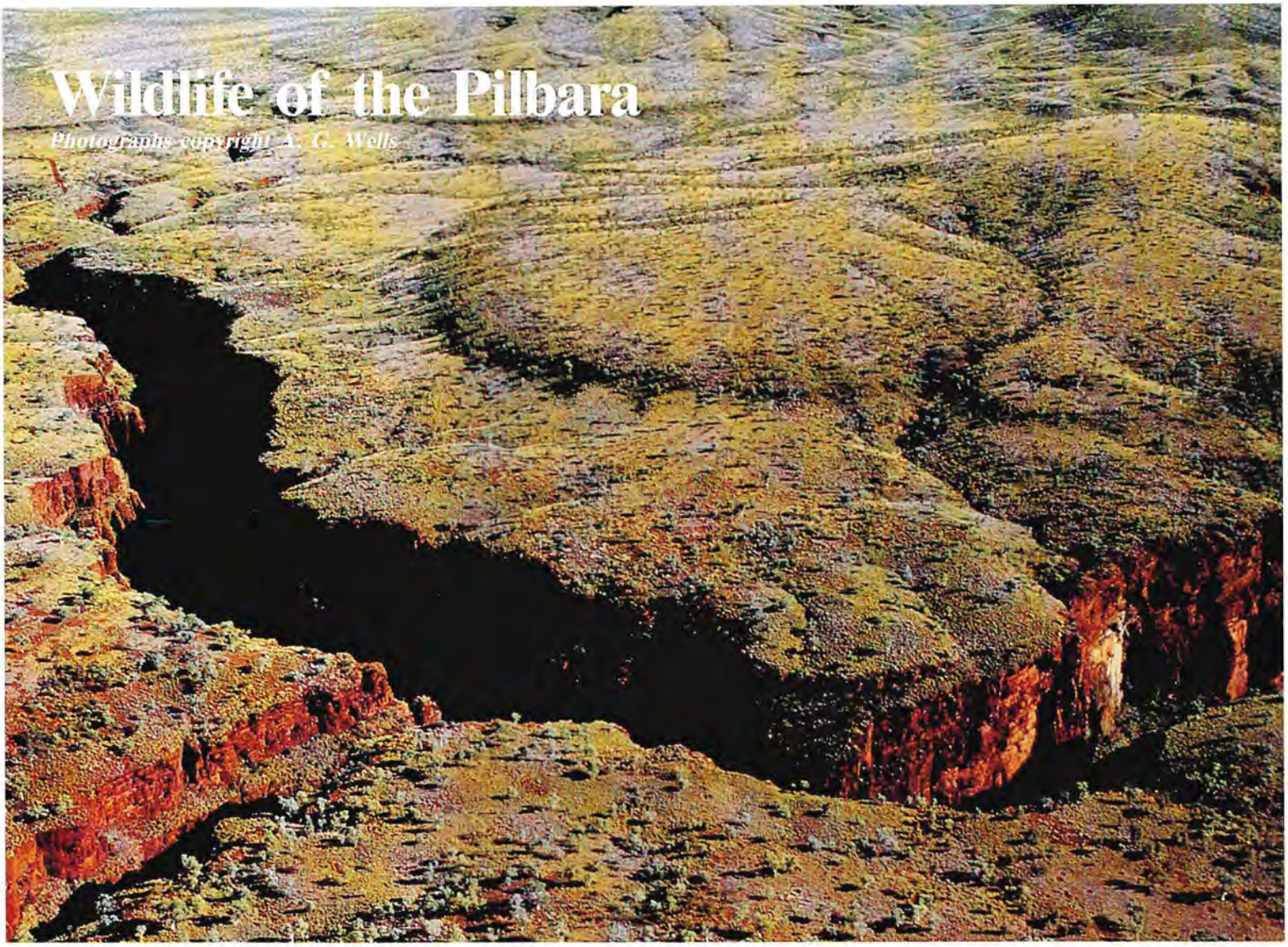
Wildlife of the Pilbara



Internationally important as one of the world's major sources of iron ore in addition to other minerals, Western Australia's Pilbara region is equally important as a fascinating and unique habitat for wildlife. Its landscape varies between spectacular rust red gorges and spinifex covered valleys and plains to tidal creeks and extensive stands of mangrove. However, most of the area's 300 000 square kilometres, an area larger than the State of Victoria, is considered desert or semi-desert.

Sometimes referred to as the 'North West', the Pilbara district stretches north from the Tropic of Capricorn to the start of the Eighty-mile Beach and inland to about longitude one hundred and twenty one degrees. Part of the northern sector represents ancient rocks whose age exceeds 3 000 million years making it the oldest crustal block on the Australian continent. A large proportion of the central Pilbara district is known as the Hamersley Range and Plateau and was formed about 2 000 million years ago. It consists of mainly jaspilite and dolomite. These rocks were considered to have been formed by chemical deposition from ancient seas and the high iron content of jaspilite has given rise to deposits of haematite and limonite which are now being worked as iron ore.

Sometime after the iron formations were laid down, they were elevated and folded by earth movements, and then finally eroded to their present form. Short streams which developed in the Hamersley Range have continued to flow down into the Fortescue Valley weathering such impressive gorges into the escarpement as Dale and Wittenoom Gorges. Similar weathering also revealed bands of long blue fibre asbestos at Yampire Gorge which was the site of the Pilbara's first asbestos mine.

Fifty kilometres further south, the plateau reaches its most elevated point at Mt Meharry which, at 1235m, is the highest peak in Western Australia.

Like much of Australia's north, the Pilbara region could be considered a land of great contrasts. Areas which today may be parched by heat and drought may be covered by flood waters overnight and in a few weeks be a stretch of lush green growth. Consequently, wildlife living under such conditions must be so adapted that they can withstand the long dry spells and make the most of times of plenty.

An example of this climatic variation is illustrated by looking at some rainfall and temperature details for Roebourne and Marble Bar, two towns situated within the Pilbara. The average annual rainfall for Roebourne is just over 300mm, but the highest ever recorded in one year is 1 050mm, while only 3mm were recorded in the driest year. Roebourne's heaviest

▲ The orange-yellow fruit of the wild orange (*Capparis spinosa*) contains numerous black seeds embedded in a sweet black pulp.

The Painted Finch *(Emblema pictum)* is a characteristic inhabitant of the Pilbara spinifex habitat. ▶

▼ The Little Red Antechinus *(Antechinus rosamondae)* is a species of marsupial which is native to the Pilbara zone, from Onslow to Port Hedland.

▲ The Water-Holding Frog (*Cyclorana platycephalus*) is specially adapted to survive drought by storing water in its bladder. When drought threatens, the frog burrows underground, only re-emerging when rain falls again.

▶ Another inhabitant of the Pilbara spinifex grasslands is the Striated Grasswren (*Amytornis striatus*.)

▼ A cyclonic depression near Enderby Island off the Pilbara coast. During the summer months cyclones provide much of the area's rainfall.

downpour in a single day was just under 304mm or more than its yearly average. Whereas Roebourne's rainfall is erratic, Marble Bar shows considerable temperature fluctuations, from 50°C in mid-summer to about 1°C in mid-winter. Furthermore, during one particularly hot and dry spell, starting in October 1923, Marble Bar had the dubious honour of reaching or exceeding the old-time century (100°F) on 160 days in succession.

Because wildlife still manages to live in these hot, arid regions it would be easy to believe that the secret of their survival lies in immunity to high temperatures, but this is not the case. Prolonged exposure to the hot sun would kill most of the birds, reptiles, mammals and insects found in this region and their ability to survive depends not on their resistance to the heat but on their ability to avoid extreme temperatures.

One of the most common adaptations to combat high daytime temperatures for instance is for animals to be active in the cool of the early morning or late afternoon and at night. This habit aids moisture conservation by ensuring that moisture loss, both by sweating and respiration, is reduced to a minimum. During the heat of the day most animals lie up in the shade of bushes or other vegetation, or in rock crevices or underground burrows.

Some other survival strategies employed by arid zone fauna include opportunistic breeding, special drought resistant eggs or larvae, short life cycles and a variety of physiological adaptations such as the ability to drink highly saline water. An example of the latter adaptation is the Chestnut-eared Finch or Zebra Finch which is capable of drinking water more saline than the sea.

Important trees in the Pilbara are the Mulga *(Acacia aneura),* the Kurrajong *(Brachychiton gregorii)*

▲ This small gecko (*Diplodactylus savagei*) seems to occur only in spinifex clumps in the area of Port Hedland. Feeding mostly on insects by night, it may take prey even larger than itself.

▼ A common bird of the Pilbara, the Grey-headed Honeyeater (*Meliphaga keartlandi*) is feeding on blossoms of Bat-wing Coral Tree, (*Erythrina Vespertilio*).

and the River Gum (*Eucalyptus camaldulensis*) which is one of the most common species lining the district's water courses. The white barked Coolabah (*Eucalyptus microtheca*) is another species commonly found along water courses as are good stands of paper barks or cajeputs (*Melaleuca quinquinerva* and *M. leucadendron*).

At Millstream on the Fortesque River grows the graceful Millstream Palm *(Livistona alfredii)* which is found only in the Pilbara and contrasts with the introduced date and cotton palms possibly brought into the area by camel drivers.

The most conspicuous of the ground plants are the tussocky porcupine grasses (*Triodia* spp. and *Plectrachne* spp.) which are popularly called spinifex, although they should not be confused with the true Spinifex which is found on sand dunes along the west coast. The golden-yellow and silver spinifex plains found throughout the Pilbara are transformed after summer rains when the spiky grass clumps change to a fresh green and, with their tall flower stalks bending in the breeze, resemble a waving wheatfield. Besides providing good pickings for many animals including kangaroos, these grass clumps give shelter to many smaller forms of wildlife. Even though outside conditions may be hot and dry, inside the clumps the air is cooler and more humid, thus helping to conserve body moisture for insects, reptiles, small birds and mammals.

Along with the wildlife, much of the Pilbara's flora has also adapted to the harsh semi-desert conditions. An example is Mulga (*Acacia aneura*), one of the most common shrubs occurring in the district, particularly in the southern half of the Pilbara. Mulga can be seen throughout the Hamersley Range in valleys between Newman and Nanutarra where it forms a tall open shrubland, becoming more spread out as soil moisture decreases. Mulga exhibits extremely variable silver-grey narrow 'leaves' or phylodes which are held erect to the sun in the hottest part of the day, thus reducing the effects of intense sunlight and conserving valuable plant sap. In times of drought it will also shed a large proportion of its 'leaves' so as to limit transpiration. The leaf litter and dead branches which accumulate on the ground below the canopy are continually processed by termites and the essential nutrients are returned to the mulga via the soil. The leaf litter also suppresses other plant growth beneath the mulga therefore reducing the chances of fire damage.

▲ A native Kurrijong (*Brachychiton australis*) grows at the base of a folded, banded iron formation in the Hamersley Range.

Cork-bark (*Hakea suberea*), and Native Walnut (*Owenia reticulata*) also protect themselves from fire but, unlike mulga, do so by insulating their trunks with thick, corky bark.

European history of the Pilbara dates back to 1699 when William Dampier's *Roebuck* visited the coast, anchoring within what is now known as the Dampier Archipelago. However, rather than encourage further exploration of this 'new' land, Dampier's reports depicting the region as waterless and inhospitable ensured there was no further British exploration until over a century later.

In 1861, an accomplished geographer, surveyor, naturalist and geologist, Francis Gregory, surveyed that part of the country lying inland from the North West coast. In the course of the survey Gregory discovered and named the Ashburton, Fortesque, De Grey and Oakover Rivers. He also reported good grazing lands and in 1863 the first settlers arrived bringing with them their stock, and went on to locate good pastures around the Harding and De Grey Rivers.

Roebourne was proclaimed a town in 1866 and Tien Tsin, later to become Cossack, operated as a busy port which was linked to Roebourne by a tramline. Once established, the pastoral industry remained a mainstay of the Pilbara region until the early 1960s.

For many years prior to this time, gold, copper, tin and other minerals had been worked in a small way and manganese and asbestos exported in reasonable quantities, but it was not until the removal of embargoes on the export of iron ore in 1960 that a surge in exploration activity began, firmly establishing the Pilbara as one of the richest iron ore areas in the world.

Today, large mining consortiums have invested billions of dollars to establish six major mines, ten new townships, 1 200 kilometres of rail and five separate port facilities. Combined with other components such as the production of salt, commerce, light industry and the development of a natural gas project, these factors have been largely responsible for population growth from 4 000 in 1960 to the present population of about 48 000.

Despite this increased growth and activity, the Pilbara essentially remains a wild land, a land of harsh beauty, immense distances and precarious life, often spectacular and always, uniquely Australian.

Adapted from "*The Wild Pilbara Iron Country and its natural wonders*" by Bert and Babs Wells and published by the Jaycee's Community Foundation Inc. 1982.