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Tragelaphus eurycerus. By Katherine Ralls

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Tragelaphus eurycerus (Ogilby, 1837)

Bongo

Antilope eurycerus Ogilby, 1837:120. (not eurycerus as in Lydecker and Blaine, 1914). Type locality, West Africa.

Tragelaphus eurycerus Lesson, 1842:181, first use of name combination.

Tragelaphus albo-virgatus du Chaillu, 1861a:299. Type locality Ashankoko Mountains (Gabon).


The large gap between the western and eastern ranges of T. eurycerus and the isolation of Kenyan populations suggests that there may be several subspecies. However, the nominal subspecies has been based on data and characters that have not been shown, so far, to be characters of populations rather than individuals. A critical assessment of the named forms will not be possible until a thorough examination of the available specimens is made (Hallet, 1963; Ansell, 1971). The names available for subspecies are as follows:

Antilope eurycerus Ogilby, 1837:120, see above.

Tragelaphus albo-virgatus du Chaillu, 1861a:299, see above.

Boocercus eurycerus Isiaci Thomas, 1902:309. Type locality Elomia Ravine, British East Africa (Kenya).

Boocercus eurycerus katanganus Rothschild, 1927:271. Type locality Katanga Province, Djaliga, "Kabongo Territory, Lualami District" (Kabongo Territory, Lomami District, according to Schouteden, 1946), Belgian Congo (Zaire).

Boocercus eurycerus cooperi Rothchild, 1928:306. Type locality Haut Uele District, Belgian Congo (Zaire).

Some question exists about the type localities of Tragelaphus albo-virgatus and Boocercus eurycerus katanganus—see remarks under "Distribution."

DIAGNOSIS. The bongo differs from all other species in the genus Tragelaphus except the eland, T. oryx, by the presence of horns in the female. Most authorities indicate that only the bongo and the eland have cowlike tails. This is not a wholly reliable character, however, as the tail of the bongo changes in appearance with age. The tail of a young bongo resembles that of other members of the genus; it is flattened, with a white margin and a black tip (shown in Root, 1959). As the animal matures, this tip develops into a pronounced black tuft and the tail acquires a more bovine appearance (shown in Van den Bergh, 1961) as in the eland. However, even females that have borne young may retain a fringe of longer white hairs on each side of the tail (personal observation).

The absence of inguinal glands has been said to separate the bongo and eland from other species of the genus but the greater kudu, T. strepsiceros (Ansell, 1971), and lowland nyala, T. angasi (Tello and Van Gelder, 1975), also lack them.

The bongo is not likely to be confused with the eland, which is much larger, with relatively shorter horns, and lives in grassland rather than in forests. The eland has a dewlap and the bongo does not.

GENERAL CHARACTERS. The bongo is the largest of the forest-dwelling antelopes (figure 1). Hallet (1963) gave the following approximate weights and measurements: weight 150 to 220 kg, total length 215 to 315 cm, tail 45 to 65 cm, shoulder height 110 to 125 cm. Males are larger than females. Ears are very large and broad. A short erectile mane runs from shoulders to rump. The muzzle is naked. No facial, pedal, or inguinal glands are present (Pocock, 1944). There are four inguinal mammae. Both sexes have large, dark, blackish-brown horns, which form an open spiral, making one complete twist. White to yellowish tips develop with age. Average length of horns in mature males is about 80 cm; record 100.3 cm (Best, Edmond-Blanc, and Raw, 1969). Horns of females tend to be more parallel than those of males, with tips closer together (shown in Lydecker and Blaine, 1914, and Mellon, 1975), and sometimes asymmetrical or deformed. Pelage is bright chestnut red, darkening in males with age and eventually becoming blackish, especially on the head and forequarters. However, even black-faced males retain broad brown "spectacle" marks around the eyes. White markings, the same in both sexes, include a conspicuous white chevron between the eyes, two large white spots on each side of the head, a white to yellowish crescent on chest, and a variable number of narrow vertical stripes on the shoulders, flanks, and hindquarters, usually continuing into mane. The numbers of stripes on the two sides are rarely equal (shown in Leister, 1933, and Van den Bergh, 1961), usually ranging from 10 to 15 per side. Tragelaphus e. isiaci from Kenya supposedly has fewer stripes than other putative subspecies (Lydecker and Blaine, 1914); however, a male from Kenya now at the National Zoological Park, Washington, D. C, has 16 stripes on one side (figure 1). Legs have a striking pattern of black and white markings.

The skull of a male bongo from Kenya is shown in figure 2.

DISTRIBUTION. The bongo is discontinuously distributed in western and eastern parts of the Lowland Forest Zone of Africa, and in several isolated populations in the montane forests of East Africa (figure 3). Ansell (1971), on whom the following account is based, discussed many doubtful and unconfirmed records, and several areas in which the range extends slightly beyond the Lowland Forest Zone.

From Sierra Leone, and probably the adjacent forested part of Guinea near the border, it ranges east to Togo. The records of Baudenon (1952) and of Raynaud and Georgy (1969) suggest that bongo may occur in the Dahomey Gap in forest outliers between about 7 and 10 degrees north latitude. It is absent from the area east of the Dahomey Gap to the Sanaga River. Hapgood (1973) gave references on its distribution in West Africa. South of the Sanaga it ranges virtually throughout the Lowland Forest.

In East Africa, it is on Mt. Kenya, and in the Aberdare and Mau forests of Kenya. It no longer occurs in the Cherengani Hills and Chepulungu Forest (Anon., 1977). In view of the close resemblance between the distribution of the bongo and that of the giant forest hog, Hylochoerus meinertzhageni, it seems possible that the bongo may occur, or may once have occurred, in the montane forest-dwelling antelopes (figure 1). Haltenorth and Elaine, 1914, and Mellon, 1975).
FOSSIL RECORD. Despite early claims to the contrary, fossil Tragelaphini have been found only in Africa (Gentry, 1970). *Tragelaphus nakae*, from the Plio-Pleistocene of Omo, Ethiopia, shares some characters with the bongo, and indeed was originally listed as *Tragelaphus (Boocercus?)* nakae by Arambourg (1941). However, it differs in a number of other characters, particularly the conformation of the back of the cranium, and seems to represent a lineage of *Tragelaphus* rather remote from *T. (prob-ochetus)* (Leakey, 1965; Gentry, 1976). No other close relatives or likely ancestors for the bongo are known, which is not surprising because forest-living mammals are not common in the fossil record.

FORM AND FUNCTION. Detailed descriptions of rhi-nirium, facial vibrissae, and ears and feet were given in Pocock (1940). For description of skull and comparison to related species, see Lenz (1952), who gave a basal length of 399 mm for a male and 344 for a female. Thomas (1902) gave some cranial measurements of East African specimens.

Lengths and diameters of limb bones were given in McMahon (1975). The bongo is relatively short-legged compared to other tragelaphines. The noticeably short metacarpal, and thick radius and metapodials, are as expected in a forest species (Gentry, 1974; Oboussier and Ernst, 1977).

Hofmann and Scholz (1968) distinguished three major types of ruminant body shapes, functionally related to habitat and flight behavior. Bongos have a “Type C” body shape, characteristic of forest ruminants—a convex back with its high point in the lumbar region and with head frequently lowered or stretched forward. According to Roosevelt and Heller (1914:454), bongos can move rapidly through the forest in this position, “getting under low limbs and through narrow openings in a way astounding for so big an animal.”

ONTOGENY AND REPRODUCTION. Reproductive data from the first group of bongos to breed in captivity are given in Ralls et al., 1978, on which the following account is based. Females come into estrus at intervals of approximately 21 or 22 days and remain in estrus for about three days. The shortest interval observed between parturition and copulation was 23 days. Although Finn (1923) claimed that bongos usually have multiple births, this seems unlikely in such a large bovid. All 11 captive births have been single calves. In two cases, gestation periods were 282 and 285 days. Due to an arithmetical error the first of these was originally reported as 294 to 296 days (Xanten, 1972).

Details of parturition in captivity and measurements of calves at birth are given in Ralls et al., (1978). The mean weight of three calves at birth was 19.5 kg. The neonatal calf has the white markings of the adult although its background pelage is somewhat paler than that of adult females (Roosevelt and Heller, 1914; Dollman, 1935). Two captive-born females first conceived at 27 months and 31 months of age. One animal, a female, lived in captivity for 18 years, 2 months, and 17 days, and was 19 years, 4 months, and approximately 23 days old at death (Crandall 1964).

ECOLOGY. In Kenya, the bongo occurs in montane high forest and bamboo forest, usually between 2100 and 3000 m (Ansell, 1971). During a brief study on Mt. Kenya in the dry season, Edmund-Blanc (1960) found bongos most often at lower elevations in the bamboo forest. The bamboo served primarily as a refuge, bongos emerging to feed and remaining outside of the bamboo forest and bamboo forest, usually between 2100 and 3000 m (Ansell et al., 1978, on which the following account is based. Females come into estrus at intervals of approximately 21 or 22 days and remain in estrus for about three days. The shortest interval observed between parturition and copulation was 23 days. Although Finn (1923) claimed that bongos usually have multiple births, this seems unlikely in such a large bovid. All 11 captive births have been single calves. In two cases, gestation periods were 282 and 285 days. Due to an arithmetical error the first of these was originally reported as 294 to 296 days (Xanten, 1972).

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In Kenya, the bongo occurs in montane high forest and bamboo forest, usually between 2100 and 3000 m (Ansell, 1971). During a brief study on Mt. Kenya in the dry season, Edmund-Blanc (1960) found bongos most often at lower elevations in the bamboo forest. The bamboo served primarily as a refuge, bongos emerging to feed and remaining outside of the bamboo forest around the year. In the Ivory Coast, it prefers to rest in particularly dense patches of vegetation, often consisting largely of *Marantochloa purpurea*, *Mimula solmsii*, both herbs belonging to the Acanthaceae (Glover, Stewart, and Gwynne, 1966). *Mimula solmsii* flowers mas-
sively at intervals of approximately seven years. According to the
Wandorobo, the vines are quite toxic the second year after flow-
ering and cause mortality among bongo (Simon, 1963).

The following observations in the Ivory Coast on the plants
selected by a young female bongo, that was taken on daily feeding
walks near the place of her capture, were supplied by Etienne
Gout. She ate the leaves of young saplings (less than two meters
tall) of Musanga cecropioides and Ceiba pentandra, and both
leaves and branches of Trema orientalis. Jeffrey (1974) also re-
ported bongo browsing on M. cecropioides and T. guineensis (=
T. orientalis.) The captive also ate leaves of Ureia repens and
Ampeolussus leonensis, and young leaves and buds of Costus al-
bus. These are all typical plants of the secondary forest, where
bongos often feed in this region. She also ate the tips of a grass,
Paspalum conjugatum, found in small clearings. West African
bongos visit deserted farmlands for cassava and sweet potato
leaves and also raid cocoyam farms for tender young leaves
(Cansdale, 1951). Bongos sometimes use their horns to attain food

Bongos eat salty earth and visit salt licks (Lydekker, 1926;
Ionides, 1946; "Tisti," 1964; Stanley-Price, 1969). They are fond
of charred and rotten wood (Lydekker, 1926; "Tisti," 1964; per-
sonal observation). The feces of the bongo more closely resemble
the loose form of the buffalo than the pellets of other tragelaph-

Although bongos are considered difficult to shoot (Mellon,
1975), they are rather easily hunted with dogs ("Tisti," 1964;
Stanley-Price, 1969). The combination of habitat destruction,
poaching, and illegal trapping, is responsible for the recent de-
cline of the population in Kenya (Stanley-Price, 1969; Anon.,
1977). Bongos can be captured alive by setting camouflaged pit
traps across frequently used trails (Reed and Buechner, 1976).

BEHAVIOR. Little is known of the behavior of bongos in
the wild, because of the density of their natural habitat and their
retiring nature. Small groups and solitary individuals, often old
males, have been observed (Ionides, 1946; Stanley-Price, 1969;
Verschuren, 1975). The behavior of a captive group has been
observed by Ralls et al. (1978) and the following description is
based on their account.

The sexual behavior is similar to that of other tragelaphines
as described by Walther (1964). The male follows the estrous
female, neck extended in a "low stretch" posture, while emitting
repeated soft vocalizations. He often rubs the side of his head
and neck on her side, and presses his head on her rump as a test
of receptivity to mounting. Like other tragelaphines, the bongo
was never seen to use a kick of the front leg ("laufschlag") for this
purpose. He assumed a “frozen” posture, facing away from the
female, just before mounting.

The behavior of estrous females varied. Sometimes the only
marked contrast to their usual behavior was that they tolerated
the male’s close approach, contact, and mounting. At other times
they actively initiated sexual contact, approaching the male and
licking his genitals.

GENETICS. The male bongo has an unusual diploid num-
ber of 33 chromosomes, because the Y chromosome is translo-
cated to an autosome and is late replicating. Presumably the
diploid number of the female is 34. The X chromosome is an
unusually large submetacentric. The fundamental number of
chromosomal arms is 60 (Wurster, 1972).

Male bongo and female sitatunga, Tragelaphus spekei, have
produced fertile hybrids in captivity (Tijssens, 1968; Koulischer
et al., 1973).

REMARKS. The bongo resembles the eland, T. oryx, rather
than other members of the genus Tragelaphus, in the presence
of horns in females, and the structure of the tail. However, it also
differs from the eland in many characters (Pocock, 1944). I follow
Ansell (1971) and Van Gelder (1977) in including the bongo in
Tragelaphus. Others have placed the bongo and the eland in a
separate genus, Taurotragus (Simpson, 1945) or given the bongo
its own monotypic genus, Boocercus, Euryceros being preoccu-
pied (Thomas, 1902).

Tragelaphus is from the Greek words tragos for "goat" and
elaphos for "deer." The specific name eurycerus is from the