DRAGONS *of the* DESERT

BY DAVID PEARSON

The word 'dragons' conjures up visions of massive firebreathing monsters. However, a large group of Australian lizards are known as dragons and include some bizarre and unique reptiles, such as the thorny devil and frill-necked lizard. They are found in habitats as diverse as rainforest and desert.

Ctenophorus cristatus Photo - David Pearson

A little over 60 species of dragon lizards are currently known in Australia, with most living in semi-arid and arid parts of the continent. In desert areas they are particularly conspicuous, and several different species often coexist in the same area. Many species tend to have a strong preference for certain habitats such as rock-piles or even beds of salt-lakes.

SPINIFEX SPEEDSTERS

Some of the most colourful dragons live in spinifex grasslands, but they can be difficult to follow and observe because they move so quickly when disturbed. Some have the ability to rise up and run on their back legs, often at speeds of up to 20 kilometres an hour, which has earnt *Ctenophorus cristatus* the name of 'bicycle lizard'. This speed, along with their acute eyesight, is needed by dragons to avoid predators and to capture food. Since they are mostly active by day and search for food in the open, birds of prey such as hawks are their main predators.

Most dragon lizards employ a 'sit and wait' feeding strategy - they elevate their heads to get a good view of the surroundings and then wait until a suitable morsel comes into sight. They then race forward, seize their prey with their jaws and gulp them down. Ants and other insects are the main items eaten, although some of the larger species eat large amounts of plant material.

KEEPING HOT

During the cool winter months desert dragon lizards retreat to a burrow and wait for warmer weather. The average summer day for a dragon is largely dominated by the need to constantly shift to maintain its preferred body temperature. Most species like their body temperature in the mid-30s (degrees Celcius), and do a variety of things to keep it at this level, including basking in the sun, seeking shade during the hot part of the day, or changing the orientation of their body relative to the sun by climbing onto a bush or rock. As the sun begins to set, dragons move to sites where they receive radiated heat, such as rock slabs or hot sand.

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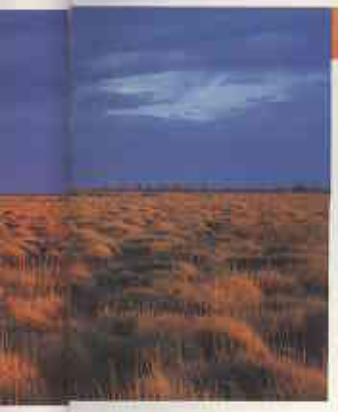
Spinifex grassland in the Gibson Desert, home for several species of dragon.
Photo - David Pearson

The thorny devil (*Moloch horridus*), a slow-moving dragon which feeds mainly on ants.
Photo - David Pearson

A bearded dragon (*Pogona minor*) excavating a nest chamber before laying its eggs.
Photo - David Pearson

Ctenophorus rufescens is a dragon known only from a few rocky ranges in central Australia.
Photo - David Pearson

The western netted dragon (*Ctenophorus reticulatus*) is usually found in rocky habitat throughout central western and south Australia.
Photo - Michael Morcombe



Male and female dragons usually differ in colour. Males are brighter, particularly in the breeding season when the belly, chest and inside legs of the males of some species are a brilliant glossy black. Behaviour during courtship often involves unusual displays of head bobbing or arm waving. The purpose of these displays is not understood.

Very little is known about the ecology of most species of dragons. A Department of Conservation and Land Management (CALM) study in the Great Victoria Desert has been looking at how different dragons respond to fires.

An interesting sequence of events, called a succession, follows a fire. The military dragon (*Ctenophorus isolepis*), a lightning-fast species which hunts its food between and along the edges of spinifex hummocks, disappears soon after a fire, probably a victim of the ever-present birds of prey. Other robust-bodied dragons move into the burnt area and quickly breed. Since they operate in an exposed situation, these species have skin colours which blend well with the mottled appearance of the ground surface and build extensive burrows to foil predators. They have acute eyesight and quickly retreat to their burrows when danger threatens. One of them, the small Clay's dragon (*Ctenophorus clayi*), launches an aggressive display when threatened, baring its bright-pink mouth and advancing to inflict a bite.

As the spinifex regenerates after a fire, dragons such as the military dragon are able to reinvade the area and re-establish, provided there are nearby unburnt refuge areas. As spinifex is slow to regenerate, this phase of the succession could take from five to ten years, depending on the unpredictable desert rainfall.

Dragons are fascinating and colourful, but we are still ignorant about a great many aspects of their ecology. If you are planning to visit a desert area, think about going in the warmer spring months so you can observe some of these delightful desert speedsters. ⊡

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A spinifex fire in the Great Victoria Desert.
Photo - David Pearson

The aggressive display of *Ctenophorus clayi* is designed to intimidate predators.
Photo - David Pearson

The central netted dragon (*Ctenophorus inermis*) prefers more open habitats such as mulga woodland or recently burnt areas.
Photo - Michael Morcombe

David Pearson is a research scientist at CALM's Wildlife Research Centre at Woodvale. He has been studying lizards and small mammals in desert nature reserves and can be contacted on 405 5100.

LANDSCOPE

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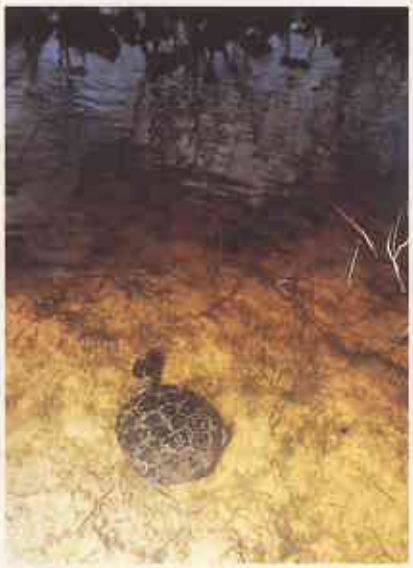
Cloud-capped Bluff Knoll, majestically brooding sentinel of the Stirling Range. Does it hold a secret in its stony heart - perhaps the answer to the missing mammal mystery? See story on page 9.

Mulga and fire - at best an uneasy relationship - sometimes symbiotic, sometimes disastrous. Find out when and where on page 20.

The Kimberley's rugged grandeur is deceptively fragile. Additional reserves managed by CALM help protect the region's delicate, complex and diverse ecosystems. See page 35.



A western swamp tortoise (Pseudemydura umbrina). *Could this be one of the last to be photographed? Not if CALM's ten-year recovery plan succeeds. See page 28 for details.*

An uncommon dragon, Caimaniops amphiboluriodes *inhabits mulga shrubs. Many other dragon lizards prefer harsher habitats such as rock-piles and salt lake beds. See page 51.*

FEATURES

REGULARS

COVER

Central netted dragon (Ctenophorus inermis), *one of the more than 60 species of dragon lizard that inhabit the arid and semi-arid parts of Australia. The acute eyesight and swiftness of dragon lizards are essential in order to avoid predators and to capture food. See page 51.*

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