

THE BARKLY TABLELAND DEATH ADDER  
ACANTHOPHIS ANTARCTICUS

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&  
GRAEME.F.GOW

INTRODUCTION:

The Barkly Death Adder was previously unknown until 5th April 1973 when Gow first noticed it in a Queensland collection. When the owner was questioned about its exact original locality, his information was that both specimens were collected by a roadworker on the Carpentaria Highway in the Northern Territory. As Gow was in transit, with his extensive private collection, comparisons were made with the adult & juvenile 'Sydney' A.antarcticus he was transporting.

The Barkly specimens were both about 0.75 metre (both males) and differed markedly in head shape, scalation, colour and pattern from the 'normal' A. antarcticus.

This species is a black soil plains dweller ranging through the Barkly Tablelands of the Northern Territory and then possibly extending south-east into Queensland around Mount.Isa and Djarra.



Barkly Death Adder Acanthophis antarcticus (Adult female)

Photo: Brian.Barnett

DISCUSSION:

Three years elapsed before Gow's field work yielded the first specimen which was a 1.0 metre female collected at Anthony's Lagoon in the Northern Territory. Despite frequent field trips to the area, no further live specimens were collected although its presence was substantiated by road-kill specimens. In 1977-8, whilst on annual leave, Gow conducted field work in December and February and collected two adult females and a juvenile male. In 1981 the male had grown to 0.7 metre and was introduced the following year, in October, to all females. Several good matings occurred in each instance.

The three females produced litters in March '82 and numbered 19, 19 and 22 respectively. They were bred again in '83, '85, '86, '88 and '89 by Gow who distributed the highly sought after young to Brian Barnett & Barry Searle in Victoria, Joe Bredl and Chris Harvey in South Australia, Neil Charles, Rob. Bredl, Terry Adams & John McLoughlin in Queensland and John Weigel and Grant Husband in New South Wales.

The distribution of these specimens by Gow resulted in the Barkly Death Adder being regarded undoubtedly as the largest, most spectacular member of Acanthophis and certainly the hardiest in captivity.

Its colouration ranges through combinations of beige, fawn, grey & occasionally red above, juveniles have striking black-edged bands, these are prominent in mature adults & intermittent in aged specimens. Males attain a maximum length of almost 1 metre and females have been recorded at 1.3 metres and weigh up to 1.5 kg.

HABITS:**HOSER**

The Barkly Adder inhabits mainly black soil plains (but also adjacent red soil areas) where it lives down deep earth cracks. Its food consists mainly of lizards, frogs, small mammals and ground birds. Its colouration blends extremely well with the ground stratum and when in repose or laying in ambush, is almost impossible to see.

Its frantic caudal luring is most efficient, the yellow tipped tail contrasts to the soil and is easily seen by potential prey animals. It is nocturnal, being particularly active on warm nights, from dusk until early morning.

Both authors keep them, in captivity, on a fine aquarium gravel substrate and provide a small water bowl for drinking. Gow (living in Darwin) keeps the adults in timber cages/pegboard lids and has no artificial heating. Throughout the year the temperatures would be pretty stable at 30 - 31 deg.C but may drop to as low as

17 deg.C during the evening over the winter months.

Barnett (living in Melbourne) keeps the adults in glass front chipboard cages with artificial heating ( globes & thermostat) and maintains a temperature of 28 - 30 deg C from September to April. The adults are flat-cooled between May and August to approx 23 deg C.

The young are kept, by both authors, in plastic Klik-Clak containers with well ventilated (drilled) lids.

Adults, or juveniles, should be housed as individuals as if one specimen is lying in ambush and another comes within strike distance, it usually pays the penalty of either dying from a head bite, or alternatively, is eaten as this species is prone to cannibalism.

This species is a 'dynamite' feeder and is extremely dangerous because of its strike speed, which is best described as faster than the eye can see. Gow once had an American Film Unit attempt to do a slow motion sequence of the Barklys strike but was unable to achieve the desired result because of the incredible striking speed. Potential keepers of this species be warned.

The food offered by Gow is dead mice & rats, occasionally day old chicks and strips of fish. These can be thawed out frozen or fresh. Barnett feeds fresh mice only.

Mating usually occurs in October and a single mating often lasting up to eight hours. Gestation periods recorded by Gow range from 147 days to 161 days. For Barnett, 142 days.

#### AN INDIVIDUAL BREEDING (GOW)

The male was introduced to the female at 1430 hours on 20/10/91 and within 5 minutes the male had effected copulation and the mating period was eight hours and five minutes ( seperated at 2205 hours). The anus of the female was enormously distended for some hours later, indicating that the female had conceived. The female weighed just under 1.0 kg prior to mating, she was weighed again at 150 days and weighed 1.2 kg. Gestation period was 161 days and 18 young were born on 29.3.92. One was still born and a further four were 'runts'. Their weights were 1.0gm, 2.5gm, 3.0gm & 3.0gm. The still born was 10.0gm & a female. The remaining thirteen were divided at 7 females and 6 males. The females were slightly heavier with an average 13.1 gms compared to the male average of 12.3 gms. All four 'runts' were females. This meant that the litter comprised of 12 females and 6 males, 2:1.

The thirteen surviving neonates have been kept seperately since birth , have shed their skins twice (as at start of June)





Birth of Barkly Death Adder Acanthophis antarcticus

Photo: Brian.Barnett



Barkly Death Adder Acanthophis antarcticus prior to  
emerging from amniotic sac.

Photo: Brian.Barnett

and although continually luring, are fed weekly on 'pinkies' which, after being placed in their mouths, are consumed voluntarily.

#### AN INDIVIDUAL BREEDING (BARNETT)

The pair used for this breeding were siblings and were ex Gow stock born in March '85 which made them 6 1/2 years old at the time of mating. No attempt had been made to breed them in their earlier years as I was conducting growth rates on the pair at this time. An attempt to breed them in 1990 was not successful.

On 4.5.91 their thermostatically controlled cage temperature was changed from the regular 30 deg C to approx 22 deg C flat-cooled. This temperature would have been slightly higher during daylight hours.

On 9.8.91, after just over 3 months of cooling, the temperature was raised back to approx 30 deg C. Both Adders had not been fed during the cooling period although from past experience they would have accepted it. From this time normal feeding was commenced on a three feeds per month routine. One feed usually being two large mice.

On 11.10.91 the male was introduced to the female who had just sloughed that day. No interest was shown by the male. As is my practice, they are never left together overnight, the male was returned to his own cage after approx 6 hours.

On 21.10.91, 10 days after the last introduction, the male was reintroduced into the females cage. Copulation occurred in just under 30 minutes and continued for almost 4 hours. Although not planned and with no prior intent or discussion, the Barnett mating and the Gow mating were 1 day apart. A point we have just picked up whilst preparing this paper.

Both of the breeders are very large specimens, particularly the female, and although not weighed or measured prior to the mating, the female has a total body length in excess of 1.1 metres & normally weighs around 1.3kg. The smaller male measures just over 1.0 metre and weighs around 1 kg.

The male, like the female, had never refused a feed but after mating did not eat for over 5 weeks. I still have no answer for this unusual occurrence. The female ate normally and right up to and into the week of giving birth.

The only sloughing of the female, prior to the birth, was on 2.1.92. This was 73 days after the mating and 69 days before the birth.

On 11.3.92, 142 days after mating, the female gave

birth to 16 young. One was stillborn and one badly deformed one did not survive the first day. 14 were healthy specimens. Similar to Gow, I had an almost similar ratio of 2:1 females to males with, including the two dead specimens, 10 females & 6 males. Also, the same finding as Gow, the females were slightly heavier. 11.56 gm average for the females compared to 11.12 gm for the males. All over, Gow's young were slightly heavier than mine.

	Weight (gms)	Length snout-vent (mm)	Tail length (mm)	Sex
1.	11.79	196	38	F
2.	12.95	206	39	F
3.	9.49	194	39	M
4.	11.75	204	38	F
5.	13.01	203	37	F
6.	10.10	188	40	M
7.	11.19	203	39	F
8.	11.62	193	36	M
9.	11.71	198	37	F
10.	10.88	197	41	M
11.	9.69	207	39	F
12.	10.64	198	37	F
13.	13.51	204	38	M
14.	11.30	183	35	F



Barkly Death Adders Acanthophis antarcticus ( 3 months old )

Photo: Brian.Barnett

FEEDING & GROWTH:

19.

All of the following material was gathered by Barnett, working on two specimens, over a 37 month period.

Number of feeds per period

<u>Period</u>	<u>#1. (Female)</u>	<u>#2. (Male)</u>	<u>Average.</u>
Birth - 2 months	14	14	14
2 - 4 months	13	16	14.5
4 - 6 months	7	7	7
6 - 8 months	10	10	10
8 - 10 months	14	12	13
10 - 12 months	11	9	10
12 - 16 months	16	15	15.5
16 - 20 months	15	11	13
20 - 24 months	13	12	12.5
24 - 28 months	14	10	12
28 - 32 months	13	12	12.5
32 - 37 months	9	8	8.5

Monthly Bodyweights (gms)

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Total Food Consumption Since Birth (gms), in brackets.

<u>Month (Age)</u>	<u># 1. (Female)</u>	<u># 2. (Male)</u>
Birth weight	9.31	7.99
2	15.85 (28.43)	13.67 (26.92)
4	26.51 (62.72)	25.31 (71.14)
6	52.71 (130.93)	52.30 (132.09)
8	95.35 (264.38)	91.81 (262.27)
10	180.51 (510.30)	166.78 (496.04)
12	267.79 (738.88)	237.39 (692.87)
16	450.00 (1311.43)	408.70 (1212.50)
20	664.39 (1931.67)	491.21 (1603.45)
24	805.29 (2577.77)	658.19 (2180.40)
28	979.11 (3273.62)	748.21 (2678.29)
37	1180.09 (4330.22)	891.52 (3657.85)

FOOD CONSUMED EACH MONTH (GMS).

<u>Month:</u>	<u>#1 (Female)</u>	<u>#2 (Male)</u>	<u>Average</u>
1	16.51	15.42	15.96
2	14.34	13.81	14.07
3	19.13	17.07	18.10
4	13.74	24.84	19.29
5	26.91	36.19	31.55
6	41.30	24.76	33.03
7	45.39	57.90	51.64
8	88.06	72.28	80.17
9	93.00	50.42	71.71
10	132.72	164.55	148.63
11	98.20	59.82	79.01
12	150.58	155.81	153.19
13	132.40	128.21	130.30
14	174.13	164.01	169.07
15	176.80	89.02	132.91
16	89.22	138.39	113.80
17	232.56	135.61	184.08
18	147.40	65.32	106.36
19	85.91	127.20	106.55
20	154.37	62.82	108.59
21	84.98	66.67	75.82
22	196.26	161.14	178.70
23	204.21	178.44	191.32
24	160.65	170.70	165.67
25	138.72	51.07	94.89
26	253.97	208.17	231.07
27	198.71	134.71	166.71
28	104.45	103.94	104.19
29	84.02	87.86	85.94
30	118.01	130.52	124.26
31	149.61	133.24	141.42
32	229.94	175.20	202.57
33	nil	nil	nil
34	198.27	225.67	211.97
35	55.96	nil	27.98
36	153.89	163.09	158.49
37	66.90	63.98	65.44



TOTAL BODY LENGTHS (mm)

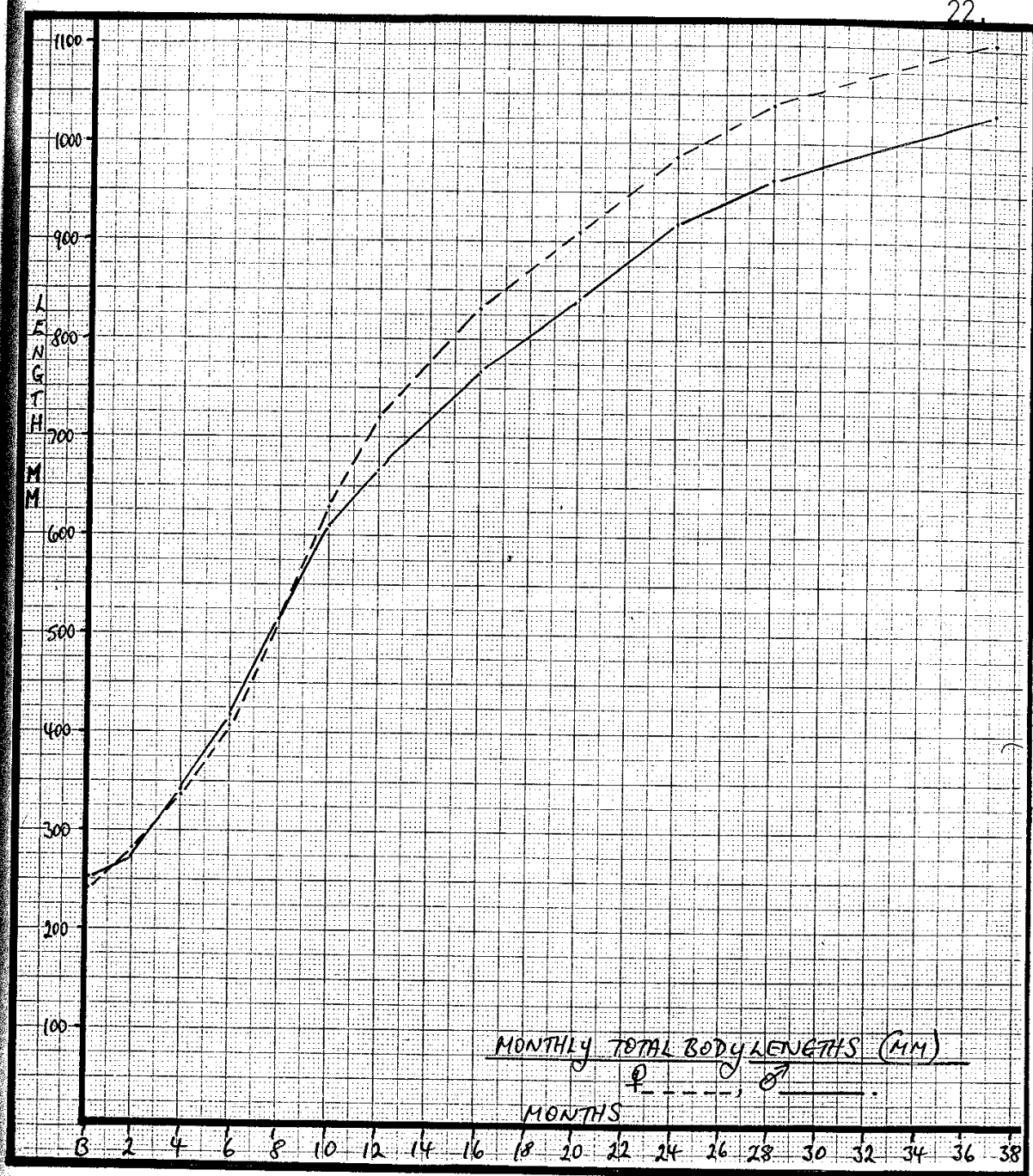
(Tail is approx 16% of T.B.L)

<u>Month (Age)</u>	<u>#1 (Female)</u>	<u>#2 (Male)</u>
Birth	240	251
2	282	274
4	339	344
6	404	416
8	519	517
10	627	609
12	723	671
16	831	769
20	908	844
24	989	922
28	1040	963
37	1103	1031

Sloughs

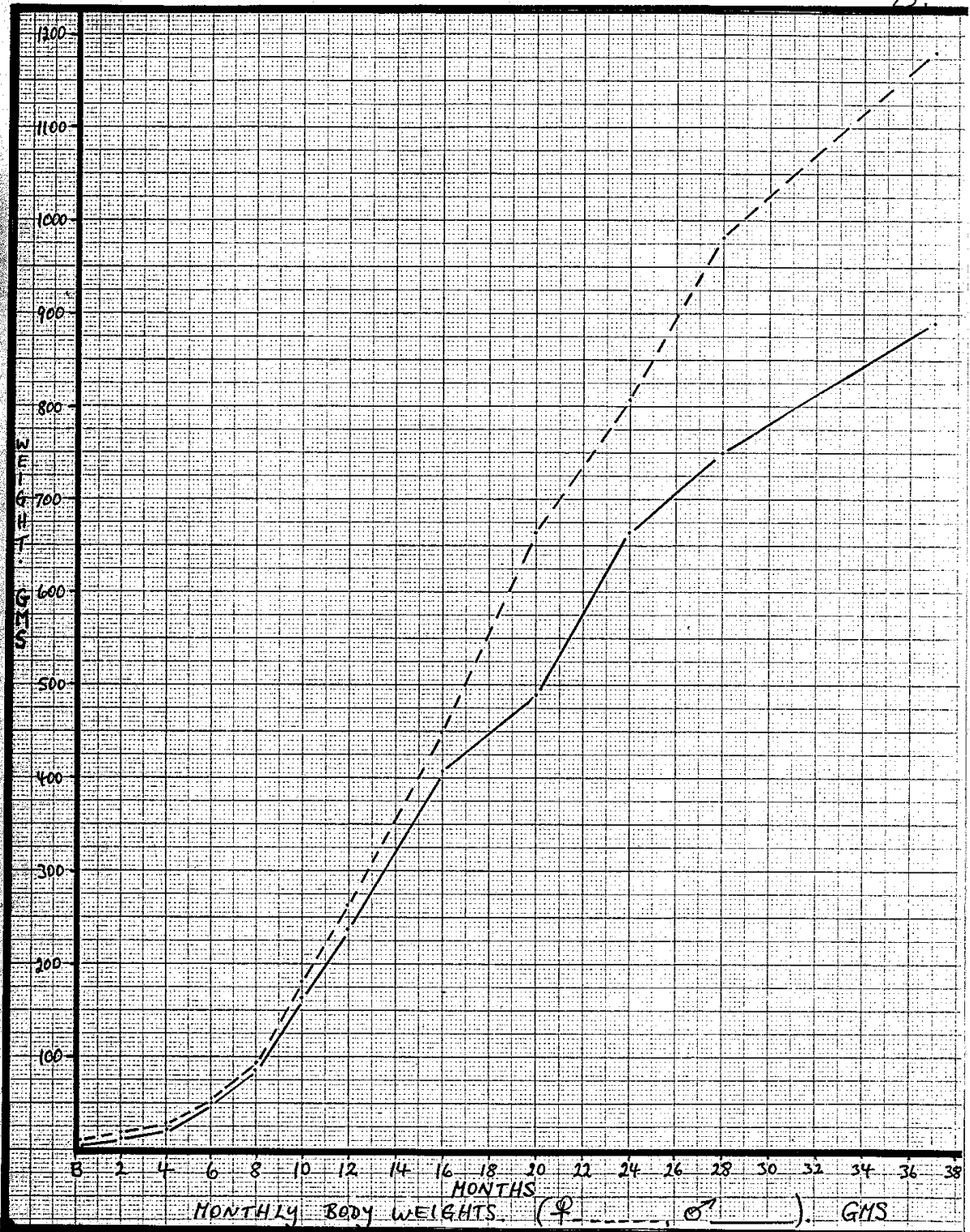
Sloughs of two 'growth rate' snakes over the 37 month period. \* denotes the age (month) of sloughing. The numbers are the days between sloughs.

	1	2	3	4	5	6	7	8	9	10	11	12
#1. Female	*		*		*		*		*	*	*	
		(34)		(71)		(50)		(56)		(36)	(40)	(47)
#2. Male	*	*	*	*	*	*	*		*		*	*
	(28)	(23)	(19)	(19)	(25)	(62)		(47)		(52)		(44)
	13	14	15	16	17	18	19	20	21	22	23	24
#1. Female	*		*		*			*			*	
		(65)		(80)		(82)				(86)		
#2. Male	*	*	*	*	*	*	*	*	*	*	*	*
	(61)		(69)		(84)			(77)			(69)	
	25	26	27	28	29	30	31	32	33	34	35	36/37
#1. Female		*			*				*			*
	(92)		(96)			(109)				(119)		
#2. Male		*	*	*	*	*	*	*	*	*	*	*
	(93)		(57)		(106)					(130)		



Conclusion:

The Barkly Adder shares with the Northern Death Adder, the title of the largest Acanthophis. Both are mostly confined to black soil areas. The Giant form of A.praelongus ? has, so far, only been collected from Blacksoil plains ( Gow & Barnett) in press. The Barkly Death Adder was lumped under A.antarcticus until Gow's research on differences in morphological characters was completed, but this kept breaking down. Frustrated by this, he drew scientific attention to it by supplying numerous specimens to Mengden (A.N.U) for chromosomal studies. Mengden finally published the results in his Ph.D thesis which concluded that the Barkly Adder was chromosomally distinct.



In 1985 Wells/Wellington, in their Australian Journal of Herpetology (Supp. series 1, p.43), described it as a new species naming it Acanthophis hawkei after the then Prime Minister, Bob Hawke. However, debatable taxonomy & politics aside, you've never kept a Death Adder that is so spectacular, hardy & rewarding, until you've owned a 'Barkly'.

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