

The distribution and status of *Manis temmincki* Smuts, 1832 (Pholidota: Manidae)

By C. T. STUART, Robertson

With 2 Figures

Received 2. VII. 1979

1. Introduction

Temminck's ground pangolin *Manis temmincki* is a widespread species occurring throughout much of southern and eastern Africa, extending through the savanna zone to eastern Chad.

Comprehensive distribution records have been published for this species for Natal (PRINGLE 1974), the Kruger National Park, Tansvaal (PIENAAR 1964), Botswana (SMITHERS 1971), Rhodesia (SMITHERS, in press), Moçambique (SMITHERS & TELLO 1976), Zambia (ANSELL, in press), and Tanzania, Uganda and Kenya (KINGDON 1971). Additional localities have been recorded for Angola (HILL & CARTER 1941, HUNTLEY 1973) and Tanzania (LAMPREY 1963, REES 1964, SWYNNERTON & HAYMAN 1964, VESEY-FITZGERALD 1964).

This short paper brings together most published records of the distribution of *M. temmincki* with notes on the status of the species over its range. Further distribution records were obtained from museum collections and other unpublished sources.

2. General distribution and status

Manis temmincki is believed to be absent from West Africa, North Africa, the high rainfall areas of west central Africa, the Namib Desert and the southern half of the Cape Province (South Africa). *M. temmincki* is apparently replaced in the forested, higher rainfall areas of west-central and West Africa by *Manis gigantea* which according to RAHM (1960) lives in forest and peri-forest savanna areas. The majority of *M. temmincki* distribution records fall within the 250–1000 m isohyets, whereas those for *M. gigantea* fall primarily within the 1000 mm and upwards range. In East Africa the area inhabited by *M. temmincki* appears to be largely dominated by woodland and dry savanna vegetation types (KINGDON 1971).

3. Distribution in various countries (Fig. 1)

3.1 Chad

Malbrandt (1952) records *M. temmincki* as occurring in the Ennedi region of north-eastern Chad but other than this record its distribution is unknown. Its conservation status is also unknown.

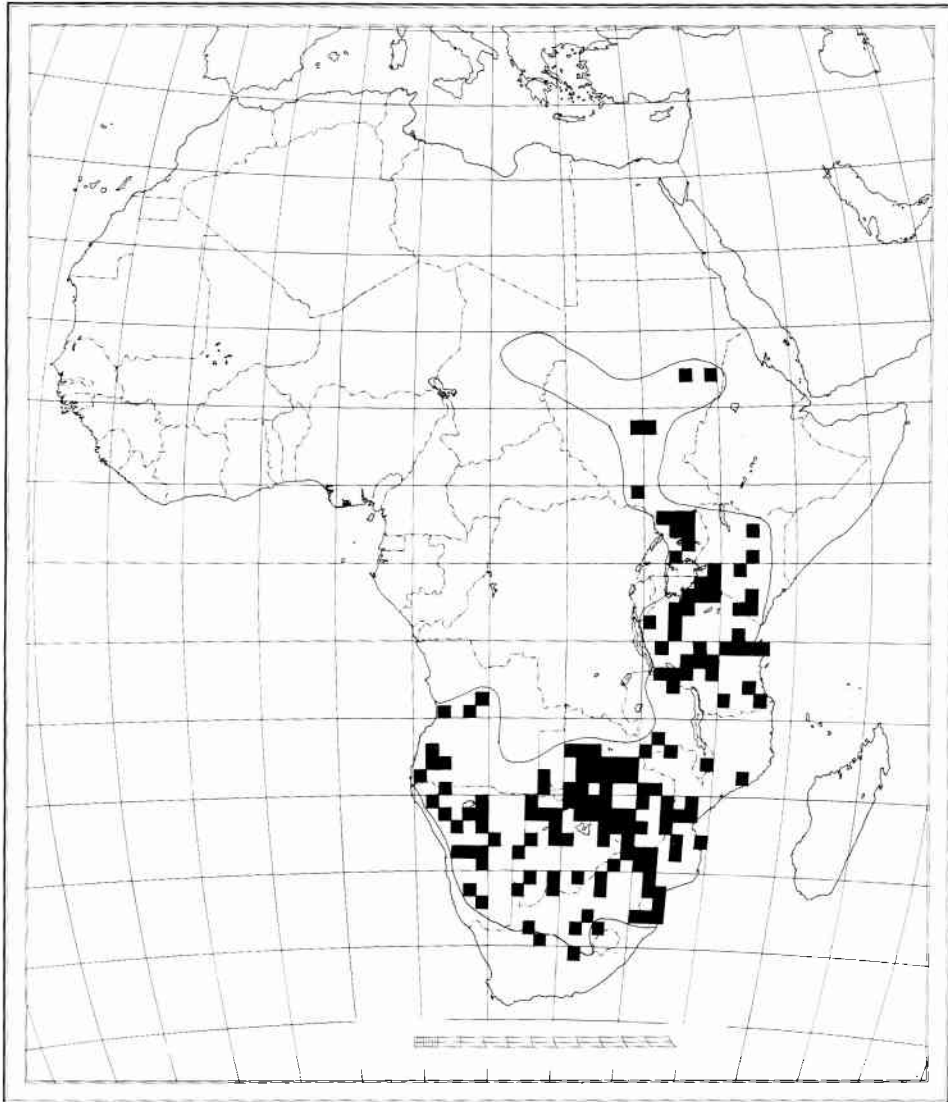


Figure 1: A map of Africa showing the distribution of *Manis temmincki*. Blacked in squares indicate known collected or other records.

3.2 Sudan

There are sight records (SWEENEY 1973) for the south-eastern area of the Sudan, south of Khartoum, but *M. temmincki* probably extends as far as the eastern boundary of Chad. SWEENEY (1973) records it as occurring over a large part of south, east and west Sudan. The same author states that the species was quite common in suitable habitat in and about the Nuba Mountains; otherwise its status is unknown. SETZER (1956) records only one collected specimen from Sudan; this was taken at Torit near the Ugandan border.

3.3 Ethiopia

There are apparently no literature records of *M. temmincki* occurring in Ethiopia although it was included in the game regulation of the Italian East Africa Administration (Anonymus 1941).

3.4 Somalia

FUNAIOLI & SIMONETTA (1966) doubt its presence in Somalia.

3.5 Uganda

KINGDON (1971) records *M. temmincki* as occurring north of the Victoria Nile and apparently absent in the south (west of Lake Victoria). He notes this pangolin as being widespread in East Africa and that it is relatively numerous in some areas and very rare in others. It is reported to occur in the Murchison Falls and Queen Elizabeth National Parks. BERC (1962) states that it is nowhere plentiful in Uganda.

3.6 Kenya

M. temmincki is apparently absent east of Lake Rudolph and the Tana River, although KINGDON (1971) records it in the vicinity of Marsabit. It is reported to occur in the Meru Game Reserve, the Lake Nakuru and Tsavo National Parks and the Marsabit National Reserve. It is however present to the west of the above area but apparently it is sparsely distributed. It is probably still abundant enough to be considered safe.

3.7 Tanzania

The species is apparently widespread but uncommon, and may be absent from the area along the Ruanda-Burundi border. It has been recorded in the Ulanga Range in the vicinity of the Selous Game Reserve (REES 1964), in the Tarangire Game Reserve (LAMPREY 1963) and in the Serengeti National Park. VESEY-FITZGERALD (1964) notes that *M. temmincki* is not numerous in Tanzania.

3.8 Malawi

SWEENEY (1959) records *M. temmincki* from the Central and Southern Provinces and he considers it to be quite common in the Lower Shire River valley. The pangolin is probably endangered in Malawi due largely perhaps to its importance in the witchdoctor pharmacopoeia (J. C. GREIG, pers. comm.).

3.9 Moçambique

SMITHERS & TELLO (1976) record *M. temmincki* from sixteen localities south of 18 °S with only one sight record north of 18 °S. In the collection of the Dr. Alvaro de Castro – Museum in Maputo there are two specimens collected locally. It is also recorded from the Rhodesian/Moçambique border in the vicinity of Umtali and Melsetter (SMITHERS & WILSON, in press) and from the Moçambique/Zambian border (ANSELL, in press).

3.10 Zambia

ANSELL (in press) notes that *M. temmincki* in Zambia may be limited to the southern and eastern areas, re-appearing in south-western Tanzania. He further notes that it is not uncommon in the Lusaka District and in the Southern Province. It is known to occur in the Kafue National Park (ANSELL 1964).

3.11 Rhodesia

The species is apparently widely distributed in Rhodesia although there are no material records from the north-east and south-east (SMITHERS, in press). However, he believes that it will be found in both these areas with more extensive observation. The species occurs in the Wankie National Park in the west of Rhodesia (SMITHERS, in press).

3.12 Botswana

The pangolin appears to be widely distributed from the northern parts of Botswana to the southern fringes of the Okavango delta and the Tati Concession in the east. There are only a few records from the central Kalahari and it is apparently absent from the south-west (SMITHERS 1971) although it has been recorded from the Kalahari Gemsbok National Park, Cape Province.

3.13 Angola

HILL & CARTER (1941) record this species from west of 18° longitude and south of 10° latitude. J. CRAWFORD CABRAL (pers. comm.) has recorded a single pregnant female *M. temmincki* from Sa dá Bandeira in the south-west. It has been recorded in the Bicular National Park, Luando Strict Nature Reserve and the Cuando-Cubango (B. J. HUNTLEY, pers. comm.). HUNTLEY (1973) considers it to be widespread in southern Angola.

3.14 South West Africa

SHORTRIDGE (1934) notes *M. temmincki* as occurring throughout South West Africa although absent from the Namib coastal belt. There are no records to the west of the 100 mm isohyet. He considers it to be rare in the southern parts of the territory but it becomes more numerous north of the Tropic of Capricorn. This has been substantiated by more recent records.

STEINHARDT (in SHORTRIDGE 1934) records it as occurring in the Tsunde District of the Kaokoveld. SHORTRIDGE (1934) records the species as being widespread in the Kaokoveld, but the author could find no recent records for this region. *Manis temmincki* occurs in the Etosha National Park and Waterberg Plateau National Park; specimens have been released in the Daan Viljoen Game Reserve (Windhoek) and in the Von Bach Dam Nature Reserve (Okahandja). There is apparently no record as to the origin of specimens released in these two reserves, nor is it certain that these reserves fulfil the habitat requirements of this species.

3.15 South Africa: 3.15.1 Cape Province (Fig. 2)

M. temmincki is apparently very rare in the Cape Province and seems to be restricted to the extreme northern areas. MILLS (pers. comm.) has recorded the remains of *M. temmincki* in the Kalahari Gemsbok National Park. A live specimen has also been photographed in the same Park (RAUTENBACH & NEL 1975). ROBERTS (1951) notes a record from Colesberg near the Orange Free State border. During a recent mammal questionnaire survey of the Cape Province it was recorded as occurring in 38 districts (P. LLOYD, pers. comm.). However, a number of the quality checks carried out by the author showed that *M. temmincki* was in nearly all cases confused with the antbear *Orycteropus afer* by the farmers questioned. Others admitted to having only heard of the animals in stories but had nevertheless included the species as being present on their property. In the northern districts of the Cape Province only three records were found to be genuine, two in the Vryburg district and one in the Kuruman District. The areas where *M. temmincki* occurs in the northern Cape Province are predominantly open Kalahari thornveld. In the past the pangolin was probably largely restricted to the Cape Province north of the Orange River and almost certainly does not occur below this river today. K. DU PLESSIS (quoted in Anonymus 1978) records six pangolin sightings in the Northern Cape for 1976–1978 and the McGregor Memorial Museum record two additional sightings, 1973 and 1976.

3.15.2 Natal

Only six locality records of *M. temmincki* are known for Natal (PRINGLE 1974), all in the north-eastern areas (Tongaland and Zululand). All the records were made in bushveld (ACOCKS 1953). It is of interest to note that four of the animals were recorded in protected areas, Mkuzi Game Reserve, Ndumu Game Reserve, Hluhluwe Game Reserve and False Bay Park. DIXON (1966) records the reported killing of an animal thought to have been *M. temmincki* in the region of Gandaba to the east of Ndumu Game Reserve.

3.15.3 Orange Free State

Manis temmincki is probably near to extinction in the Orange Free State although it was apparently widely distributed in the past (N. A. FERREIRA, pers. comm.). A mammal survey conducted by VON RICHTER et al. (1972) in the Orange Free State showed that *M. temmincki* is present but rare. LYNCH (1975) documents four distribution records for this province, of which only one is recent (1968).

3.15.4 Transvaal

The Transvaal is the only province in South Africa where the pangolin is relatively frequently recorded but even here it is far from common. The species is recorded from three protected areas, the Kruger National Park, Langjan Nature Reserve and the Hans Merensky Nature Reserve but only in the former is it known to occur naturally. PIENAAR (1964) states the pangolin occurs throughout the Kruger National Park in suitable areas. There have been 73 sight records in Kruger in the past 20 years (Anonymus 1978). Again nearly all records from the Transvaal are in bushveld areas. N. JACOBSEN (pers. comm.) considers *M. temmincki* to be rare although widely distributed in the savanna regions north of Pretoria.

4. Discussion

In South West Africa the species seems to be secure at present but there is evidence of a decline. In the Cape Province, Natal and the Orange Free State they are extremely rare, if not

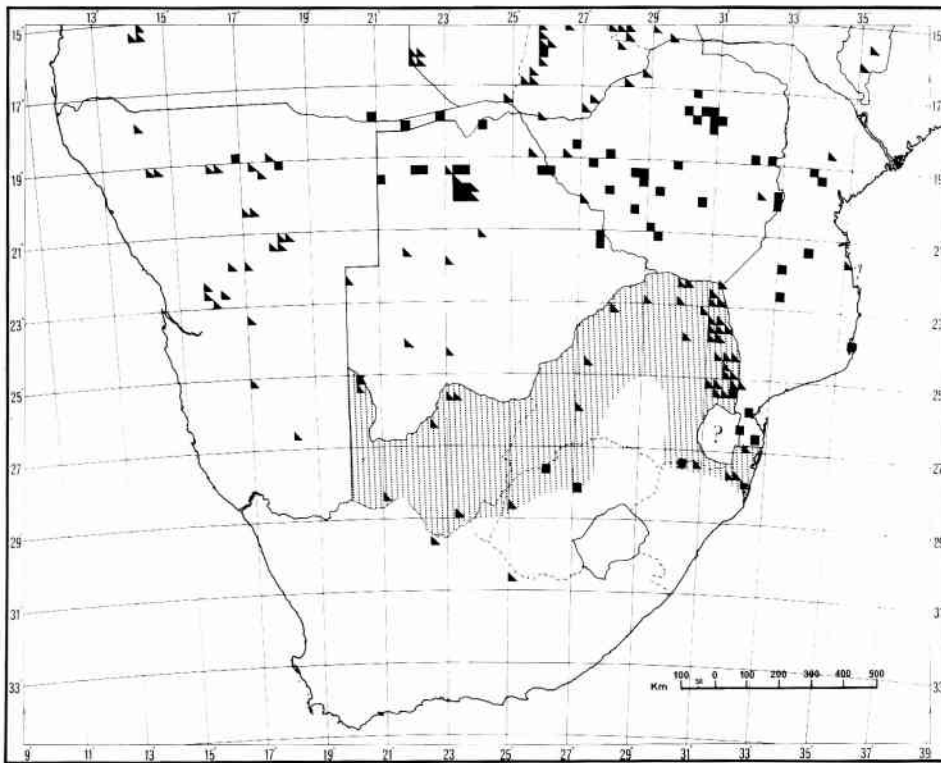


Figure 2: The distribution of *Manis temmincki* in Southern Africa. Blacked in squares indicate specimen records and triangular symbols indicate sight records. Anonymus (1978) show an additional eight locality records for the Cape Province and eleven for the Transvaal all within the expected range. The stippled overlay indicates the known range in South Africa only.

approaching extinction in the case of the Orange Free State. In the Transversal they are apparently widespread and are probably secure for the time being. In South Africa *M. temmincki* is almost entirely restricted to the bushveld areas as defined by ACOCKS (1953), this vegetation type being present in the northern Cape Province, much of the northern, eastern and western Transvaal and northern and coastal Natal. They are known to be present in all but coastal Natal. In South West Africa the pangolin is restricted to thornbush savanna, tree savanna, woodland highveld savanna, camelthorn savanna, mopane savanna and mountain savanna (GIESS 1971). In East Africa it appears to be restricted to savanna, avoiding desert and semi-desert areas, swamps and open grassland. An additional factor, dietary specialisation, could play a part in its distribution. PRINGLE (1974) does not regard diet as a limiting factor but research is needed to determine this.

The nocturnal habits of *M. temmincki* make it difficult to assess its overall conservation status. It seems to be decreasing throughout much of its range and an urgent effort should be made to initiate an in depth study of its ecology and conservation requirements.

5. Summary

The known distribution and status of *Manis temmincki* is discussed and two maps (Fig. 1 & 2) are provided to show its distribution in Africa.

Acknowledgements

A large number of people provided information but Mr. W. F. H. ANSELL formerly of the Zambian Game Department, and Dr. R. H. N. SMITHERS, Associate Curator of Mammals of the National Museums of Rhodesia, are especially thanked for allowing the author to make use of unpublished data. The following are also sincerely thanked for assistance and information: Dr. D. MARAIS (Louis Trichard), J. CRAWFORD CABRAL (Centre de Estudos do I. I. C. A.), B. J. HUNTLEY (Servicos de Veterinaria, Angola), Dr. M. R. BRAMBELL (Curator of Mammals, Regents Park), J. H. GAERDES (Kalidona, S. W. A.), Dr. J. D. SKINNER (Mammal Research Unit), L. G. OATS (Transvaal Nature Conservation Division), Dr. G. B. CORBET and J. M. INGLES (British Museum), I. L. RAUTENBACH (Transvaal Museum), Dr. E. JOUBERT, H. BERRY, W. JANKOWITZ and J. E. W. DIXON of the Division of Nature Conservation and Tourism, S. W. A., A. J. MENCE (I. U. C. N.), G. PAGE (Natal Parks Board), N. JACOBSEN (Transvaal Division of Nature Conservation), M. L. GROOM (The American Museum of Natural History), N. A. FERREIRA (Division of Nature Conservation, O. F. S.), Dr. B. L. PENZHORN (National Parks Board), C. HADLEY (Botswana Wildlife and National Parks), J. C. GREIG and P. H. LLOYD (Cape Department of Nature and Environmental Conservations), Dr. F. PETTER (Paris Natural History Museum), Gus MILLS (National Parks Board), J. C. GREIG, Dr. R. H. N. SMITHERS and Dr. I. GAIGHER are sincerely thanked for critically reading and commenting on the manuscript.

ACOCKS, J. (1953): Veld Types of South Africa. Mem. Bot. Surv. S. Afr., Pretoria, 28, 1-192. - ANONYMUS (1941): A Handbook of Ethiopia. Whitehead Morris (Kairo) Ltd. - ANONYMUS (1978): There are only ten pangolin left in South Africa. African Wildlife, Johannesburg, 32 (4), 22-23. - ANSELL, W. (1964): Addenda and Corrigenda to "Mammals of Northern Rhodesia". The Puku, Chicago, 2, 14-52. - Idem (in press): The Mammals of Zambia. - BERG, R. (1962): The wild animals of Uganda. Collins, London. - DIXON, J. (1966): Notes on the mammals of Ndumu Game Reserve. LAMMERGEYER, Pietermaritzburg, 6, 24-40. - FUNAIOLI, U. & A. SIMONETTA (1966): The mammalian fauna of the Somali Republic: status and conservation problems. Monitore zool. ital., Firenze, 74 (Suppl.), 285-347. - GIESS, W. (1971): A preliminary vegetation map of South West Africa. Dinteria Locality?, 4, 1-114. - HILL, J. & T. CARTER, (1941): The Mammals of Angola, Africa. Bull. Amer. Mus. Nat. Hist., New York, 78, 1-211. - HUNTLEY, B. □ (1973): Distribution and status of the larger mammals of Angola, with particular reference to rare and endangered species. First Progress Report, Ecologist; Direcção Provincial Dos Servicos De Veterinaria, Luanda (Rep. No. 21). - KINGDON, J. (1971): East African Mammals, Vol. 1, Academic Press, London. - LAMPREY, H. (1963): The Tarangire Game Reserve. Tanganyika Notes and Records, Daressalam, 60, 10-22. - LYNCH, C. (1975): The distribution of mammals in the Orange Free State, South Africa. Navors. nas. Mus., Bloemfontein, 3, 109-139. - MALBRANT, R. (1952): Faune du Centre africain francais (Mammiferes et Oiseaux). 2nd ed., P. Lechevalier, Paris. - MEESTER, J. & H. SETZER (ed.) (1971): The Mammals of Africa: An identification manual. Smithsonian Institution Press, Washington. - PIENAAR, U. de (1974): The small mammals of the Kruger National Park - a systematic list and zoogeography. Koedoe, Pretoria, 7, 1-25. - PRINGLE, J. (1974): The distribution of mammals in Natal. Part 1. Primates, Hyracoidea, Lagomorpha (except Lepus), Pholidota and Tubulidentata. Ann. Natal Mus., Durban, 22, 173-186. - RAUTENBACH, I. & J. NEL (1975): Further records of smaller mammals from the Kalahari Gemsbok National Park. Koedoe, Pretoria, 18, 1-12. - REES, A. (1964): A check list of mammals and amphibia of Ulanga District. Tanganyika Notes and Records, Daressalam, 63. - RICHTER, W. VON, C. LYNCH & T. WESSELS (1972): Status and distribution of the larger mammal species on farmland in the Orange Free State. Orange Free State Provincial Administration Nature Conservation Research Report Bloemfontein, I. - ROBERTS, A. (1951): The Mammals of South Africa. "The Mammals of South Africa" Book Fund, Johannesburg. - SETZER, W. (1956): The Mammals of the Anglo-Egyptian Sudan. Proc. U. S. Nat. Mus., Washington, 106, 446-587. -

SHORTRIDGE, G. (1934): The Mammals of South West Africa. 2 Vol. William Heineman, London. – SMITHERS, R. (1971): The Mammals of Botswana. Mem. nation. Mus. Rhod., Salisbury, 4, 1–340. – SMITHERS, R. & J. TELLO (1976): Check list and atlas of the mammals of Moçambique. Mem. Nation. Mus. Rhod., Salisbury, 8, 1–184. – SMITHERS, R. & V. WILSON (in press): Check list and atlas of the mammals of Rhodesia. Mem. Nation. Mus. Rhod., Salisbury. – SWEENEY, R. (1959): A preliminary annotated check list of the mammals of Nyasoland. The Nyasoland Society, Blantyre. – Idem (1973): Background of Baobabs. Constable, London. – SWYNNERTON, G. & R. HAYMAN (1950): A checklist of the mammals of the Tanganyika Territory and the Zanzibar Protectorate. J. East Afr. Nat. Hist. Soc., Daressalam, 20, 1–119. – VESEY-FITZGERALD, D. (1964): Mammals of the Rukwa Valley. Tanganyika Notes and Records, Daressalam, 62, 61–72.

Address of the author: C. T. Stuart, Vrolijkheid Nature Conservation Station, Private Bag 614, Robertson 6705, South Africa.