

A VISIT TO QUEEN VICTORIA SPRING, JANUARY, 1955

By P. SLATER and E. LINDGREN.

INTRODUCTION.

On September 26, 1875, the explorer Ernest Giles, after a distressing waterless march from the east, discovered Queen Victoria Spring, 43 miles north of what is now Zanthus on the Trans-continental railway. In the eyes of the parched members of the expedition this "miniature lake lying in the sand" appeared as "a liquid gem", and as the leader described it, "the most singularly-placed water I have ever seen, lying in a small hollow in the centre of a little grassy flat, and surrounded by clumps of the funereal pines" (*Australia Twice Traversed*, vol. 2, p. 200).

After Giles' visit the locality attracted many explorers, including E. Goddard (1890), D. Lindsay (1891-92), D. W. Carnegie (1894), A. Mason (1896), C. G. Gibson (1908), and H. W. Talbot (1919). After World War II a track was cut through the area from Zanthus, the primary object being to distribute food to the Wongai living there, and to gather sandalwood. The Australian Aborigines Evangelical Mission then selected a hill 23 miles north of Zanthus as the site of what is now Cundeelee Mission.

We visited the Spring between January 18 and 26, 1955, using a sedan. The track is good between Zanthus and Cundeelee; between Cundeelee and the Spring the bush track, though there were occasional bad patches, was easily negotiable by car.

DESCRIPTION OF THE ENVIRONMENT.

Queen Victoria Spring lies in the Pre-Cambrian area which borders the Nullarbor Plain. Around the Spring itself the country is very sandy, the particles being coarse, and extending to quite a depth. The mission area, on the top of a hill, is covered by about 6 in. of red sand overlying a stiff white clay. Between the Mission and the Spring there are a number of quartz outcrops, and it is probable that the depth of sand increases towards the Spring. A large sandhill, named Streich Mound, can be seen 6 miles east of the Spring, and the missionaries state that the country becomes very sandy in that direction, the sandhills mostly lying parallel to each other.

The Spring itself is set in the side of a sandhill about 15 acres in area. As pointed out by Gibson in his description of the country (*Geol. Surv. W.A. Bull. no. 37, 1909, p. 16*) the term "spring" appears to be a misnomer; "soak" would be more correct. The floor of the sandhill is clay, and it is probable that the "spring" is a pocket of clay holding run-off from the sandhill indefinitely. The only surface water in the soak was in a small hole, 18 in. deep, dug by animals. The water was quite sweet. Twenty feet below the soak is a claypan, which held several inches of water at the time of our visit and covered over a quarter of an acre. A recent thunderstorm yielding two inches of rain was probably responsible for the presence of this water, and it would appear that Giles'



Fig. 1.—Road leading to the Queen Victoria Spring.



Fig. 2.—The claypan at Queen Victoria Spring.

"miniature lake" was a similar thunderstorm remnant in the claypan. On his visit it was two or three feet deep and about 150 yards in circumference. However, it was a dry claypan when Carnegie saw it on April 18, 1894, and he had to dig out the soil to obtain water (*Spinifex and Sand*, p. 38).

VEGETATION

Binding the sandhill are numerous *Acacia*, *Santalum* and *Callitris* trees, composites, coarse grasses, and many bushes of *Solanum*. For about a mile surrounding the sandhill is a thick *Acacia-Eremophila* formation, which supports a large population of honeyeaters, thornbills, bell-birds, and quail-thrushes. Numerous nests of the White-browed Babbler occur in the *Acacia* trees. Outside the *Acacia* thickets the country clears into a *Xanthorrhoea-Eucalyptus* association, which in turn quickly gives way to a dense mallee growth of *Eucalyptus uncinata*, growing to 15 feet, with *Triodia*. This eucalypt was in flower and numerous honeyeaters were attracted to the blossoms. Proteaceous thickets supported thornbills and ground-frequenting birds. Buprestid beetles abounded and provided food for Butcher-birds. Amongst the *Triodia* lizards (dragons, geckoes and skinks) were numerous, and scorpion burrows were frequent.

The trees increased in height southwards to the Mission where *Eucalyptus salmonophloia*, growing to 50 feet, was dominant.

Specimens of the following plants were identified by Mr. R. D. Royce:

Coniferales.

Callitris verrucosa. Well-developed trees were growing in the vicinity of the claypan, the thicket gradually thinning out further from the water. These are the "funereal pines" of Giles' account.

Gramineae.

Amphipogon strictus.

Triodia irritans (Poreupine Grass; "Spinifex"). The commonest plant in the whole area.

Xanthorrhoeaceae.

Xanthorrhoea sp. (not collected but probably *X. Thorntoni*). Encountered only within half a mile of the claypan, growing to a height of 9 ft.

Lomandra leucocephala. Found only on the slopes of the claypan, binding the sand.

Casuarinaceae.

Casuarina Helmsii. Growing along the track between the Mission and the Spring.

Casuarina acutivalvis. Found on the crest of sandhills around the claypan, and also along the track.

Proteaceae.

Hakea multilineata and *Banksia Eldcriana*. Both growing sparsely along the track.

Santalaceae.

Santalum acuminatum (Quandong). Well represented in the whole area, but more frequent near the Spring.

Amarantaceae.

Trichinium obovatum.

Pittosporaceae.

Pittosporum phillyracoides. Mostly found in the Mission area in association with *Eucalyptus salmonophloia*.

Leguminosae.

Acacia brachystachya. Found only in the vicinity of the Spring.

Acacia subglauca. A dense cluster on the slopes leading to the claypan; growing about 30 ft. from the water.

Myrtaceae.

Thryptomene sp. Associated in very dense thickets about 4 ft. high, with *Eucalyptus uncinata*.

Baeckea tetragonia.

Eucalyptus pyriformis. Quite common along the track in the mallee area.

Eucalyptus uncinata. The commonest mallee of the area; it was the only eucalypt seen in blossom.

Eucalyptus salmonophloia. The main tree between Cundelee and Zanthus.

Eucalyptus gongyloides. This tree was sparsely distributed throughout the mallee area; first met with about half way between the Mission and the Spring. Specimens were not collected but the species was identified from Kodachrome photographs.

Asclepiadaceae.

A creeper of this family, with green fruit about the size of a grape, is eaten by the Wongai, who call it "Kalgoola".

Boraginaceae.

Halgania strigosa. Found with both blue and white flowers mainly along the track nearer the Mission.

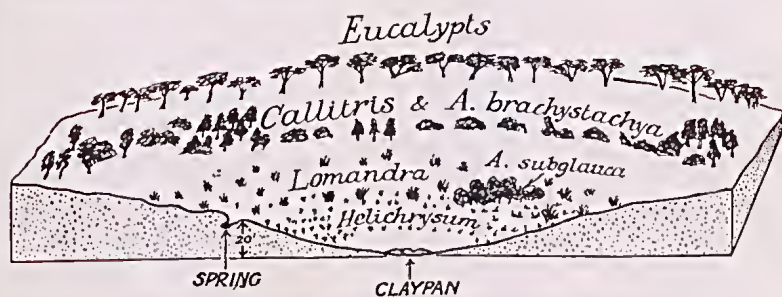


Fig. 3—West-east section through the Spring.

Solanaceae.

Anthotroche Blackii. Found all along the track but nowhere common. We named it "Blue Velvet" because of the velvet-like petals.

Duboisia Hopwoodii (Pituri). Quite common around the Spring. The native children regard it as poisonous, but the older people chew it.

Solanum orbiculatum. Quite common along the track.

Myoporaceae.

Eremophila Duttoni. Growing close to the Mission.

Compositae.

Helichrysum apiculatum. A yellow flower very common on the slopes around the claypan, but not seen elsewhere.

Olearia exiguifolia.

MAMMALS.

A Dunnart was brought in alive by the cat at the Cundelee Mission. It was identified as an immature female of *Sminthopsis murina* by Mr. J. H. Calaby.

No kangaroos were seen, but the natives frequently supplement their rations with kangaroo meat. This would be the Red Kangaroo (*Macropus rufa*).

BIRDS.

Dromaius novae-hollandiac (Emu). Two birds were observed 30 miles south of the Spring.

Geopelia cuneata (Diamond Dove). One bird was noted in the mallee several miles south of the Spring.

Phaps chalcoptera (Common Bronzewing). One bird flushed from the *Acacia* about the Spring. Also observed 10 miles south.

Zonifer tricolor (Banded Plover). Four birds flew over Cundelee.

Anas gibberifrons (Grey Teal). Four birds flew from the claypan at Queen Victoria Spring on our approach.

Chenonetta jubata (Maned Goose). Three birds landed at Cundelee and then flew towards the Spring. The aborigines had never seen this species before.

Hieraaetus morphnoides (Little Eagle). One observed at Cundelee.

Haliastur sphenurus (Whistling Eagle). One bird frequented Cundelee, evidently scavenging.

Falco peregrinus (Peregrine Falcon). One flew over Cundelee and treated us to a breathtaking display of aerobatics.

Falco berigora (Brown Hawk). Frequently observed. One was an extremely pale variant, but the remainder were dark-breasted individuals. A male and female were observed circling and calling together.

Falco cenchroides (Kestrel). Observed only south of Cundelee.

Ninox novae-sclandiac (Boobook Owl). Well-known to the aborigines, who call it "Goorr-goorr".

Glossopsitta porphyrocephala (Purple-crowned Lorikeet). Very common in the flowering mallee.

Kakatoe roscicapilla (Galah). Three birds recorded three miles south of the Spring.

Barnardius zonarius (Twenty-eight). A number observed three miles south of the Spring.

Podargus strigoides (Tawny Frogmouth). Four individuals flushed from the roadside at night several miles south.

Eurostopodus guttatus (Spotted Nightjar). One bird observed at dusk five miles south.

Halcyon pyrrhopygia (Red-backed Kingfisher). A nest of this species was found near the Spring in a termite mound. The hole was about three inches in diameter, four feet above the ground. Each parent visited the nest about once an hour, bringing mainly grasshoppers, leaf insects and skinks, as well as two dragons and a gecko. Several of the skinks were longer than the bird itself. The feeding reaction of the young, on our first two days at the nest, was released by a call, a low "ehurr", from the parents, but later by the sound of the parent's wings. We could induce the reaction by blowing on our hands. Many ants, blowflies and beetles frequented the nest.

Mcrops ornatus (Rainbow-bird). One of the commonest birds of the flowering mallee. Large flocks were observed wheeling about at great heights.

Misocalius osculans (Black-eared Cuckoo). Rather common in the country surrounding the Spring, but more often heard than seen.

Microeca leucophaca (Brown Flycatcher). Frequently met with in the mallee, numerous young birds with streaked heads and wing coverts being seen. Quite often the parents gave a distraction display.

Petroica goodenovii (Red-capped Robin). Observed throughout the whole area.

Pachycephala rufiventris (Rufous Whistler). A male at the Spring was observed to give a bowing display.

Colluricincla rufiventris (Western Shrike-Thrush). Common throughout, the beautiful song being heard wherever we went.

Oreoica gutturalis (Crested Bell-bird). Very common, the "ban-ban-ballela" call heard everywhere.

Coracina novae-hollandiae (Black-faced Cuckoo-Shrike). Common about the Spring, with numerous young in the "Gaseoyne" plumage.

Pteropodocys maxima (Ground Cuckoo-Shrike). A party of ten noted 10 miles south of the Spring; also observed at Cundeelee.

Lalage sueurii (White-winged Triller). A bird in male plumage noted at the Spring, and a number about 12 miles south.

Cinlosoma castanotum (Chestnut Quail-Thrush). Common in Proteaceous thickets and about the Spring.

Pomatostomus superciliosus (White-browed Babbler). A party frequented the Spring area; their bulky nests were a feature of the *Acacia* thickets.

Ephthianura albifrons (White-fronted Chat). A male and female were flushed from the Spring on our arrival, and later a large party flew in to the claypan.

Smicrornis brevirostris (Weebill). The commonest bird throughout the area.

Aphelocephala leucopsis (Whiteface). Observed in the thickets in the vicinity of the Spring, usually those of *Acacia brachystachya*.

Acanthiza pusilla (Brown Thornbill). In association with the Whiteface.

Acanthiza uropygialis (Chestnut-tailed Thornbill). Common in the thickets about the Spring.

Acanthiza chrysorrhoa (Yellow-tailed Thornbill). Seen in more open country to the north of the Spring.

Pyrholaemus brunneus (Redthroat). Common throughout, wherever there are dense thickets.

Artamus cinereus (Black-faced Wood-Swallow). Very common wherever dead trees and large clearings occur together.

Neositta pilcata (Black-capped Sittella). Observed three miles south.

Climacteris rufa (Rufous Tree-creeper). Common about 10 miles south of the Spring among dead timber.

Dicacum hirundinaceum (Mistletoe-bird). Observed in very heavily parasitised *Eucalyptus salmonophloia* at the Mission.

Pardalotus substriatus (Red-tipped Pardalote). Common at Cundelee but not heard at the Spring.

Cinchoramphus mathewsi (Rufous Song-Lark). One bird noted at the Spring; when singing it showed a black gap.

Gliciphila albifrons (White-fronted Honeyeater). Common throughout.

Gliciphila indistincta (Brown Honeyeater). Observed at the Spring, 12 miles south, and at Cundelee.

Meliphaga virescens (Singing Honeyeater). Common throughout.

Meliphaga ornata (Yellow-plumbed Honeyeater). Common throughout the mallee. Very pugnacious and was noticed attacking the Spiny-cheeked Honeyeater.

Meliphaga plumula (Yellow-fronted Honeyeater). Observed 16 miles south of the Spring but the identification is not certain.

Meliphaga leucotis (White-eared Honeyeater). Noted 20 miles south and at Cundelee.

Anthochaera carunculata (Red Wattle-bird). Several birds noted at the Spring.

Myzantha flavigula (Yellow-throated Miner). Common throughout.

Acanthagenys rufogularis (Spiny-cheeked Honeyeater). Common throughout.

Corvus sp. In the absence of a specimen it is difficult to state what species of "crow" occurred. The birds were reasonably plentiful at the Mission.

Squaker (*Strepera versicolor*), Grey Butcher-bird (*Cracticus torquatus*), Black-throated Butcher-bird (*Cracticus nigrogularis*), and Western Magpie (*Gymnorhina dorsalis*). Sparsely scattered throughout.

REPTILES

Most of the lizards had their burrows under the *Triodia* clumps and if cornered were easily caught. The following species came under notice.

Egernia inornata Roscn. A plump reddish skink captured in the *Triodia*.

Amphibolurus maculatus Gray (Military Dragon). Also found in the *Triodia*. This lizard runs very fast, and when at full speed folds its forelegs along the chest and runs on its hindlegs. A female was collected having male sex colours.

Sphcnomorphus sp. A small chocolate-brown skink with four longitudinal yellow lines on dorsum. Captured in the *Triodia*.

Moloch horridus Gray (Mountain Devil). Two individuals were seen. The aborigines consider them reasonably common.

Only two species of snakes were encountered. A Bandy-bandy (*Rhynchoclaps bertholdi* Jan.) was brought in by a native. Another larger snake was seen crossing the track but it disappeared quickly into dead wood nearby.

AMPHIBIA.

Helioporus centralis Parker. These frogs were found to be very common in a low drainage area, about 3 miles south of the Spring, following on the thunderstorm. Most were copulating, the male clinging to the female by his forelegs and propelling both with his hindlegs. The male had a black thumb and forefinger in the free state, but this colour disappeared within two days of collection. The mating urge must have been exceptionally strong, for about 40 frogs were collected and placed in a four-gallon drum half full of water. Within ten minutes many became paired and eggs were laid in the container.

Helioporus sp. This second species occurred with the preceding but in far fewer numbers, the ratio being roughly 1 to 10. The species is not yet described. "A yellowish frog with chocolate spots, not *pictus* or *plobatoides*. This species has also been collected at Morawa, north of Morawa, and along the Murchison River (A. R. Main).

No frogs were found in the claypan at Queen Victoria Spring, but numerous tadpoles were seen in it. None survived of the collection made, so their identity is unknown.

INSECTS.

The most conspicuous insect group that came under notice was that of the jewel beetles (Family Buprestidae). These were feeding on the flowering *Eucalyptus uncinata*. The whirr of the wings of some of the larger species was audible for 30 yards. Up to 30 individual beetles (including some chafers) could be collected from one tree. The following determinations of the material collected were made by Mr. R. P. McMillan:

Buprestidae.

- Thamnognatha bonvouloiri* Saund.
- " *chevrolati* Gehin.
- " *heros* Gehin.
- " *miszechi* Saund.
- " *yarrelli* var. *cleigans* Gehin.
- " *miranda* Cart.
- " *chaleodera* Thoms.
- " *gigas* Cart.
- " *parryi* var. *picea* Kerr.
- " *brueki* Thoms.
- " *oleata* Blkb.
- " *tibialis* Waterh. (many colour and pattern varieties.)
- " *rectipennis* Blkb.
- " *murrayi* Gem. & Har.

Scarabaeidae.

- Metallesthes metallescens* White (two varieties).
- Pocillocephala succinea* Hope.

Trogidae.

One large species.

ARACHNIDS

Centipedes were very prevalent and at the Mission often enter the houses. During our stay we found three in our house.

Many scorpion burrows were spread throughout the sandier parts. One dug up from a spiral burrow about two feet below the surface was a species of *Urodacus*.

THE BREEDING PERIODS OF THE BLACK CORMORANT

By D. L. SERVENTY, Nedlands.

When reviewing the nesting seasons of cormorants in South-Western Australia (1939, p. 368) I concluded, from the evidence then available, that all the species nesting in fresh-water localities bred in the spring months and that only the purely marine Pied Cormorant (*Phalacrocorax varius*) was an exception. This was shown to have a double nesting season, all of the colonies on the coastal islands breeding in the autumn and early winter while those on the isolated Abrolhos Islands bred in the late spring. Field and other evidence since then suggests that the Black Cormorant (*P. carbo*), nesting in fresh-water swamps, not only has a double nesting season in this State but the autumn nesting population is greater than that nesting in the spring.

The Black Cormorant is not a very abundant species in Western Australia and hitherto practically nothing has been recorded about its nesting habits. The only reference I can trace is that of A. J. Campbell (1901, p. 972), who recorded that Miss A. M. Ellis had made observations for him of a rookery of these birds on the lower