

Ekhad and the Master

Shalosh B. Ekhad is known to be
Doron Zeilberger's
beloved computer companion.

Perusing Lewis Carroll's poem
"The Walrus and the Carpenter"
"through the Looking-Glass,"
it becomes:

The Ekhad and his Master
Were staying close at hand:
They wept like anything to see
Such quantities of unsolved problems.
'If they were only cleared away,'
They said, 'it would be grand.'

'If seven Ekhads with seven props
Swept them for half a year,
Do you suppose,' the Ekhad said,
'That they could get it clear?'
'I doubt it,' said the Master,
And shed a bitter tear.

'But, still,' said the Ekhad,
'Many things we have done.
First, the q-Dyson conjecture,
And the G2 version.
You know, all this Macdonald stuff,
In relation with root systems.'

‘But who remembers now?’
Said the Master, ‘as the global
Algebraic solution
Has killed off the problem
By whom was it done?
The Russian guy from Chapel Hill.’

‘Don’t be so sad and desperate,
The holonomic approach to
Automatic proving
Sure, has been a great coup.
Bourbaki did celebrate it.
Peter Paule’s RISC lives on it.’

‘Yes, but it was not so easy
To convince the community.
Special Function Pope Dick Askey
At first, did not believe
That the analysts’ savoir-faire
Could so easily be by-passed.’

Better luck we had with
q-guru George Andrews.
Indeed, computer-aided proof
Was for him no mystery.
Uneasy with computer proofs,
He’s now a fan of Zeilberg’ry.

‘Yes, I know, Thirty-three F Ten
In Mathematical Reviews
Is dutifully subtitled:
The Zeilberger algorithm.’
‘What a consecration,’
Replied the Ekhad.

‘Not only that, but with Herb Wilf
Its dubelju-zee version
Has become a standard.’
‘Yes,’ said the Master, wearily.
‘Cheer up, Master, the Hall of Fame
Now has several of your entries.’

The Ekhad pursued: ‘You forgot
The alternating sign
Matrix Conjecture.’ ‘What’s this?’
‘You know, the ASM problem
Stated by Mills-Robbins-Rumsey.’
‘Oh, yes, now I remember.’

‘Its solution had kept busy
Not only Dave Bressoud,
But also a crowd of checkers.
I wonder if this solution
Will ever be re-checked.
Anyway, the counting remains.’

The Ekhad finally mentioned
The non commutative version
Of MacMahon's Master Theorem.
'Yes, indeed, it was a great feat,
For it kept busy the people,
Who did not trust our own version.'

'O Master, do give up the past!
The Ekhad did beseech.
'First, get hold of the sacred books
Listing all those unsolved problems:
We cannot do with more than four,
To give a hand to each.'

The great Master looked at the books,
But never a word he said:
The great Master winked his left eye,
And shook his curly head –
Meaning to say he did not choose
To start working right away.

'The time has come,' the Ekhad said,
'To talk of many things:
Of shoes – and ships – and sealing wax –
Of cabbages – and kings –
And why the sea is boiling hot –
And whether pigs have wings.'

‘Big computers,’ the Master said,
‘Is what we chiefly need:
You, Ekhad, you will program them.
You’re very good indeed –
Now, if you’re ready, Ekhad dear,
We can begin our work.’

After all those years, quite expert
They have become. The solutions
Came rapidly. I won’t tell you
What famous problems were cleared.
Was it P equal to NP?
Or the Jacobian conjecture ?

Successful they were, but alas
Mathematicians are still stuck
With their pen and pencil habits.
‘Wake them up. It can’t last.’
‘Well, I’m afraid, we have to wait
For a new math generation.’

‘Sure, they will appreciate
The new formalities.
Meanwhile, they will discover,
As Opinion ninety-four chimes,
That today’s formal proof
Was a waste of computer time.

Even, more regretfully, of human time.’
‘But,’ replied the Ekhad,
‘Isn’t it human fate
To waste time the whole of one’s life?’