



The Grasshopper

The Organ Of The Gresham Society

Bumper Edition for Christmas, Chanukah, Kwanzaa and New Year

Issue No. 6

19th December 2020

Season's Greetings to all – and our thanks to former College Academic Registrar Dr Valerie Shrimplin for this contribution to Christmas Cheer, first produced at the Soirée in 2015:

A Gresham Christmas poem

'Twas the night before Christmas at Barnard's Inn Hall
And staff and professors were busy no more.
The phones were all quiet, the PCs at rest
After a year of hard work, when all did their best.

They now were at home with the ones they hold dear
Preparing for Christmas with joy and good cheer
All of them safely tucked up in their beds
Dreams of committees filling in their heads.

The Ghost of Sir Thomas looked round and he thought
'What else can I do?' I really ought
To show them how pleased I am that they care
My wishes fulfilled as they all do their share.

The rooms were thus silent (the gatehouse as well)
When all of a sudden, the sound of a bell.
Up on the roof there arose such a clatter.
On such a quiet night, what could be the matter?

An interdenominational bringer of gifts
Came down from the roof (not up in a lift)
With something for all, and good wishes too,
Appropriate gifts, as I now will tell you

First, in the room of Simon the Provost
He left some champagne, procured at great cost.
For Tim he left Rum, for Frank Cox some nice socks
And for our dear Barbara, a nice Candelabra

The Hall had a tree, and also a Robin
- Wilson, that is, who does a great job in
Arranging the Soirée for all to enjoy
With music galore by each girl and boy

For singers and friends, there was wine and mince pies
For good cheer, as Santa came down from the skies.

(Editor's Note: These rhymes, I must say, are really quite dreadful

The gifts were much better and more than a sledgeful!)

The rest of the team had new carpets and shelves
The giver was Santa, team leader to elves.
Adviser on socks and ladies' perfumes,
Quiet as a mouse, he crept through the rooms.

Outside in High Holborn, the snowflakes came down
As Santa went out to the sound of good cheer
He looked all around, smiled, and said with a frown
'Merry Christmas – and here's to a Covid-Free Year'.

College notes

Please note that the Lord Mayor's Lecture, planned for 7th January, will now take place on Monday 1st February. Force majeure means that our AGM (but no Dinner of course) will still take place on 1st Feb, but at 5pm.

The College's on-line presence has been greatly increased among schools: 2748 pupils in attendance just from mid-September to the end of October, up from 700 for the whole of last year! On-line attendance is also well up too.

Salve Atque Vale

A warm welcome to incoming members Professors George Brock, Thomas Grant QC and Roberto Trotta. Plus Sophy Antrobus, veteran of the Nailor Lecture and much else, has also joined, which doubles the number of Wing Commanders on the strength.

Barbara Anderson (our very own hon. Academic Registrar and Senior Revisions Editor) tells us more about the late Professor John Barrow, whose obituary appeared in G5: "My two most hated lessons at school were Maths and Sport, so when John Barrow was appointed as Gresham Professor I wasn't looking forward to his lectures with much glee. I thought of taking a book in with me to help while away the hour, but decided that was probably a sackable offence. So imagine my astonishment when I found the lectures fascinating – and even fun!



John was a wonderful teacher. Speaking of which, one of his former school masters came to every lecture. I once said that he must be very proud of having set John Barrow on a path of such an acclaimed science career. 'Oh no,' he replied, 'I taught him sport. He was the best I ever had.' A truly great Gresham Professor – and that's saying something!"

Society member Professor Chris Haines (sometime Dean of Mathematics at City University) writes, "I knew John Barrow having worked with him at various OU Summer Schools in the mid 70's. He once trialled with Chelsea for football. He was in fact a good athlete: on 5th June 1971 at Hayes, Middlesex, John won the Middlesex Junior Championships 800m in 1:58.4 minutes running for Ealing & Southall AC". (*Athletics Weekly* 19th June 1971 Vol 25 No 25 page 20.) "John's best time that year was 1.54.2 and, also according to *A.W.*, a young Steve Ovett shuffled round behind him at a mere 1.55.3."

Members' Corner

Sir Roger Penrose (as previously mentioned) is famous for the impossible triangle which now bears his name: the [Penrose Triangle](#). Professor Sarah Hart (very much part of the Home Team) tells us that the Penrose Triangle was inspired by an exhibition which Roger first saw at the Exhibition of Escher's work at a mathematics conference in 1954 and which first appeared in a 1958 paper by Penrose and his father. Escher in turn was inspired by this to create works such as the impossible staircase in *Ascending and Descending* (1960). (*Editor's Note: for more on Escher see Sarah's Gresham lecture of 5th June 2017 on [Escher and Coxeter](#).*)

Further Light Reading

Pepys in pieces

I was following up on the fate of Samuel Pepys and discovered that the team who conducted the anatomisation had plenty to work on. They were the physician Hans Sloane, the surgeon John Bernard and one John Shadwell; he was one of Pepys' godsons (though it is not something I would have thought to keep in the family.) Poor old Sam had a cluster of stones in the left kidney, there was internal sepsis, the bladder gangrenous, the incision from his notorious cutting for the stone had broken open and the lungs were in an awful state. The poor man must have suffered dreadfully at the end, which seems to have been quite prolonged. (Thank God for antibiotics and the NHS...)

Snakes alive

With regard to the jararacá story in G5 concerning the genus *Bothrops* (whether *atrox* or not), those members

who enthusiastically support the Physic lectures at the College will be aware that venom from the jararacá snake is used to create ACE inhibitors, which have been developed of course from a peptide found in it, and which is used to treat heart disease. (ACEs? Wake up at the back – Angiotension Converting Enzymes, which is surely self-explanatory.)

The presence of peptide (you will recall) was discovered in 1965 in São Paulo's celebrated Butantan Institute, which produces an enormous range of serums for use against snakebite (not to mention scorpions, spiders and other venomous arthropods). This is literally a godsend as 40,000 people a year in South America get bitten (or 400,000 worldwide). I just have to admire those workers who spend their days milking snakes for their venom.

With regard to thanatophobia I fear I may well be accused of thanatophidiophilia (though I am not a herpetologist really myself). But I do find a horrid fascination with reptiles, having come face-to-face with one on various occasions ranging from springtime Dorset to the depths of the Amazon in flood (and I once shared a tent with one in the Pyrenees, but that's another story). Their movements are really quite hypnotic, their colouring is quite remarkable and they seem to adapt well to their environment, from jungle trees to the depths of the ocean. But their venom is truly diabolical – a newborn cobra has enough to kill a man, and the bushmaster is known in Central America as the *matabuey* (ox killer) with some reason. So I do wonder why they need so much venom, and how come they don't poison themselves when consuming their prey.

The fate of future war leaders

Further to the experiences of future war leaders in World War One (*see G5*), it is curious that Napoleon, Franco and Montgomery were all wounded on the field of battle as junior officers. The world would have been a different place had one bayonet thrust and two bullet wounds been a few inches further over. Napoleon was wounded in the thigh in the action at Toulon in 1793, and cannonballs (or more probably grapeshot) narrowly grazed him at both Regensburg and Wagram; Franco was hit in the stomach and his liver was damaged in an obscure skirmish in North Africa in 1916 during the Rif campaign while Montgomery was shot in the right lung at Méteren in 1914 and almost left for dead by the triage team. Mussolini by way of contrast, did not have a distinguished war – but more about that some other time.

Compendium of Games

Do you remember those boxes of games that you were given to keep you quiet at Christmas, with at least twenty games enclosed? And with such small pieces that they had



all been lost by Boxing Day. Well, here are a few items for you now:

Compendium 1: Spot the Croc

Further to the discussion about Batesian Mimicry in G5, some animals are better at remaining hidden than others:



Can you spot the croc in the left picture? He was about four feet away. And the iguana looks very much at home in the right picture. (Taken in Costa Rica, February 2020)

Compendium 2: How many instruments in the orchestra?

How many words of three letters or more can you make out of the word “orchestra”?

10 words: *da capo al fine*; 50 words *molto e con brio*;
250 words *imbroglione fortissimo!*

Compendium 3: A round with Sir Christopher Wren

Our very own Professor Richard Harvey offered us “An Introduction to Algorithms” in his lecture on 20th October (available of course on-line). Spurred on by an artless question from your Editor, he has come up with an algorithmic solution to the Hamiltonian Circuit.

(Editor’s Note: if this is an introduction, Heaven help us when he gets on to the tough stuff...)

The Grasshopper Himself is a great fan of Sir Christopher Wren who as a Gresham Professor was given rooms in the original College from which to prepare his lectures. After the Great Fire Wren was asked to rebuild fifty-two churches, of which, according to Wikipedia (source of all knowledge) thirteen survive unscathed by town planners or the Luftwaffe. Grasping round for an example to explain the Travelling Salesperson Problem (the TSP as the cognoscenti call it, aka the Hamiltonian Circuit) Richard realised that the thirteen Wren churches provide a splendid example: what is the shortest walking route round all the churches and visiting each church only once?

The answer is in fact quite simple (Editor’s Note: oh yeah?): yes indeed - you just download the co-ordinates from Wikipedia, build some code to interface with the Google distance API, symmetrise the distance matrix to

make the problem manageable (one pair of churches has 60m of difference in the routes depending on whether you walk from A-to-B or B-to-A). Then download your favourite TSP route solver (Richard used Google OR-Tools which uses the Held-Karp algorithm for small problems) and - bingo. (Editor’s Note: The Grasshopper may be seen at this point, lying down with a cold wet towel draped over his antennae...)

Solution: your route, should you wish to spend a happy 4.4km is St Paul’s>St Martin Ludgate>St Benet Paul’s Wharf>St James Garlickhythe>St Mary Abchurch>St Margaret Pattens>St Clement Eastcheap>St Edmund, King and Martyr>St Michael Cornhill>St Peter upon Cornhill>St Margaret Lothbury>St Stephen Walbrook>St Mary Aldermay and back to St Paul’s. All of which can be computed in a few microseconds on any home computer. Somewhat surprisingly, the shortest route around all 52 churches cannot be computed in under the age of the universe even when using the fastest computer. It’s a problem with bad computational scaling. How does your Amazon driver deliver parcels then? Well, they use an approximate algorithm which is around 50% worse than the optimal route. (Editor’s Note: Did anyone notice something about Richard’s pictures during the lecture? You remember those “Our Artist has made ten deliberate mistakes” competitions? Well, the Grasshopper Himself spotted that longitude and latitude had been transposed so that the churches, in theory at least, were all lying on their sides. Not even the Luftwaffe managed that...)

Plague Notes

There are some parallels between the plague and our experience of coronavirus today.

Pepys notices on 6th August 1666 that parts of London are affected in different ways, so that people are on the move (not unlike those second home owners) though it seems odd that in 1666 people should go into London in order to get away from the plague on the outskirts.

“So home; and there do hear also from Mrs Sarah Daniel, that Greenwich is at this time much worse than ever it was, and Deptford too: and she told us that they believed all the town would leave the town and come to London; which is now the receptacle of all the people from all infected places. God preserve us!”

And he notes on more than one occasion that the wealthier inhabitants have left for the countryside. King Charles himself moved to Salisbury where he stayed at Malmesbury House in the Cathedral Close. (Also formerly inhabited by Ted Heath. It is currently on the market – yours for a mere £5m...)



Editorial

Seasonal Greetings

I hope everyone has a proper Christmas season this year despite the circumstances. It is quite possible with people working remotely that productivity has been closer to its usual levels and I suppose that most Christmas shopping this year has been done on-line. (I still remember the excitement of going to Gamages with my Old Dad – just over the way from Barnard's Inn Hall it was.)

Anyway, I hope that Father Christmas brings you all more than a pair of socks and a packet of handkerchiefs. I dare say that some of you might even find a souvenir copy of *The Eagle* in your Christmas stocking (and I wonder how many members will admit that they still have a full past run of *The Beano*. Answers please on a Dennis the Menace postcard...)

The French Brexit Lament

The Editorial Board could not see the passing of the UK from the EU without meeting in the Grasshopper Offices to sing the following with a suitable tone of *sang froid* and quite possibly *laissez-faire*:

Oh England, you broke our heart when you voted to depart
But before you take French leave and go and pack,
One thing you'll surely lack, whether you be Jacques or even Jack
We just want to have our Gallic language back.

You'll be lost and up a lonely cul-de-sac,
Of savoir-faire you'll surely lose the knack.
You may write la plume de ma tante, you could can-can
but now you can't [Ooh!]
'Cos we're taking all our French words back.

Non, you cannot drive a car without a chauffeur
You can drive a van but not a sleek coupé
You won't get very far without our ooh-là là
On the day French words go back to France.

Oh England, it's the start of picking allies à la carte
It isn't nice, but clearly it's too true
You can no longer rendez-vous or even parlez-vous
And we just want to have le français back.

You may still have a wife but no fiancée
Without us your soufflé will never ever rise
Don't bother to RSVP, we've slipped off for après ski
And we're taking all our French words back

Without a soupçon of warm Camembert or pâté
Le menu for the Soirée isn't there.

And you can't eat à la mode nor in a café down the road
We want our language back – it's only fair.

Alas you cannot have another encore
You won't even have another village fête.
And if you want our bel esprit, I'm sorry c'est la vie
We want our language back before it is too late.

D'après Sarah-Louise Young, Maxim Melton and Amanda Palmer, adapted by Tim Connell and first performed at the Soirée in December 2019.

Envoi

And Kwanzaa? Ah, this is a festival (first launched in 1966 among African Americans) which runs from December 26th to January 1st. Much of the imagery is drawn from Swahili (which is slightly strange as the ancestors of most African Americans would have been taken from West Africa.) Each of the seven days has a special significance with its own rituals and customs. It is estimated that between half a million and two million people celebrate Kwanzaa (often without overlooking Christmas), mainly in the USA.

Our congratulations go to Professor Robin Wilson on the publication of his new work on Number Theory. (The fact that it is sub-titled "A Very Short Introduction" comes as a relief to us non-mathematicians.) It is also Robin's fiftieth book, so Blackwell's must be proud of him...

And as ever, if you have any news items for *The Grasshopper* do let [Tim](#) or [Basil](#) know. With best wishes for Christmas, in the reasonably strong hope that next year has to be better than the one outgoing...

And remember – stay sage!

STOP PRESS STOP PRESS STOP PRESS

Following on from the success of our first webinar with Ian Harris I am delighted to announce that Fred Hohler (PM of the Mercers' Company, originator of Art UK and co-founder of Watercolour World), will lead a webinar on The Origins of Watercolours. This will take place on Thursday 18th February at 6.30pm and log-on details will be forwarded closer to the time.

Covid Update

For further insights regarding the Covid situation, readers may wish to log in to the recent lecture "[How to Panic Properly in a Pandemic](#)" given by Emeritus Gresham Professor Raj Persaud at the Royal College of Psychiatrists on 11 December 2020.



The Covid Christmas Carol

Blow the candles
Stuff the turkey
Fa-la-la-la-la-la-la-la-la.
The nights are dark
The days are murky
Fa-la-la-la-la-la-la-la-la.

'Tis the season for reflection
Fa-la-la-la-la-la-la-la-la.
And find ways to avoid infection
Fa-la-la-la-la-la-la-la-la.

Deck the wards
And ward off Covid
Fa-la-la-la-la-la-la-la-la.
The vaccine's here
So don't be morbid.
Fa-la-la-la-la-la-la-la-la.

Bring more vaccine
Do more testing
Fa-la-la-la-la-la-la-la-la.
Astra Zeneca, Pfizer, Oxford
Sure to be the best we've ever seen.

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