



Senior

U3A

Moments

The Newsletter of the Bookham & District
University of the Third Age

Issue 63

July 2019

Its Bookham U3A membership
renewal time.
See page 14 for full details



Ornithology walk with John Dicker. David Middleton photos



Bookham and District U3A

Registered Charity No 103686 U3A Membership No 4/239/93

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This issue is always published in July, just two months after the previous issue, because we do not meet in August and making each new Senior Moments available at a monthly meeting helps to keep the cost of posting a copy to members under tighter control. It also has the advantage of publishing in July when membership subscriptions become due. Not only is the customary red strap on the cover a reminder about subscription renewal but there are important changes noted in the Membership Secretary's report on page 14 that we must all take on board.

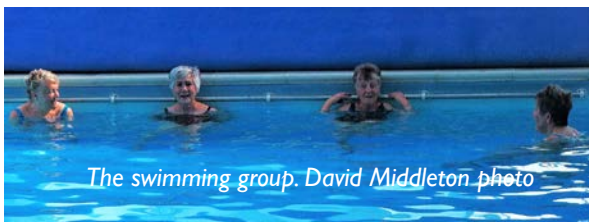
It is increasingly encouraging to find that for the second issue of the magazine this year, I have had to hold over an article to the following issue because I have run out of available pages—long may that continue. Don't forget you don't have to come up with a complete article, but just an idea for what you wish to see in the magazine. I am always happy to help put together a piece from an idea that may occur to you.

There are again some good articles this issue that are well worth a read. Jolly Jack Tar provides historical information on seamen's service over the years in the Navy which dominated the seas and was a major part in developing our world wide Empire and now Commonwealth. The Science group went to see water treatment and there is a full write-up on that outing. There is a piece on Randalls Park Crematorium that makes an interesting read. The usual gardening piece from Anita Laycock is there with a visit to RHS Wisley which is going through a makeover at present so its appropriate that the cover this time is some of Wisley's finest blooms. Judith Witter has written a piece on gardens.

David Middleton has again submitted several photographs he has taken at various group meetings that are always interesting to see.

My own interest in art took me to see an exhibition at the National Gallery in London to see some very fine paintings by a famous artist in his day—Joaquin Sorolla 1863-1923 who is hardly known at all today. I had certainly never heard of him until I read about this exhibition which closes on 7th July, so you need to be quick to get there to see it.

Maurice Baker



The swimming group. David Middleton photo

Cover photo—fuchsias at Wisley

Chairman's Report

We tend to take for granted that our U3A events are well organised, run smoothly and are enjoyed by everyone involved. But behind the scenes there is always a lot of work involved to 'make things happen' and we are very fortunate to have Jan Dicker as our Social Secretary. She has been supporting our activities for many years and our latest event, the Quiz Night, was another example of her administrative excellence.

It was a real pleasure to see nearly 100 members attend the evening as we enjoyed both the quiz and Elizabeth's catering. Over 8 rounds of questions on topics from Classic Television to 'Back to the Sixties', we were well and truly tested by our quizmaster Gary Shillingford. There were individual rounds to lighten the evening and at the end the winners were declared; congratulations, and the wine and chocolates went to Valerie Rose and her table. As for the Chairman's table, we sampled some fine wines but didn't trouble the leader board.

I continue to enjoy visits to various Interest Groups and this month went on a lovely walk over Ranmore Common with John Dicker and his Ornithology and Botany Group. John has been leading these walks for over 20 years and his knowledge of the various plants and butterflies we encountered was really informative. Without his guidance I would never have found the orchids in the wood or the pasque flower, which I now understand to be rare in this country. It was a great afternoon shared in the company of a number of our members.

The summer season is now upon us and whilst some groups will take a break over August, others will continue and we also have Village Day to enjoy.

Our U3A is a key part of our village life and I look forward to seeing many of you at Village Day and in our various meetings over the coming weeks,

With all my best wishes
Roger Mendham



Purple Orchid
(*Orchis mascula*)



Pasqueflower (*Pulsatilla vulgaris*) 4



Vegetable gardening

In April we visited Polesden Lacey and there was plenty of interest on our walkabout.

In the Kitchen Garden radishes were just emerging under the cold frames, with buds on the fruit trees and bright vibrant shoots on the peonies.



In the Home Farm Orchard several new fruit trees had been planted out since our last visit. We did notice that the variety of the fruit trees had been labelled although they did not give the type of fruit – was it an apple or pear?



The chickens are well protected with electric fencing round their plot and Mr McGregor also paid them a visit. We noticed some large bug hotels and log piles in this area.

We admired the borders alongside the Gardener's Cottage and the newly planted Winter Garden. It was lovely to see that they are making use of the area just over the bridge on the right as more kitchen gardens.

We wandered back through the Double Herbaceous Border to the Granary Café to enjoy a warm cup of coffee along with a shortbread biscuit or scone.



Some of us enjoyed a trip behind the scenes at The Vineries with Gardening Group 2. They grow thousands of plants each year and we saw the machine putting the compost into the pots. This machine had been in use for decades.

In May, Wendy kindly led a tour of Little Bookham Allotments where she has her own plot. She served refreshments in the Cabin – much appreciated after a cold and damp morning.

Anita Laycock



Jolly Jack Tar? I don't think so

Hearth of Oak' is the official march of the Royal Navy. Its lyrics were written by actor/manager David Garrick to commemorate naval victories over the French in the Seven Years' War; and it was first sung publicly on New Year's Eve 1760 at the Theatre Royal, Drury Lane. The first two lines of its chorus are: "Heart of Oak are our ships, Jolly Tars are our men", so clearly the assumption that Jack Tars were indeed cheery chaps goes back a long way, and almost every UK port has a pub called the Jolly Sailor. Tar was widely used to waterproof sails, ropes, clothes and to prevent sailors' long hair getting caught in ships' equipment. Research shows that at the end of the 1700s, sailors had many reasons not to be jolly:

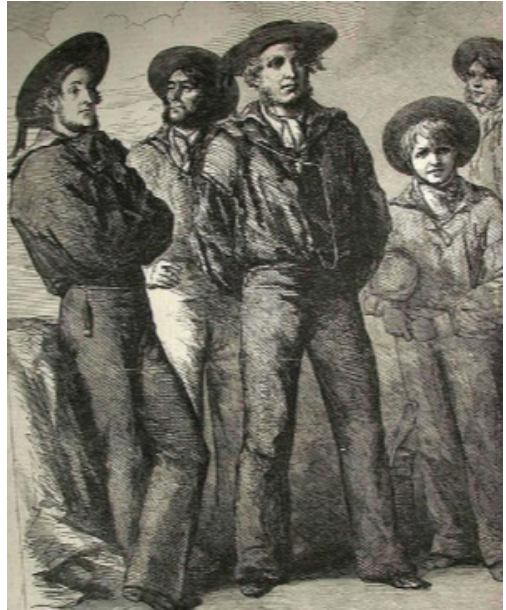
- Impressment
- Poor and delayed pay
- Longer voyages with fewer 'home' visits
- Enforced transfers to other ships
- Having to work with inexperienced landsmen due to the "Quota" system
- Poor living conditions and food
- Inadequate medical attention
- Cruelty

Fewer than half of most crews would have signed up voluntarily. The remainder might have been lifted from the streets in what they were wearing by press gangs, so resentment was rife. Impressment refers to the act of taking men into a military or naval force by compulsion. Though the public opposed conscription in general, impressment was repeatedly upheld by the courts, as it was deemed vital to the strength of the navy and thus to the survival of the realm. One of the most successful 18th century press-gang recruiters was Lt. Andrew Miller whose name is remembered even today in the R.N.'s own nickname for the service – the Andrew.

Royal Naval lower deck pay had not been increased since 1653. Now that is austerity in the public sector! In fact, for the first century their pay was still reasonable because of the stability of wages and prices, but after the 1756–1763 Seven Years' War high inflation had severely eroded the real value of their pay. The army and militias had been granted

pay rises in line with the cost of living to aid recruitment for the land wars, but sailors' pay had remained unchanged, even though naval officers' pay had also risen.

Naval pay was around 1/3rd of that of merchant seamen due to simple supply and demand. At the start of the war in 1792 it is estimated there were 118,000 merchant seamen in the country. By 1797 parliament had voted for a wartime navy of 120,000, so the owners of merchantmen had to pay higher and higher wages to retain the crews



they needed.

Naval wages were paid six months (and often years) in arrears to discourage desertion. As far back as the 1660s this delay in payment had been a bugbear of Samuel Pepys when Secretary to the Navy Board. Seamen were given 'tickets' instead of money and these were often redeemed only when a ship was "paid off" (taken out of commission or mothballed) provided the Navy had been allowed sufficient funds by King and Parliament. There was no payment while sick, even if wounded in the line of duty.

Naval uniforms for the lower decks

were not introduced until 1857, so until then the seamen had to provide their own work-clothes, at their own cost. Even if they wore the 'slop' clothes stocked and issued by the purser they had to buy them with two months' pay in advance. While at sea, sailors had their own distinctive style of dress, quite different from that of landsmen, who wore long coats, breeches and stockings. Matelots wore loose, bell bottomed trousers that were easy to roll up for deck cleaning duties and short jackets that were less restrictive than a long coat. As a landsman's cocked hat would soon blow away or catch on the rigging they preferred a hat with a small brim or a wollen or fur cap. It became fashionable for seamen to paint the names of their ships onto their hats.

The practice of coppering the submerged part of hulls, which started in 1761, reduced barnacle and weed growth and attacks by teredo worm, so the wood lasted longer: British warships no longer had to return to port frequently to have their hulls scraped and the extra time at sea significantly altered the rhythm and length of Jack's work at sea.

'Turnovers' was the term used for transfers of seamen from one ship to another against their will, a practice that had caused considerable grievance for decades. It broke up established, happy working teams and meant demotion for petty officers and others if the ship to which they were transferred already had a full complement of their rank. It meant that tickets were issued by the transferring ship in lieu of cash payment for wages owed, and it could mean that those returning from long voyages abroad could be transferred to new ships about to sail without even having the opportunity to step ashore. Successive Secretaries of the Navy Board had urged changes to this highly resented practice, but without result.

Prime Minister William Pitt the Younger introduced the Quota system in 1790, requiring each English county to provide men for the Royal Navy, based on its population and the number of its seaports: London, for example, had to provide 5,704 quota-men while Yorkshire had to provide 1,081. The counties found it difficult

to meet the quotas, so some offered cash bounties to inexperienced volunteers (mostly landsmen), creating resentment among the regular seamen who, despite their experience, had received only a small fraction of that bounty on their own volunteering (and none if they were pressed). Sometimes, the counties resorted to sending convicted criminals in lieu of punishment, further creating ill feeling among ships' companies and sometimes introducing typhus (then also known as jail fever). The new wartime quota system meant that crews had many landsmen from inshore who did not mix well with the career seamen, leading to discontented ships.

Living conditions were grim. Even with modern lighting, anyone who has visited the lower decks of HMS Victory without a bang on the head is either tiny, very careful or extremely lucky. An average Englishman's height in the 18th century was 5'6½", a little shorter than the 5'8½" of the 20th century, but not so small that those restrictions wouldn't be uncomfortable. Capt. Hardy was 6'3" and his ship's carpenter was 6'7". Below decks is where the men had to eat, sleep and spend their off-duty time, and remember Victory was one of the largest ships in the navy. Smaller ships meant even less room. In cold climates they almost froze in the dark. If they opened the gun hatches they got some light but also bitter winds. In hot seas they sweated and suffered. For ordinary seamen the sustenance on His Majesty's ships was extremely poor. Most meat was bone, gristle and fat. There were weevils in the hard-tack biscuits which were made with minimum moisture to avoid mould and red worms in the cheese. Water was served from rancid barrels. Rations were often short due to the "purser's pound". To encourage economy, the ship's purser could keep two ounces of every true pound of meat as a perquisite i.e. 1/8th, and this proportion could also include the booze ration.

A sailor's daily ration of alcohol was eight pints of beer, a pint of wine or half a pint of spirits depending on what was locally available. In later years, the political influence of the

West Indian planters led to rum being given the preference over gin, arrack and other spirits. The half pint of spirits was originally issued neat; it is said that sailors would "prove" its strength by checking that gunpowder doused with rum would still burn (thus verifying that rum was at least 57% ABV). Naval rum had to be this strong in case its barrels leaked and made the gunpowder unusable.

The practice of compulsorily diluting rum in the proportion of half a pint to one quart of water (1:4) was first introduced in 1740 on the West Indian station by Admiral Edward Vernon (known as Old Grog, because he habitually wore a cloak made of grogram – a coarse fabric of silk, mohair and wool). The term Grog for the rum ration comes from him. Grog-rum. It was also split into two servings, one between 10 am and noon and the other between 4 and 6 pm.

Medical attention aboard ships was often by drunken, incompetent students unable to practice ashore. Amputation was frequently their only available treatment and of course there were no anaesthetics. In addition to injuries caused by warfare or accidents at sea, sailors' most common health risks were scurvy when at sea for long periods and contracting the great pox (syphilis) when ashore.

Early symptoms of scurvy include weakness, feeling tired, curly hair, and sore arms and legs. Without treatment, decreased red blood cells, gum disease, and bleeding from the skin may occur. As scurvy worsens there can be poor wound healing, personality changes, and finally death from infection or bleeding. It took centuries for the cause of scurvy to be identified as a deficiency of Vitamin C and it is estimated that between 1500 and 1850 some two million sailors died of the condition. Half the crew on a long voyage would be expected to die and on a three-year voyage in the 1740s under Commodore George Anson, 1,400 of the 2,000 crewmen died, of whom only four were killed by enemy action.

Captain James Cook had risen from the lower deck and for his circumnavigation of the globe 1768-71 he took several anti-scorbutic foods, including thirty gallons of carrot marmalade and 100 kilograms of sauerkraut for each crew member. He lost no-one from scurvy and for this miracle he became a national hero and was awarded the Copley Medal, the highest distinction of The Royal

Society. Of course, he had also explored the Eastern coastline of Australia and claimed it for the crown. However, the Royal Navy was slow to learn the lesson and it was another generation before Navy regulations required adding small quantities of citrus juice to the rum ration of its crews. Even then the Navy Board provided limes, not the costlier but more effective lemons, giving rise to the nick-name Limeys for British sailors, and later all Brits in America.

This could be a struggle, but imagine you are a fit, heterosexual sailor who has been worked hard at sea and lived in exclusively male company for months on end. Do you rush ashore asking "where can I find some citrus fruit?" I don't think so. It was female company Jack desired, regardless of the known risks. Better trained ship's surgeons treated syphilis with mercuric chloride. It was inhaled, ingested, injected, and applied as an ointment. Both mercuric-chloride treatment for syphilis and poisoning during treatment were so common that mercury poisoning's symptoms were often confused with those of syphilis. Less aware medics simply shrugged and allowed the disease to progress unimpeded. The axiom of the day was "a Night with Venus and a lifetime with Mercury". Smallpox was so named to distinguish it from the Great pox. With no sick pay, their health was a major concern for those living on board ship.

On each of his Britannic Majesty's ships, the Captain was the law and his decisions were final, at least until the ship next reached port. There were many good Captains but inevitably there were those whose personalities led them to rely on the strictest discipline rather than good leadership. With the stress of command this sometimes led to excesses, so a climate of fear could easily be generated with no permissible avenue of protest.

All the above are compelling reasons to suppose that the Jack Tar of Nelson's time was far from being a Jolly Sailor.

Bob Kelley

From a talk given to the Bookham U3A



LWG7 Walk 15th May Open Spaces Lungs of London Leader John Newman

London Walking Group 7 was launched today 15th. May 2019. John Newman was the group leader and Martin, Monica, Jackie and Pam joined as group members. What a glorious sunny morning, a real treat for us all. We started at Waterloo looking at some of



the history of the station before setting off to explore some of the green spaces that breath fresh air into London.

Our first place was St. Johns Church just across the road from Waterloo station, a garden attended by St. Mungo's community

supporting homeless people. We talked to the gardener there and were enthralled by the beautiful and restful garden. One of our



members commented that they had passed the church many times and never realised there was such a beautiful garden behind the church which anyone could use.

The rest of the walk involved gardens of various sizes all providing green spaces for a crowded city. These spaces were fully enjoyed by workers during their lunch break. There were play areas for children.

We stopped for coffee at Gabriel's Wharf, an area so far saved from development by the

efforts of enthusiastic local support. Previously this area had been the centre of ITV's studio productions .



We walked down Hatfield Road where skins had been prepared and some used in the making of hats. The garden here was quiet and cool.

Lunch in Southall was tasty and gave us time to chat. Several more gardens followed and we then reached the Mary Harmsworth Park and the Imperial War Museum. This was a very large space and a most imposing building.

The slow walk back was a surprise as in a set of arches

we saw many mosaics based on the work of William Blake who had lived in the area, and this contrasted with a second arch where a display of Graffiti Art was under Waterloo Station.

All in all a great way to meet new people and a revelation of the numerous peaceful gardens and places where famous people have lived. A thoroughly enjoyable day and all in wonderful sunshine.

Pam Newman



Spanish Master of Light

Joaquin Sorolla (1863-1923) a Spanish artist born in Valencia who died in Madrid. His life spanned the initial expansion of photography that had been invented in France and England in the late



1830s. He was clearly influenced by the Impressionists and some of his paintings had all the attributes of Impressionist influence. On the other hand many of his portraits were extremely detailed and almost like camera captured shots. I was first attracted to this artist by the exhibition at the National Gallery in London in March 2019 advertising it as a 'Spanish Master of Light' and he clearly was in so many of his paintings. At the exhibition the first



thing that impressed me was the size of so many of them where full length figures were life size as were several pictures that

included horses and cattle, both oxen and bulls. The National Gallery stated "Joaquin Sorolla y Bastida was the leading Spanish painter of his day,



world famous when Picasso was still struggling to establish his name. Indeed, it is hard to underestimate Sorolla's renown a century ago as the



exponent of a bravura impressionist painting style capturing the spirit and colour of Spain and its people. This exhibition, his first in London since 1908, traces Sorolla's career at home and abroad. Focusing on 60 paintings, these include portraits, landscapes, the bathers and seascapes for which he is most famous, and genre scenes of Spanish life."

At the same time as Sorolla was at his peak, photography had advanced from its first invention to becoming an art form, particularly in portraiture where 'cartes de visite' visiting cards and later the larger cabinet cards in the



1880s and later still Kodak introduced their first cameras. One of his finest paintings is of his wife setting her Kodak camera.

Artistic photographers Julia Margaret Cameron, Alfred Stieglitz, Edward Weston, Eadweard Muybridge and of course Charles



Dodgson were developing their skills and gaining world wide reputations. Looking at some of the paintings of people at the Sorolla exhibition I was occasionally struck by the quizzical expression he captured that some people show when they are being photographed. It all made me think, was he trying to say, "You may have instant picture making with your cameras and photography in whole plate, 10x8 or even

15x12 inch plate cameras, but look what can be achieved with these life sized paintings and in colour too!" He may not of course have said this but his paintings certainly said this to me.

One painting, not in the exhibition but I found on the internet was a portrait of his friend and almost exact contemporary, the Danish photographer Christian Franzen operating his large plate camera.

One painting, not in the exhibition but I found on the internet was a portrait of his friend and almost exact contemporary, the Danish photographer Christian Franzen operating his large plate camera.



Self portrait

Hockney makes the point that a good painted portrait is so much better than a photograph because while a photograph is now captured in a fraction of a second and then in little more than a few seconds, a painting is often produced over several hours of work often with a number of sittings so that a portrait painter gets to know and understand far more about the subject before him and the best portrait painters convey this in their pictures.

Many of the paintings show back lit subjects, not always easy to achieve in photography but here captured to perfection with detail in both highlights and shadows.

It's not easy to convey the full impact of the paintings in reproduction, because most of the subjects are life size and this makes the canvases very large indeed.

An exhibition well worth seeing at the National Gallery until 7th July.

Maurice Baker

12k Walk

We started our May walk from The Inn on the Green at Ockley, where we were allowed to park.



We made our way over the green to the woods, passing bluebells that were sadly in need of rain and had lost their sparkle. On the way to Forest

Green, we saw the most enormous, white Charolais bull, but luckily there was a fence between us and him!

After climbing over many stiles, some of

the giant redwood trees. All downhill from here, passing by the house once lived in by



In front of one of the giant redwood trees

Ralph Vaughan Williams.

Unfortunately we got a bit lost and, after a



which were very steep and not very safe, we started the climb up to Leith Hill Place.

Much to our delight, in the wood on the way, we heard our first nightingale of the spring. Why are they not returning to Bookham Common?

The lane got steeper and steeper, but as we got to the top we were rewarded by the most glorious rhododendrons and azaleas, all in full bloom.

We had to stop for photos of them and

vote as to which way we should go, we luckily took the right path. We passed through Jayes Park, now used for small businesses, and so back to Ockley for (rather a late) lunch. I think we climbed about 15 stiles, (I'm sure it did us good) and walked 8 miles.

Anne Parsons

Visit To Randalls Road Crematorium

When the visit was first suggested during a meeting of the Science & Technology Group 2 earlier this year there was silence. But when everyone realized a 'volunteer' was not being sought to undertake the whole procedure the mood of the group lightened considerably!



Many of us have attended services at Randalls Road before, but none had ever ventured behind the scenes, so had no idea just how the process of cremation worked. But that was all to change; because on a beautiful sunny spring afternoon nine members of the group were welcomed by a smiling Alex, the Manager, at Randalls Road. She took us round the back and introduced us to Kevin one to the technicians. They could not have been more helpful, answering all our questions and explaining the cremation process which debunked many of our preconceived ideas.

Once the coffin arrives at the crematorium it is never opened. The coffin and body go as one into the furnace. And there are no flames within the furnace itself; the walls are so hot, over 800C, that the coffin bursts into spontaneous flaming combustion vaporizing and oxidizing all tissues with the body reduced to bone fragments. This process takes between 70 – 80 minutes. The fragments are placed in a cremulator which further reduces them to

powder. It is this powder which is returned to the relatives.

There is no smell or smoke produced from the process. The filtering system starts with all the vapours passing through the equivalent of a large sealed water tank and on through more and more fine filters – even trapping mercury vapour from old fillings.

Metal hips and knees, and anything else metal within the body, are not destroyed during the cremation but automatically separated out at the cremator process. This 'waste' metal is sold to a Dutch company and all the money given to charity. The exception are pacemakers, which have a tendency to explode on heating, so are removed by the Funeral Director prior to cremation.

Lastly, but much more important than everything else, all the bodies and their remains are meticulously 'tracked' through the whole system so all relatives can be assured that the ashes they collect really are the remains of their loved one.

We understood how the staff at Randalls Road give a very professional and caring service to the public and are rightly proud of what they



do. And we left having had a most informative and, yes, a very enjoyable visit.

Brian Williams

U3A MEMBERSHIP RENEWAL GUIDELINES JULY 2019

A Notice for all members of Bookham U3A

If you wish to remain a member of Bookham U3A your membership will need to be renewed by 31 July. The renewal subscription is £14.

We are introducing some changes to the renewal process this year. This note is to explain your options for renewal. These changes are partly as a result of members' requests and partly our desire to reduce paperwork and the use of stamped addressed envelopes!

If you have not yet used the website, we encourage you to do so now, since new facilities will be introduced during the coming year. Whilst the website can be viewed without logging on, full use will depend on you setting up a password. Full details of how to do this can be found in the documents section of the website or by clicking on the website. Once you have logged on to the website as a member, please access your profile and check the data we hold for you, changing it if necessary. In particular we would appreciate you providing emergency contact information. Click here to access the website. www.bookhamanddistrictu3a.org.uk

The first change is that we are discontinuing the issue of a membership card. Proof of membership, if required by other local U3A's, will be provided in other ways.

The renewal process is as follows:

1. FORTHOSE MEMBERS WHO HAVE EMAIL ACCOUNTS AND ACCESS TO A PRINTER.

- You will receive an email advising you that your renewal is due.
- If you are happy to use online banking, please make the payment using the information supplied in the renewal email. There is no requirement to return a renewal form.
- If you do not want to use an online banking, print off the email and sign it to confirm that you accept the current terms and conditions which are on the website and then either bring a signed copy of the email together with your cash/cheque to the July meeting where a receipt will be provided or post it to the Membership Secretary together with a cheque at the address provided.
- In all cases, you will receive an email acknowledgement of the payment.

2. FORTHOSE MEMBERS WHO DO NOT HAVE AN EMAIL ACCOUNT OR DO NOT HAVE A PRINTER.

- You will receive a renewal form with your next edition of Senior Moments.
- You will need to complete and sign this renewal form.
- Either take the completed form and your cash or cheque to the renewal desk at the July meeting when a receipt will be provided.
- Or you can post it to the Membership Secretary at the address provided.
- If you renew by post you can pay by cheque or bank transfer (details will be provided).
- If you require a receipt please provide a stamped addressed envelope.

PROOF OF MEMBERSHIP.

If you are required to provide proof of membership in order to join a Group with another local U3A you can use your receipt for this purpose.

PAYMENT FOR PARTNERS

Payments of £28 for two partners will be accepted, in cash, by cheque or bank transfer.

Visit to SES Water Bough Beech Reservoir & Water Treatment Works April 18th 2019

Just before Easter, 13 members of the Science & Technology Groups 1 & 2 visited our local water company's reservoir and water treatment works at Bough Beech, near Edenbridge, (just into) Kent. S&T2 had been looking at water supply resilience in the south east of England so that this visit rounded off some very important issues for all of us.

Increasing awareness of vulnerability to terrorist attacks has meant that many utilities have closed their doors to visitors. Initially that was the SES Water position, but since 2000 they have opened their facilities in a controlled manner so that they can encourage their customers to appreciate the issues associated with providing an increasing Surrey population with its daily requirement of drinkable quality water. So our visit was preceded by identity checks and submission of vehicle registration numbers. Then at the works entrance we were signed in.



Whilst the SES Water Education Programme at Bough Beech is more used to school age visitors, our leader for the afternoon, Jo Hedges, was more than happy to deal with us in our second childhood! She explained that 85% of our water comes from deep aquifers fed through the chalk in the North Downs or large deposits of greensand in the supply area. This raw groundwater is high quality, as it has been naturally filtered. Boreholes are sunk into these aquifers at

depths of between 90-180 metres. The groundwater is pumped to the surface and then to the nearest treatment works, which for Bookham is Elmer in Leatherhead. However, Bough Beech is different in that it has no boreholes but instead SES Water's only reservoir. This is fed by two natural streams but more significantly by extraction from the nearby River Eden. Extraction is allowed by the Environment Agency between about October and April only. So when we were



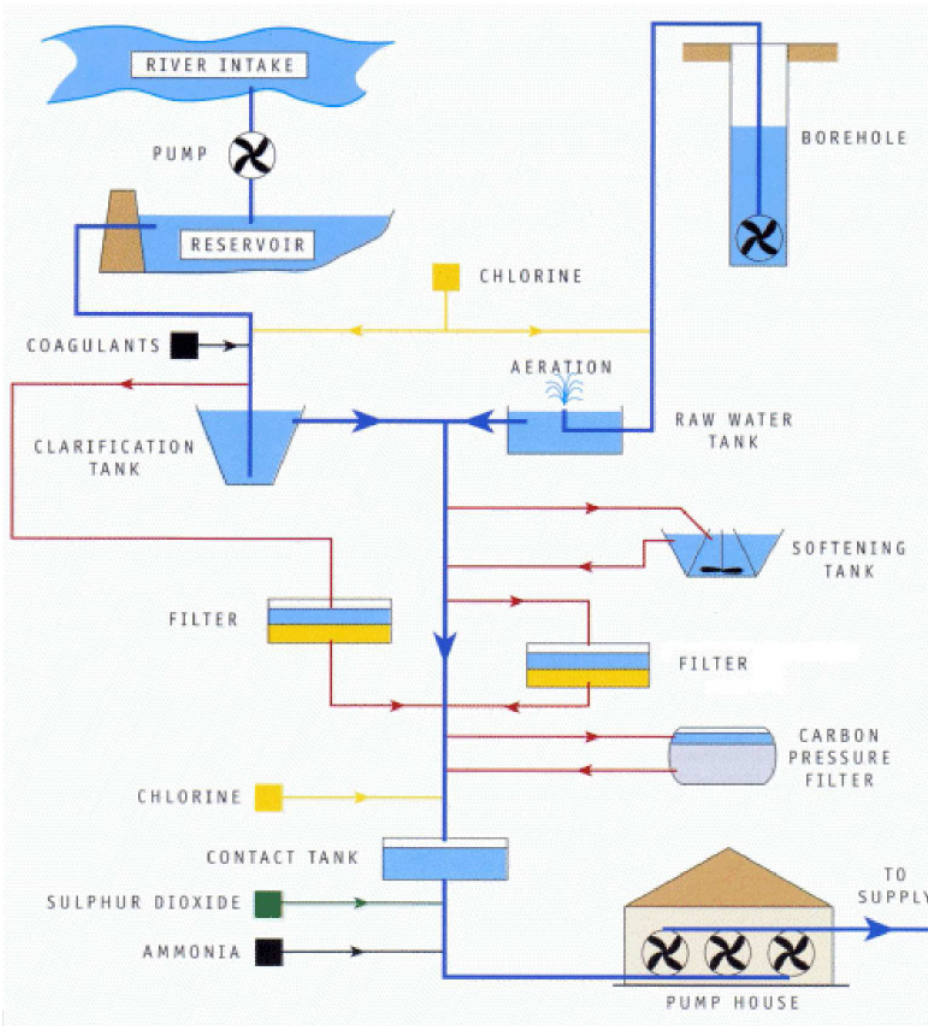
Bough Beech Treatment Works

visiting, the reservoir was 99.83% full and that water will have to last until the autumn. Given the different raw water characteristics, its treatment requires a more thorough process to remove substances affecting taste and smell. A schematic for both borehole and river water treatment is shown here (courtesy of SES Water) should you wish to know more.



Bough Beech Reservoir

Our visit took us outside to witness some of the filtration processes seen in the photographs. We looked down into open tanks and followed piping, noting on the way changes in water clarity as unwanted particulates



RIVER

SCREENING
Leaves and large debris removed

CHLORINATION
Chlorine is added to purify the water

AQUIFER

AERATION
Water from aquifers contains dissolved carbon dioxide (CO₂) and to remove it we blow air through the water. If we leave the CO₂ in the water we will use more lime at the later softening stage.

Aeration also converts soluble salts of iron and manganese, that occur naturally in the water, into insoluble precipitates which are subsequently removed.

CHLORINATION
Chlorine is added to purify the water

SOFTENING
The water then moves to the softening tank. Lime, fine sand or a coagulant are added. The lime reacts with the

CLARIFICATION
Fine particles are removed by adding coagulants, that cause the particles to stick together to form large lumps, called floc, which settle out of the water.

FILTRATION
The water passes through gravity filters containing sand which remove any fine particles which have not settled.

Carbon Pressure filters containing 'Granular Activated Carbon' remove taste, smell and very fine particle

bicarbonates, which cause the hardness, to form chalk.

The chalk is either deposited on the fine grains of sand to form pellets, or the particles of chalk coagulate into a sludge, both will settle on the bottom of the tank.

The softened water leaves the top of the softening tank to the next stage.

FILTRATION
The water passes through gravity filters containing sand which remove any fine particles which have not settled.

Carbon Pressure filters containing 'Granular Activated Carbon' remove taste, smell and very fine particle

and sediments were removed. We then walked up the steep grassy incline to the top of the clay dam to view the water intake tower and overflow piping. Finally, once more at the bottom of the dam, we entered the tunnel carrying the intake piping from the tower to the treatment plant. We walked to the base of the intake tower where we were some 20m below the water surface to

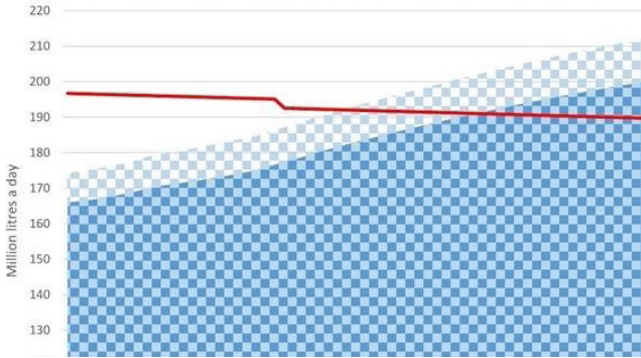


Walking along the Intake Tunnel

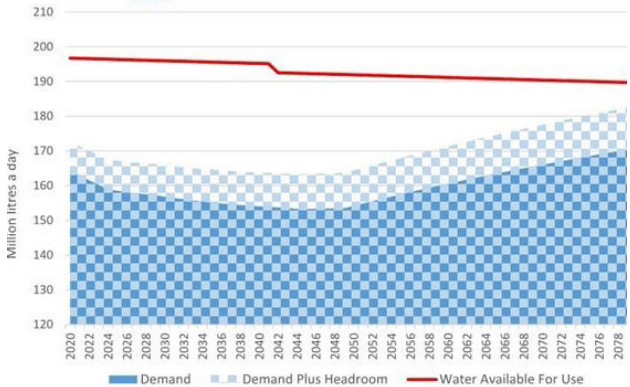


On top of the dam

Baseline Supply / Demand Balance if No Action Taken



Supply / Demand Balance after Control Measures



look up at the various offtake levels used depending on reservoir depth.

In common with other water utilities, SES Water is predicting increasing water demand which, without remedial action, will result in a shortfall by the 2040s. SES Water customers are amongst the highest water users in the UK; whereas the average use per person is 141 litres/day in England & Wales, here it is 160 litres/day which is not sustainable.

So SES Water plan to control demand by reducing leakage, installing water meters and promoting efficiency measures. Then they expect to achieve a balanced supply and demand position.

The visit ended with a welcome cup of tea or for those of an inquisitive nature, with a glass of (very) fresh cold water. This was indeed delicious and a serious taste challenge to any bottled water!

Chris Middleton

The joy of garden visiting

I am writing this as it is pouring with rain but with a week to go before I open my garden for Bookham Open Gardens. Quite a lot has changed since I opened my garden two years ago. I have cut away all the lower branches of two areas of conifers and hard pruned a yew tree. This has meant I have planted two new areas one for hot sunny and dry and the other for dry shade. Both are doing well. I have also removed the lawn in the front garden and planted a prairie style of planting. In total my husband and I have planted about 300 new plants this year.

The beauty of opening your garden is that your interest in visiting other gardens is greatly heightened. We regularly go up to Polesden Lacey and have loved the Amsonia tabernaemontana with the Geum Totally Tangerine near the cottage at the end of the walled garden. We also regularly visit the RHS gardens at Wisley though we have felt the extent of the works that have been going on recently have somewhat spoilt our experience except for our love of Battleston Hill which so far has not changed. The other gardens we have visited



this year are: The Salutation Garden at Sandwich, Nymans, Borde Hill (both near Haywards Heath), Vann at Hambledon near Godalming,

Bressingham Gardens in Diss, Norfolk, Raveningham Gardens Norwich, Beth Chatto Gardens Elmstead, near Colchester Essex, Parham House Gardens Storrington, Sussex. This is quite a list when I see it written down.

It is hard to say which gardens I most liked as they all have something different of interest. The gardens at The Salutation are on sandy soil and it was particularly interesting to see Echiums growing there. The head gardener of The Salutation, Steve Edney is very interesting to talk to and the dining room in The Salutation

Hotel had some dried seed heads from the garden on display. It was fantastic to see he was awarded a Gold Medal at The Chelsea Flower Show 2019 for the dried seed heads that he displayed there. Bressingham is amazing if you want to see many different varieties of the same plant. Beth Chatto's garden has so much to offer from the dry garden near the car park to the beautiful garden around the lake.

The garden we have visited the most this year is Vann which we have been to three times. This is a lovely garden with a rill with lots of crossing places constructed of mossy stone or wooden planks. Our two older grandchildren (two boys aged 10 and 7) love this garden because of the adventure they see in the rill which runs through a wooded area, has lots of crossing over places and changes in ground levels. They also love the plants on sale which are priced within their pocket money and which they leave with me to tend and care for and which they like to inspect on each visit to our house. Gertrude Jekyll designed the water garden in 1911 and this includes the rill. The joy it gives our grandsons



suggests it has stood the test of time. I think our grandchildren also love it because it is quite testing physically for grandparents as they balance on the crossings and negotiate the narrow paths.

The height of garden visiting this year was my visit to The Chelsea Flower Show with our daughter and son-in-law. We try to go through the gates at 8.00 am which this year we managed. It is slightly quieter at this time though still busy and the visitors around the show gardens are two or three deep. I loved Chris Beardshaw's garden. This was mostly because there were aspects of it that I could imagine using if I were doing a redesign of my garden. Although Andy Sturgeon won 'Best in Show' for his garden and both my daughter and son-in-law liked it, I did not. I could see the great skill in his design but the black wood

and all green garden felt very depressing to me. Once again Mark Gregory's garden Welcome to Yorkshire was amazing with his garden around



lock gates. However for me the question was, is this an engineering feat with plants or a garden? In the Artisan Garden category I really like The Green Switch Garden designed by Kazuyuki Ishihara because the moss and acers were beautiful. I was not sure about the shower in the glass box as I wondered who would want to be naked showering

there but had to imagine the garden intended for a secluded screened position. I found the The D-Day 75 Garden very moving and thought provoking particularly the soldier Bill and his comrade going

up the beach.

I came away from Chelsea with lots of ideas but as usual most of them I mull over and digest over the winter months. This usually translates into purchases of



one or two more unusual plants. Although the Iris bed we have in our garden came from the influence of seeing Irises at Chelsea some years ago. I wonder what idea I will be taking forward next year?

Judith Witter
2019

Out & About with Bookham U3A

OUTINGS & THEATRE VISITS

The new arrangements for organising outings in Bookham U3A

Individual members are now expected to come forward to arrange "one off" trips and a number of members have arranged some very good outings.

Roger Mendham has organised on 11 July a visit to the Royal Military Academy, Sandhurst

U3A SURREY NETWORK STUDY DAYS

Fri Sep 20th

The Development of Personalised Medicine & Treatment of Disease.
The speakers will be Daniel Biggs, Felicia Anna Tucci & Justin Whalley from the Wellcome Centre for Human Genetics, University of Oxford.

Do you have a smoke alarm?

Anyone with faulty or indeed no smoke alarms can contact Surrey Fire Service and have them fitted at no cost. The firemen will advise where they should be fitted and there is no drilling involved.

Tel: 03456 009 009 or email: sfcontactqueries@surreycc.gov.uk

To avoid people listening to the usual stream of messages when getting through, on the telephone it's option 6.

U3A Tuesday Monthly Meetings

July 2 Dr Kathryn Harkup, Mary Shelley
August No meeting
Sep 2 Oliver Hills, Tax, Care and Toy Boys



Roger at the Photography meeting David Middleton photos



Currant affairs meeting David Middleton photos