

The captive maintenance and breeding of

Diporiphora winneckei
(Cane grass dragon)

at the Alice Springs Desert Park.

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Index

1. Taxonomy

1.1 Nomenclature

2. Natural history

2.1 Morphometrics

2.2 Distribution

2.3 Habitat

2.4 Wild diet and feeding behaviour

2.5 Longevity

3. Housing requirements

3.1 ASDP display caging

3.2 ASDP off exhibit caging

3.3 Water provisioning

3.4 Enclosure furnishings

3.5 Heating/Lighting requirements

3.6 Enclosure cleaning/maintenance requirements

3.7 Intra/inter species compatibility

4. Feeding requirements

4.1 Captive diet

4.2 Supplements/vitamins

4.3 Presentation of food

5. Health requirements

5.1 Routine treatments

5.2 Known health problems

5.3 Routine quarantine treatments

6. Behaviour

6.1 Habits

6.2 Courtship

6.3 Captive behavioural problems

7. Breeding

7.1 Breeding season/clutches per season

7.2 Breeding group dynamics

7.3 Age at first breeding

7.4 Nesting requirements

7.5 Gestation period

7.6 Clutch size

8. Incubation and rearing of neonates

8.1 Incubator type

8.2 Incubator temperature and humidity

8.3 Incubation period

8.4 Rearing of neonates

9. Handling and transport

9.1 Capture and handling of specimens

9.2 Transport requirements

HUSBANDRY MANUAL for Cane Grass Dragon

1. Taxonomy

1.1 Nomenclature

Scientific name: *Diporiphora winneckei*

Common name: Cane Grass Dragon

Classification

Class	Reptilia
Order	Squamata
Suborder	Sauria
Family	Agamidae
Genus	<i>Diporiphora</i>
Species	<i>winneckei</i>

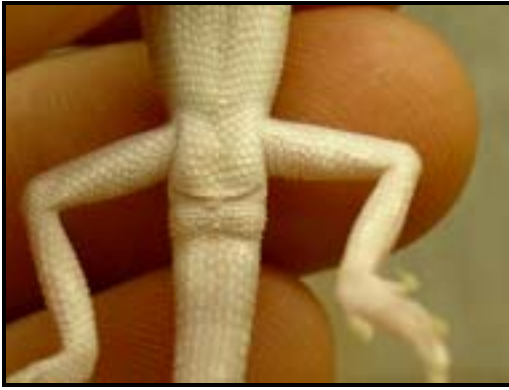
2. Natural History

Cane Grass Dragons were officially described in 1896 (Lucas and Frost). Their common name is derived from the fact that they are often found in Cane Grass (*Zygodloa paradoxa*) on sand ridges. Their scientific suggests that two pores are visible however this is not the case. This diurnal agamid spends most of its time amongst vegetation for protection although males will often be more visible and out in the open to guard their territories. The species is not rare but are rarely observed due to their secretive nature and excellent camouflage. No breeding programs are in place as this species is infrequently kept across zoos in Australia let alone overseas.

2.1 Morphometrics Av adult Weight; 5-8 gram.
Av adult Snout-Vent Length; **Males** Av. 46mm, **Females** Av. 65mm

Sexual dimorphism

The Cane Grass Dragon is a small dragon easily recognized by its slender shape, long legs and toes. Its colour ranges from pale white to dark grey with a grey vertebral stripe and white to yellow dorsolateral stripes. Unique to this dragon in this genus is the presence of ventral stripes. The colour changes depending on environmental conditions and mood. Females have a more robust build and have blotches on either side of their vertebral line. The males are generally more slender and have none or only a few blotches on either side of the vertebral stripe. Hemipenis bulges can be seen on the outside of the cloaca, these can be everted for positive ID.



Male, note the hemipenis bulges under skin



Female, note the absence of the hemipenis bulges

2.2 Distribution;

The Cane Grass dragon is widely distributed throughout central Australia ranging from the junction of Qld, NSW and SA to central WA.



2.3 Habitat;

Generally the Cane Grass Dragon is found in arid sand-ridge habitats where it perches on Cane Grass *Zygochloa paradoxa* and Spinifex *Triodia sp.*

2.4 Wild Diet and Feeding behavior

Cane Grass Dragons are mainly insectivorous, but it is believed that on some occasions they consume flowers and leafy greens. Feeding occurs throughout the day. No specific feeding behavior is recorded.

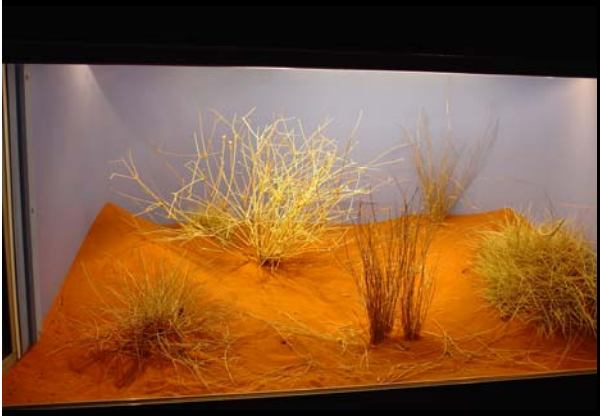
2.5 Longevity

The life span of the Cane Grass Dragon is between 4-6 years.

3. Housing Requirements

3.1 ASDP Display caging

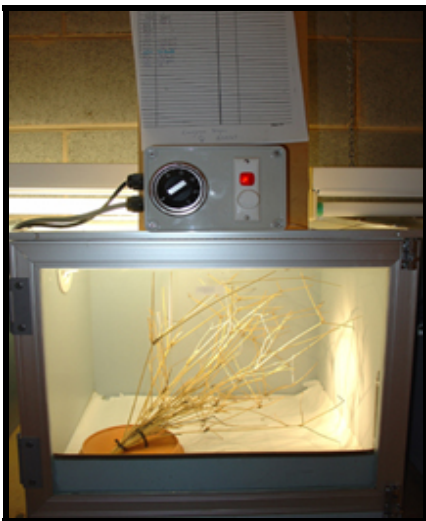
Dragons for display are housed in a pair all year round. The cage setup includes Cane Grass, Spinifex, grasses and red dust-free sand. In winter time flowers appropriate to the habitat are added to the exhibit for a more realistic look coinciding with outside conditions. The sand at the back of the display is approx. 200 mm deep. This depth is necessary for digging/egg laying. Small sand hills (dunes) are incorporated to mimic the natural habitat of the dragons.



Display Nov.2004, habitat appropriate to Sand Country.

3.2 ASDP off exhibit caging

Dragons off display are maintained individually to prevent fighting amongst lizards and unwanted breeding. Housing individually also helps monitoring the specimens for health and behavioural issues. The cage setup is basic for easy and hygienic cleaning. Paper towel is used as a substrate to absorb any moist faeces or water. Cage furniture is limited and consists of a bunch of Cane Grass attached to a hiding dish (see picture). Each cage has an appropriate record sheet to record daily progress about shedding, feeding, behaviour etc.



Off display enclosure.

3.3 Water provision

Each day the dragons receive a light spray of rain water. The droplets that are left on grasses are readily drunk by the dragons.

3.4 Enclosure furnishings

Plants and logs that are used are relevant to the habitat where the lizards naturally occur. Spinifex, Cane Grass and other grasses are used for decorating the exhibit. At Alice Springs Desert Park we treat all plants with a diluted PVA solution. Treating plants prolongs their display life and holds their original shape.

3.5 Heating / lighting requirements

The exhibit and holding enclosures both have thermostat controlled under floor heating set at 30°C. To create a basking spot for the lizards in the display cage, we use two dimmer controlled 12V 50W 38° dichroic spot lights. To increase the amount of light, two Polyflux XL F18/840 tube lights are suspended above the centre of the exhibit. An additional 60 W spot light is installed to increase air temperature when needed. Holding enclosures have one dichroic light which is connected to a thermostat set at approximately 32°C. The tube lights are replaced once a year and the other lights are replaced when malfunctioning. The temperature of the basking spot is between 30°C and 35°C and is checked on a regular basis. When the basking temperature is not correct it is adjusted using dimmers connected to the lights.

3.6 Enclosure cleaning /maintenance requirements

Each day the dragons receive a light misting of rainwater. Paper towel in the off display cage is changed once soiled and the cage is disinfected. Faeces, shed skin, and uneaten food are vacuumed out of the exhibit each day. The deepest part of the sand receives a decent spray of water to facilitate digging for egg laying.

3.7 Intra /inter species compatibility

Cane Grass Dragons can be kept with a number of different species, other reptiles as well as some invertebrates. Our current exhibit includes Striped Desert Roaches. The Cane Grass Dragons do not interact with this species, except in breeding season when the female occasionally attacks the roaches, mistaking their legs for food. We have successfully kept Cane Grass Dragons with numerous reptiles including; Military Dragon *Ctenophorus isolepis gularis*, Thorny Devil *Moloch horridus* and the Legless lizard *Delma nasuta*.

4 Feeding requirements

4.1 Captive diet

Roaches make up 90 % of their diet. Additionally mealworms, crickets and moths are fed. All insects are coated in calcium dusting powder + Vit. D3. The size of the insect is relevant to the size of the lizard being fed.

4.2 Supplements / vitamins

Every feed is coated with Calcium dusting powder + Vit. D3. No additional vitamins are supplemented.

4.3 Presentation of food

The food is offered with tweezers, as this controls the amount fed to each individual. When food is dropped into the enclosure we ensure that the animal eats the food. Problem feeders are sometimes left with 1 or 2 food items in the cage as they can be flighty and will only eat if no one is present.

5 Health requirements

5.1 Routine treatments

Fecal samples are taken 2 times a year, checked for parasites and treated accordingly.

5.2 Known health problems

Cane Grass Dragons are not very susceptible to diseases or ailments, providing basic husbandry needs are met. In the many years we have kept this species only a few medical issues have come up. These include: head tremors, tail tip constriction and an abscess in the jaw. All of the mentioned issues were treated with basic medical care and all animals recovered completely.

5.3 Routine quarantine treatments

When new animals are acquired they are quarantined and checked for internal and external parasites.

6 Behavior

6.1 Habits

The Cane Grass dragon spends early mornings basking on grass or logs. When optimum body temperature is reached the dragons generally stay on a perched position to look for any food that is available. Later in the day the dragons might retreat to a cooler spot in the exhibit but they are always visible.

6.2 Courtship

In breeding season the male will actively look for the female and head bobs to show his willingness to mate. When the female is receptive for mating she responds by slowly lowering her head several times. She will run away from the male if she is not ready for mating, in order to avoid his advances. When mating occurs the male bites the female in her nape and copulation follows.

6.3 Captive behavioral problems

Both male and female Cane Grass Dragons can react defensively towards their keeper. When this occurs the dragons might even attack the hand of the keeper. Ensure that the dragon is not injured when this occurs. Some dragons are of flighty nature and launch themselves out of the holding cages if the keeper is not observant. Ensure to always watch the dragons when servicing the holding enclosures.

7 Breeding

7.1 Breeding season /clutches per year

The breeding season for the Cane Grass Dragon stretches from October to April. In this time the female can produce between 4-6 clutches.

7.2 Breeding group dynamics

We house one male and one female all year round in the exhibit. More females can be introduced if additional breeding is required. The introduction of a second male will result in combat and most likely one of the males will become stressed and injured.

7.3 Age at first breeding

The Cane Grass Dragon reaches sexual maturity in about 1 year providing husbandry needs are met.

7.4 Nesting requirements

Moist sandy soil to a dept of 200 mm is recommended for egg laying.

7.5 Gestation period

Following fertilization the eggs develop in about 2-3 weeks.

7.6 Clutch size

Cane Grass Dragons produce between 1-3 eggs per clutch.

8 Incubation and rearing of neonates

8.1 Incubator type

No specific incubator is required for the successful incubation of the eggs. Both horticulture and conventional incubators have been used to successfully incubate eggs of this species.

8.2 Incubator temperature and humidity

The ideal incubation temperature should be between 28°C and 32°C with a relative humidity of 90%-100%.

8.3 Incubation period

Depending on incubation temperature, the eggs hatch between 40-60 days.

8.4 Rearing of neonates

Caging;

Neonate dragons are housed off display. They are maintained individually to prevent fighting and unwanted breeding and for ease monitoring individual health. The cage setup is basic for easy and hygienic cleaning. Paper towel is used as a substrate to absorb any moist faeces or water. Cage furniture consists of a bunch of Cane Grass attached to a hiding dish (see picture). The Cane Grass provides the dragon with basking and climbing opportunities. Each animal has an individual record sheet to record details on feeding, shedding, behaviour and medical issues

Diet and feeding schedule;

The neonates are sprayed twice a day for the first few weeks after hatching. When they start feeding they get a feed twice a day for the first 5-8 weeks then the feeding should be reduced to once a day. When the neonates reach 1 year the feeding is reduced to once every two days. The diet consists of woodies, mealworms and crickets.

9 Handling and Transport

9.1 Capture and handling of specimens

Cane Grass Dragons can be difficult to catch as they are of a flighty nature and very fast. Once captured they often attempt to bite the handler initially but settle down after a few minutes. Dragons are best picked up by putting your hand over the top of the body. Pick the dragon up around the shoulder area just behind the head, this prevents the dragon from biting the handler.

9.2 Transport requirements

short term;

Transport inside the park can be achieved by using a plastic tub with ventilation holes in the top or in the side. The animal should still be secured inside a cloth/calico bag.

Intra/interstate transport;

Dragons should be packed into cloth bags individually. The bags can then be placed inside a wooden box conform to ARAZPA standards. The box should be lined with shredded paper or similar material that absorbs shocks. Stickers* appropriate for transport should be placed on 3 sides of the transportation box. Never leave the transportation box in the sun or near cold draughts or ant nests. Ensure that permits are organised before the animals are packed. Permits need to be visible on the outside of the box. Transporting in weather warmer than 35 Degrees is not recommended.

*Stickers like “Live animals”, “Keep out of sun”, “↑This way up↑”, “Keep out of cold draughts”