

NOT

ON SCIENCE

MY

NOTES



C O C C O B O Y L E

NOT MY NOTES  
A COLLECTION OF POEMS ON SCIENCE

COCO BOYLE

*To my family, always.*

*To science, you witch.*

*To my biology major GPA, RIP.*

<b>Starstuff</b>	<b>7</b>
<b>Atmospheric Physics</b>	<b>8</b>
<b>Bergmann and Allen</b>	<b>9</b>
<b>Dobzhansky</b>	<b>10</b>
<b>Bone Structure</b>	<b>13</b>
<b>Osteology</b>	<b>15</b>
<b>Reinforced Orbitals</b>	<b>17</b>
<b>Stratigraphy</b>	<b>18</b>
<b>Senescence</b>	<b>21</b>
<b>Apoptosis</b>	<b>23</b>
<b>Gentamicin</b>	<b>26</b>
<b>Scientific Immunity</b>	<b>27</b>
<b>White Gum Hatred</b>	<b>29</b>
<b>The Irish Giant</b>	<b>33</b>
<b>Freaks</b>	<b>35</b>
<b>Endocrinology</b>	<b>37</b>
<b>Brain Chemistry</b>	<b>39</b>
<b>Memories</b>	<b>40</b>
<b>Circadian Arrhythmia</b>	<b>42</b>
<b>Neurological Lullaby</b>	<b>43</b>
<b>Stress Response</b>	<b>44</b>
<b>Resource Allocation</b>	<b>46</b>
<b>Sexual Selection</b>	<b>47</b>
<b>Oxytocin</b>	<b>49</b>
<b>Whiptail Lizards</b>	<b>50</b>

<b>Viral</b>	<b>52</b>
<b>Chromosomes</b>	<b>53</b>
<b>In Vitro, Vivo</b>	<b>54</b>
<b>Mitochondrial Eve</b>	<b>55</b>
<b>Alloparenting</b>	<b>56</b>
<b>Barnacles</b>	<b>57</b>
<b>Linnaeus</b>	<b>58</b>
<b>Mesurement</b>	<b>59</b>
<b>Bias</b>	<b>60</b>
<b>Making Slides</b>	<b>61</b>
<b>2000 RPM</b>	<b>62</b>
<b>Probabilities/Miller-Urey</b>	<b>66</b>

# Starstuff

*“The revelation of this immensity...was like falling in love”-Giordano Bruno*

we are made of starstuff  
forged in the burning cries of unapostatic souls  
starstuff  
shimmering in helical boundless structures  
a trillion cells strong  
boundless starstuff  
we have no edge  
and in this night beneath the stars  
we have no edge  
we will forge a new understanding elemental  
without infinite gods  
and finite men  
without knowledge in books  
and silicon chips  
we will emerge from caves on two legs  
using clubs to break hyperdisks  
for no ochre handprint can contain the sky above  
this world will be made of starstuff  
and it will have no edge  
like falling in love.

# Atmospheric Physics

*“The paleoclimate record combined with global models shows past ice ages as well as periods even warmer than today.”-NASA*

The temerity of life to persist  
against geologic forces and better judgment  
is quite frankly, bewildering  
persisting in the whiplash of time  
to bubble ferociously under ice-locked seas  
to burn bright  
within the heat of volcanoes  
the tilt and whirl and sway  
of the star-lit stone breast  
was david to goliaths  
though  
through some self righteous internal logic  
it reared its self-replicating head  
again and again  
from the top of Mauna Loa  
to the vents of the Pacific Ridge  
yet life branched into brilliant phyla  
again and again  
through ice and warm  
through the wanderings of lineages  
til it differentiated into us  
teetering on the brink of ice and warm  
staring determinedly into the oncoming glaciations  
with the stubborn vanity of ancient bacteria.

# Bergmann and Allen

*“... within a broadly distributed taxonomic clade, populations and species of larger size are found in colder environments, and species of smaller size are found in warmer regions”-Bergmann*

The great hand of natural selection  
whirls the pottery wheel of the world  
the varying forms of humanity arise  
undulating clay blobs  
in the gyrations of the earth  
a lineage becomes linear  
rolled gently underhand  
those in the tropics are  
molded towards the heavens  
tall, ebony surfaced  
fired in the kiln of the tropics  
the glaze as dark as melanin blaze  
expresses heat as easily as a lover's kiss  
the hand moves north  
palm down  
compressing the unformed bodies  
to the squat rounded torsos  
conserving heat exquisitely  
ribs round, legs bowed  
taken from the heat of their origins  
the porcelain coverings translucens in the UV  
beneath the surface  
synthesizing multitudinous parts of our whole  
the confluence of differences  
the spectrum of humanity  
is the ecogeography of art.

# Dobzhansky

*"Nothing in biology makes sense except in the light of evolution."-Dobzhansky*

Nothing in biology makes sense  
except  
in the light of evolution  
the early morning light  
carried across the horizon by the chariot of the Beagle  
filtering Darwinian  
through the phylogenic trees  
gently curving off the concave pelvis of *Ardipithecus*  
filling the gleaming bones with photovoltaic life  
the thousand pages of *Origins* in a thousand Victorian homes

Nothing in biology makes sense except  
in the afternoon of evolution  
the lazy afternoon suffused with sun-bathing lemurs  
and Scopes Monkeys trials, embattled lawyers  
the gentle chatter of academic and tantalizing siren of genomics  
of behaviors and rituals

Nothing in biology makes sense except  
in the dark of evolution  
the deepness of our DNA  
the millennial long night that shaped us  
molded our lineage in unyielding geologic forces  
the turning of stars and the march of the glaciers  
the depth and attenuation of our humanity  
projected on the cave walls of our minds.

#2

Nothing in biology makes sense  
Except in the light of evolution  
The great spotlight of evolution  
Arcing across the yggdrasil of skeletons  
wildly branching through the terra of chronology

A bone-white incisor of ardipithecus juts from the trunk  
The upturned toes of baerlingus  
The gently curving half-moon of the australopithecus pelvis  
The diminutive skulls of h. floriensis  
The finally sinusoidal lumbar of erectus unfurling in the upper branches

Nothing in biology makes sense except  
when illuminated in the lighthouse of evolution  
The ship of embryology comes sailing safely to shore

Nothing in biology makes sense except  
in the light of the wildfire of evolution  
Raging down molecular landscapes  
Neon signs of relatedness

Nothing in biology makes sense  
Except in the twilight of evolution  
Flickering gently over the gently gleaming cities  
Subverted selection  
Crumbling in the forces of time.

Nothing in biology makes sense except  
In the dark of devolution  
That night of our making  
The world to come  
The progression of regression in which the only forces are not of our own  
Except in the dark  
The dark of evolution

# Barnacles

Out there in vastness  
was it swirling around in your head  
or did it coalesce when you looked upon the exposed bones of the sloth  
did it spark into cognition  
or were you too careful

the footprints of ideas to earthshaking large  
for your internal stability

did it wreck you dear Charles  
did it tear your marriage to shreds?  
Emily's frosty demeanor  
her lifeline to heaven too strong

Was your vision blurred  
atheism your only cure  
become a barnacle Charles  
and weather the storm that is to come.

# Linnaeus

I imagine Linnaeus  
bearded, bending over a carefully preserved species of flower  
eyes dark with concern

To have so much power  
of your own design  
what separated you from the unknown unnamed greek systems succumbed to the withering scorn  
of time

Obsession breeds legacy  
and my time spent pouring over diagrams  
attributed to you  
but I can't help but see  
you giggling over an entire family of flowers named Clitoria

# Bone Structure

*“The hominid pelvis is much shorter than ape pelvis, with muscle attachments reoriented for effective walking.”-John Hawks*

I feel it in my bones  
that need to escape what has shaped us  
to jump out of the hormone fueled flesh  
too easily controlled by touch  
leave behind my convoluted lump of gray and white matter  
too instrumental in empathy  
I grow weary with the weight of  
our origins  
and simply  
become a skeleton ossified  
of disbelief

even then  
I am a puppet of biology  
pulled in an endless walk  
by the intangible strings of selection

I look down at the delicate phalanges of my hand  
whose elongation demarcates  
us from them  
all the better for grasping with  
my long lovely pelvis  
all the better for walking with  
the tiny floating hyoid  
all the better for talking with  
even at my core I am horribly humanoid

the only recourse is destruction  
a sacrifice to the cultureless lineages of ape-men  
we outcompeted  
recompense for the world we have raped  
in our wanton succession

I tear off my l-shaped jawbone  
so that I am rendered speechless  
crack the utilitarian length of my legs  
crush my ridgeless browline  
until all that remains is a pile of calcium on the bereft earth  
left best to its own devices.

# Osteology

and I lie there  
a collection of cells  
synapses silent

what can they learn from my husk  
is this where the knife pries secrets from me?

the wriggling worms  
and silent encounters  
written in bacteria  
come to life

scars betray me  
I am a sum of interactions and actions

my skeleton betrays me  
my teeth have too-big-mouths  
my wrists are liars

the untruth of me lies naked on the operating table  
the dirt could not cover me

**#2**

In a thousand years  
the brittle tip of my ossified femur will poke through the soil  
bury me deep, boys, bury me deep

the wind will uncover me bone by bone  
until I lie exposed  
my bones belying the truth of my existence  
bury me deep, boys

I will pass into the shadow-world of inferences  
staring eyes reconstruct me

from the once-broken wrist  
chipped tooth  
now-vacant eyes by crooked nose

# Reinforced Orbitals

But what are we really?  
A smattering of traits  
I see in Yorick  
Reinforced orbitals  
Phantom phalanges  
The ability to remember him well  
He could ape the role well  
In the lowlands of Gombe  
Memories made by tents and primates all named F  
A mirror held to the environment in the grasping hands of the orangutan  
Two eyes a face  
A name, a vocalization, the ability to vocalize  
A suburbia made of leaf nests  
A mere 1% of coding  
Perhaps there's no such thing  
As a human  
No branching lineages stretching backwards in babies birthed  
Perhaps there's no such thing  
I only imagined you in my lab notebook.

# Stratigraphy

*“Catholic priest Nicholas Steno established the theoretical basis for stratigraphy when he introduced the law of superposition, the principle of original horizontality and the principle of lateral continuity in a 1669 work on the fossilization of organic remains in layers of sediment.”*

I grasp the ledge  
the strength of my fingers rasping the rough sandstone  
reaching gymnastic  
I stretch for the foothold left  
so I am splayed across the face of the cliff  
sliding my hand upwards searching for the next foothold  
my right hand crosses in one motion the undulating waves of strata  
thousands of years in one dynamic move  
pulling upwards my ribs heave  
straining towards the next move  
I imagine trapped within the differential colors  
the raging jaws of an ichthyosaurus frozen in calcified rage  
as I skip and step  
bouncing over ancient predators  
and algal blooms  
til at last I stand splay legged at the top  
gazing over the rugged topography of the desert  
and make the mental pilgrimage  
vanishing laetolian into times past.

#2

halfway up the face  
I am at an impasse  
legs trembling from anaerobic effort of the ascent

balanced on the barest of footholds  
I rest my face against the grit of the sandstone  
lungs heaving with the effort  
I close my eyes

reaching upwards  
my hands splay starward in the arch of the chimney

scanning the surface in hopes of traction  
and there!

I open my eyes  
the stratigraphy of the rock is startling  
a single tooth juts from undulating waves of strata  
pinched between my fingers

and I vault upwards  
past the gaping leviathan grip  
ichthyosaurs frozen in stony lunge  
upwards through the delicate settlements of centuries  
pulled by the strength of my hands  
tendons twist and muscles spasm  
upwards with the step of my feet  
upwards against gravity and into the burning rays of the sun  
at last I sit Babel high  
watching the empty leagues of desert unfurl Laetolian  
here I am

my chalked handprints the ochre of modernity  
that will pass over this rock with the brevity of the western wind

# Senescence

*"... is the gradual deterioration of **function** characteristic of most complex lifeforms."*

The antagonistic pleiotropy of aging  
haunts me

me  
in my ozymandias youth  
the bend and heft of muscles taut  
[beneath smooth skin]  
of clear eyes and steady hand  
all the better for pursuing with  
sun tanned beneath the violent sun  
reaping the benefits of life history  
the immediacy of survivorship and intangibly high fitness  
are meaningless

we have subverted those once-powerful twins with  
structures of gleaming metal and concrete  
machines that flash in the night  
vaccines clear and powerful

but we cannot triumph over the simple linearity of time  
no fountain of youth illuminated in the helical curvature  
no one switch discernable in the fluorescence multitudes of ATCGs  
no certainty but death

like the lion  
we face the slow curve of senescence  
the downward slope of decreasing function  
drawn in the bone-like hand of statistics  
that we  
are cursed with remembering

so that when we reach the unreturnable precipice  
on the far right of the graph

unlike our brother lion  
we can knowingly scream  
at the impending blankness of the page  
with the impotent inelasticity of worn-out lungs.

# Apoptosis

*“a normal, genetically regulated process leading to the death of cells and triggered by the presence or absence of certain stimuli, as DNA damage”*

I.

I carry my death with me  
37 trillion strong  
written in the curvature of my cells  
apoptosis  
I stride vital  
the headiness of my youth  
carving the earth before me  
weaving between brandished guns and swerving cars  
I laugh at the sun  
teeth bared  
eyes rolling  
the mushroom cloud of my vitality  
encompasses the earth  
How could my mother and father know  
they doomed me to crumble from within  
my ozymandias youth  
snatched from me like breath  
by a biological conspiracy  
my recombinant fate

II.

I carry my death with me  
Neatly packaged in each cell  
A temporal landmine  
buried in the warfields of evolution  
my body  
a trillion trillion cells  
a trillion trillion triggers  
apoptosis

the fatal mechanism  
apoptosis  
I am a machination of warr  
I will pass on  
this loaded gun to all my unborn daughters  
building them inside me  
cell by cell  
when I hold her in my arms  
the first time  
I will cry once  
for I have created and destroyed you  
a single tear that falls  
against the overwhelming  
biological forces  
apoptosis  
one day the unstoppable force will start  
microscopic  
and I will crumble from within  
as all have before me  
I will be brought to my now arthitic knees by a lysosome  
apoptosis

III.

the man who discovered telomeres died today  
his last breath a gentle sigh of regret  
lying there  
surrounded by a friends and family  
they fade from sight  
as he disappears into his cells  
40 years of scrutinizing  
familiar iterations  
he feels the microstructures crumbling  
the familiar decay pathways  
bring him no comfort  
the ambition of youth has left him  
the echoing hallways and closed doors  
of laboratories at night  
teetered on the cusp of discovery

immediately lay trapped  
beneath the glass tabletop of his lab notebook  
within these glimmering structure lies flammelian youth  
globular temptress  
every shrinking

my chromatin-curse  
micron-heavy bring me low in my ozymandias youth  
til the day when the cascade begins  
death-scythe proteins relaying the knell  
scytheing through nuclear formations  
membranes friendships wane and they drift apart  
all that's left

IV.

the societal blebbing carves lines in JFKs face  
apoptosis  
fills the tombs of kings  
apoptosis  
killed our other eve  
apoptosis  
inevitably

a cavernous biological wasteland

# Gentamicin

*“Gentamicin, sold under brand name Garamycin among others, is an antibiotic used to treat several types of bacterial infections.”-Wikipedia*

there should be cymbals  
wails of sorrow  
gnashing of teeth  
hearses horses hellfire  
but there is only the sterile whisper of the hood  
glare of glass  
and my white lab coat  
the one with giemsa stains like blood  
the drop hangs suspended  
at the tip of my pipet  
a reverse conception  
of ungentle gentamicin  
the red of the blood below  
so so red  
the bloom of youth blushing  
in test tubes  
the bloom of malaria across sickly cheeks  
the indigos of fever so  
beautiful and bright  
the only forces prolonging cultured life below is capillary action and surface tension  
of a single shimmering drop  
for a silent moment  
gravity is defeated  
and then  
it is not  
death is an osmotic wave.

# Measurement

The flask slips and smash  
shards lie on the floor  
irreparable  
Delineated markings now meaningless fractals  
In the microcosm of the lab  
The chaos is sublime

Let us cast aside all measurements  
The farad and the gram, the colomb and the liter  
zettaohm gigaelectronvolt, yoctohertz, Picometer,

[Femtokatal, zeptobequerel, nanocandela  
exafarad, milliweber, yottatesla,  
attohenry exajoule, petawatt]

The people will burst through the vaults of Sevres  
Burning cries swelling in their throats  
To topple these false gods  
And melt them down to burnished mirrors

So that all that is left  
To measure ourselves against  
In this boundless new world  
is the warmth of your body  
And the intangible music of the stars  
that are not here

And we will murmur to each other  
It is good.

# Bias

I pare away  
with my mental knife  
the sliver of doubt  
cleanly shaving the dark spots to lie discarded on the side  
held up by iterations  
and repetitions

flawless-balanced-simple

what is left is a glistening David  
in which a simple glance is revelation

## Making Slides

adrift in a sea of saline  
I lie smeared across the slide  
drenched in giemsa  
my features stain bright blue  
down the barrel of the Leica  
the giant eye gazes  
I am counted  
and quantified beneath the celestial grid  
the light burns my tissue-thin body  
and I start to lyse  
memories bursting free  
swirling across the coverslip  
until all that is left is my skin

## 2000 RPM

The centrifuge hums in the corner  
quietly separating the plasma from the red red blood cells

there is something divine in the muted whirr of the rotors  
each revolution swirling out the denser imperfections.

If I were to climb into a test tube  
stripping off gloves, coat, and glasses  
to curl gently inside the glass cell  
would I slowly rise with the supernatant emotions  
to be decanted clear and perfect into the world  
while the precipitate of my mortality  
lays discarded underfoot?

# Scientific Immunity

*“As an incentive for participation in the study, the men were promised free medical care, but were deceived by the PHS, who disguised placebos, ineffective methods, and diagnostic procedures as treatment.”-Wikipedia*

*HELA, harlow, tuskagee  
sacrificed for immortality  
are you a monster or a man  
time is a flat circle*

**#2**

HeLa, harlow, tuskagee  
science makes macrophages of us all

abhor the antibody  
science making anti-bodies  
[science secretes anti-bodies]  
[blank face topography]

sometimes there's no correction  
error ERROR error 401  
you can't fix death with a transformation  
cover naked ambition with a lab coat and coat it with nitrile gloves  
the malice of white eyes

now Now is different  
ethics committees concomitant with experience  
but their tables are balanced on the backs of Lackses

graph that mother f\*&ker  
graph what  
on the floor  
your curves and regressions  
lay buried, ain't no more

Q-Q transformation think again replication  
Statistics ain't savin the shit that you're layin  
On people not people black people just numbers

A study administer penc-illin encumbered

the science suits said  
bad blood is what you got  
the lies in their eyes say  
it ain't the white man it's the suit  
never trust a suit, hear  
there ain't no hearts there  
they lyin bout them free procedures

#3

HeLa, harlow, tuskagee  
science makes macrophages of us all

abhor the antibody  
science secretes anti-bodies  
cloak naked ambition with a lab coat  
and coat it with nitrile gloves  
enlarged scotomas seek bodies  
the heart is just a muscle

HeLa, harlow, tuskagee  
clone me then forget to call

#4

HeLa, harlow, tuskagee  
burnt at the altar of immortality  
burnt black  
black bodies  
white labcoats

HeLa, Harlow, tuskagee  
we carry our shame in our labcoat pockets  
can't wash the blood from nitrile gloves

HeLa, harlow, tuskagee  
there is progress and then there is blindness  
there are unbias and there are unpeople

# White Gum Hatred

In prepatent silence  
The worm/wyrm/waits  
Encysted in your mind  
Migrating  
Growing  
The milkspots on your liver of hate  
It migrates up the brainstem  
Pushing its gargantuan fluid  
Serpentine  
Growing with each  
Until crusting is crystalline  
Hatred it waits  
Events stimulate its larval leak  
The verminous pneumonia  
Of the riots  
White gum hatred  
Your anemic philosophies  
That turn hair dull and kinky  
Once hale  
Limbs in lethargy  
Gasping  
Loeffler's pneumonia rasping  
Tarry stool leaking  
I can see them peeping  
Out your throat  
Seeping out  
Seeking out  
White heads waving  
Your deeds migrating cutaneous-creeping eruptions  
Penetrating  
Migrating  
Inflamed penetration routes  
Tattoos  
If only someone had shoved mebendazole hope down your wretched throat

#2

get across ignorance of poverty-lined with roundworm-also a disease of poverty  
bare-foot dust clouds slap  
the moment echoes in twilight memory  
whiplash moment in vicous memory  
faces staring wifebeater-stillness  
mud ankledeep  
porch struts heron angled above shantys

bursting through alveoli  
up up  
horrid things crave recognition  
towards light they come  
through your mouth  
out your nose  
they seep  
seek  
you are host  
the transmission continues  
control is futile  
how can your target this abstract?  
slack jaw  
hooded eyes  
hands clasped round abdominal distention  
no food  
no job  
distended belly

your air hunger sickens me  
waiting until conditions are right  
hypobiose emotions  
spring-rise the worms

Notes: focus on homophobic nature of campus/American life! not racism

**#3**

In prepatent silence  
The worm waits

beneath your vineyard vines blazer

subcutaneous

Encysted in your mind  
Gathering fibrous collagenous to bind it irreversibly  
To your unknowing host cell

Transmission was inevitable  
In a way  
You were blameless  
The mere touch of infected minds was enough  
A quick moment of indecision  
A thought  
And it wriggled deep to your flesh  
Piercing pincers ripping tearing  
Flagellated movement unstoppable

Standing  
Alone  
Spewing vitriolic dogma  
Hemorrhaging hatred  
Ribs concave with bigotry  
Gaspings heaving  
The air hunger of hatred consumes you  
There is nothing I can do for you  
A self-cure is the only escape  
From your imposed isolation

So retch gag expel your way to freedom  
The worms lie glistening on the barren earth  
I will wipe the spittle from your mouth  
And take your hand unafraid  
My menbendazole heart burning bright.

Together we will  
Start afresh  
Ancient rhythms restart  
Korotovs sound strong  
Milky eyes clear  
Let us bring immunity to the world

It is clear you have never understood love  
Or people  
There is no mebendazole to save you from this

# The Irish Giant

Don't take my body  
Don't take my bones  
says poor old Charles Byrne  
the Irish giant  
I buried myself  
down deep in the earth  
but they sold my down to science  
£130  
is what I cost

Charles Byrne is my only friend  
the poor old Irish giant  
they took your flesh  
they took your soul  
and put it on display  
for £130  
back to prying eyes  
wired up you'll always stay

dark sockets stare  
don't take my body  
don't take my bones

8 foot slump  
don't take my body  
don't take my bones

LED glare  
rib lights on ceiling

£130 for 200 years  
and 30 second display [and 30 seconds on a free tour]

from behind the rows  
of coldly gleaming jars

2392

ovaries of a hawk moth

2393

3 week sloth fetus

he stares me soul

Charles

Charles Byrne

the Irish Giant

dark sockets stare

don't take my body

8 foot slump

don't take my bones

LED glare

don't take my body

rib lights on ceiling

Don't leave my body

Don't leave my bones

But I am late for class

**#4**

dark sockets stare

don't take my body

8 foot slump

don't take my bones

LED glare

don't take my body

rib lights on ceiling

don't take my bones

plastic plaque reads

don't take my body

bury me at sea

don't take my bones

pituitary tumor

don't take my body

please god let me be

they sold him for some guineas

# Freaks

the arguments fly back and forth across the room  
swinging like Cleo's sparkling form on the trapeze  
the crowd of students filling the academic arena chant *exploitation*  
a wave of the star's languid arm to the other  
roars *equal opportunity*  
a humanizing moment met by malice

but me  
sitting silently  
watching the credits roll  
think we need to dig deeper  
go further in each scene

zoom in on the pinhead children frolicking around the legs of Madame Tetrallini  
the black and white image of the beetling freak brow filling the four cornered screen  
*further, further* I shout now in Tod Browning's voice  
until they are dehumanized completely  
and the simmering student debate fades  
and the silence of cells lie glimmering wetly onscreen

the students mouths shut in astounded awe  
the narration slide begins  
LADIES and GENTLEMEN  
What you are about to witness will push the boundaries of HUMAN IMAGINATION  
MAGNIFIED from the MOST MINISCULE of cellular machinery  
you will not believe the horrors that await your innocent eyes  
see before you the exotic  
the invasive p53 tumor suppressor that this unfortunate suffers from  
an affliction that could strike down any of us  
the savagery of nature  
the pleiotropic effects of biology  
ladies and gentlemen  
the real monster  
...D...N...A....

a freshmen in the front row faints  
a sophomore yelps  
good god there must be a test for it!  
we've got to have a treatment for it!  
we can fix it!  
we can fix them!  
the miracles of modern medicine?!?!?!?  
the camera slowly zooms out  
out to the quivering eyes of Jenny Lee Snow slowly filling with tears  
out to the meadow  
where the children of god dance.

# Endocrinology

I choose nothing  
but let me believe in pop music and the Bible  
let me sing of love instead of oxytocin  
Put my blinders on and let me say I do  
burn the studies  
in our genealogy of circles and squares  
I am nothing more than a dead end [geometric shape]  
give me a shaded color so I may pass quicker  
from this earth ruled by biology

# Brain Chemistry

It's just brain chemistry  
I scream to myself  
rocking back and forth behind closed doors

brain chemistry I sigh  
that colors my world this hopeless shade of nothing

that turns me into a writhing worm of the lowest phylum  
incapable of anything beyond it's the limited scope of its primary nerve nets

a few faulty synapses and I am undone  
what little it takes to unhinge us  
for lack of serotonin signals I am lost

lost amid the darkening corridors in the hallway of my gray matter  
next to doors I cannot open  
for to raise my hand is akin to suicide  
on account of this damned  
damned  
brain chemistry.

# Memories

The ephemerata of memories  
forms a glittering pathway  
frozen in the neuronc amber of emotion  
we can relive moments in perpetuity  
the myelin cabinets of our minds  
overflowing with flickering images of dopamine and acetylcholine  
times past.

# Circadian Arrhythmia

In the neon of the night  
they gyrate  
music fueling the ongoing rituals  
2am 3am throbbing pulsations in nightclubs  
bodies sweat and throw  
a hand skywards the hair haloes in defiance  
with steepled fingers across mahogany desks  
brows furrowed  
decisions are made  
attentive attendants brings silver sets in and out  
coffee rivers trickle between conversations  
mothers hands shush the nightmares away  
eyes wrinkle  
voices reassures  
round and round  
interrupting melatonins ministrations  
in hospital beds sometimes they stop  
whilst a monotonous beep echoes in the corridor

#2

I am outside staring in  
at the drums circle sounding the circadian rhythms  
serenity surrounds the biological lullaby the thrum  
to the sleeping biosphere  
the tribe of hipsters passes out by pbrs  
the toddlers who have said goodnight to the moon  
the crickets slowly waking  
each of the wearing bon ivers face  
let me in  
let me hear  
for the love of god let me sleep  
the stasis is killing me softly

# Neurological Lullaby

It is midnight on a  
Monday

my parasympathetic system  
walks down the hallways of my physiology book  
and gingerly ease open the pages  
stepping cautiously between diagram 5.17 and the schematic of the electrocardiogram  
out onto the floor of the dimly lit  
study room

affectionately tucking a  
loose strand of hair behind my ear  
he runs his acetylcholine fingers  
across my sacral medulla  
shushing the adrenal gland  
into bashful inactivity.  
closing my notes  
he turns sternly next to my rabbit heart  
silently chastising...  
which obediently slows  
its contractions  
Tucking my jacket firmly round my shoulders  
...

As my head gently falls to the scrawled notes  
from his inevitable attentions  
he turns one last time  
to look upon my circadian frame  
before he shuts off the lights  
and gives the satisfied chuckle  
known only to parents  
and disappears into the unreality of dawn.

# Stress Response

I feel

In the fringes of the night

My body start to fail

Staring at the diagrams and text

I slowly slide down the curve of my cortisol response

Marinating in a sea of corticoids

I wait until morning

Deadening my receptors

Those delicately constructed membranes

Contemplating why zebras don't get ulcers

but my clostridium pylori don't comply

adrenaline comes bouncing in

on nike covered feet

epinephrine unshod waits his turn

and I imagine a future in which

I am so conditioned that

the voluptuous swell of my response curve anorexically flattens

and my flat eyes register only black and white

but the hours tick by

and the test comes

life went on marginally flatter

**#2**

staring at this diagram of the stress response is provoking a mirrored reaction in me

I feel my cortisol levels rising

oh god no

next to it is the list of memory storage pathways that I just can't seem to remember

jesus

the clock is running perilously low

and I am dangerously unprepared

for this exam

shit what else is on there?

Does that come from my long or short term memory?

which is activated via the..

the..hippocampus-no-amygdala-noooo

harvey save me

pulse skyrocketing

pupils dilating

adrenaline rising

four hours to go

# Resource Allocation

We all play the game  
consciously or not  
the simplicity of selection diluted  
with the solvent of emotion  
from the throbbing of A. traeva through the cool night air  
the female emerges from behind the harungana frond  
but the deep blue of his Armani coat remains  
reminiscent of the frenetic vibrations of the bird of paradise

#2

the game is afoot  
what turns will their life history take?  
a study in selection plays out  
at the end of the bar.

the tilt of her head  
the shade of his Armani tux  
reminiscent of the blue blue of the bird of paradise  
the jealous intellectual looks on from  
his sullen corner, unfavorable in frowsy tweed  
her eyes flit around  
the vibrancy of her presence an unspoken demand  
they circle her gravity  
honing on unconscious signals  
what difference is there between the wrapped leaf of the damselfly  
and the jameson in crystal cut glass  
his only thinly veiled indicators of resourcefulness  
the quick conversation no different from the swift twitch of the grouse

We build on deepest darkest evolutionary urges  
towers of words and rituals of love  
quantifiable, traceable  
unbearably obvious.

# Sexual Selection

*“The sexual struggle is of two kinds; in the one it is between individuals of the same sex...in order to drive away or kill their rivals, ...whilst in the other, the struggle is likewise between the individuals of the same sex, in order to excite or charm those of the opposite sex....”-Darwin*

I have a theory about you and me  
Lamarck would say when you walked in the room  
I acquired a certain new characteristic for you  
Say yes, baby, say yes  
Fisher would say our ratio is just right  
But if it was unbalanced, honey  
I would stabilize it with you all night  
Because one and one make two then three  
There's no limitations on us babe, so Malthus says our love can expand geometrically  
My body is Francesco Redi  
From all the love you've spontaneously generated in me  
No-no-slow-down those curves  
Don't make my words mutate  
You're inverting my meaning  
Don't delete my true feelings  
I'm just getting to the point  
That the variation you induce in my life  
Is something I'll select for every time  
Like those blind cave-fish I don't need eyes to see it  
Call everything else in my existence vestigial but you-  
You-you-baby-you  
Say our hearts are homologous  
And you feel the way I do  
My love for you is not like genetic drift  
Decreasing over time  
Its like a coelacanth, never changing  
Say yes, baby say yes  
Let's start a phylogeny  
Our derived characteristics will be honesty, fidelity and always love  
And after we're dead and gone  
Our bones lying intertwined, calcified in the strata of the earth

They will say everything coalesced back to this moment  
So say yes, baby, just say yes.

# Oxytocin

In a fleeting moments  
our lips touch  
I experience a flood of oxytocin  
the sensory department in overdrive  
heat racing down nerve endings  
heart pounding faster  
pupils dilated  
epinephrine coursing through  
the electrification of love  
joined in this moment in the biology of Cleopatra and Marc Antony  
our seduction identical  
our humanity inseparable  
a genetic heritage of endless love.

# Whiptail Lizards

I wonder if whiptail lizards get lonely  
It certainly is much simpler their Amazonian lifestyle  
Clones of each other skittering through the desert brush  
Bloop new lady friend bloop another  
Surrounded by their sisters  
How romantically Dionian  
They wouldn't even notice with their teensy chordate brain the conspicuous complications that  
those of the y chromosome persuasion bring  
*Cue the eye roll*  
I mean there's starfish who have removed sex from the equation completely  
But I mean come on  
Being a starfish  
Who needs that  
And fragmenting  
Well that hardly sexy at all?  
Who wants to say their genesis was from auntuncle *Nepanthia's* left appendage  
*Nobody*, that's who  
At least it's a step up from the conjugal tubes of amoebas  
*Collective shudder*  
But there's a downside to that courtship free efficiency, babe  
How would we ever be able to cope with all the stressors to our environment  
If there wasn't a big strong sexual recombination to protect us?  
There's such a fuss kicked up over  
Those chromosomes XY ZW ZZ  
Cycle back to that yin and yang  
That rooster and hen bollocks  
We're in a mutational meltdown anyway  
Give it ten million years and the y chromosome is a goner  
The genes all ran away because natural selection said it had cooties  
The autosomes would be the big kids on the block then  
I would skip rope with those fellas I mean hot chicks  
I mean do away with it? No its necessary-statement  
Do I get 70 cents or a whole dollar-dammit  
Who the hell knows  
Blame it on my parietal lobe

Or the patriarchy  
It makes all the decisions anyway.

# Viral

He's just better at it than you, darling.  
the comment lodges on the membrane of my psyche  
cloaked in kindness my receptors lock  
and shuttle the antigen in  
embracing it  
clathrin coat swaddling  
until it reaches my ribosomes  
replicating  
packaging  
desiccating my system  
leeching from my nurturing cytosol  
until with a haughty sigh  
I whisper to her  
he's just better at it  
and thus its spread  
person to person  
plague  
multiplying  
legion

# Chromosomes

The simple difference between the two neatly wrapped chromatin structures  
determines the courses of history  
who know how many great minds have been fettered by the simple appearance of two Xs  
at the simple instant of the fusion of two gametes  
the course of a life is laid out  
an emotional pathway littered with sexing  
things will grow  
cells differentiate  
minds molded by the influx of specific hormones the almighty influence of androgens  
but we have all shared the sexless void of preconception  
our unformed bodies  
the radical dynamism of a simple egg  
a collection of proteins  
a sperm  
separate in two bodies  
before the meeting of two was a blameless one  
the fusion is when it all goes the hell.

## *In Vitro, Vivo*

Wowh  
breathe  
its my first time  
I'm just a little nervous  
I look okay right, I look pretty?  
smooth my labcoat nervously  
my hand trembles  
You're sure, we're doing this?  
Ohmygod we're really doing this!

No one will take you from my gloves, my loves  
I've seen your lives laid out in neon bars  
No one can interpret you the way I can.

I have brought you into being  
but on you will be taken far from your home in the lab  
from your mother you chosen one  
while your brothers and sisters are discarded  
those I have loved and nurtured  
with the dexterity of my hands  
the clinical love of a mother can be no stronger than mine.

They may have commissioned you  
but I have created you with the dexterity of my hands  
coaxed you into being  
you will never know that  
you are mine more than ever.

Egg and sperm are material  
I have made you in my plastic womb.

# Mitochondrial Eve

Do you feel close to our mother?

I don't

that motherhood that permeates yours and mine

a trillion cells strong

wending through a seas of humanity

our mitochondrial mother

eve

I can trace you in skull fragments and buried footprints

but there's no need to look outside of myself

each breathe is a legacy to you

respiration<sup>2</sup>

every reaction is you

very thought comes from you

stems from your gift

# Alloparenting

the grandmother effect  
sounds so warm and cuddly  
I imagine out proto-ancestors  
mucking around in the savannah  
parents out foraging for grubs  
will dear old mrs. *homo habilis*  
putters about in a floral apron crocheted from grass  
handling out fresh-baked grubs  
to her bouncing baby primates  
whose faces are enshrined in daubed paintings on cave walls  
whom all the visiting tribes are compelled to worship  
before passing through.

# Light Microscopy

I am filled with disgust  
even the parasites I scrutinize through the scope of my Leica  
have some innate direction  
blind worm wriggings guided by  
migratory pathways embedded in knowledge  
obvious to even basic nerve nets  
yet me in all my gloriously intricate lobes  
frontal occipital parietal societal  
float formless in the void.

why are *we* not guided solely by hormonal signalings  
or drawn north by the magnetic compass known only to species of birds?

I wish for that unerring precision and unwavering fortitude  
to flap my future-guiding wings  
heading toward an American Dream of my own.

whose idea was it to equip these bipedal meat suits with  
the delicate synaptic interactions  
and protenoidal patterns from which an embarrassingly sentient consciousness arises?

forget that primal innovation  
free will is for whales  
give me the numbness of modernity  
in ovoid pills and doors that whoosh shut.

I have been shaped and formed, poked and prodded  
with expectation and legacy  
strip me down to the flesh and perhaps  
I will sink to all fours and gallop towards  
a horizon filled only with sex and death.

## Probabilities/Miller-Urey

*“Many of the compounds made in the Miller/Urey experiment are known to exist in outer space.”*

A billion billion worlds  
Seething out there in the cosmos  
A billion billion worlds with the same conditions  
The same fortuitous combinings to spark  
From a billion billion primordial soups  
life  
Life in all its oozings splishings voluptuous glory  
Revolving around in the mathematical probabilities  
There must be one  
At least one  
In a billion billion  
Where events evented  
Results resulted  
Some form of self-replicating  
Autonomous sentience emerged  
In glorious intricacies  
Somewhere in the billion billion  
Is an alien poet  
Sighing over statistics  
Dreaming of an alien me.

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COCO BOYLE is an American poet. She was born in San Diego, California and started writing poetry in 2011, around the same time she first donned a labcoat. Correlate away... This is her first collection of poetry.