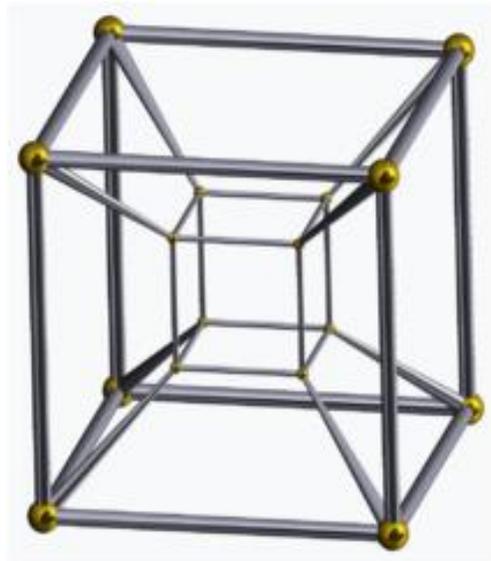


When are you?

A time travel tale based on true fiction
by Kate Jones



*All persons mentioned herein are real people.
Only the circumstances of their appearance
are imaginary and coincidental.*

Dedicated to Martin Gardner,
who started it all.

Celebration of Mind, 2018

Photo credits:

Solomon, Lewis Carroll, Archimedes, and
Dr. When's stand-in — *Wikipedia*

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When are you?

by Kate Jones

Recent discussions among friends of time travel – wishful thinking or fantasy – reminded me of my own time travel adventures of some years ago (or was it some years from now?). The time has come to tell that tale.

.....

I met Dr. When for the first time (or was it the last time?) at a party in Atlanta in 1994. The party was hosted by Tom Rodgers, a business tycoon and Renaissance man, to honor Martin Gardner, the beloved author of countless articles on mathematical puzzles and magic, science and philosophy. Martin's many admirers and friends were invited to this once-in-a-lifetime event. Tom seemed to know just about everyone in the world, and almost everyone knew Martin from his decades of writings on puzzles new and very old. Martin's keen understanding of those ancient subjects made one wonder whether he had done some time-traveling himself.

Many of the guests knew me, as well, for having developed and published one of the puzzles Martin Gardner had popularized in 1957: the famous pentominoes, consisting of the 12 shapes made by evenly joining 5 squares.

Martin's articles about the pentominoes were inspired by the studies made of them by Solomon Golomb. Sol's ground-breaking report was published in *The American Mathematical Monthly* in 1953, while he was still a student at Harvard. As it happened, I had met Sol in 1983 at a private puzzle party and kept up a warm friendship ever after.

It was great to see him at this Gardner fest. It amused him that I had brought a souvenir for each guest, consisting of one wooden pentomino in cubic form, with a keyring attached. The group challenge was to fit the 12 different pieces together into a rectangle, with the keyrings all on the outside. I had brought several sets, all different, so that each of the guests could be part of one grouping. Each pentomino being a different shape, they all had names that Solomon had given them based on the letter of the alphabet they most resembled. One particular guest, whom I had not met before, quickly reached for the W and gripped it most possessively.

“Ah, you’ve got the piece that’s my logo,” I said to him with a smile. “Is that your initial?”

Tom was standing nearby and stepped in. “Kate,” he said, “let me introduce you! This is Dr. When. Doctor, this is our puzzlady, Kate. She made these souvenir keyrings for our guests. Her theme here is to let the circle be unbroken – our friendships and connection to Martin.”

“That’s a beautiful idea,” remarked the Doctor. “Very symbolic of the space/time continuum.”

I looked more closely at him, at his otherworldly handsome face and intense eyes that seemed to see beyond the present, almost into another dimension.

“Funny you should say that, Doctor,” I answered. “I often think about the Universe that way, and wish I could jump into a time machine to visit all the most fascinating minds in history. Interesting that your name is ‘When!’”

Dr. When looked pensive. He glanced for a moment at Tom, then over to Solomon and Martin. Then, in a conspiratorial voice, he asked me, “Would you like to?”

“Like to what?” I asked.

“Get into a time machine and visit fascinating minds in the long ago.”

“Why, do you have a time machine?” I asked jokingly.

“Yes, the latest model. My cousin, Dr. Who, has to tool around in an old telephone booth. Mine is four-dimensional.”

I had nothing to lose. I’d either call his bluff, or get the ride of a lifetime. “Can we go right now?” I asked.

He smiled. “Of course, and we can get back here before anyone can blink and notice we’re gone. Let’s go out in the garden.”

He led me outside among the lush trees on Tom’s estate. He drew out of his pocket a small square tube and took my hand. “Ready?” I nodded, and as he lifted the tube, it emitted a gentle hum and expanded into all directions at once, and then some.

“Have you ever ridden in a Tesseract?” the Doctor asked.

“Only in my imagination,” I said. “I’ve seen it often on paper.”

“Jolly good,” he said. “When shall we go first?”

“Well, the wisest man ever to have lived was believed to be King Solomon. How about visiting him as he is designing the First Temple, around 965 BC?”

Dr. When touched some invisible points on one of the edges of our enclosure, the hum intensified for a moment, and the Tesseract glowed and shrank back with a wisp into the tube in the Doctor's hand.

"Here we are," he announced with the solemnity of a twentieth-century elevator operator.

As far as the eye could see, the city of Jerusalem spread out before our view. In the foreground a massive construction project appeared, with hundreds of laborers carrying stones, moving wheelbarrows, climbing scaffolding and following the commands of their foremen. On one side an elevated platform held a high chair and several stools around a large table covered with parchment drawings. An animated discussion was in process, with a tall young man explaining earnestly the details on a chart to a couple of men who were evidently supervisors of the work crew.

The young man glanced over to us, obviously recognizing Dr. When, and sent the supervisors on their way.

Dr. When asked me, "How is your Hebrew?"

"Oh, I don't speak Hebrew," I replied in dismay.

"Never mind, we'll use this little translator tool. How do you think I can converse with all people in all times and places?"

"That's a relief, thanks," I all but stuttered.

"Welcome, my friend," the young man greeted the Doctor. "I never know when I will see you again. And," looking at me, "who is your friend?"

"This is Kate. I brought her to you from 3000 years in the future. She wanted to visit the wisest man who ever lived. Kate, this is Solomon."

Solomon graciously shook my hand. "Really? Am I supposed to be the wisest man in all of time?"

"I am greatly honored, your Highness," I said, "and I can assure you that your wisdom and reputation will be legendary and continue to grow for thousands of years to come. We all know of your wisdom in determining the real mother of a disputed baby. Now how would you adjudicate among hundreds of disputatious and jealous women?"

Solomon laughed. "That was easy. I decreed that they were to play games. In fact, I organized a tournament where each of my 700 wives and 300 concubines has to play a round against each of the others. This will win me years of peace and quiet. I even designed a special gameboard on

which they move stones along paths. And the rules are simple enough for even a woman to follow. ... Oh, with my apologies to your ladyship, Kate."

"I would love to see this gameboard of yours, your Eminence," I ventured, "and even learn the rules."

Solomon pulled off his sash and spread it dramatically on the table. A great star pattern with masterful embroidery came into view. "Oh, the Star of David," I exclaimed.

"Yes, it commemorates my father. However, it has also become known as 'The Seal of Solomon', with some lines added to fill out the gameboard."

"I see there are circles at the ends and intersections of the lines," I said. "Are those the resting places for stones?"

"Very good," Solomon nodded, "and the stones travel from one side, with one player's palace pictured, to the opposite side. And anytime one stone can leap over one of the other player's, the stone leaped over becomes a captive and is removed from the field. Both players' stones may move only forward or sideways, towards the other player's palace. Should a stone arrive in the other palace, it gains a crown and can move in any direction."

"Oh, that sounds exactly like a game we play, called *Checkers*," I interrupted. "How amazing to have such similarity over such a long distance in time. My friend Martin Gardner will be delighted to learn of this game of yours."

Dr. When murmured, "He already knows. He will shortly show it to you himself. We should be going now, before you get the idea of wanting to join his Kingship's harem."

Just then one of the construction foremen climbed up the ladder to the platform, looking distressed. Solomon turned to him, waving farewell to us. In a moment, the Doctor and I were enveloped by the shimmer and hum of the Tesseract, and immediately we stood in Tom Rodgers' garden again.

"Oh, wow," was all I could say.

We rejoined the party as though nothing had happened. Martin came over to me and said, "I want to tell you about a game you might like to design

and make. I've written a review of it for the magazine, *Games*, and it would make a great addition to the product line of your little company."

I looked at the Doctor, who winked at me. "Let me guess," I said to Martin. "Is it by any chance *The Game of Solomon*?"

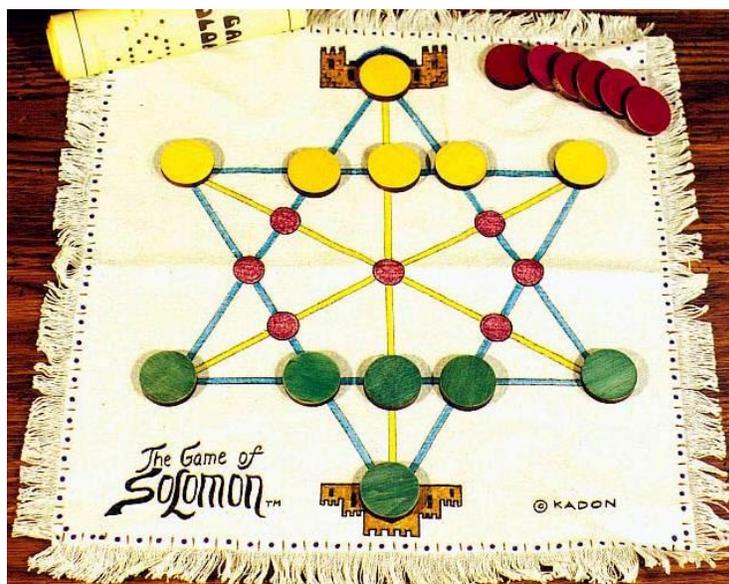
"How did you ...?" Martin looked at the Doctor. "Oh, you visited the source. Well, I've written up the detailed game rules, and worked out some original puzzles for the board as well. I'll send you all the details if you're interested."

"Oh, Martin, I'd love it. Yes, it will make a wonderful historical game to teach people at our Renaissance Festival pavilion in Maryland. Thank you so very much. I've even had some ideas of making it out of fabric with a fancy fringe, and I'm thinking of putting the rules on a scroll rather than in a book."

"That sounds very attractive and thematic," Martin said.

"And," I finished up with another inspiration, "I'll be sure to tell everyone that the game came from you. They'd never believe the other story."

Martin gave me a big hug, and in due course of time I sent him a picture and poem of how I presented *The Game of Solomon* to the gamers in the 20th and 21st centuries:



*As rumour tells, Sol made this game to keep
His harem playing 'stead of quarreling!
The handsome emblem of his reign of peace,
On fringed fabric painted, serves as grid
For several games of thoughtful skill for two
And plentitudes for solo ponderings.
If truth be told, the sage's creative partner
Is famous scrivener-scholar Martin Gardner.*

Dr. When smiled indulgently at my enthusiasm about the treasure from the past that our trip through time had won me. "When would you like to go next?" he asked me after grabbing an hors d'oeuvre from a tray.

"Do we have time for another trip?" I asked.

"All the time in the infinite Universe," he smiled.

"Someone else I've been dreaming of meeting is an author, Lewis Carroll. His real name was Charles Dodgson, and he had the most amazing imagination and fanciful stories, weaving mathematical ideas throughout. Have you seen how Martin Gardner decoded and wrote about Carroll's secrets in *The Annotated Alice*?"

"It's one of my favorites. I read it before Martin ever wrote it."

I was getting used to these time displacement paradoxes flying around me and barely paused. The good Doctor nudged me towards the door. Back in the garden I already knew the routine – hum and shimmer of the Tesseract, and in a moment we were in a lovely park, with trees and a lake, and on the shore a picnic table with a pretty, checkered tablecloth and a large basket and containers of food. A youngish man was serving fried chicken legs and biscuits to three young girls, clearly sisters.

"Now, Alice, use your napkin. We wouldn't want the Queen of Hearts to see spots on that pretty dress," the gentleman said.

"Oh, look, Mr. Dodgson, we have company," the girl exclaimed.

Charles looked around and instantly recognized Dr. When. "Well, hello again, Doctor. Whom have you brought this time? Not your friend Mr. Gardner?"

"A good day to you, sir," said the Doctor. "Let me introduce a friend of Martin's. Her name is Kate. She wants to meet all the most intelligent and creative people in all of time. She particularly wanted to meet you."

Charles blushed with embarrassment at this compliment. "Welcome, Kate. A friend of Martin's is always an honor to meet. By all means, please, join our picnic. Have a seat. There are plenty of comestibles to go around. And then we may play some games."

"Thank you, Mr. Dodgson, or shall I call you Mr. Carroll," I responded.

"Call me Lewis," he commanded. "That's what the publisher prints on my book covers."

I fished out a chicken leg from the basket and gnawed on the delicious morsel. "So what game do you have in store for us today, Lewis?" I asked with my mouth full.

"I've been pondering a new word game. Do you see this tablecloth? It's like a checkerboard, isn't it? Well, what if instead of chess pieces we used letters? And what if the letters could walk about on the board to try to form words? Say, each player starts with some letters, placing them on their side of the board, and then moves one letter on each turn to rearrange them into words (if possible, of course)." Lewis pondered. "I haven't got all the rules worked out yet. Maybe my friend Martin Gardner will have some ideas about that."

The Doctor leaned over to me and whispered, "He already has. I read his opus on it before he finished writing it!"

"Hmm. Lewis, do you have a sense of how many letters the players should have at their disposal? I know of a very popular word game we call *Scrabble* that has a whole bagful of little square wood letter tiles, and players draw 7 at a time to work with to build words on a big square grid. There are many multiples of the most frequently used letters and vowels. Maybe for your game," I suggested, "players should start with 8 letters each to fill the whole row on your 8x8 checkerboard?"

Alice, who had been listening avidly, bounced up and down in her seat. "Yes, yes, Mr. Dodgson, that makes perfect sense. Let us place eight! Remember the frog story?"

"Frog story?" I asked, curious and curiouser.

"Yes," Alice explained. "Let's play a little word game. It's like a little contest. I'll start. I'll say, 'Here's a frog. I one it.' Then you use the next number, 'I two it.' Ready?"

"Very well, I two it."

"I three it," responded Alice.

"I four it," I continued.

"I five it."

"I six it,"

"I seven it," said Alice with a wicked twinkle in her eye.

"I eight it," and realized as soon as the words were out of my mouth that I had fallen into her trap, and everyone laughed heartily.

Dr. When got us back on track. "Now about this game..."

"All right, so each player places 8 letters. But how many letters should there be altogether," I still wondered. "And what should we call this game?"

Dr. When, who already had foreknowledge of where this conversation would lead, interjected at this point, "I have an inkling it will be called *Lewis Carroll's Chess Wordgame*, and its gameboard will look remarkably like your red and white tablecloth here."

Lewis Carroll blushed again while the assembled company all applauded. Then Alice had another thought. "And maybe it should be decorated with magic mushrooms?"

"A wonderful suggestion, Alice," I found myself saying, eager now to get home and tell Martin Gardner all about this adventure and how I was ready to make this game to share with all the folks in the 20th century.

After bidding these new friends goodbye and thanking them for a magical visit, and assuring Lewis that we would see to it that his inventive legacy would endure, I joined Dr. When as he activated his time-traveling Tesseract, and before I could catch my breath, we stood in Tom Rodgers' garden again, with not a second elapsed from the time we had departed.

"Oh, thank you, Doctor, that was a historic encounter. I want to tell Martin all about it, right now!" I blustered.

"What do you want to tell me?" Martin had just stepped outside onto the patio and caught the end of my effusion.

"I just met Lewis Carroll, and there's this fantastic word game he's thinking about, and I'd like to make it," the words tumbled out in a blur.

“Oh, yes, I’ve been wanting to tell you about it.” Martin reached into his jacket pocket and pulled out a sheaf of papers. “I’ve worked out some nice rules for playing it, based on notes that Carroll left in his diaries. I brought them along for you. Here they are. See what you can do with it.”

I gave Martin a big kiss on the cheek, and in due course of very flexible time I sent him a picture, complete with mushrooms, and the poem about *Lewis Carroll’s Chess Wordgame* in the 20th century:

*A tale is told of wonderlands of mind
Wherein as through a looking glass of thought
The traveler meets with marvels past recount.
A wordgame for a chessboard? Yes, indeed!
So Lewis Carroll's fertile brain opined
And Martin Gardner's skillful sense defined.
Now let the letters stalk about like queens
To range themselves as words upon the board.
Two players vie to weave the "spell" that scored.*



The party continued, with the attending mathematicians and magicians entertaining one and all with their stories and feats that Martin had so elegantly written about in his many articles and books.

At one point Dr. When drew me aside and asked me, “Do you know about the oldest puzzle ever studied?”

“Do you mean Archimedes’ Square? That’s the oldest one I’ve ever heard of. There’s a rumor that Archimedes documented it on an old parchment, even showing a picture of an elephant that the 14 tiles of the puzzle could make.”

“Indeed, that is the very one,” the Doctor responded, glancing at me with a mischievous gleam.

“Where is that parchment now,” I asked with growing anticipation.

“It was found in 1846, then disappeared again until 1906, but somehow disappeared again and won’t turn up for, oh, sometime soon in your lifetime, Kate.” That the Doctor was relishing the humor of this situation was unmistakable. Time had no boundaries for him. He played with events as on an infinite gameboard.

"Archimedes," I mused. "Oh, how I would love to meet this greatest genius of antiquity. He was thousands of years ahead of the rest of humanity in his mathematical insights, his inventions... scientists even today are still trying to catch up with his methods."

"Yes, and he did wonders with the news I brought him of what later scientists had worked out in mathematics and physics, thanks to his ideas. Archimedes was one of my most valuable discoveries."

I must have looked very wistful, for the good Doctor then offered me an invitation that I had, this time, been too shy to suggest. "Would you like to meet this great genius?" he asked. "We won't be able to stay long as he is deeply immersed in working out π and other geometrical theorems."

I was speechless at this prospect and could only nod. Taking a deep breath, I followed the Doctor back to our take-off spot outside among the trees and could barely contain my excitement at what would be the high point of my entire life, and all in the same day.

The familiar hum and shimmer was a little louder and brighter this time, though in a moment we stood outside a stone wall and its open gate.

"Come," Dr. When said, "Archimedes is home now. How is your Greek?"

"Oh, I don't speak Greek," I replied in dismay, then brightened. "Can we use your little translator tool again?"

"Of course. Let's go in."

A servant met us at the door and guided us into a room crowded with models, charts, parchments, spheres and polyhedra, even a cat or two curled up on a rug. At a large table, a bearded man sat, intensely pondering some drawings. At one end of the table was a tray with differently shaped tiles scattered in and around it.

The man looked up and recognized Dr. When. They must have met many times before (or after?). The idea of a man showing up out of nowhere, with an otherworldly air about him, did not surprise Archimedes any more than it had others like Martin Gardner, Solomon Golomb, and Charles Dodgson. I couldn't help wondering how many other humans throughout history had known of his secret, and whom I may have met, not knowing of their privileged place in the field of temporal mechanics.

"Greetings, Archimedes. Allow me to introduce Kate. She is one of your greatest admirers in all of time."

"Welcome, Kate, may the Fates always be favoring you. Doctor, it is always a pleasure to see you, whenever you appear. You always have a surprise for me. What surprise have you brought me this time?"

"Kate specializes in geometrical puzzles. Can you show her the puzzle you have been exploring?"

"Ah, it is good to see a woman who is interested in mathematical subjects. In which century did you find her, Doctor? -- There is the puzzle, Kate, with its 14 pieces. What do you make of it?"

At this point I was completely tongue-tied. I could not have felt more stupid. Dr. When understood my hesitancy. "Go ahead, try it," he said, encouragingly.

I examined the various pieces that looked utterly confusing, with different lengths of sides on triangles and other polygons. Some had square corners that could fit neatly into the corners of the square tray. I tried a few pieces that seemed to fit and finally got the courage to ask, "How many ways can they all fit? How many solutions are there?"

Archimedes grinned and said, "We don't know that exactly, but it has a multitude!"

"And what do you call it," I asked.

"Ah, it is so difficult that it gives people a stomach ache. So we've named it the Stomachion!" This little joke clearly amused Archimedes greatly.

I noticed the large parchment on the table with drawings of what were evidently different arrangements of the tiles, a page full of them, looking like animals and birds and abstract geometric shapes. "Are those all figures that these tiles can make?" I asked, moving some more tiles into the tray. They started to fill the space neatly, and I noticed that the way the pieces were cut allowed them to show orderly adjacencies. In fact, there were straight lines from corner to corner, and from top to bottom. Finally I managed to get the last piece to fit.

"Oh, look," I exclaimed, "the whole pattern looks like the letter A. Archimedes, it's your name. Did you design it that way on purpose?"

Archimedes laughed and said, "No, I never noticed that. And truly, I did not design it, and I do not know who did. It was delivered to me secretly as a gift. I am recording its shapes on this parchment as a light-hearted interlude among these more serious mathematical findings that I am recording, to preserve them for other scholars."

Dr. When touched Archimedes on his shoulder and assured him, “Yes, it will be a priceless treasure for all the future to come. Please continue.”

We thanked Archimedes and took our leave. The party at Tom’s house was just as we had left it; not a second had passed since our last departure. The only thing changed was my brain, crammed full of the timeless experiences that Dr. When had made possible. And when the party was over and we said goodbye, I told him I would like to see him again sometime, anytime, in time and out of time. And so it happened that from time to time he did turn up, evidently amused by my enthusiasm, and treated me to travels to other times and places. The telling of those stories, however, will have to wait for another time.

Meanwhile, as the Doctor had promised, within my lifetime, in 1998, a palimpsest turned up that was an exact replica of Archimedes’ manuscript. It was in bad shape from all the centuries of being tossed around and forgotten, and even scraped off to write other text across the original pages. It was entrusted to an international team of 100 scholars from many disciplines, who spent 12 years studying and conserving the 172 pages of priceless knowledge, among them an amusing and challenging puzzle of 14 tiles.

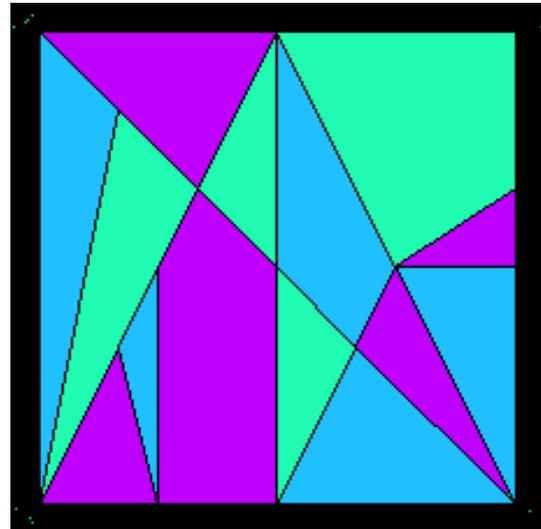
It was my good fortune to be invited to see the palimpsest at the Walters Art Gallery in Baltimore, Maryland, while it was still in mid-project. The full story of this incredible feat is now in a BBC documentary. The only part of the story they left out is how the palimpsest arrived in 1998 out of seemingly nowhere, but by now I recognized Dr. When’s whimsical touch. The published story credits an anonymous collector with purchasing the palimpsest for two million dollars and leaving it in the care of the Walters experts until they pulled every possible shred of Archimedes’ writings out of the damaged pages.

An avid follower of the translation project, one Joe Marasco, contacted me in 2003 about making some copies of the puzzle as gifts for the team leaders, and that is how, in fact, I happened to see the drawing again and produced it as a working puzzle. It became a star attraction among the historical games I was showing at the Renaissance Festival and to the world at large. Joe even offered a prize to anyone who was the first to prove how many solutions were actually included in that “multitude”

that Archimedes had mentioned. We still don't know who the original designer was, but a computer wizard, Bill Cutler, in 2003 won the prize with the complete answer: a surprising 536.

And here is its image, with the three colors I added as a further enhancement (note that no two of the same color are together and all colors have the same total area), and a verse in Renaissance style to go with it:

*What marvel of antiquity be this,
This fabled square of fourteen parts comprised?
The legends credit Archimedes' wile
With clever cuts that render every tile
An integer, in twelve by twelve reclined.
Solve 18 figures from that early age
And many new designs for youth and sage.
Behold the oldest puzzle ever told,
Our heritage of mind millennia old.
One hundred scholars did decode, with zest,
The Archimedes much-prized Palimpsest,
A scroll long lost, inscribed by ancient hands,
A rarest find from Greek and Latin lands.*



THE END
(or not)

Notes:

All three games are shown and sold on this website:

www.gamepuzzles.com/histfun.htm

A TEDx presentation by Will Noel about the palimpsest is here:

https://www.ted.com/talks/william_noel_revealing_the_lost_codex_of_archimedes

Sadly, the BBC documentary is no longer available online.

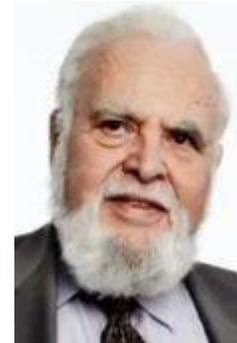
Cast of Characters



Martin Gardner



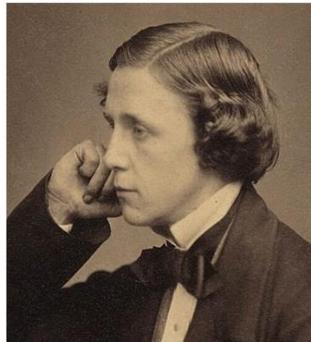
Tom Rodgers



Solomon Golomb



King Solomon



Lewis Carroll



Archimedes



Joe Marasco



Bill Cutler



Dr. When