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6. PERISSODACTYLA, PROBOSCIDEA, HYRACOIDEA, LAGOMORPHA, TUBULIDENTATA, SIRENIA AND CETACEA

(PUBBLICAZIONI DEL CENTRO DI STUDIO
PER LA FAUNISTICA ED ECOLOGIA TROPICALI DEL C.N.R. CCLXXXV)

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B. FAMILY RHINOCEROTIDAE

1. *Diceros bicornis* (Linnaeus, 1758)

Rhinoceros bicornis LINNAEUS, 1758, Syst. Nat., ed. 10, 1: 56. «India», but Cape of Good Hope, South Africa elected by THOMAS (1911)

Rhinoceros kei-loa A. SMITH, 1834, Rept. Exped. for Exploring Central Africa from Cape of Good Hope: 44. North and South of Kurrichane (= Zeerust), South Africa

Rhinoceros cucullatus WAGNER, 1835, Schreiber's Säugethiere, Suppl. 6: 17 pl. 17F. No locality. Invalid (HOLLISTER, 1924; ZUKOWSKY, 1965).

Rhinoceros bicornis var. *A. R. brucei* LESSON, 1842, Nouv. Tabl. Regne Anim. Mamm.: 159. Tscherkin, Ethiopia. Based on BLAINVILLE's «Rhinoceros de Bruce», which was based on BRUCE (1790, Vol. 5, p. 85, pl. 25).

Rhinoceros bicornis somaliensis POTOCKI, 1897, Notatki Myśliwskie z Afryki: 82. Somaliland, and restricted to Bulhar, N Somalia by HOPWOOD (1939).

Diceros bicornis palustris BENZON, 1947, Field 189: 529. Near Aweng, N of Lol River, Bahr el Ghazal, Sudan.

Diceros bicornis michaeli ZUKOWSKY, 1965, Zool. Gart., Lpz. (N.F.) 30 (3-4): 115. Between Engaruka and Serengeti, Tanzania.

Diceros bicornis rendilis ZUKOWSKY, 1965, Zool. Gart., Lpz. (N.F.) 30 (3-4): 122. Northern Guaso Nyiro, Kenya.

Diceros bicornis ladoensis ZUKOWSKY, 1965, Zool. Gart., Lpz. (N.F.) 30 (3-4): 124. Shambe, Bahr el Jebel, Sudan. Invalid according to MERTENS (1966).

Diceros bicornis atbarensis ZUKOWSKY, 1965, Zool. Gart., Lpz. (N.F.) 30 (3-4): 141. Anseba Valley, N of Keren, Ethiopia.

Diceros bicornis ladoensis GROVES, 1967, Z. Säugetierk. 32: 274.

Taxonomy. — BRUCE's (1790) original figure of the rhinoceros reputed to be from Tscherkin depicts an Indian specimen (copied from BUFFON) with a second horn added by the artist. Nevertheless, LESSON's name *brucei* has been generally accepted as the correct designation for representatives of the species in northern Ethiopia (GROVES, 1967), although ZUKOWSKY's (1965) attempt to fix as holotype a specimen from Homran on the Setit River is clearly invalid (MERTENS, 1966).

ANSELL (1971a) followed GROVES (1967) in considering that rhinoceroses which once occupied northern and eastern Ethiopia, along with adjacent areas of Sudan and N Somalia, represented *D. b. brucei*, which would therefore include *somaliensis*, *atbarensis* and *palustris* as synonyms. This conclusion seems unlikely to be correct in view of the fact that the populations in the north and east of Ethiopia were broadly separated by unsuitable habitat in the Danakil Desert and high mountains of the central plateau. If it is really true that taxonomically distinct groups of *D. bicornis* once inhabited NE Africa, we would expect that *somaliensis* was a recognisable Somali-arid race, perhaps equally isolated from representatives of the species in southern Ethiopia by the Webi Shebeli. The latter population may be indistinguishable from *rendilis*, a name which GROVES (1967) believes to be a synonym of *D. b. michaeli*, while the affinities of the small number of animals which still survive to the west of the Omo River presumably lie with *D. b. ladoensis*. However, when considered in the circumstances of the virtual extinction of the Black rhinoceros

throughout NE Africa during the present century, such speculation is purely academic and perhaps even too trivial to warrant further attention.

Records. — BRUCE, 1790: Tscharkin; Sanchaha. — RÜPPELL, 1838, 1840: Anseba River; Workemider. — HARRIS, 1844: Mentshar region; Karaiyo region; Muttahara Lake; Boorchutta Water; Susa; Gochob River. — WAGNER, 1850: Shoa. — HEUGLIN, 1857: W of Duk el Arwa; Basmehl River, N of Anoha; Gira Valley; Merdibba; Ambo, S of Merdibba. — HEUGLIN, 1858: Habab region. — HEUGLIN, 1859: Gash River, S of Alga den. — MUNZINGER, 1860: Zad Amba. — SAPETO, 1861: Barka region. — BEURMANN, 1862: Khor Barka, near confluence with Mogareb River. — HEUGLIN, 1862: Ain Seba (= Anseba River), N of Bedjuk. — BREHM, 1863: Ain-Saba (= Anseba) Valley; Labka Valley. — STEUDNER, 1864: near Wochni. — SCHWEINFURTH, 1865: Metemma. — FITZINGER, 1866: Taka region; Habab region; Ethiopian coast; W shore of Lake Tana; Albana, near Galabat; Shoa. — WICKERRODE, 1867: Debedi. — BAKER, 1868: Deladilla; Khor Mai Gubba mouth; upper Khor Rojan; Bahr Salam; NE of Mt Nahut Guddabi. — HEUGLIN, 1868: Mohaber; Khor Dari mouth; Barka; Beni Amer region: Bel-Wohe Valley. — SCLATER, 1868: near Casala. — JESSE, 1869: Gabena Weld Gonfallon; Bejook: between Bejook and Waliko; near Waliko. — BLANFORD, 1870: Anseba River. — HEUGLIN, 1877: Anseba Valley; Anseba River mouth; Taka region; Homran; Qalabat; Barka River; upper Atbara River; Shoa. — JAMES, 1883: Toadwan; between Mai Daro and Khor Ma Ambassah; Khor Ma Ambassah. — MÜLLER, 1883: Chor Hasta; between Geer and Schedem. — SCHUVER, 1883: between Gubba and Mt Kienien. — MARGRETTI, 1884: Metemma area. — MENGES, 1884: between Bet Bidjel and Wolda Gabriel; Jebel Gerfetu; Machbar area. — JUNKER, 1889: between Gash River and Setit River. — SWAYNE, 1894: Tug Fafan; Webbi (Shebeli). — WOLVERTON, 1894: near Dagaboor. — DONALDSON-SMITH, 1895: Gardubella; Tug Turfa; Galana Amara River; E side of Lake Rudolf. — DONALDSON-SMITH, 1896: Bodele; Aimola; S of Lake «Abbaya» (= Chamo); Lake Stephanie. — DONALDSON-SMITH, 1897: Gardubella; Aimola; E of Aimola; near «Erer» (= Errer) River (17.VIII.1894); Ada River; Finik; Budessa Galana; SE shore of Lake «Abbaya» (= Chamo); S of Lake «Abbaya» (8.V.1895; 12.V.1895); Dida Halka Baroli; N of Burga River; S of Burga River; NE shore of Lake Stephanie; W shore of Lake Stephanie; «Omo River» (= Mago River, S of Lake Mago); E shore of Lake Rudolf (9.VIII.1895). — ПОТОЦКИ, 1897: Bulhar. — ГИКА, 1898: Douri Valley; Gabouro ridge; Mt Dabala; Daghatto Valley; Biahemadou River; Djigo Mts; W of Djigo Mts; Debile River; S of Labansale River. — PONCINS, 1898: Danakil region. — PEEL, 1899: Biermuddo; Gonsali; Havooli, between Boholo Deno and Mt Culdush; Webbi Daghatto; Farfanyer region; Galadi, Midgertain region (E Oga-

den); Marehan region. — STRAKER, 1899a: Haud region; between Milmil and Ime; Lubba Sunli; Hagog: S of Hagog; 2 days E of Milmil: Gos. — STRAKER, 1899b: Webbi Sheybeli. — WICKENBURG, 1899: Tuli; Tog Adibob; Hodajo: Adadle, Fafanjer (= Fanfanier); between Adadle and Mersi; Daberdjerisso; Malaiko; Tog Oman; between Lafkei and Hora Abdallah; near Hodudu. — SWAYNE, 1900: Gumbur Wedel; Kurudelli; Girbi; Haljid; Tuli Hill; near Eil-ki-Gabro; Tug Jerer; Tug Fafan; Webbe (Shebeli); Dik Wijileh. — HARRISON, 1901a: between Bugady and Godigea; N shore of Lake Rudolf. — WELLBY, 1901: Hamer Koki Hills; Asille area; NE shore of Lake Rudolf; Geyu region; Nyuru region. — AUSTIN, 1902: SE of Mt Naita. — NEUMANN, 1902b: between Lake Gandjule and Shambala River. — NEUMANN, 1902c: (W shore of) Lake Zwai; between Lake Zwai and Lake Abbaya; near source of Sagan (= Sarmaile) River. E of Lake Gandjule; Adoshebai Plains; Omo Valley. — PEASE, 1902: Filwa; between Filwa and Ouwaramulka; El Toki; between Darror and Aware; near Aware; between Aware and Milmil; between Horoabdulleh and Darhatto; between Gohowaine and Bourhaisa. — ERLANGER, 1904: Sagan River, E of Lake Gandjule. — MAUD, 1904: Ganale River, E of Darar: E shore of Lake Rudolf. — DRAKE-BROCKMAN, 1909: W Ogaden region; S Borana region. — DRAKE-BROCKMAN, 1910: Haud region; Ogaden region. — KLEYDORFF, 1910: Setit River at Sudan border. — ESCHERICH, 1911: Bilen. — SCHWARZ, 1920: Anseba Valley. — ESCHERICH, 1921: Bilen; Arkessi; Neri River area. — SWAYNE, 1932: Ogaden region. — TURNER, 1937: boundary pillar 84, on border between Ethiopia and N Somalia (= Tallybur). — ANONYMOUS, 1940b: near Cassam River mouth. — MERTENS, 1949: Kulla. — HUNT, 1951: near Ainabo. — STEWART & STEWART, 1963: Dawa River, at Kenyan border; SE of Lake Stephanie; E of Lake Rudolf. — ZUKOWSKY, 1965: Anseba Valley. N of Keren; Homran; between Homran and Ondarof; Blue Nile River (?E of Sirba); Chomen swamp; Sobat River; W of Omo River; N of Lake Rudolf; Mersi. — BROWN, 1967: near Maji. — GROVES, 1967: Bogos region: Bejuk (= Bejook); Cachir; Atbara River; Tscharkin; Mersi; Lamu. — BLOWER, 1968: Borana region; Omo Valley. — URBAN & BROWN, 1968: S of Mwi River. — ANSELL, 1971a: Dawa Parma Valley; lower Omo Valley; between Dabus River and Sudan border. — BOLTON, 1973: Mwi River; Omo Plains, S of Mwi River; Mago Valley?

Note. — A map of the past and present distribution of *D. bicornis* in Ethiopia (Fig. 5) provides a statement so eloquent as to almost beggar further comment. Formerly widespread and obviously quite common in many parts of the country, the species occupied semi-desert and savanna habitats at altitudes between about 400 m and 2300 m being, like the Elephant, excluded from the Danakil Desert and confined to the foothills

of the central plateaux. Its range probably remained little altered until about 1900 but thereafter, as a review of the literature clearly shows, the populations, perhaps already weakened to a critical level by human persecution and habitat destruction, suffered a collapse of devastating proportions. The Black rhinoceros is believed to have been extinct in the central Rift Valley of Ethiopia by 1909 (ESCHERICH, 1911) and in most of northwestern Ethiopia 10 years later (ZEDLITZ & TRÜTZSCHLER, 1919). There seems to have been a population crash in the Ogaden region at much the same time, since DRAKE-BROCKMAN (1909) appears to have been the last traveller to encounter the species in this area, although small numbers perhaps survived here, as in N Somalia, until the 1930's (TURNER, 1937; HUNT, 1951; FUNAIOLI & SIMONETTA, 1966). In the Awash Valley region the species apparently lingered until about 1940, if an ANONYMOUS (1940b) report is to be believed, but must have disappeared very soon afterwards. At the present time, the only known survivors in Ethiopia are a few individuals observed in the vicinity of the lower Omo Valley (URBAN & BROWN, 1968; BOLTON, 1973) and, according to ANSELL (1971a) who reported on the authority of J.H. BLOWER, small numbers in the valley of the Dawa River and between the Dabus River and Sudan border. STEWART & STEWART (1963) also indicated extant populations on the border with Kenya in the Dawa Valley; SE of Lake Stephanie and E of Lake Rudolf, but we have found no precise published records to verify the existence of the species in the Dabus River area.

The situation is no less bleak in Somalia, where *D. bicornis* was once widespread but had been rendered almost extinct 20 years ago when FUNAIOLI & SIMONETTA (1966) estimated that fewer than 50 individuals still survived, most of them in the extreme south of the country. In Sudan the species has become very scarce, although good numbers are still found in many parts of Kenya (ANSELL, 1971a).

It may well be true that the survival of such large mammals is almost incompatible with the requirements of a developing country and that, like most big game, they can be preserved for the future only in protected areas specially set aside for the purpose (DORST & DANDELOT, 1972). Fortunately, at least a few nations on the African continent have the resources to provide such sanctuaries, but Ethiopia is in a less enviable position and the few National Parks which exist in this country are ill-equipped and too insecure to provide for the effective conservation of such species. The fact that the Omo National Park is included within the range of the few surviving Black rhinoceroses in SW Ethiopia provides no guarantee that these animals will receive adequate protection and, for similar reasons, no conceivable justification could be found for the re-introduction of this species to any part of the country in the foreseeable future.