

Reproduction

A Celebration of Pond Snails

from *The Ecology of Freshwater Molluscs* by Robert T. Dillon Jr.
pages 80-85.

Reproduction is a poem for an ensemble of four or five voices. Tempo and pitch are as in conversational speech. No strain or expression. Always listen and know where the other voices might be in the text. Voices remain in sections for approximately two minutes. Within a section a voice may move vertically or horizontally from any entry point. Perform, with smooth and staggered transitions, sections 1-4, then 5-8, then 9-12, then 13-16 and all end in 17. Orchestrate. The time duration is approximately eight to nine minutes.

Photocopy, print or modify this poem and perform variously and often.

REPRODUCTIVE SECTIONS:

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5

large	low	eggs	lay	flat
sorts	may	stored	jack	who
store	sperm	sperm	soil	firm
gland	term	tough	may	whose
may	bit	eggs	have	days
cued	five	well	serve	store
moist	can	snails	sperm	been
can	gland	low	sex	seem
may	male	nor	sperm	their
four	sex	might	down	eggs
been	shell	crawl	shell	who
not	lay	sea	mounts	one
mounts	off	shell	sex	tube
put	when	snails	put	stores
from	size	mail	one	both
note	sort	vie	has	clear
made	lines	firm	both	made
made	sense	moist	will	life
foot	size	soil	life	stage
lay	egg	may	juv	spawn
fill	trance	when	moist	from
through	term	both	gland	duct
life	sort	fresh	use	has
down	sheath	high	gain	head
fit	mate	strict	least	must

6

large	low	eggs	lay	flat
sorts	may	stored	jack	who
store	sperm	sperm	soil	firm
gland	term	tough	may	whose
may	bit	eggs	have	days
cued	five	well	serve	store
moist	can	snails	sperm	been
can	gland	low	sex	seem
may	male	nor	sperm	their
four	sex	might	down	eggs
been	shell	crawl	shell	who
not	lay	sea	mounts	one
mounts	off	shell	sex	tube
put	when	snails	put	stores
from	size	mail	one	both
note	sort	vie	has	clear
made	lines	firm	both	made
made	sense	moist	will	life
foot	size	soil	life	stage
lay	egg	may	juv	spawn
fill	trance	when	moist	from
through	term	both	gland	duct
life	sort	fresh	use	has
down	sheath	high	gain	head
fit	mate	strict	least	must

7

uni	ono	isto	logi	exa
acto	erro	repro	effo	mollus
invo	dilu	bio	raulus	data
ifan	ordin	matv	parvus	ditic
ater	manu	ethod	pulla	opul
ivor	ucla	ovi	sgmw	erre
ato	sidie	navi	vesent	reject
ductiv	intro	ifest	aller	awlves
reeco	earm	oulmo	geni	uring
herma	rodi	fuscus	oogen	copu
hapte	rious	allo	udo	ichar
aker	rolli	inson	vian	liud
ulvey	rije	buli	iley	jenho
hoek	inso	wethi	illon	ingto
onte	iro	rudo	vander	apter
lymna	buli	ene	lbi	zyme
demoi	meno	posi	arin	prece
pica	ivi	umbe	uid	iscu
ende	pring	telli	enon	tosp
equi	iliz	muco	chari	copro
rece	prepa	aspe	isto	rote
cylid	catu	umbe	timin	ayin
ovo	itne	lymna	ater	ated
nae	epor	linso	lely	rece
prote	eshwa	revi	artne	rije

8

using
markers
workers
molluscs
reviewed
coated
loosely
passed
packed
laying
itself
fluid
tissues
require
smaller
proteins
surface
carry
itself
fitness
adverse
aspects
cycle
timing
convex

storage
thousand
report
received
partner
enclosed
diet
selfing
substrate
fitness
carries
lifting
other
cases
little
very
systems
gender
termed
mounted
behind
delayed
neither
offspring
jerking

seven
confirmed
mislead
surface
water
able
system
exist
further
taken
cannot
conflict
prior
studies
upon
rarely
female
fighting
sexual
except
butting
other
conflict
tightly
suitor

membrane
ovoid
process
early
pockets
occurs
partner
acting
prevails
assume
single
adult
taken
region
courtship
favour
poorly
assume
conflict
prostrate
organ
fashion
distance
increased
clamping

masses
physids
report
storage
bersa
female
mating
loses
attempt
extent
model
solid
dashed
longer
figured
partner
present
although
onward
penis
induce
mated
donor
female
display

9

genetic	albinism	typically	desiccation	evidence
various	allozymes	starvation	multiple	previous
occasions	reported	fertilizations	temperature	autosperm
competition	allosperm	bilinus	biomphalaria	galactogen
inseminate	spermsharing	fertilized	phenomenon	secretory
perivitelline	calcium	components	mucoproteins	amphibious
albumen	jelly-like	mucopolysaccharide	ancylicids	lymnaea
		s		
encapsulated	planobids	temperature	cemented	truncatula
oviduct	irregular	reproductive	oviposition	oviposits
lymnaeids	anchorage	freshwater	pulmonates	copulation
nocturnal	history	successfully	inseminated	recently
preparation	depression	inbreeding	behavior	rejected
behavior	estimates	prospective	unseminated	manifesting
consequences	expanding	aperture	interpreted	struggling
gonopore	frequency	behaviors	hermaphrodites	shell-shaking
unwanted	usually	origins	simultaneously	exception
pulmonate	involving	individuals	biomphalaria	initially
commonly	populations	circumstances	substantial	tendency
arising	unilateral	autosperm	encounter	previously
bilateral	swapping	copulation	allosperm	diverted
hydrolysed	absorbed	recipient	copulatrix	transported
reproductive	oviduct	fertilization	vesicles	capacity
probability	pulmonate	freshwater	previously	abscissa
juvenile	copulation	pulmonates	subsequent	deposits
probabilities	barrier	reinsemination	likelihood	constitute

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together	seminal	degraded	transported	everted
pulmonates	vesicle	generally	inductive	maximum
separate	allosperm	likelihood	muscular	oviduct
autosperm	outcrossing	freshwater	pulmonates	globosus
stagnalis	laevapex	bulinus	evidence	prospective
glabrata	deficits	commonly	unwilling	otherwise
reported	certainly	incidence	reported	outcrossing
allosperm	understood	pulmonates	positions	aperture
donated	carrefour	freshwater	production	vagina
autosperm	carrefour	autosperm	progeny	detected
albumen	carrefour	chemical	progeny	allosperm
autosperm	evidence	pulmonates	frequency	outcrossing
producing	recently	prospective	suggested	resulting
mass-cultured	parallel	adaptive	suppression	autosperm
certainly	conducted	preceded	outcrossers	isolates
outcrossing	isolated	preceded	bulinus	peregra
uncrowded	peregra	genital	certainly	exposes
reductions	geneva	families	negative	reproduce
predation	copulants	described	collected	allozyme
reported	ivory	interfers	expensive	allozyme
globosus	pulmonates	ancylus	abnormal	truncatus
terminal	genetic	bulinus	bulinus	aphallic
components	aphally	bulinus	aphally	aphally
regardless	aphally	bulinus	truncatus	frequent
inbreeding	depression	bulinus	truncatus	pulmonate

hermaphrodite	ultimately	elaborate	acroloxidai	fertilization
freshwater	self-fertilize	mechanisms	copulation	fertilization
endogenously	physiological	anatomical	adaptations	insemination
hermaphrodite	individuals	reproductive	behaviours	behaviour
inseminated	praeputium	receptively	behaviours	especially
vasdeferens	initiated	encountering	reproduction	masculinity
considerable	energetic	generally	encountering	individual
hermaphroditic	negligible	apparently	preputial	laboratory
manufactured	maturity	heterozygote	self-fertility	heterostropha
regionally	maturity	sterility	populations	heterostropha
differentiated	demonstrably	sterility	occasionally	reproductive
ovatestes	inseminated	sterility	monitored	heterostropha
spermatogenesi	characterized	sterility	self-fertilization	differences
s				
oogenesis	phenomenon	sterility	individuals	accidental
fontinalis	isolated	advantages	pseudosuccubea	fecundity
biomphalaria	viability	isolated	columella	documented
fertility	populations	lymnaea	heterostropha	documented
fertility	lymnaea	carolina	copulation	population
reproductive	populations	population	survivorship	population
histological	expectation	energetically	self-fertilization	populations
heterostropha	allozyme	allozyme	pfeifferi	fluviatalis
individuals	predominate	biomphalarie	forskalii	senegalensis
self-fertilization	allotetraploids	chromosomal	individuals	fluviatalis
reproductive	polymorphism	environmental	populations	development
demonstrated	significant	correlations	adaptation	rematode

12

bulinus	in	reported	physa	in
globosus	contrast	that	heterostrophe	gyraulus
and	judging	female	in	parvus
biomphalaria	by	fertility	both	reported
glabrata	reproductive	and	precedes	that
rather	function	three	male	male
than	preceded	individuals	fertility	maturity
histological	female	and	matured	female
section	maturity	three	in	preceded
in	in	individuals	both	male
one	during	matured	of	in
case	the	in	the	one
the	same	both	several	case
genital	seven	functions	families	have
systems	day	compared	eggs	been
through	period	and	and	described
a	hermaphrodite	figured	sperm	with
narrow	duct	region	are	a
where	be	or	passed	seminal
the	stored	ultimately	together	vesicle
sperm	egg	degraded	opening	usually
may	and	an	into	called
mature	sperm	elaborate	the	the
are	then	region	carrefour	carrefour
fertilization	enter	pocket	pockets	an

13

albumen	female	they	over	male
gland	duct	seem	allosperm	duct
that	freshwater	by	over	to
favour	pulmoates	allosperm	allosperm	have
produced	hermaphrodite	donated	from	separate
endogenously	duct	by	allosperm	eggs
male	in	female	from	separate
duct	inseminated	duct	allosperm	eggs
over	the	poorly	reproductive	the
allopserm	penis	understood	systems	penis
over	is	the	allosperm	is
allosperm	held	penis	is	held
separate	reproductive	a	prostrate	no
eggs	systems	sack	gland	evidence
over	preputial	may	snails	chemical
allosperm	organ	serve	seeking	cues
is	a	well	chemical	snails
held	holdfast	described	cues	seeking
a	snails	induce	for	energetic
sack	seeking	insemination	want	cost
my	is	be	pass	not
serve	there	unwilling	each	negligible
during	a	neither	pass	as
copulation	holdfast	may	each	female
copulation	snails	mated	snail	male

14

expanding	display	to	snails	from
the	rejective	gain	that	the
foot	behavior	a	have	gonopore
the	to	successful	been	one
snail	fill	copulation	inseminated	snail
they	the	in	no	must
are	aperture	both	further	serve
mounting	mate	roles	gender	bilateral
seem	with	simultaneously	conflict	mating
to	a	clamping	exists	shell
display	single	the	lifting	shaking
involving	partner	shell	the	and
many	the	tightly	shell	struggling
individuals	other	the	high	one
mating	the	male	swapping	snail
in	female	role	is	must
both	has	in	the	serve
roles	been	the	result	the
simultaneously	observed	recipient's	fertilization	sperm
through	workers	bursa	in	storage
the	typically	compulatrix	fact	capacity
female	reported	to	occurs	of
reproductive	storage	the	in	freshwater
system	of	seminal	fertilization	pulmonates
pockets	allosperm	vesicles	pockets	seems

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model	adult	based	physa	taken
showing	stages	on	heterostropha	place
pulmonate	only	male	solid	trace
snails	if	initiates	lines	mating
the	prior	the	taken	initial
abscissa	copulation	likelihood	place	likelihood
mating	note	successful	as	as
probabilities	that	copulation	male	female
no	studies	dashed	female	successful
prior	with	lines	copulation	copulation
show	successful	to	uninseminated	unwanted
mating	copulation	dislodge	eggs	males
or	female	or	gender	dashed
jerking	copulation	butting	conflict	lines
among	female	chain	or	unwanted
hermaphrodites	rejection	copulation	jerking	males
pulmonate	sexual	unilateral	female	put
snails	conflict	mating	rejection	off
one	attempt	male	pulmonate	both
snail	mating	role	snails	snails
autosperm	put	female	successful	both
stores	off	acting	copulation	vie
successful	as	of	generally	as
copulation	the	a	gains	the
copulation	male	pair	copulation	female

16

autosperm	crawls	in	everts	to
in	across	parallel	his	orient
storage	her	fashion	penis	himself
mounts	along	the	sperm	all
the	the	female's	may	the
shell	edge	vagina	apparently	way
inserts	into	which	all	all
it	the	typically	the	the
through	oviduct	requires	way	way
all	which	this	on	may
the	may	plug	much	go
way	got	seems	longer	on
may	may	this	soft	a
go	have	plug	and	rather
on	other	seems	temporary	soft
including	the	by	this	no
shell	female's	no	plug	means
shaking	oviduct	means	seems	assured
but	a	in	a	to
copulation	great	pulmonate	successful	the
is	variety	snails	copulation	snail
snail	snails	divided	but	no
who	mounted	into	copulation	means
mounts	as	juvenile	is	assured
display	females	snail	successful	no

the freshwater pulmonates	are hermaphroditic spermatogenesis	both sperm and	being manufactured in	the ovatestis by
in physa fontinalis a snail carrying into the oviduct jelly-like into the oviduct egg and sperm jelly-like jelly-like sperm and egg jelly-like	seems to proceed oogenesis female's vagina a considerable distance into jelly-like shell aperture sperm and egg jelly-like jelly-like jelly-like jelly-like jelly-like jelly-like	egg lymnaea stagnalis autosperm in storage sperm may apparently be conducted crawls across egg and sperm jelly-like jelly-like egg and sperm jelly-like	a single regionally differentiated gonad gonad gonad female's vagina a jelly-like considerable distance jelly-like sperm and egg egg sperm jelly-like jelly-like jelly-like	at least a few weeks upon encountering a second jelly-like the shell jelly-like sperm and egg jelly-like jelly-like jelly-like jelly-like jelly-like