearly four hours of flying between the Taccaze and Balas Rivers, no hartebeest were located.

In March last year I spent two weeks crossing trackless country between Metemma and the Balas River and saw but a single tora hartebeest some fifty kilometres south of Metemma. Spoor indicated that they were present in small numbers in the general area of the Dinder River and its tributaries. Thus all that can be said at present

is that *tora* appears to be very thinly distributed over the country between the Taccaze and Balas Rivers as far east as the foothills of the Ethiopian plateau. This is an area of black clay plains with lava-strewn hills and numerous stony outcrops. Natural vegetation consists mainly of long grass (largely *Hyparrhenia*) beneath an open canopy of *Combretum*, *Terminalia*, *Boswellia* and other deciduous trees. There are large cotton estates in the vicinity of Setit Humera and Metemma, and throughout the area scattered settlements are supported by subsistence agriculture.

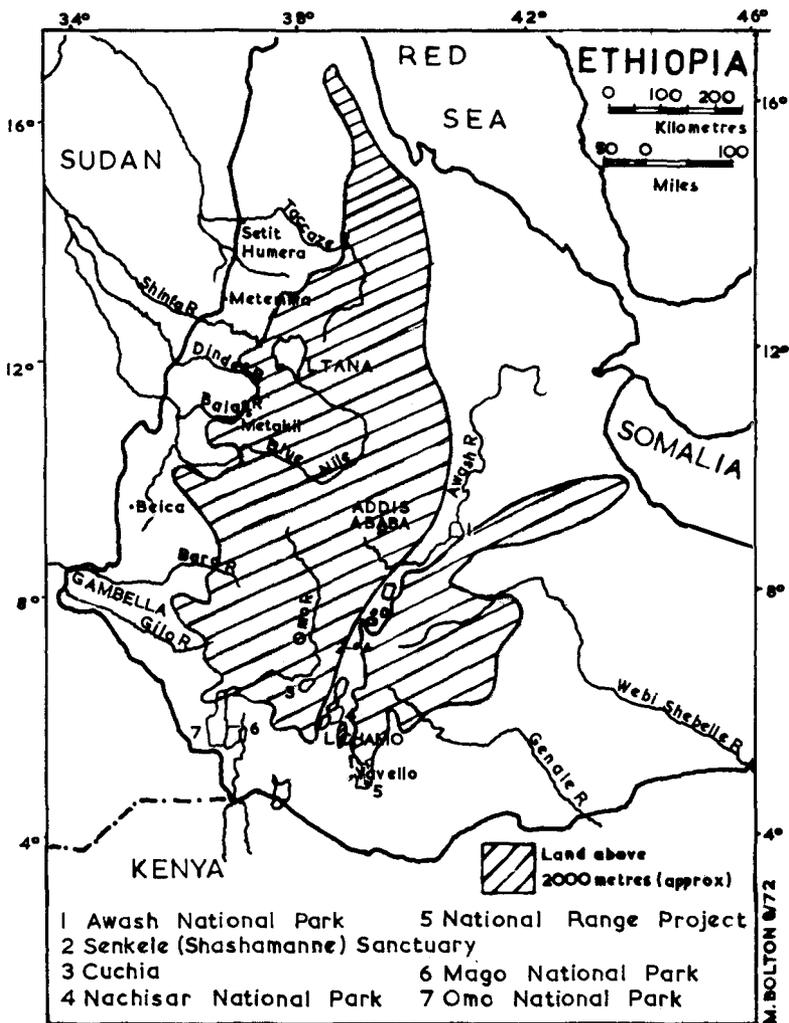
Lelwel Hartebeest

The largest and the most widespread of the Ethiopian hartebeests *lelwel* is fawn coloured, with horns that diverge far less than in *tora* so as to appear as a narrow V in front view (see page 104). In Ethiopia it is confined to the south-west, extending from the west bank of the lower Omo River, westwards (sporadically) along the Sudan border to Gambella and northwards beyond the Baro River; it is by no means abundant but occurs in small scattered herds. The range includes *Acacia* tree savanna with short grass west of the Omo, and open deciduous woodland with long grass in the Gambella area and further north.

The exact northern limit of *lelwel* has yet to be determined but hartebeests are rumoured to occur around Beica (9°20' N 34°32' E) and if this is so, they are more likely to be *lelwel* than anything else, but it is not inconceivable that they could be *tora* or an intergrade of the two races. On the east bank of the Omo River and extending into the Mago River valley, as far north as 5°50' N, Neumann's Hartebeest *A. b. neumanni* occurs in short grass, *Acacia* savanna and savanna woodland. This is generally considered to be an intergrade of *lelwel* and *swaynei* which is found further east. In general appearance *neumanni* is similar to *lelwel* but the horns are more divergent, presenting a wider V in front view. The body colour is fawn with a paler rump and there is no trace of the redness or the black limb markings which characterise *swaynei*. Neumann's may be smaller than *lelwel* though this is difficult to detect in the field; a mature bull shot in 1969 measured only 126 cm (49½ ins) at the shoulder. They generally appear to breed true, but in the Mago Valley a number of individuals were noted in which the horns were scarcely, if any, more divergent than those of *lelwel* which inhabit the west side of the Omo, and were indistinguishable in the field from *lelwel*. The Omo apparently presents a barrier to game movements since within Ethiopia, as far as is known, it marks the western limit of genenuk *Litocranius walleri* and Grévy's zebra *Equus grevyi*, and the eastern limit of eland *Taurotragus oryx*.

Swayne's Hartebeest

This is a distinctive type; horn shape varies but in general the horns are fully expanded and shaped like those of *tora*; the tips are usually, but not always, hooked backwards and they may or may not turn inwards. The general colour is chestnut, lighter below; the rump,



tail, hindlegs and lower half of the forelegs are fawn. The tail-tuft is black; a black stripe extends from the shoulder to just above the 'knee', and there is often a black patch on the inside of the hindlimb just above the hock. The darkest or most heavily-marked individuals, usually bulls, may also have black markings on the outside of the hindlimbs and a black smudge on the flanks. On the darkest individuals however, the ground colour can be such a dark purplish chestnut that the limb markings are obscured in the field. Facial markings are variable; there is sometimes a fawnish, sometimes a blackish blaze, with a lighter band beneath the eyes. Calves are fawn and in some cases at least, they do not acquire black limb markings until they are a year old. Once abundant in Somalia, Swayne's is now believed to be extinct outside Ethiopia.

Pure *swaynei* are found in at least four separate localities with a total known population of around 600–700:

Awash River Valley: very small numbers survive east of the Awash River in south-western Afar, an area of short grass plains (notably *Chrysopogon aucheri* var. *quinqueplumis*) with open acacia thornbush and extensive lava flows inhabited by nomadic pastoralists. Although I have not seen hartebeest in this locality, there are a number of recent reports from ground and air observations, and all agree in describing a very small number (six or fewer) of solitary animals and no calves.

Yavello, southern Ethiopia: the southern part of Sidamo province (Borana area) is chiefly *Acacia/Commiphora* thornbush country but there are some expanses of open tree savanna. The only hartebeest (and, incidentally, also Burchell's zebra *Equus burchelli*) in this part of Ethiopia appear to be concentrated on an area of grassland in the vicinity of Yavello (4°55' N 38°10' E.). In September 1971 I saw one group of three hartebeests (2 adult 1 immature) and could confirm that they were *swaynei*. A week later agricultural experts carrying out an air survey reported seeing fifteen adult males and two immatures. A range management project has been started in an attempt to demonstrate optimum utilisation of the pasture (largely *Chrysopogon*) over an area of about 2250 square kilometres (900 square miles) to the nomadic pastoralists; this is the greater part of the Yavello grassland area.

Shashamane Area: The largest known population of Swayne's hartebeest is on the heavily settled and cultivated plain known as Senkele about 270 kilometres (170 miles) south of Addis Ababa. In March 1972 I first counted nearly 200, but subsequent counts indicate that there are probably at least 500, occupying an area of about 200 square kilometres (80 sq miles) which is already a patchwork of cultivation, while, with mechanisation, the remaining grassland is being rapidly brought under the plough. The natural vegetation consists mainly of *Acacia/Combretum* savanna with short grass pasture. The particular part favoured by the hartebeests however is edaphically distinct and carries only a scattering of trees with taller grasses dominated by *Hyparrhenia*, *Pennisetum* and *Themeda*.

Thousands of cows are grazed in the Senkele area but the hartebeest appear to be in excellent condition, and of 244 individuals seen in May, 53 (21.7 per cent) were calves of four to five months.

Lake Chamo: the best-known population of Swayne's hartebeest occurs in an area of about 400 square kilometres (160 sq miles) immediately east of Lake Chamo in the Rift valley, about 130 kilometres (80 miles) south of the Shashamane herds. Known as Nachisar (white grass), this consists of black clay plains with extensive lava flows and boulder-strewn ridges. The grass is about 50 per cent *Chrysopogon aucheri* var. *quinqueplumis*. Other species include *Setaria trinervia*, *Lintonia nutans*, *Eragrostis* sp.

Heteropogon contortus, *Bothryochloa radicans*, *Chloris gayana* and *Themeda triandra*. No rainfall figures are available but during the last two years the grass has been found to be lush and green during April, May and June and again during October, November and December. Some rain certainly falls in the two intervening dry seasons.

In 1967 John Blower, then Senior Game Warden in Ethiopia, estimated the total Nachisar population at not more than 130; they now number about 100; five counts carried out at intervals between April 1971 and February 1972 have yielded quite consistent results, with totals ranging from 93 to 104, though it has been impossible to obtain precise data since fieldwork has had to be conducted on foot, and the problem of effectively combing hundreds of square kilometres in this way are considerable. There are no seasonal movements away from the Nachisar Plains, and, as at Shashamanne, rutting begins in April and the calves are dropped in December–January.

In April 1971 the population structure was as follows:

Adult males	Adult females	Immatures 15–16 months	Calves 3–4 months	Total
12	72	6	13	103

The tendency for adult bulls to be solitary would to some extent account for their low representation in the counts. The sex of all adult animals seen was accurately determined in three of the five counts carried out, and on each occasion the ratio of males to females fell between 1:5 and 1:6. During the calving period especially, the herds were difficult to approach on foot and sexes could not be accurately distinguished. At the end of December 1971 fourteen new calves were counted and in the following mid-February the population, as far as could be determined was:

Adults	Immatures 13–14 months	Calves 1–2 months	Total
68	13	23	104

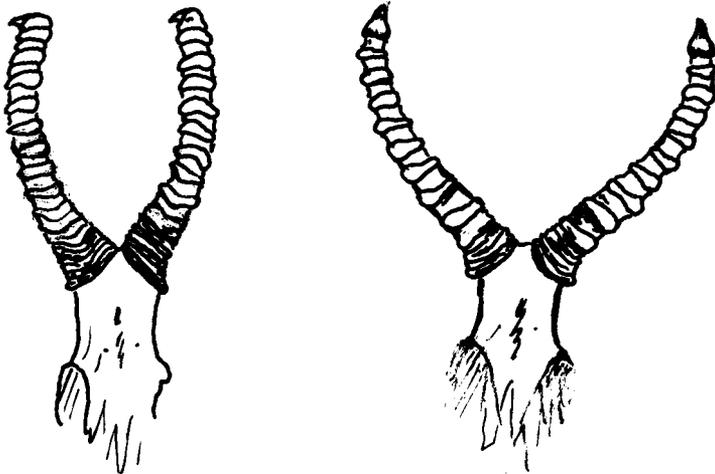
The percentage of very young calves in the population was thus scarcely higher (22.1 per cent) than the percentage of 4–5 month-olds in the Shashamanne herds. This low number of calves has yet to be explained. One hartebeest herd occupying a home range conveniently separate from the main plains has been easy to observe. For the past three years at least, the herd has comprised the same adult bull and never fewer than ten adult females; in April 1971 the bull was seen to drive off a rival male and retain the territory and harem. Yet in April 1970 there were only three calves in this herd and again in 1971 only three young calves were present; none were seen in December 1971 and only four had appeared by February 1972.

Predators at Nachisar are not common, but hartebeests are sometimes shot for meat by poachers.

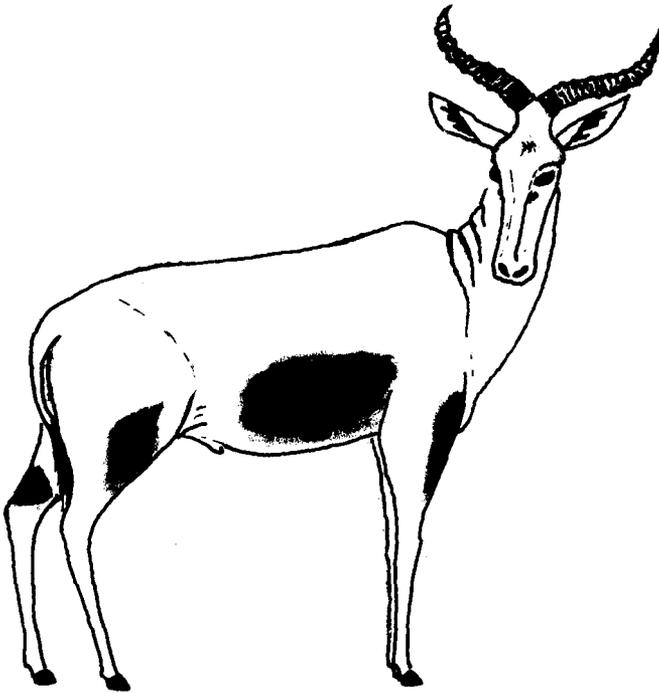
The Cuchia Intergrades

About 80 kilometres (50 miles) north-west of Nachisar, in a district called Cuchia, several hundred hartebeest inhabit a valley of some 200–300 square kilometres (80–120 sq miles). The country is undulating *Combretum/Terminalia* savanna clothed with a long grass (mainly *Hyparrhenia*). There are no human settlements on the valley floor but cattle are brought down from the surrounding hills to graze. A dry weather motor track runs through the valley. Of more than 70 hartebeest observed here, only two (both bulls) were seen to have the black markings on the forelegs characteristic of *swaynei*, and none to have black on the hindlimbs or on the flanks. Coat colour ranged from reddish fawn to light chestnut with a pale fawn rump; the horns were slightly less divergent than is usual in *swaynei*.

It seems reasonable to assume that at one time hartebeests were more or less continuously distributed from the Sudan, across Ethiopia to Somalia, and that they ranged in appearance from typical *lelwei* in the west to typical *swaynei* in the east. Settlement, cultivation, shooting and rinderpest have eliminated this cline of hartebeests except in a few pockets. The type known as *neumanni* is close geographically and thus close in appearance to *lelwei* whereas the Cuchia herds are closer in both senses to *swaynei*. The richer coloration, black forelimb markings and expanded horns appear at Cuchia and are established as a constant feature at Nachisar and Shashamanne. Descriptions of Swayne's hartebeest in Somalia prior to their extermination there indicate that the Somali populations were normally like the darkest and more heavily-marked individuals



Left: front view of lelwei hartebeest horns. Right: front view of Cuchia hartebeest horns, showing angle of divergence intermediate between that of lelwei's and Swayne's



SWAYNE'S HARTEBEEB, showing characteristic horn formation and black coat-markings

from Nachisar and Shashamanne, so presumably the trend for richer coloration and more extensive black limb markings continued east of the Ethiopian Rift Valley.

It is quite possible that other groups of hartebeest will be discovered, especially in and around the Rift Valley. It is also known that there are areas where they are said to have occurred within the last few years but none can now be found. Poaching and, where rainfall permits, displacement by agriculture, have helped to produce the present isolated concentration of Swayne's hartebeest near Shashamanne.

Conservation

Under the Wildlife Conservation Regulations 1972, Swayne's and tora hartebeest are specially protected and only lelwels may be shot on an ordinary hunting licence. However, poaching is rife and for a number of reasons will not easily be brought under control; specially conserved areas are therefore vitally important for many species. The following proposed or existing conservation measures would give the hartebeest protection.

LELWEL HARTEBEEST

Omo National Park. This proposed park will occupy an area of approximately 3450 square kilometres (1380 sq miles) containing about 30 species of larger mammals; reports of hartebeest vary from 'fairly numerous' to 'absent'—they appear to move seasonally in and out, and possibly across the Sudan border. The park is inadequately staffed with 16 game guards under an acting game warden; the shortage of staff and lack of motorable tracks mean that it cannot be effectively patrolled and poaching is said to be serious.

Mago Valley. The proposal to develop the valley of the Mago River, east of the Omo (5°30' N 36°15' E) as a national park, ultimately to be annexed to the park west of the Omo River, would involve an area of some 1500 square kilometres (600 sq miles). It would include some animals not found in the western park, and also half the known range of Neumann's hartebeest; but no conservation measures have yet been introduced. There are good reasons for believing that the game animals are resident in or around the Mago Valley throughout the year.

Gambella Game Reserve. The declaration of a Game Reserve as proposed between the Baro and Gilo Rivers would, if acted upon, affect a large part of the *Leiwels'* range. So far no special conservation measures have been taken in Gambella.

SWAYNE'S HARTEBEEST

Nachisar (Lake Chamo) National Park. The Wildlife Conservation Organisation proposes to establish a national park in Nachisar, an area eminently suitable for development as a tourist attraction—vastly more so than any other locality where Swayne's hartebeest is known to occur. Moreover, the hartebeest are resident on the plains throughout the year, and at least 18 species of larger mammals are now known to be there. A survey report in 1970 recommended boundaries which, in the main, follow physical or ecological barriers, and enclose about 700 square kilometres (280 sq miles) including mountain foothills, freshwater lake shores, riverine vegetation, dense thicket and open grassland. The land shows little agricultural potential and the amount of cultivation is negligible.

It is unlikely that Swayne's hartebeest will ever be found to occur in a place more suitable for a national park and it is much to be hoped that Nachisar will soon be legally established. It is recommended that an ecologist be assigned to prepare a soundly-based management programme, with particular attention to building up the hartebeest population. A resident researcher would be able to examine any sick or dead animals and send parasites, blood smears, etc for laboratory examination. Moreover intensive observations during December-January are vitally important to reveal how many calves are actually being produced, and in April-May should yield useful information on rutting behaviour. All this will be enormously facilitated when it becomes possible to get a Land Rover into the

park area. A Bailey bridge has been built across the Collofu River, previously a barrier between Nachisar and the town of Arba Minch, but the access road beyond the bridge is not yet complete. No conservation measures are in force there yet.

Some improvement in game stocks can be expected to follow automatically upon the removal of cattle and control of poaching, for much of the grassland (though not all) is degraded by cattle; the extent of the poaching is not known. Only the zebra population appears to be actually increasing (at present about 500 head) and it seems likely that selective poaching for meat is at least a factor in limiting the stocks of other animals. To improve the tourist attraction, the introduction of other species should be considered; both *Oryx beisa*, and ostrich are said to have occurred here at one time. *Oryx* should do well at Nachisar, for the predominant grass, *Chrysopogon aucheri*, is one favoured by them in other parts of their range, and ostrich would surely do no harm.

Shashamane. Recommendations for the protection of the Shashamane hartebeests include the declaration of a sanctuary of about 70 square kilometres (28 sq miles) in the central part of their known range, where all cultivation and stock grazing would be excluded, for clearly, unless the present agricultural trends can be at least arrested, the hartebeest will not survive much longer. Shooting would be prohibited within 10 kilometres (6 miles) of the sanctuary, and no visitor facilities provided other than the access roads necessary for effective patrolling.

Shashamane is about 2000 m. (more than 6000 ft) above sea level and it is quite possible that hartebeest there are totally independent of drinking water, but until they have been observed throughout the dry season this cannot be said with certainty and a waterhole may have to be provided. Every effort will have to be made to meet all the animals' requirements within the central sanctuary, and detailed observations during the dry seasons will be necessary. In the present wet season at least, this is the area which they naturally favour.

The Shashamane hartebeests constitute the best known population of this race—the biggest and the healthiest in terms of apparent reproductive success and including some of the best-marked specimens of *swaynei* I have ever seen. The herds should form an excellent source of animals for future translocations, for it is suggested that when the Awash National Park can be administered so as to meet UN criteria, Swayne's hartebeest should be reintroduced; their occurrence there in the past is well documented. Similarly, unless early research indicates otherwise, it is recommended that some selected well-marked specimens be transferred to Nachisar when that park has been made ready to receive them. There is relatively little risk of new introductions straying away from the Nachisar plains. The captures will, of course, have to be carried out with the utmost care and skill; any intolerable disturbance would scatter the herds into the adjacent

cultivation whereas the aim is to concentrate them in the sanctuary. At present there are only three game guards under the supervision of a local assistant warden, but numbers are to be increased.

Yavello Range Management Project. In the hope that it is not already too late to save the heavily poached Yavello hartebeests, it has been recommended that game guards be stationed at the range management project as an anti-poaching force. The project manager has readily agreed to co-operate with an anti-poaching team, and has also offered to allow his own men to act in the capacity of honorary game guards if they are provided with arms, uniforms and the necessary documents. Graded access roads and transport already exist.

Cuchia. In view of the relative difficulty of access to Cuchia, and the enormous pressure upon the small resources of the Wildlife Conservation Organisation, it is not recommended that permanent staff be stationed there at present. The local Governor has been made aware that the hartebeest are unique, and mobile anti-poaching teams, once set up, should give the Cuchia area special attention. For the purpose of hunting licences, the Cuchia hartebeest are to be classed as *swaynei*. It would be very difficult, sometimes impossible, to tell whether a trophy was taken from a Cuchia specimen or a 'pure' Swayne's hartebeest, and hunting at Cuchia should be prohibited.

TORA HARTEBEEST

It is difficult to suggest specific conservation measures for the Tora hartebeest. Anti-poaching patrols once established in the north-west, will need the co-operation of local authorities and headmen if they are to be effective in such a large area of trackless country. For the time being all that can be done is to try to get this co-operation and improve the people's attitude towards wildlife.

The report that hartebeest are to be found in the Metakil area will be investigated at the first opportunity (a grant has already been provided by the FPS to cover the cost of fuel), and hopefully, this will lead to something more concrete.

References

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The World's Vanishing Birds, by Cyril Littlewood, Director of the Wildlife Youth Service, and Denys Ovenden, one of our best wildlife artists (Foulsham, £1.25) is a most attractive production, describing and illustrating with beautiful colour paintings and maps some 60 of the world's rarest birds. There is considerable bias towards the most striking.