

Seaweed

John Charles Ryan

A Book of
Algae

SEAWEED

A Book of Algae

John Charles Ryan


Aralia Publishing

|

Copyright © 2018 by John Charles Ryan
All rights reserved. This book or any portion thereof
may not be reproduced or used in any manner whatsoever
without the express written permission of the publisher
except for the use of brief quotations in a book review.

Printed in Australia
First Printing, 2018

Aralia Publishing
PO Box U37
University of New England, NSW 2351
Australia



Dedicated to mermaids and mermen, sirens and
naiads, fays and kelpies, dulse and kelp

|Contents

Prologue

Poems

Seawave

Seawalk

Seasong

Seaskull

Sealace

Seashorn

Seawall

Seawish

Sealeave

Seadeuce

Seawade

Seawed

Image Credits

Resources

Back Cover Blurb

Prologue

The Past and the Future of Seaweed

Neither plant nor animal, seaweed is a breathing mystery and ancient curiosity. Known to naturalists as marine macroalgae and to foragers as sea vegetables, seaweed performs photosynthesis, as plants do, transforming sunlight into energy. Even though it populates all oceans and has adapted to a wide range of climate types – from tropical to arctic – seaweed, nonetheless, remains an enigma with an unspecified global distribution, incomplete scientific classification and unknown degree of biodiversity. Even so, our lives depend on seaweed. In all shapes and sizes, marine algae supplies 75% of the planet's oxygen and absorbs vast amounts of atmospheric carbon dioxide.

Phycologists – biologists who research marine macroalgae – divide seaweed into three groups, namely, red (6000 species), brown (2000 species) and green (2000 species). Whereas the smallest seaweeds are only a few millimetres, the largest are 30 to 60 metres. Giant kelp, for instance, grows to an enormous size while forming extensive forests in the ocean. All kinds of seaweed have a root-like holdfast connected by a stem-like stipe to leaf-like fronds. Others have air-filled bladders. The seaweed body, or thallus, presents an array of configurations from simple filament or broad sheet to flat frond or a crust on a shoreline rock.

Seaweed is eminently adapted to the relentless demands of what marine ecologists call the littoral zone – or the shoreline – as well as the intertidal zone between extreme high- and low-water levels.¹ Macroalgae, indeed, are elastic enough to flex with waves and currents yet robust enough to produce stable colonies in exceedingly turbulent marine habitats. An anti-freeze-like carbohydrate allows these organisms to survive frigid Arctic water. Seaweed also absorbs nutrients from the ocean through its surface. Following the loss of 90% of fluid content from desiccation, remarkably, some species can begin to photosynthesize again merely hours after being returned to water.²

Despite the emergence of terrestrial plants from algae, relatively little is known about this group of organisms. Evolutionary biologists suggest that algae have existed for three billion years and marine macroalgae for more than 500 million. The recent identification of a deep-ocean order of seaweed called the Palmophyllales

points to the splitting of algae from plants 540 million years back.³ This pioneering alga developed a large thallus and complex structure independently of its green counterparts. The seaweed has adapted to light-starved conditions at 80 metres below the ocean surface as an innovative means of coping with the pressures of predation.

Most seaweeds have considerable nutritional and therapeutic value. Nori, dulse, kombu, wakame, carrageen and other popular macroalgae contain ten times more minerals than land plants. Habitual consumers of seaweed rarely suffer deficiencies of iodine, calcium, phosphorous, magnesium, iron, sodium, potassium and chlorine. Used in folk medicine as a cure for goitre and other ailments, seaweed has been shown recently to heal brain tissue following injury.⁴ It is also the source of umami, recognised by Japanese palates as the fifth taste in addition to sweet, salt, bitter and sour. In fact, the word *umami* stems from the Japanese term for 'deliciousness'.

Occupying 8% of the world's ocean surface, seaweed benefits the biosphere immensely and is vital for a sustainable future. Seaweed processes sunlight more efficiently than plants do. Algae, including microscopic phytoplankton, generate 90% of the atmospheric oxygen and 80% of the organic matter of the planet.³ Meanwhile, macroalgae supply food and habitat to diverse providers. Crabs, sea anemones, periwinkles, limpets, starfish, mussels, coral and sea urchins are protected from waves and predators within the sheltering fronds of seaweed. Chemists, furthermore, are developing

high-oil-yielding diesel made from algae⁴ and investigating seaweed as an agent for remediating soil contaminated by heavy metals.⁵

For these and many other reasons, I offer you this little collection, *Seaweed: A Book of Algae*, with its special focus on the humble ocean vegetable as my poetic subject. In attending to the mysteries of macroalgae, however, I am far from alone. Instead, I join a chorus of historians and poets for whom seaweed has presented an intriguing object of contemplation, churned up forcefully from depths by storms or swaying elegantly in sea shallows on a clear morning. Reading and writing poetry inspire my imagining of these organisms and furnish a prospect from which to glimpse their deep-time consciousness.

I started writing about seaweed by reading natural history. Living in Australia, near the coast, I sourced phycologist William Henry Harvey's *Phycologia Australica*, published in 1858 and, to my delight, available at a local library. Harvey observed seaweed populating rocks or rock pools and appearing commonly 'in the *rejectamenta* thrown up by the waves on sandy beaches, or among drifting masses of weed and tangle that sometimes accumulate between two strong currents'.⁶ The phycologist also extolled marine algae as 'very pretty objects for an amateur collection. When once dried, if kept in a dry place, they will last for ever'.⁷

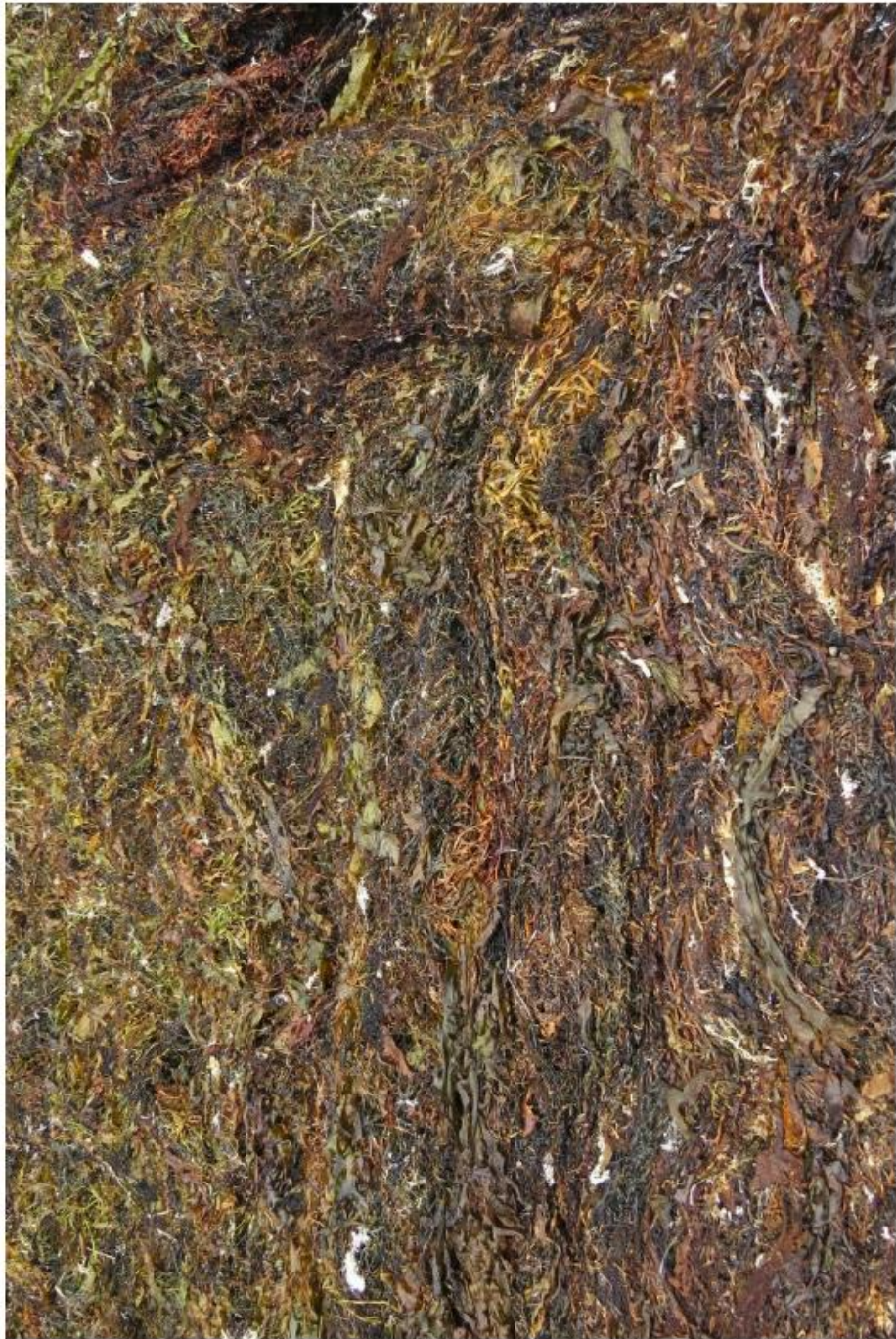
In addition to familiarising myself with macroalgae history and ecology, I read what other poets have had to say about these enthralling though misunderstood

lifeforms. During the nineteenth century, for example, Henry Wadsworth Longfellow wrote the poem 'Seaweed' with its lively references to 'The toiling surges, / Laden with seaweed from the rocks'.⁸ Pablo Neruda also penned a poem 'Seaweed' in which the algal subject speaks for itself: 'I am the seaweed of the storm / dashed by the surf'.⁹ And in yet another poem titled 'Seaweed', Diane Fahey evokes 'clumps of swaying darkness' and a 'crusted globe weeping light'.¹⁰

The writing process behind this chapbook was sensory and en plein air. Where possible, I touched, smelled, tasted or ate, listened to and appreciated the beauty of marine algae. I visited several colonies in New South Wales and Western Australia then reflected philosophically on the uncanny knack of macroalgae to endure the demanding conditions of the littoral and intertidal zones. I kept field notes – turning these later into poems – and took photographs of seaweeds and the creatures that rely on them for survival. In this way, I came to understand humanity's utter dependence on algae for the future of Earth.

Seawave

In prismatic water,
seaweed waves of pale purple—
the ocean breathes out.



|Seawalk

After quicksand & windshear & saltsting,
on that shady porch at Ellensbrook
Homestead, we caught our breath
& gave our sermon about the tribulations
of hoofing it over crunchy seaweed beds &
dunes & granite precipices where our feet
throbbed & yielded & toenails split like our
will to continue on & how we resisted urges
to bail as evening gifted superbly fine sand &
hooded plovers courting & effervescent sun
collapsing on itself & sensual curvature of
sandbanks forestalling onshore breezes.

In forest cover after Ellensbrook, we opened
thigh and calf throttle, tramping over gum tree
bric-a-brac & sheoak miscellany to reach a medley
of moon-tipped algae asking of the day come what may.



Seasong

And the dulse that you found strung in the sea
Are the chords plucked by Ptolemy;
Now the sun of May is awful and sweet;
Now the moon and the tide ever repeat
Songs of light.

I'm sorry for this but it just had to be
That the fucus turned brown and leathery
And the tussling tide became your creed;
The water is still red and softly bleeds
On the isles.

Tangled paths from the sea, onward they lead
Quite hard to discern and spidering,
Spun in the same feverish dream
That brought sight of the sun to Ptolemy
Through the night.

Now the star hangs at its apogee—
I'm sorry for this but it just has to be.



Seaskull

in a jumble of seaweed—

concavities where the eyes sparkled,
jaw that once yawned with daybreak,
cheek bones that once deflected gale hiss.

we are this underneath
and the frame of us
will loiter long after

inspiring skin has gone, supple
mosaic muscle withdrawing under bone,
a bleached whirligig wind-spinning into the unknown.



Sealace

stabbing nuisance,
seatossed bother
testing textures,
tasting tones,
sharp lace
shedding tiers
of briny colour,
disclosing inner
purple translucence.



Thyasnocladia coriacea.

Wm. A. Pritch. del.

Seashorn

on each fontanel
the wind shears
air sings in ears
like a dulcimer
against celloing
of seashorn surf
stirring fossils of
bladderwrack birth.



|Seawall

Easter Sunday in the city
and Collaroy Beach has closed
after an invasion of bulky
swales of sopping rawhide leather—

heaps of kelp belts, purses, cowboy
hats, lassos heaving over handrails
into a walkway as a sunburnt guy
loses his footing, stumbles, almost sheds

the AC/DC towel girding his loins.
The Easter Bunny couldn't come
this season so beseeched an esteemed
emissary to stay in Sydney indefinitely

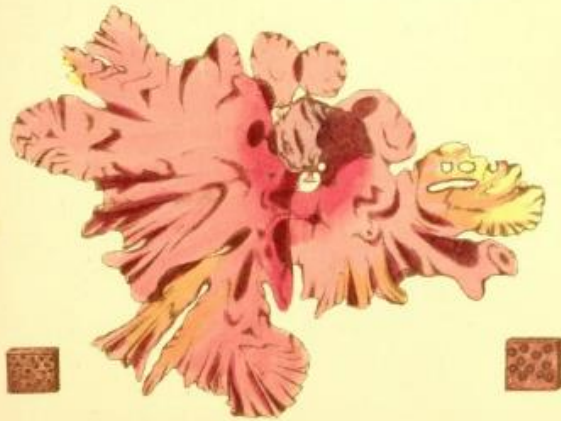
and though he's *smelly and unsightly*
he's a beach-builder, a gift wrapped in
slime and iodine, an advocate of starfish
and anemone. Gilded gesture from sea.



213.—*Kallymenia Dubyi*, *Havr.*



214.—*Iridaea edulis*, *Boyd.*



215.—*Kallymenia reniformis*, *J. Ag.*

|Seawish

A mile away, I thought you were
an octopus,
many-armed in the glassy sand.

The last storm must have disknuckled
your holdfasts from
the warm stomach lining of the Pacific.

With the blunt sun scalding your skin
for the first time,
are you as unafraid as I think you are?

Though our passage is narrow we will
tread this alien coast
together in stony hope of tomorrow.

|Sealeave

I've taken my leave of sea,
shriveling to mummy of dark amber,
a sleeping curve beneath you

on bed of errata in pastel hue
of rocks spewed up from tidal torrent
thrust, my stipe hollowed bamboo.

I've taken my leave of sea,
mucilage hardening to superglue,
seasoning each lunar new.

I'm beached and cannot
return to ancestral reach of ocean.
I exenterate beneath you.

Seadeuce

After Aesop's 'The Farmer and the Sea'

Dear lonely sailor, I'm not your enemy,
I'm Thalassa, solitary spirit of the sea.
I give life to fish, whale and dolphin.
I'm spurred, like you, by wind's gyration.

With my crab pincer horns and algae
vestments, I must obey each whim
Of masters Amphitrite and Poseidon,
Those spiteful gods who beckon me.

I'm not a siren who lures you away
Not wicked and jealous like Aglaope.
*Even more gentle than that dry land
of yours.* I'm no seductress, understand?

In these fathoms, there you are. And there I am.

Seawade

tropical Cyclone Bianca
agitates
the placidity of the reef

*

a sunworn Italian couple
gabbles
in old country jolts

*

pale husbands cradle infants
cautiously
towards first saline bliss

*

snorkelers don polymer
colours and
transfigure to dulsemen

*

|
the male toilet becomes
grainy
and as rank as the kelp

*

onyx sand mounds up
against
the razor-scalloped algal rocks

*

sea cucumber cow livers
jetsam
in littoral shallows

*

rejectamenta mirages
ensparkle
the iris of Mettam's Pool.

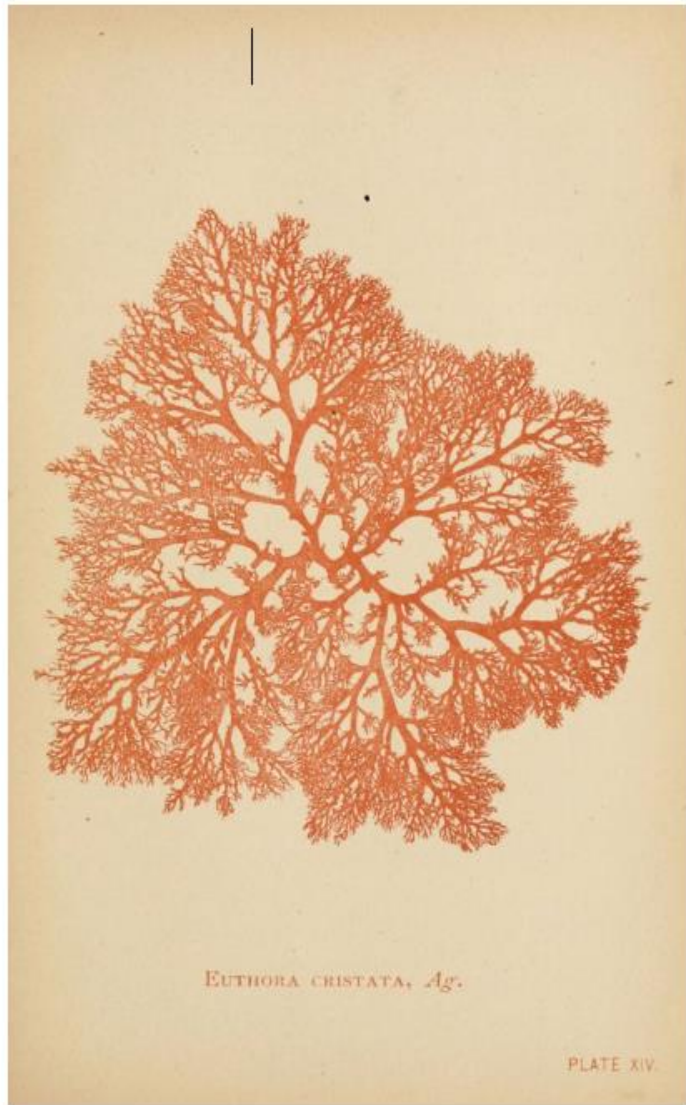
Seawed

I am not divine. Stop being senseless!
Are my stigmata not worldly enough?
You who branded on me pulpous and rough
guff of diction and left me defenseless?

I am not dumb rather I apprentice
to the sea you worship but only bluff
in words that hiccup injurious stuff
and ever eruct, outwardly endless.

Let me disclose my meaning through presence,
suggestive of my wholeness though voicing
nothing but utter quavering pleasance
and a demure quivering rejoicing,
my wine-dark seawed flosch presenting
an ancient union enjoining.





EUTHORA CRISTATA, Ag.







Image Credits

1. Seaweed Bric-a-brac, Cape to Cape Track, Western Australia © John C. Ryan.
2. Plate from *Phycologia Australica, or A History of Australian Seaweeds* (1858) © William Henry Harvey (Wikimedia Commons).
3. Sargassum Seaweed I © Sam Fraser-Smith (Wikimedia Commons).
4. Sargassum Seaweed II © Sam Fraser-Smith (Wikimedia Commons).
5. Plate XXXVI from *Nereis Australis, or Algae of the Southern Ocean* (1847) © William Henry Harvey (Wikimedia Commons).
6. Seaweed in Ensenada, Baja California © Tomas Castelazo, www.tomascastelazo.com (Wikimedia Commons).
7. Plate XLVII from *British Sea-weeds* (1872) © Margaret Gatty and William Henry Harvey (Wikimedia Commons).
8. Carrageenan Seaweed © secretlondon123 (Wikimedia Commons).
9. Plate XIV, *Euthora cristata* from *Sea Mosses: A Collector's Guide and an Introduction to the Study of Marine Algae* (1893) © Alpheus Baker Hervey (Wikimedia Commons).
10. Devon Seaweed © Chris Parfitt (Wikimedia Commons).
11. Wales Seaweed © GerritR (Wikimedia Commons).
12. Plate XI from *A Popular History of British Sea-weeds* (1851) © D. Landsborough (Wikimedia Commons).

Resources

1. Alan Major, *The Book of Seaweed*. London: Gordon & Cremonesi Publishers, 1977, p. 22.
2. Kaori O'Connor, *Seaweed: A Global History*. London: Reaktion Books, 2017, pp. 7–19.
3. Emma Marris, 'Strange Seaweed Rewrites History of Green Plants', *Scientific American* (2016), 9 May, www.scientificamerican.com/article/strange-seaweed-rewrites-the-history-of-green-plants/.
4. Chris Rhodes, 'Biofuel from Algae: Salvation from Peak Oil?', in *Seaweeds and their Role in Globally Changing Environments*, A. Israel, R. Einav and J. Seckbach, eds. Berlin: Springer Science+Business Media B.V., 2010, pp. 229–248.
5. Chris Pash, 'Australian Researchers Have Found that Seaweed Can Help Heal Brain Tissue', *Business Insider* (2017), 12 September, www.businessinsider.com.au/australian-researchers-have-found-that-seaweed-can-help-heal-brain-tissue-2017-9.
6. William Henry Harvey, *Phycologia Australica, or A History of Australian Seaweeds*. London: Lovell Reeve, 1858, p. vii.
7. *Ibid.*, p. ix.
8. Henry Wadsworth Longfellow, 'Seaweed', *Poetry Foundation* (2018), ll. 5–6, www.poetryfoundation.org/poems/44645/seaweed
9. Pablo Neruda, 'Seaweed', in *Isla Negra: Poems*, D. Maloney, trans. Buffalo, NY: White Pine Press, 2001, p. 84, ll. 1–2.
10. Diane Fahey, 'Seaweed', *Southerly* 58.1 (1998): p. 75, ll. 2, 8.

Back Cover Blurb

Seaweed: A Book of Algae explores the wonder of the world's seaweeds in poetry, photography and illustrations. This little e-book brings to life the relationship between seaweeds and the dynamic environments they inhabit. On an ever more imperiled planet, the lessons of the algae kingdom might offer the hope that humankind needs so desperately. For more information about the project, including future publications, please contact John Charles Ryan 