

The first British shale gas was discovered at Hawkhurst in 1836 whilst drilling for water. A lantern was lowered to investigate and the subsequent explosion killed two of the drillers. In 1872 Charles Darwin and colleagues found gas at Netherfield when drilling to explore the geology of the Weald. In 1896 at Heathfield Railway Station, when looking for a water supply for the steam engines, gas was found, captured and used to light the station and local homes. Its use continued until 1934 and some production for research into the 1960's.

There are a number of locations in the western Weald where both oil and gas have been conventionally produced, i.e. not 'fracking', since the 1970's. Geological surveys have been done in Kent, indeed one around Marden in the 1980s included test wells drilled near Blantyre House and Biddenden. Some hydrocarbon traces were found but the BGS believe that any shale lies further west in the Weald, towards Gatwick and Balcombe! However, in the short term, the most likely focus for shale gas development will remain Lancashire, East Yorkshire and Lincolnshire where there are proposals for 'fracking' awaiting approval.

In order to extract oil and gas from shale it is necessary to drill vertically for over a kilometre, and then turn the drill to go horizontally through the shale stratum. Under high pressure (~9000 psi) water, sand and chemicals are injected into the borehole. This fractures the rock into many thin layers and the sand particles act as props to keep the layers apart, enabling the gas and/or oil to flow out. The amount of water needed is substantial and the chemicals could include such substances as polyamides, hydrochloric acid, biocides and salt. There are many arguments for and against 'fracking'. It would improve energy security, provide tax revenue, increase manufacturing jobs and it is cleaner than coal. Against are the environmental effects; the noise, the traffic, water contamination, minor earth tremors, air and visual pollution and the difficulty of what to do with huge quantities of contaminated water. These arguments will, no doubt, continue to rage, but, fortunately for us it is considered very unlikely that 'fracking' will be developed in Marden. *Barbara Dubois*

FOOTPATH NEWS – BRIDGEHURST WOOD

There has never been a public Right of Way through Bridgehurst Wood, one of the nicest bluebell woods around Marden. However until recently there was a well-used path through the wood from the south, via path KM274 over the railway bridge off Howland Road, to the reservoir and path KM273. This is no longer the case as Firmins, who own the western side of the wood, have sold the old barn for development (now "Bluebell Barn") and fenced off the orchard to prevent access. They have made it clear that there is no public access allowed to their part of the wood, citing problems with dog fouling contaminating fruit crops as the reason. However they are happy for the Walking Group to guide a few walks through the wood each year, entering from the north off path KM267 or 272. We will be organising some such walks next spring as usual to see the bluebells and anemones. The eastern side of the wood next to the reservoir however is still owned by the Highwood family, and as far as we know they are happy for walkers to enter the wood via paths KM272 and 273.

Meanwhile we are still waiting for work to be done on the new rerouted KM275 path from Copper Lane to Park Road before we can use it as a route to Marden Meadow. This was promised for last spring but nothing has happened and we have been unable to get any information from KCC as to when it will be done. *Steve McArragher*

The Parish Pump

THE JOURNAL OF THE MARDEN SOCIETY – FEBRUARY 2018

Our first talk of 2018 will be on **24th February** when **Mary Smith** will speak about **"A Schoolgirls War"**. This talk describes a unique set of WW2 paintings and drawings created by an art teacher in Kent. These show the lives of schoolgirls and their teachers in paint and pencil as the war unfolded, with contemporary photos and accounts of those at school during the war.

Then on **28th March**, **Delia Taylor** will be speaking about the wartime entertainment organisation **"ENSA", (or Every Night Something Awful!)**. Both meetings will be in the **Vestry Hall at 7.30**, with refreshments and raffle as usual.

Note that the full programme for 2018 is now on the Marden Society Website at <http://mardensociety.org.uk/>

MARDEN SOCIETY ANNUAL GENERAL MEETING

Our AGM took place on a wet and windy 24th January attended by 21 people who braved the elements. The Society is in a healthier position than this time last year, as membership has now increased to 111 and our income over expenditure increased to £245. The summer visit to Peter Hall's farms and flood water storage project was a great success, attended by over 50 people, most of whom enjoyed a strawberry tea in his Oast afterwards.

The History Group is also thriving, and members were glad to hear that David McFarland was out of hospital and recovering well. Three exhibitions had been held, and a variety of historic documents relating to mortgages and property acquired. Plaques will shortly be erected about Marden airfield (at the Heritage Centre) and at the WW2 bomb sites. The Walking Group is also doing well. A highlight was the achievement of walking the Saxon shore Way led by Ian Balmer (which is the subject of our April talk). A meeting with Firmins had also been held about access to Bridgehurst Wood, see article below. There was little to say about development in the village as there was no news of the Neighbourhood Plan or the revised Cricket and Hockey field plan. The Committee all agreed to continue for another year and were re-elected. However our chairman Mo has expressed a wish to stand down next year after several years' service.

HISTORY OF THE ORDNANCE SURVEY

In October Colin Brown spoke to us about the Ordnance Survey. Although he has never actually worked for the OS, redundancy led him to change direction and pursue an interest carried forward from his schooldays, namely, maps and the Ordnance Survey,

The history of maps goes back to the Romans who attempted a detailed map of Rome. It was huge at 1:240 scale, 60' x 40', using 150 stone slabs with south at the top! Henry VIII, worried about defence, ordered a map of the southern counties to view the vulnerability of the fortifications, but unfortunately the maps proved to be totally inaccurate. It was not until

after the Jacobite rebellion in 1745 that the Army felt the need for maps, to pinpoint the Jacobite Dissenters. A military survey of the Highlands was commissioned and the work was carried out primarily by William Roy, who had a distinguished career in the Army rising to the rank of General. The survey was produced at a scale of 1" to 1000 yards, 1:36000. The work was hard and often inaccurate but was pursued with great determination. Roy's work led to the Principal Triangulation of Great Britain and the creation of Ordnance Survey. In 1782 Charles Lenox was made Master General of the Board of Ordnance, (Headquarters the Tower of London), and a national military survey was ordered in 1784, starting with the South Coast. It took years to get off the ground, but with improved technical equipment the work began, using a 5 mile baseline on Hounslow Heath that Roy had previously measured using 20 ft. long glass rods. In 1801 the first one-inch-to-the-mile map was published detailing the county of Kent, Essex followed shortly afterwards. Following the death of Roy, William Mudge took over the mapping of Great Britain but progress was slow and all maps were withdrawn between 1811 and 1816 for security reasons, (the same happened in WWI and WWII). It was 1872 before the whole of the country was finished.

In 1841 a fire in the Tower of London caused the Headquarters of the Survey to move to Southampton. Then In 1855 the Board of Ordnance was abolished and placed under the War Office. The Ordnance Survey was transferred to the Office of Works in 1870, and publication of the one inch to the mile maps for Great Britain was completed in 1891. In 1935 the Davidson Committee was established to revise the Ordnance Survey's future and establish a grid for the whole country. A 1:25000 scale series was introduced and continued to be produced until superseded by the 1:50000 scale in the 1970s.

In 2001 an Ordnance Survey Master Map was launched, a digital map of the whole country which is constantly updated. There are about 5000 daily changes to the map. Ordnance Survey is now in public ownership and its use extends to many areas, including planning applications, location surveying, sat-nav., aircraft information, road traffic accidents. The historic maps still have their use, being generally in demand for research. *Barbara Dubois*

BIRD RINGING IN MARDEN

All those who came on the walk around Peter Hall's Mill Farm in June will have met Ray Morris who showed us around. He is a Field Ornithologist and is licensed to ring birds by the BTO (British Trust for Ornithology). In the autumn he allowed a few members of the Marden Society to observe ringing in progress in the orchard at the end of the Millennium Walk off Plain Road. Bird ringing is a way of tracking where birds go by fixing a numbered metal ring around one leg. The ring number is carefully logged by the BTO, together with the bird's details (see below) and it is released. If trapped again in another country, the ringer can see where it came from and send details back to the BTO. In this way much can be learned about where and how birds migrate.

The birds are trapped in 'mist nets' made of fine nylon mesh that they cannot see (1). Then they are carefully removed by the ringers, put into soft cloth bags and taken to the ringing station (2). Here the birds are sexed (not easy!), aged (even harder as it depends on minute details of feather length and colouration etc.), measured and weighed (3). All the data is logged in an old-fashioned notebook, from which it will be transferred to the BTO database.

Finally the numbered metal ring is very carefully clamped onto the bird's leg. This is a very skilled job, and it takes many years to learn how to be a ringer and to be licensed by the BTO.



On the day that I attended in November, most of the birds ringed were linnets and yellowhammers; this is because under Ray's direction the hedges in these fields have been trimmed to the optimum size and shape for these bird species to build nests. They also ringed a robin, and frightened off a kestrel who was trying to catch one of the trapped linnets. In 2017 they have observed 81 species and ringed a total of

852 birds. This including 163 linnets, 38 reed buntings and 190 yellowhammers, making Marden something of a yellowhammer hotspot as only 47 were ringed in the whole of Kent in 2015! Clearly the environmental stewardship work being done by Peter with Ray's help is paying dividends, at least for the yellowhammer and linnet population! A more detailed report on their work is available from me. *Steve McArragher*

WHY IS SHALE GAS DIFFERENT & WILL WE SEE DRILLING RIGS IN MARDEN?

Peter Kershaw described the geological setting for the formation of gas and oil, starting with the Cambrian period (over 500 million years ago) when life began in the sea, through the Ordovician (when Marden was close to the south pole), Devonian, Carboniferous, (bogs, ferns, swamps), Jurassic, (abundant life), and into the Cretaceous. During these, and later periods, organic material was buried with layers of mud and silt at increasing depths and temperatures, leading in time to the formation of shale, an important source rock for oil and gas. However shales have poor permeability, so the oil and gas cannot easily be extracted.

The British Geological Survey identified the potential for oil in the shales beneath the Weald and Wessex. In the 17th century Sir William Clavell at Kimmeridge in Dorset was in the alum business, and used local shale (known as blackstone) as fuel as it could be easily burned. His successors mined this shale to produce gas, using techniques developed and patented by James Young in Scotland, starting the oil industry in the United Kingdom. Shale from Dorset was exported and used to produce gas for street lighting in Paris in the late 19th Century. Shales beneath Poole harbour are the source rock for Wytch Farm oil field in Dorset, the largest onshore oil field in Western Europe. Discovered in 1973, it is still producing and at its peak provided over 100,000 barrels of oil a day.