MISCELLANEA ZOOLOGICA HUNGARICA
Tomus 11. 1997 p. 101–105

An additional skull of the Bali tiger, *Panthera tigris balica* (Schwarz) in the Hungarian Natural History Museum

by
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(Received November 20, 1996)

Abstract: A Bali tiger skull from Tanjung or Gunung Gondol, northwestern Bali, Indonesia, in the Department of Zoology, Hungarian Natural History Museum (HNHM 4250.17) is described in detail. It is believed to be the ninth specimen of this now extinct subspecies preserved in a museum collection. Circumstances of its killing are also given on the basis of the collector's account.
Key words: Carnivora, Felidae, *Panthera tigris balica*

Mazák *et al.* (1978) reviewed all material (eight skulls, five skins and some limb bones) of the Bali tiger, *Panthera tigris balica* (Schwarz, 1912) deposited in museum collections. Additionally, the Department of Zoology of the Hungarian Natural History Museum possesses a skull (HNHM 4250.17) evidently unknown to the scientific community. According to the museum records, the specimen was shot by Oszkár Vojnich at "T. Gondoel", on the northern coast of Bali, Indonesia in 1911. At that time, the hunting of "vermin", such as pigs and tigers was not regulated on the island in any way (Kirk 1994). The circumstances of the killing of the HNHM specimen were described in detail in an account (Vojnich 1913) that is one of the very few authentic narrations of a Bali tiger hunt, and is partially reproduced here in our translation. Brackets indicate sections added or deleted by us. The same chapter from Vojnich's book appeared in the periodical Vadász-Lap in 1911 (Fig. 1).

"In the western part of Bali Island, along the northern shore, in the mountains of Goendoel, we discovered tiger footprints. Munaut set up two traps along the trails in use (i.e. the tiger, like other big game, readily employs the trails of humans). Goats served as bait. On November 2nd, while collecting twigs to be used for constructing a fence around the traps, the carcass of a freshly killed kidang (a roe-like animal) was encountered by the people. The trap was set in front of the kidang, in a thicket. Munaut was almost certain that the tiger would be caught in another day. I was much less convinced, as the many human tracks could have warned the tiger. But, no – it came to feed on the slightly smelly joint, and the trap caught one of its forelegs, just below the wrist.

"When we arrived at the site on the morning of [November] 3rd after about an hour's walk, and took a few steps from the coast into the thicket, we immediately heard the tiger's roar. Then we continued along with Munaut and a sharp-eyed native hunter towards the trap, or rather approached eslowly and carefully'. When we came near it, and I could not figure out where the tiger that I intended to shoot in the head actually was..., I definitely enjoyed the feeling of being so close to danger [...], but as soon as I came to see the beautiful animal wriggling in impotent rage with a huge piece of iron in its leg, I felt sorry for it.

Fig. 1. Oszkár Vojnich and local servants with tiger at the foot of Gunung Gondol, November 3rd, 1911 (reproduced from Vojnich [1913])

"I did not have a good shot, but at the coaxing of the native hunter that I shoot, I aimed at the head of the roaring animal. The tiger lowered its head slightly at the moment of the shot, and the right barrel did not point to its forehead, but rather lower, and the bullet destroyed the nasal bone. The tiger roared and jumped a few steps aside. Because of the dense vegetation, I had to clear the place, and shot the tiger in the forehead with the left barrel from about 15 meters. It collapsed immediately like an apoplectic.

"As I later found out, three buck-shots penetrated the frontal bone, a fourth destroyed the eye, and all four reached the brain. Does one need a better shot than this? [...]

"My male tiger is thus a perfect example of the Dutch [East] Indian species. Its tail is shorter than that of the Indian [form]."

According to Vojnich (1913), an identical method of immobilizing and killing was customarily employed by the Surabayan rifle-maker E. Munaut, who had already brought down over 20 Bali tigers at that time. This hunter caught his tigers with steel traps weighing 16–18 kg, and subsequently gunned the handicapped animals in the head from a distance of 15–20 m.

Although shot in 1911, our specimen was not actually catalogued until 1947. Therefore, the holotype might have reached the Senckenberg Museum considerably earlier (cf. Schwarz 1913).

In accordance with what was written by Vojnich (1913), HNHM 4250.17 is damaged to a great extent (Fig. 2). Portions of the nasals are missing, the right being somewhat more intact. Their overall shape — as much as it can be reconstructed — agrees with that in *Panthera tigris sondaica* (Temminck, 1845), as illustrated by Hemmer (1969). Whereas *balica* had long been accepted as a bona subspecies (e.g. Pocock 1929, Sody 1932, Brongersma 1935), the similarity in the shape of the nasals caused Hemmer (1969) to question its validity, and to synonymize it with *sondaica* — a view generally not adopted by subsequent workers. The left frontal is also considerably damaged: three holes enter the skull, and one large, irregularly shaped cavity opens into the orbital fossa. All canines have been removed — probably by the hunter himself as a trophy —, and also one lower and four upper incisors are missing. The second upper premolars are greatly reduced in size, which is a characteristic feature of the subspecies *balica* (Mazák *et al.* 1978).

Vojnich (1913) provided the following measurements for the Gondol tiger: total length, 245 cm; body length, 174 cm; tail length, 71.5 cm; height at shoulder, 90 cm; girth around the foreleg, 37 cm; girth around the head in front of the ears, 69 cm. Our measurements of the skull are as follows (Fig. 3; lower case characters in parentheses correspond with those shown in the illustration): maximum length (a), 312 mm; condylobasal length (b), 279 mm; basal length (c), 258 mm; rostral width (d), 79 mm; interorbital width (e), 66 mm; postorbital width (f), 59 mm; bizygomatic width (g), 218 mm; mastoidal width (h), 117.5 mm; supraoccipital width (i), 55 mm; maximum length of nasals (j), 111 mm; mandible length (k), 210 mm; length of Pm^4 (l), 34.5 mm/35 mm; length of M^1 (m), 25.5 mm/26 mm; alveolar length C–Pm^4 (n), 94 mm; alveolar length C–M^1 (o), 112 mm. Apparently, HNHM 4250.17 is the largest Bali tiger cranium available, which can easily be explained by the fact that most (= six) other known skulls are of females. It was long believed that *balica* is the smallest of all tiger subspecies (e.g. Mazák 1976), and Mazák *et al.* (1978) even suggested that inaccurate measuring of a skin obtained in the vicinity of Sumbar Kima by its original collector, now in the Museum Zoologicum Bogoriense (MZB 6834) was to blame for the inflated head-and-body length (1770 mm) calculated by these authors. Considering the size of the skull, and the total length recorded by Vojnich (1913) for the Gondol tiger, however, we have surprisingly matching data. Crania of *Panthera tigris sondaica* in the Leiden Nationaal Natuurhistorisch Museum (formerly Rijksmuseum van Natuurlijke Historie) measured by Brongersma (1935) range from 252.5 to 284.0 mm condylobasal, and 282.5 to 321.0 mm maximum length (sexes not distinguished), whereas those of two male *P. t. balica* in the Natural History Museum (formerly British Museum of Natural History), London (cf. Mazák *et al.* 1978), and the one described herein range from 266.5 to 279.0 mm condylobasal, and 295.0 to 312.0 mm maximum length.

Tanjung (= Bay) or Gunung (= Mount) Gondol is a new locality record (cf. Brink 1980), well within the presumed former distribution of *Panthera tigris balica* in western Bali, at approximately 60 km airline East of Pura Pulaki (cited by Mazák [1976]).

Acknowledgements

We are indebted to Gábor Csorba for allowing us to examine and describe the Bali tiger skull under his care. He and György Topál read the manuscript, Péter Ujhelyi helped with measurements, the late Hajnalka Mátrai prepared the line drawing, Qemal Bistrica improved the English text considerably, and Lang Xing set fire. Thank you to all.

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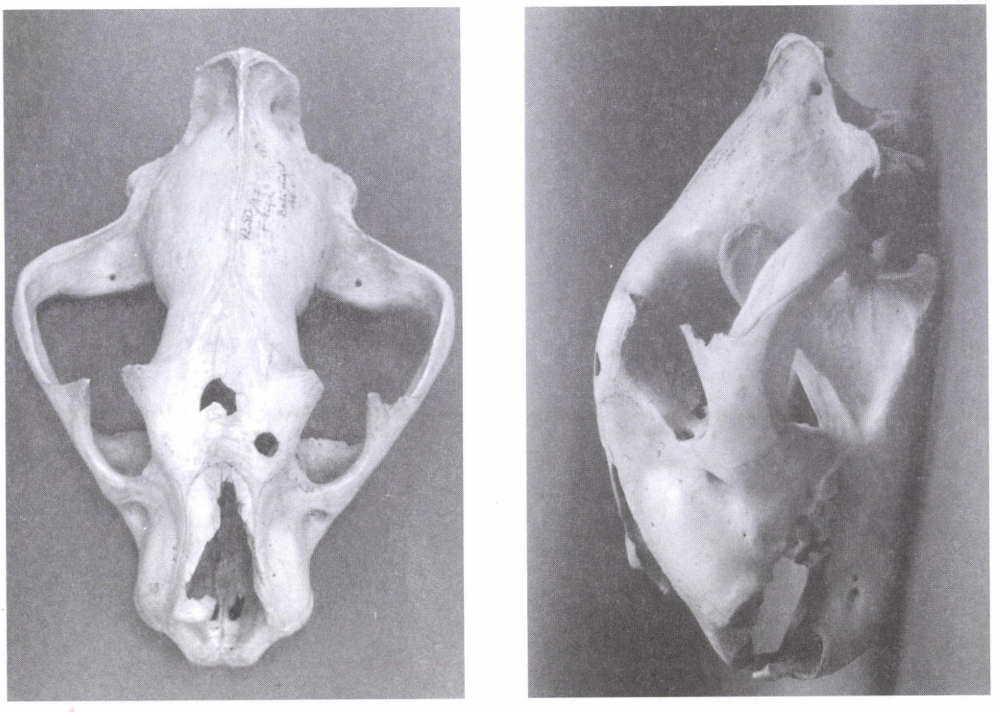

Fig. 2. Bali tiger skull and lower jaw (HNHM 4250.17) in dorsal and lateral aspects

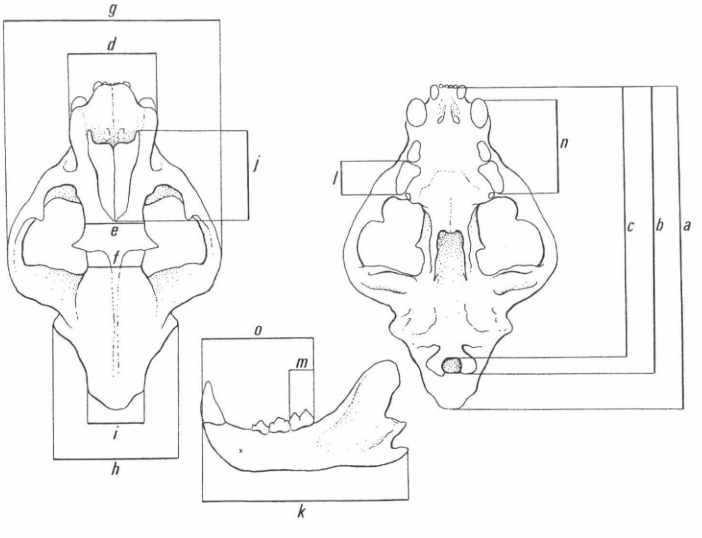

Fig. 3. Schematic views of a tiger skull showing limits of cranial measurements taken by us (drawing by † H. Mátrai)