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Report Supplement: Poetry Folder -- Selections from the Poetry Reading at Joint Mathematics Meetings 2012

POETRY FOLDER

Selections from the Poetry Reading at Joint Mathematics Meetings 2012

In this Poetry Folder we are delighted to present several of the poems read at the Poetry Reading held during the Joint Mathematics Meetings on January 6, 2012. We thank the poets (together with their publishers when applicable) and the two artists whose work we have included (as Figures 1 and 2) for allowing us to share this content in our July 2012 issue to accompany Charlotte Henderson's report on the reading. We would also like to acknowledge the efforts of JoAnne Growney and Charlotte Henderson that made this Folder possible.

–Editors of the *Journal of Humanistic Mathematics*

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By the father's order sent to the school of mathematics I perceive the beginning of transcendence
(number π poems)

Tatiana Bonch-Osmolovskaya

As I am spinning round,
A ring of signs turns in front of my eyes.
Best to stop on three.

It was easy in the beginning,
But watermelons ripen full of juice.
I cannot describe their fullness.

Call seven young girls together,
Give them twenty-two ribbons.
Their suffering would not come close to mine.

A cart rolls along by a flat road
Among fields flooded with water and light.
The wheel leaves a track in the dust.

From one season of sakura's blooming to another
I count the number of seconds.
Time has turned around itself once again.

From the teacher's pile I took a brick
And threw it into a pond.
Calmly he ordered me to recite the sizes of circles.

My fellow worm,
You gnaw through an apple,
But can you wound yourself around it?

A donkey rotates mill's wheels
In a bright day as well as in a storm.
He alone knows how long his path is.

At last the months of studies are over.
Teacher's wife has baked an apple pie.
A piece gets stuck in my throat.

I woke up at home at midnight.
A full moon in the window
Is peering at me, or is it a ghost?

Mother gathered back into a clew the thread
That I unwound and entangled
Explaining numbers to a kitten.

At a dinner table I rolled up a rice ball.
The hand stopped halfway to mouth –
The same ghost looked into my eyes.

I brought a hen and a sack of rice to the teachers' door.
Three years have passed. I've learnt primary numbers,
But still have not perceived transcendence.

A flock of geese crosses the autumn sky:
Three birds, another one, four more, one again, five ...
I will not raise eyes from the book.

Each hokku-like strophe represents one of the features of the number π: its approximation by 3, by 22/7, by 3.1415, π in measuring the length of a circle, the volume of a sphere, consonance to the word *pie*, approximately $\pi \times 10^7$ seconds in a year and so on.

$^{G}{}_{M}$AZE

Tatiana Bonch-Osmolovskaya
to John

E
N
T
E
RAY reflects from the planes, falling into an airless corner of
SPACE
rotates clockwise, turning the other
FACETS
are transparent, letting the ray through, holding it, then thickening unapparently at one
EDGE
becomes a prism, breaking the ray, splitting it into visible
SPECTRUM
shines like a rainbow, from violet on one side to red on the other
EDGE/S
move towards each other, reflecting, dissolving, drawing dangerously close the
FACETS
tinkle, with silvery song filling the silent
SPACE
breathes, returning to sight the hasty RAI
S
E
E
Y
O
U
!

This poem is written on one of John Hiigli's paintings, see the next page for the accompanying image.

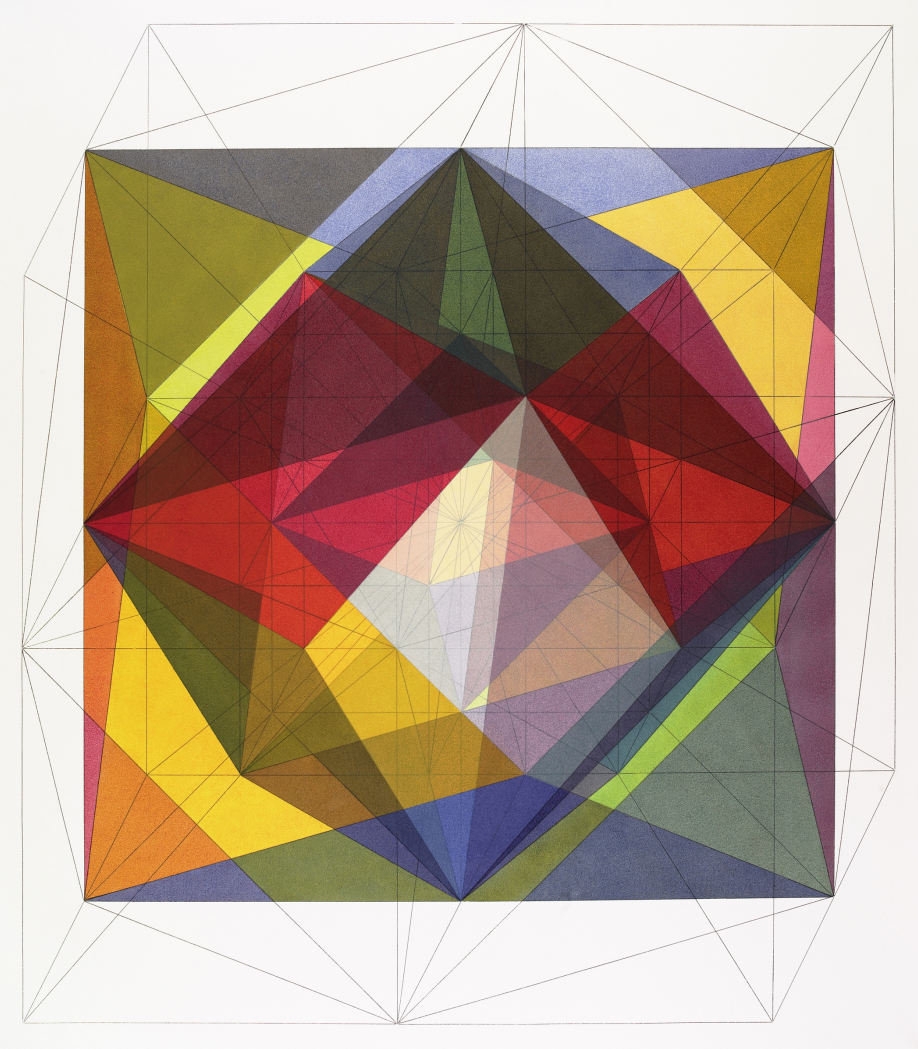

Figure 1: John Hiigli's *Cr 163: Cuboctahedron, Rhombic Dodecahedron, Octahedron II Tetrahedron, Octahedron: Top View Tetranet Series*, 2002–2005, transparent oil on canvas, 56×64 in (142×183 cm). Reproduced with permission.

Old Chair
(fractal poem)

Tatiana Bonch-Osmolovskaya

Above an old chair in our house –
I often had a dream that I climbed onto it,
And having spread my wings
Floated up and outside –
There was a wooden-framed picture, cracks on the frame:
A house on a street, one among many others,
Its walls freshly whitewashed, a wall
With an open window, through it I saw a room,
A table, a wardrobe, a piano, a chair,
Above the chair – sometimes I dreamt
That I climbed onto it and spread my wings and
Floated up and outside – in a flaking frame,
There's a picture: a three-storied house,
A brick wall of a light colour, a window,
A windowsill adorned by flowers,
A cat's asleep in the flowers.
If you look closely, in the window
There's a room: a bookcase, a table and an old chair,
Above the chair – once I'd dreamt
That I've climbed onto it and spread my wings
To float up and outside –
Inside a frame, a picture the size of a nail:
A multistoried house, a line of balconies, on a balcony:
A pram, by a magnifying glass through a window:
A room, an old chair, above it – I had never
Dreamt that I climbed onto it – a picture:
All I could see was a roof,
A pipe and a pigeon.
Over the roof somebody's floating up and outside.
I couldn't tell.

TATIANA BONCH-OSMOLOVSKAYA is a writer, philologist, artist. She is also a participant in Symmetry festivals (2003, 2009) and Bridges festivals (2010, 2011) and a curator of festivals of Russian literature in Australia.

The Power of Three

Mary Elizabeth Buchinger

i.
Two points muster a line
but three, a shape.
Only three can jump a dimension:

Holy Trinity, Brahma, Vishnu, Shiva.
Good, bad, ugly.
The third and thoughtful eye.

Jesus-Mary-Joseph!
Three Kings, three gifts,
three crosses on a hill.

ii.
Three Fates, three Goddesses,
three Musketeers, three witches,
three wishes, three riddles, three strikes.

After two deaths, wait for the third.
Two leave themselves to conceive.
Three's a crowd: Threee!

Trilogy, Triptych, Triad,
three sisters, three bears, three pigs.
What three days do to fish and company.

iii.
The third wheel. The third man.
The third time's a charm.
On the third day: earth, water, flora.

Three primary colors.
Three constituents of an atom.
Three toes has the sloth.

Adam and Eve and the Snake:
Fortune and Mystery and Death.
Everybody, on the count of Three ...

MARY ELIZABETH BUCHINGER, a widely published poet, holds a doctorate in Applied Linguistics and is Associate Professor of English and Communication Studies at the Massachusetts College of Pharmacy and Health Sciences, Boston.

What Drove Me into Math

Marion Cohen

What drove me into math
was not Fermat's Last.
I preferred the factoring of the difference of two squares.
And Cantor's stretched-out one-dimensional lace.
Also, the center of a circle is inside the circle.

What drove me into math
was not the Mystery of the Unknown
but the mystery of the known.

Other early influences:
the point of light just happening to coincide with the only visible corner of our livingroom
those dark-red shapes when you close your eyes tight
and that spot, that nightmare
of many bloody colors.

Points Were Blinking

Marion Cohen

Points were blinking.
Lines were beckoning.
How was I go know?
What could I have done?
I heard some voices.
I had some time.
There was a tenderness.
There was a weeping.
How was I to know
the points would not point?
How was I to know
the lines would not line up?

A Mathematician Just Sits There

Marion Cohen

A mathematician just sits there.
There is empty paper in front of her.
And it stays empty.
A cat also just sits there with empty paper.
But the cat doesn't mind that.
The cat, in fact, gets right on top of the empty paper.
The cat believes his sitting will fill it up.

MARION COHEN is a mathematician and a poet. All three pieces by Marion Cohen are from her poetry book, *Crossing the Equal Sign* (Plain View Press, 2007), which describes the experience of mathematics. "What Drove Me into Math" also appears in *Strange Attractors*, edited by Sarah Glaz and JoAnne Growney (A K Peters, 2008).

Escher on Escher

Sandra DeLozier Coleman

There is no way to draw a line,
Other than a border line,
Which splits what was a unity
Into a multiplicity.
Whatever form the line may be–
Pure orb or drawn haphazardly,
If closed, it forms without a doubt,
Two parts of spaceinside and out.
All forms defined by borders are
Perceived as either near or far.
That is, one form is viewed as space
On which the other form is placed.
Unless the two-space world we build
Is with congruent objects filled
In ways in which the whole defies
That one before the other lies,
Or rather leads to thoughts more strange,
That near and far can be exchanged.
As endlessly the objects glide,
forming one anothers sides,
We see within each entity
A fragment of infinity.

This poem was inspired by the general theme of symmetry found in M. C. Escher's work. To see some samples of this type of work, readers can visit the sixth gallery titled *Symmetry; most of M.C. Escher's Symmetry Drawings* at the official website of Escher works on the web: http://www.mescher.com/, accessed June 30, 2012.

Wild Sphere

Sandra DeLozier Coleman

A sculpture made of clay I saw
They called a horned wild sphere.
Though nothing like a sphere at all,
Its wildness was quite clear.
In infinite bifurcations
It besought eternity,
And I saw a clear relation
To the wilder side of me.
Arms ever reaching higher
To a world beyond its sphere,
Torn by bifurcate desires
Never satisfied, I fear.

This poem is written on one of Helaman Ferguson's sculptures, see the next page for the accompanying image.

Figure 2: Helaman Ferguson's *Alexander's Horned Wild Sphere: Wildfire*, bronze, 1985. (Photograph by Helaman Ferguson, printed with his permission.)

Between You and the Root of Two

Sandra DeLozier Coleman

I have less chance of knowing you
than of writing out the root of two.
How ere I start, it never ends,
exploring how love lies, pretends.

At least, as this square root unfolds,
the mind accepts what it is told.
The root of two is less than two,
but more than one, its clearly true.
And it is easy to derive
that it is less than one point five.
Its just as easy, what is more,
to see its more than one point four.
Just form the squares of these two stems!
Two lies between the two of them.
Thus, we may show its greater than
a one point four one four two one
and that its surely lesser, too,
than one point four one four two two.

But with such fine precision gained,
I find my interest has waned,
and back I go to figure out
your truths entwined with threads of doubt.

SANDRA DELOZIER COLEMAN is a retired mathematics professor whose interest in art with mathematical elements includes poetry as well as several forms of visual art.

Dear Ivar

Carol Dorf

I read your book on the unexpected.
Like most poets, I opposed mathematics
when I was young, seeing it as the converse
to feeling. The previous statement is false.

When I was very young I loved counting
and zero and even numbers. At sixteen,
I wanted to imagine calculus as a novel
of limits and motion. Yet by college,
I had learned mathematics could not correspond
to poetry in a one-to-one intensity.
Would your book have mattered to me, then?
Most likely, I would not have read it.

Today, I am sending this fan letter. Thank you
for explaining catastrophe and instability.
I spent so many years writing my way
through them. And boundaries, I kept insisting
they were psychological or geographic,
unwilling to see them as breaks
between states of matter. Your words
matter to me, a language as precise as poetry
to delineate universe and being. Sincerely,

Euclidian Shivers

Carol Dorf

So, how does the Triangle relate
to the Circle; and this has nothing
to do with gender, or class derived
from Abbott's naive misclassification.
Euclid and a radius prove points
that radiate from the center, a circle;
a method to circumnavigate space.
Would this seem more real if we pulled
ribbons from some agreed upon place,
perhaps the Maypole? Preoccupied
with tangents, it is hard to visualize
chords, a concordance, to be in accord.

Lost Information

Carol Dorf

Visualize groups – there's the babysitting co-op,
with slips of scrip the children color during
the quarterly potlucks; and more than enough churches
each with study evenings, and committees for fundraising
or dropping food off to the sick; let alone the PTA
whose membership overlaps with both of the above.
The library used to be open six days a week, but it's down
to three, and the video store has been replaced by streaming.

Group elements develop more complexity
than the smooth surface of empty Sunday streets
suggests. When we look to neighborhoods elements
repeat, except in the vicinity of Upper Normal School
where cafes and the movie theater take up
asynchronous positions. At times, one eavesdrops
in an attempt to develop a theory of place,
where the odd one out has been assigned a node
in this network, or frog-jumps to another group.

CAROL DORF's poems appear in *Sin Fronteras*, *Spillway*, *In Posse Review*, *Poemeleon*, *Feminist Studies*, *Fringe*, *Runes* and anthologies. Poetry editor of *Talking Writing*, she teaches math at Berkeley High School.

I know a mathematician ...

JoAnne Growney

always busy
counting, doubting
every figured guess,
haply idling,
juggling, knowing
logic, measure, n-dimensions,
originating
playful quests,
resolutely seeking theorems,
unknowns vanish :
wrong xs, ys – zapped.

Principle of Mathematical Induction

JoAnne Growney

Bilingual pronunciation note: The expression S_1 is read "ess-sub-one" and other similar expressions are read similarly, including the final S_{k+1} as "ess-sub-kay-plus-one."

Suppose we have an infinite list of statements,
S_1, S_2, S_3, ... – one for each positive integer.
Then all of these statements are valid
if these two conditions hold:
    S_1 is valid;
    For any positive integer k,
        if S_k is valid then so is S_{k+1}.

Counting the Women

JoAnne Growney

When I look around
the room – if I don't
know in one glance how
many women are
there with me, I smile.

JOANNE GROWNEYs first career was teaching mathematics at Bloomsburg University. Now she lives in Silver Spring, MD, writes poetry, and maintains a mathematical poetry blog: *Intersections—Poetry with Mathematics* (http://poetrywithmathematics.blogspot.com). All three pieces have appeared in Growney's blog.

Crocheted Hyperbolic Plane

Charlotte Henderson

Powerful, what
I hold in my hands;
Friendship breaker because
The Prince judged us unready.
Impossible (yet made with my hands)
So Hilbert proved, at least in our dimension.
Yet I can perceive, enfold, zero-angle triangle,
Contradiction of Euclid's fifth—powerful postulate that led many
Through disbelief, false proofs housing equivalents, to madness or ruin and me to this:
It must be some trick, newspaper stippling, individual stitches collectively forming this illusion plane.

Note that the lengths of the lines grows exponentially—for every four syllables, a new syllable is added—mirroring the technique for increasing stitches to create a crocheted hyperbolic plane, as discovered by Daina Taimiņa (see *Crocheting Adventures with Hyperbolic Planes*, A K Peters, 2008).

Freshman Year

Charlotte Henderson

His blue eyes
Deceptive as a clear winter's day
Brightness promising warmth

Deceptive as one over n
As n goes to infinity, summed
Converging summands promising convergence

Yet the sum grows, almost imperceptively
Like the condensed breath gradually fogging my vision
Like the crystalline frost eventually encasing my heart

Promises perceived by the uninitiated
Abandoned to the cold, diverging to infinity
Naive intuition taught doubt

By counterexamples so potent they're named
Harmonic series
First heartbreak

CHARLOTTE HENDERSON graduated college with a double major in mathematics and English and is now a mathematics book editor at A K Peters/CRC Press.

The Blob Speaks to Its Mother

Judith E. Johnson

The blob speaks to its mother
just to have held one clear memory of shape.
not always to be approaching some limit other
than can be derived from me. not to be possessed by your voice.
not defined by any voice factored out of my voicelessness.
not to leave remainders of myself each place
i pass over.
not constantly to find fractions, hardly ingested,
of alien minds worked into my bubbling mass.
not to be forced to race
to feel like an integer
to get there in one piece.

i swear to you i'd shave away
even my infinitely minute
variable
hypothetical
disappearing center for this

and leave myself no more than a function from outside space.

Flight of the Monarchs
From "Cities of Mathematics and Desire"

Judith E. Johnson

Part 4. The Flight of the Monarchs

Dappled under the shifting leaves
first one, then another, gilded flakes that sift
through steam layers, they stir their wings.
Like snow that filters down through the bare fingers
of oak and ash, they ripple up through
summer and rain, the tangle of vines,
wet, heavy air, green weave that would hold them fast
to familiar grounds. All color and darkness,
gold, black, they lift. Their waves leap, span
oceans, flow north to my lordly Hudson
and span it too.
Though they travel, not in one cloud
but in small bursts,
particles of mottled
and jeweled light
shot from the swirling steam
as if from an accelerator,
their passage is a wave.
Compress the space between, we'd see them soar up and outwards
across the Hudson like cables of the high bridge
whose silver strands reflect the river below.

[Dialog of the Monarch Butterflies and the George Washington Bridge]
Line, span and cable, their wings cry,
(those wings that stroke summer's air, but one day
under glass will spread open from bodies pinned down
to felt matting),
hold us together as you hold
your city and its opposite, don't let us splinter
or lose our single motive force
that has pulled us from so far away.
Though we've come to the Hudson, not the Neva or the Seine,
though there are no heroes to lead or follow,
though the wave of our flight be invisible fire,
so scattered you make its curve guess, not graph,
that pulse is our life. Without it we melt
and become only a powder raining down
our gold from dead wings.

But the span shoots back,
the line you fly, though at its crest
it is a rising, all one flow,
breaks at the height. The separate drops
fan out and are sprayed apart. I, gravity's whole,
free arc, see how you will be pulled
away and away in a widening curve
till the one of you does not know its other.
All connection will break. Not until
dead autumn wake and the leaves feather
their spirals for the long sifting down,
will one of you in the curling
shadows feel sister call to brother
and lift before the snowflakes gather.

 "The Flight of the Monarchs" is part 4 of Johnson's long poem, "Cities of Mathematics and Desire," which was published first by the Canadian journal *Exile* in 1994 and then included as the title poem of a book of the same name, published by Sheep Meadow Press in 2005.

Maurits Escher's Impossible / Buildings

Judith E. Johnson

Maurits Escher's impossible
buildings
are like mine, his stair
going up, joins itself, no
spiral, but the same closed
square. his men climb up and up and
over the same measured
course. if there is where they haven't
been, they never get there.
when to go back in space or
time is to go up or
down as the artist's mind will
require of you, to what end serve
orders and made conventions, our
disappearing line, our vanishing
point, our signals, renaissance, globes,
perspectives? i shift them around, the bare
numbers, denied ornament or
setting here.
let a be 1, then a is
whole, he wants to multiply
each quantity he meets but
quits them without change.
let a be 2, see
exploding universe the midas
touch sprouts, bursts / hairy ass's ears from his troubled
crown, he's doubled into / game for you.
let a be
a, let 1 be 2. why so i do
constantly, the simple child's
words, the old word
games, the same blunt rhymes.

the construction is
the information. like Escher's it has less
to do with conservation than with
recirculation: to pass the same new
world through me again (let
labored be worked / over)
reclaim it
again. if you don't care for
mathematics and science / fiction you won't want
these. the satisfactions are
minimal
equal
true
austere
a discipline
choose
one.

JUDITH E. JOHNSON, Professor Emerita of English and Women's Studies at SUNY Albany, has published eight poetry collections, including Cities of Mathematics and Desire (Di Castagnola Prize, 1992.)

Several Hypotheses and a Proposition

Jacqueline Lapidus

nothing's been quite the same with me
since you and I had a falling-out
or should I say throwing since you
tore up all those pictures
of me and I threw you
out of my house for one thing
I trust myself more and other people
less for another, we don't write letters
not having you to argue with
alters my inner space I spend whole nights
meditating with selves I didn't
know I had and wondering whether we
made each other up
or drawing graphs
on which we appear as two sides
of a right triangle one upright one
flat the hypotenuse of course
is the man who came between us
and held us irrevocably
perpendicular without him we
could have extended ourselves
to infinity but wherever we end
we always start at zero
and whatever we tried, we always got
nowhere you couldn't love him
and me if we both loved you I
couldn't love you and him unless
you both loved me and he couldn't
love both of us no matter what
and unless we both loved him
he couldn't love himself

I don't know what theorem that proves
but I do know whose calculations
determined the result you
threw him and me together till
our passion became acute you threw
jealous fits to the point of being
obtuse then you and I lay
naked in each other's arms
and psychoanalyzed the situation
to the nearest decimal place

finally
you got violent, and that's where
I stopped the vortex and got off

I felt dizzy for a long time
after that but now the ceiling
and the chairs and the bed have
settled into their proper perspective
and other women to whom I tell the story
say we were all mad
I'm not sure, though I think
you only offered what you knew
I'd take and I only accepted
what you wanted me to have
and the man we nearly died of
knew exactly what he was doing and
cancelled out of the equation just in time

one of these days
we'll intersect again

JACQUELINE LAPIDUS's poems appear in many periodicals, anthologies and three collections: *Ready to Survive*, *Starting Over* and *Ultimate Conspiracy*. She is co-editing *The Widows' Handbook* (to appear). This poem first appeared in *Hanging Loose Magazine*; reprinted in *Starting Over* by Jacqueline Lapidus (Out & Out Books, 1977), in *Against Infinity: An Anthology of Contemporary Mathematical Poetry*, edited by Ernest Robson and Jet Wimp (Primary Press, 1979) and in *Strange Attractors: Poems of Love and Mathematics*, edited by Sarah Glaz and JoAnne Growney (A K Peters, 2008).

Quark/Antiquark

Ann Perbohner

I – a student living in Oxford
charmed by flavors of Marmite, pub food
kippers and afternoon tea by the Cherwell
studying the classics, logic
the mind-body problem.

You – a squash player
living in a flat with no bath
walking the street with passport
in pocket for any sudden urge to
travel across the Channel.

Teatime with your math group
unfolded a passionate explosive scribbling
of ideas on any flat surface –
napkin, chalk board, any table top.

At night we shared tea and biscuits
in my bedsit, discussed mysteries
of the universe, conjectures and refutations
of probable twistor realities revealing in me a scientist –
some thing I had wanted to become.

Our spirits melded, rhythms jostled,
we spoke of love, affirming our self-same
similarities. As lovers, dynamic forces
strengthened or weakened, responding
to processes of attraction and revulsion.

Through the spacetime boundaries
of our marriage, fundamental weak interactions became charged.
As you rebelled over quarks strange and charm
I expressed degrees of freedom
not before we joyously spun off another generation
and our pairwise vanished down
a black hole. Binary now, self-dual, there
is no intersection where we meet for tea.

Ann Perbohner is from Highland Park IL. She studies the poetics of alchemy to create new thought forms. Her work has appeared in *Bloodroot*, *Lifelines*, *Cram* and elsewhere. Ann works as a Physical Sciences Librarian at Dartmouth College.

Divertimentum Ornithologicum

Pedro Poitevin

After Jorge Luis Borges's
Argumentum Ornithologicum.

A synchrony of wings across the sky
is quavering its feathered beats of flight.
Their number is too high to count–I try
to estimate it but I can't: the night
is dark, the birds are black, my eyes are weak.
Certainly less than N but more than k,
I tell myself, but then, in an oblique
arrow of thought, I argue with dismay
that if k is too small, then $k + 1$
can't be enough, and so, inductively,
all of God's natural numbers fail–there's none
determining how many birds I see.
I entertain that He might not exist,
but N being hyperfinite I resist.

Published previously in the *Mathematical Intelligencer* (Pedro Poitevin, "Divertimentum Ornithologicum," the *Mathematical Intelligencer*, Volume **33**, Number 4, 2011, page 3).

Mandelbrot Set

Pedro Poitevin

My eyes zoom in acutely on the edge
and find, within its widening trace, a part
identical yet smaller than the whole,
as if, like warning signs along a ledge,
mirrors within the labyrinthine chart
were mocking my illusion of control
and though I know the door and hold the key,
I find myself absorbed by what I find
till, suddenly aware of what I don't,
perhaps in reckless search of harmony,
I turn around: I need to clear my mind
before I start to work. My office won't
contain even a slice of loneliness
within the hollow center of its mess.

A mathematician in a family of poets, PEDRO POITEVIN has, among other things, written several palindromes in Spanish. A recent poem of his, "Elevator Speech," was published in the January 2012 issue of the *Journal of Humanistic Mathematics*, available at http://scholarship.claremont.edu/jhm/vol2/iss1/11, accessed June 29, 2012.

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