

# LITHOPHYTE

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## INTRODUCTION

My writing sample, *Lithophyte*, explores the lives of plants—and plant-like organisms such as lichens—that grow *inside* or *on the surface* of rocks. My sample includes excerpts from two essays “Banyan” and “Lichen” as well as seven poems about the lithophytes of Australia and Indonesia, two countries I visited for an extended time in 2020 in the midst of the coronavirus lockdown. In the tradition of the herbarium specimen, the essays and poems are arranged alphabetically according to genus.

Some lithophytes are endemic to specific locales. This is true of the Gorge Hakea (*Hakea fraseri*), restricted to a few gorges in the New England Tablelands region of New South Wales, Australia. In contrast, other lithophytes are more widely distributed and, in some cases, cosmopolitan. Although native to Africa, for example, Tamarind (*Tamarindus indica*) can be found in tropical environments around the world. My ongoing investigation of lithophytic lives aims to celebrate the astonishing world of plants—and lichen—that derive nutrients not from soil but from air, rain, decaying vegetable matter, and even their own decomposing tissue.

Toward this aim, I have used a variety of poetic styles, forms, and voices to rouse the reader’s imagination. Please note that, due to the spatial layout of poetry—the importance of the space around the words—I have included more than the requested five pages of writing.

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*ALLOCASUARINA LUEHMANNII*

**Bull Oak**

Outlier  
of Dangars Falls,  
Buloke tough as galls  
is gorge iron forged fire  
nutsmall darkbrown shinationspire  
drifting short samara fuzzalls  
is furrowed brittle lorikeet wauls  
needling glossy black cockatoo desire  
see its heart wood of a deep red colour  
see the toning off to pale towards its bark  
is massive medullary mother  
whose scaly cladodes disembark  
not bearing seed it suckers  
daubs water on the parched  
lips of another.

*DENDROBIUM SPECIOSUM*

**Outstanding Dendrobium**

Its lustrous leather leaves splay open to welcome rain  
To issue orchid hope from the tips of pseudobulbs—  
Those jaundice-green stalks dense and rigid as bamboo.

Some know it as Sydney Rock Orchid but I prefer  
Outstanding Dendrobium: a lithophyte leaning from  
A granite ledge overlooking the Apsley River chasm.

Beneath the viewing platform, we stumble gingerly—  
The soil crumbles and rocks dislodge with every step,  
Rumble entropically into the green groin of the gorge.

One day, this dendrobium will tumble too: a ganglion  
Of debris, like a matted birds nest, has amassed, pushing  
The precipice dweller away from its precarious holdfast.

It clutches to the outstretched forearm of a woody  
Vine—just as we do—in a last-ditch impulse to preserve itself.  
But soon, at last, we will fall. The abyss will reclaim us

All. Until then, we hold steadfastly to one another: the stingless  
Bee swaddled in the draping moss, clinging to the cliffside  
Eucalypt, sinking its digits, into precious earth given it.

## *FICUS BENGHALENSIS*

### Banyan

A humid gust whisks the yellowing egg-shaped leaves on the dusty earth below an old banyan. It is the end of the dry season in Central Java, Indonesia. Slowed by the midday sear, I walk—languor my only companion—around the perimeter of the Candi Mendut site. This small temple is less than three miles from the world-famous Buddhist complex Borobudur. In the adumbral haven of the tree's broad-shouldering canopy, a chattering boy swings with euphoria from aerial roots draping to the ground like thick ropes. A brood darts skittishly across the courtyard. Relinquishing his grip on the fibrous cables, the child imitates the rooster's crow then chases futilely after the hens.

My lower vertebrae crackle as I hunch down to inspect a curious alcove formed by the interwoven appendages of the sacred tree. Here, a jar wrapped snugly in a sky blue fabric contains an unseen offering.

According to interpretations of the Karangtengah, a stone inscription composed in Old Javanese and Sanskrit, King Indra of the Shailendra Dynasty constructed Candi Mendut during the early-ninth century AD. The rupestral text attributes the name *Venu-vana-mandira*, or “Bamboo Temple Grove,” to the monument. Mendut consists of a large central temple with a square terrace surrounded by the remains of several smaller brick stupas. A vaulted chamber—musky, cool, and saturated with prayer—encloses statues of the Buddha and two Bodhisattvas seated opposite one another. Relief sculptures adorning the temple's volcanic-stone exterior depict other Bodhisattvas sheltered by the Tree of Awakening under which Siddhartha Gautama—the Buddha—attained Enlightenment. To be precise, the Bodhi tree integral to the Buddhist tradition is a fig species—pipal or *Ficus religiosa*—closely related to the stately banyan that now presides over Mendut.

Although lacking the ascetic devotion of my predecessors, I am likewise inclined to find shade and contemplate the spiritual, historical, and cultural resonances here. A placard near my bench gives the title *Pohon Dewata*—Tree of the Gods—to this behemoth. On the map, an orange splotch reminds me, correctly so, that “Saya di sini: I am here.”

Outside the low iron gate circumscribing the grounds, two less mature banyans serve as sentries at a crossroads. Beneath their outspread boughs, a woman peddles *jamu*—a medicinal decoction of ginger, turmeric, and other herbs—as the oleaginous scent of fried rice intermixes with motorbike exhaust. Beside the refugial trunks, supine men appear as if in an intractable stupor. This soporific scene lies along an east-west axis—considered an ancient pilgrimage route by archaeologists—crossing the Elo and Progo rivers before intersecting with the temples Pawon and Borobudur. Together with the fig trees, the temple (*candi*) triad constitutes a spiritual unity linking the built environment to the plant world—interweaving the physical and the metaphysical.

I swallow the bittersweet brew, hoping it will ease the hacking cough I've acquired since coming to the *candi*-rich Kedu Plain in the shadow of Mount Merapi.

***FICUS MACROPHYLLA***  
**Moreton Bay Fig**

“Figs yellow turning red, usually prominently warted...” –*Flora of New South Wales*

herd  
of feral goats, snow  
coats bolting upslope  
or have they absconded  
their paddock beyond  
to a feast of fig  
hope?

\*

gum bark  
stripping streamers,  
tree unzipping trousers,  
or was it billy rutting that  
left these frilly jutting  
splats of rusty red  
around it?

\*

blue-tongue  
nudges head between  
boardwalk planks to glean  
bush flies zinging by, or is  
she simply saying hi to  
blue sky while it can  
be seen?

\*

fig tree  
espaliered to granite,  
splaying tentacles around it;  
as cicadas call in counterpoint  
I swivel on my ankle joint to  
grasp the woody limb  
that spans it.

\*

latex like  
milk exudes when  
bark is wounded and then  
from warted skin of fruits,  
hard and green beans in  
groups between rust  
stems.

\*

flowers  
turn shyly inward,  
inflorescence splintered  
into ovaries translucent, juicy  
as vesicles of ruby grapefruit,  
wasp-churned through  
this winter.

\*

banyan  
lichened to blue-grey  
by boulder it pours over,  
a lithophyte, stone-lover,  
suckering up top—who  
dropped it there, a  
rosella?

\*

this  
fig is shapeshifter,  
polymorphous stonelifter,  
creeping body cables through  
slimmest creases—root lace  
to stone eyelet, or, likewise,  
seed to sifter?

\*

this  
fig is freestanding!  
hmm, wait, maybe not: did  
its seed vessel take a different  
landing, slip off its stony loft

into rubble wedge it's now  
commanding?

\*

fig  
nested in crook  
of gum who mistook  
a feather-lifted fruit for  
a casual visitor wanting  
just a one-night  
nook.

\*

ficuses  
in fields growing  
huge, showing sculpted  
muscles, flexing six packs,  
ripped lats, perfect pecs  
liquid molten lava  
flowing.

\*

a  
currawong,  
darts among upper  
branches, taking chances  
with sudden lances  
of its beak and  
tongue.

\*

***FICUS RUBIGINOSA***

**Port Jackson Fig**

In this province of currawongs and goats, I am watching.  
As you cross the fence and enter the field, I am watching.

I am the cornea of this winter field preparing to enclose you.  
Tell me, is today the day when the southerly wind is blowing?

Tell me, is today the day when the stacked stones will topple?

I was once water flowing around stone. I hardened in my waiting.

The ribbons of tumbling water calcified to ligaments and bones.  
My leaves agreed with the stones, sand, stars, and sun watching.

The grazers stave off other trees. Goats manicure this foliate gloss.  
When will these inner fruits ripen? My wasps will cease their waiting.

From this rock-strewn rise, I shepherd the slow flexures of seasons.  
New families come. Children mature. They leave. I am left waiting.

See my purpling air roots spider darkly as venous blood. Lean in.  
Soothe this calloused skin with your touch. Breathe in. Watching.

### ***FLAVOPARMELIA CAPERATA*** **Greenshield Lichen**

Walking in the small Indonesian city of Batu, I notice a squat human figure carved from the black volcanic stone typical of the island of Java. Its plump fingers rest on a trunk-like knee. Thick lips purse upward, revealing jagged teeth. Vacant, bulbous eyes stare coldly through me. On its forehead is a carving of a skull. Around its neck is a garland of miniature craniums. Known in Javanese mythology as *Batara Kala*, this fearsome god created light and embodies *kāla*, the Hindu concept of time. Something more than the statue's sinister anatomical features, however, invites me to look closer. A pale-green patina encrusts the torso of the underworld deity. Although its right cheek is bare and as yet uncolonized, Batara Kala is being overtaken by lichen—one of the planet's oldest, slowest-growing, and most often neglected forms of life.

A lichen is a mutualistic alliance, a microorganismic system, a symbiotic partnership, and a threshold organism. Creatures resembling lichens were among the first to arise from the primordial stew to colonize the planet. This ancient composite form emerges from the interchange between a fungal partner (the mycobiont) and green algal or cyanobacterial cells (the photobiont). Whereas the photobiont produces sugars through photosynthesis, the mycobiont produces a suite of beneficial chemical compounds called secondary metabolites. Recent studies, moreover, have identified additional symbiotic partners such as basidiomycete yeasts and specialized bacteria.

Lichens inscribe time's inexorable advance. In the Arctic, seven-thousand miles north-east of my Javanese encounter with Batura Kala, communities of map lichen (*Rhizocarpon geographicum*) are estimated to be as old as nine-thousand years. When those stone-hugging lichen emerged as propagules during the Paleolithic Age, the world's ten million hunting-gathering humans lived in small clans scattered widely across the Earth. Appearing as a crust on and, occasionally, within rock formations, *R. geographicum* is the most ubiquitous Arctic lichen. Easily mistaken by the untrained eye for an inert mineral layer on lithic surfaces, each lichen on close inspection reveals a complex topography of dull gold flecks of *thalli* (undifferentiated vegetative tissue) on charcoal-dark patches of fungal *hypothalli* (mats of hyphae). Biologists postulate that, in Greenland, for instance, map lichens grow at the

exceedingly sluggish rate of one centimeter every one-hundred years. Yet, even so, other lichen species are known to increase their biomass by forty percent annually.

Although categorized taxonomically as fungi, lichens are more precisely symbiotic alliances encompassing two or three biological kingdoms. Lichenologists estimate that there are between 13,500 and 30,000 species worldwide. Approximately six percent of the Earth's surface is cloaked in these composite creatures, these self-contained ecosystems. Uncannily able to withstand inhospitable and, ordinarily, lethal conditions—and hence often given the label extremophiles—lichens inhabit almost all terrestrial ecosystems, from polar, subpolar, and alpine to forest, tropical, and coastal habitats. As epiliths, they populate bare rock surfaces; as endoliths, they embed themselves within the upper few millimeters of rocks. As dendrophiles, they affix their filigreed bodies to trees.

### ***GREVILLEA BEADLEANA***

#### **Beadle's Grevillea**

Devoted I am to this song, being  
an ascetic in a dirtless crevice,  
bivouacked to a gondwanan terrace,  
disciplined I am to disagreeing  
without helmet, harness guaranteeing  
suction on such crumbly precarious  
chasm talus, lacking even a tarsus  
for traction nor a tongue, though decreeing  
“I found my devotion, go find yours too.  
Squat beside me, although not for too long  
for I now have too many chores to do,  
the glacial nocturne swiftly coming on,  
and solitary I shall make it through.  
farewell and thanks for clambering along.”

### ***HAKEA FRASERI***

#### **Gorge Hakea**

granite above me—me above granite.  
whatbird left me here—here me left birdwhat.  
justheard gust beneath—beneath gust heardjust.  
planted bones under—under bones planted.  
canit be long here—here long be itcan.  
touch of rime over—over rime of touch.  
clutchrim of pure brink—brink pure of rimclutch.  
planet below me—me below planet.  
fineniche of soil slant—slant soil of nichefine.  
shadow behind me—me behind shadow.  
whineof gorge torrent—torrent gorge ofwhine.



below is bellow—bellow is below.  
chineof me still here—here still me ofchine.  
bellow is below—below is bellow.

*TAMARINDUS INDICA*  
**Tamarind**

Lombok asam  
prostrate seeming  
slanted into  
twilight saline  
skewered up through  
stony rupture  
bonsaied mind of  
algal sealine.

\*

Thing squall-coppiced  
splotched with lichen  
camouflaged in  
boulder breaches  
pinnate-green pate  
balding leeward  
bluffs enclose us  
lit in neon.

\*\*

Among to sleep  
scarce roots that clutch  
harsh cleft between  
that which was—will  
make thought as sweet  
as deep brown pulp  
from sickled pod  
of tamarind.

