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In this issue:

A 'granite' boulder found embedded in the chalk	Paul W Sowan
The Revd Charles Maddock Arnold and the Window of Angels	John I Hickman
Notice – Data Protection	—
Shaking the Universe	—
Notice – Gift Aid declarations	—
Where were they then?	—
Fungus foray	John Greig
East and New Croydon Stations in 1890	Paul W Sowan

Editor: John B Greig, 96a Brighton Road, South Croydon, CR2 6AD; bulletin@cnhss.org.uk

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A 'granite' boulder found embedded in the chalk

The Haling Downs Limeworks were located in the large chalk pit in which Edwardian and later houses now stand in Biddulph Road, behind the Royal Mail sorting office in South Croydon. The pit probably existed before the horse-operated Croydon, Merstham & Godstone Iron Railway (CMGIR) was built though it and opened in 1805. This pit may have been the one on Haling Downs for which documentary evidence dating from 1592 is known, referred to by George Steinman Steinman [1811 – 1893] in his 1835 'An account of the Manor of Haling, in the Parish of Croydon, Surrey, and of some of its possessors'. *Collectanea Topographica et Genealogica* III: 18pp. This pit evidently continued to supply Croydon with 'white chalk' and quicklime made from it throughout the 19th century, and closed in or about 1906 when the kilns and plant were demolished or scrapped, and Biddulph Road was laid through it. In the 18th and early years of the 19th century white lime for Croydon seems to have been sourced from the several large but long-abandoned chalk pits either side of Coombe Road and in Lloyd Park. Greystone lime made from the 'grey chalk', in demand especially for building works in Croydon and London, had to be fetched from as far away as the chalk pits and limeworks at Merstham, where the CMGIR had its southern terminus.

An event of great geological interest occurred at the Haling Downs pit in the mid-1850s. This was the discovery of a large rock boulder estimated to have been between half a metre and a metre long embedded in the chalk, a marine deposit. How such a large lump of rock had managed to be floated far out to sea and settled on the sea bed in South Croydon not far off ninety million years ago remains an unsolved mystery. The find was investigated by a Surrey geologist, Robert Alfred Cloyne Godwin-Austen [1808 - 1884], and was the subject of his paper 'On a boulder of granite found in the "White Chalk", near Croydon; and on the extraneous rocks from that formation' published in 1857 in the *Quarterly Journal of the Geological Society of London* 14(1), 252 – 266. Other such 'exotic' rocks in the chalk have also been reported from various places such as Cuxton in the Medway Valley, and Brockham in Surrey.

A modern review by Peter Walsh of the Purley 'granite' (more accurately, petrologically, a syenite) and other such finds has recently been published in *Down to Earth* 90, pages 8 – 11 (February 2015). From this we learn that only a small fragment of what had once been a boulder estimated to weight up to 90 kilograms is now known to survive, in the collections of the British Geological Survey at Keyworth, Nottinghamshire.

Peter Walsh reviews the several theories proposed for how this boulder, of a rock type thought to have come from Norway, arrived in what is now South Croydon. Floating along on a steadily melting iceberg seems unlikely, as the chalk here was deposited around 90 million years before the latest Ice Age. The very large rock also seems unlikely to have been carried in the stomach of a steadily rotting plesiosaur corpse. Plesiosaurs (extinct marine reptiles) were undoubtedly large animals, up to two or three metres long, but did they have mouths big enough to ingest such a large lump of rock? Or the inclination! A somewhat more plausible explanation is that the boulder was washed out to sea during a storm, somewhere near present-day Oslo, caught up in the roots of a tree. Nobody knows, but the tree roots theory seems to be the current favourite.

Paul W Sowan

The Revd. Charles Maddock Arnold and the Window of Angels

The ministry of Charles Maddock Arnold (c.1813 – 1876) at the church of St. Mark, Albert Road, South Norwood from 1855 to 1875 is commemorated in the west window erected by his daughter Amy Caldecott and dedicated in a service on 17th April 1909.

Messer's James Powell & Sons of Tudor Street, off Bouverie Street, London, carried out the work. At the time it was commented, '[the window] conveys important messages while reflecting on the passing of an earnest and pious man.' Three, stained glass, lancet windows depict three archangels, Michael, Gabriel and Raphael standing on a sea of glass, each with attendant angels. Michael, the warrior archangel, the leader of the hosts of God, is in the centre. Underneath is shown the angel releasing St Peter from prison, 'which is a very suitable subject as a memorial, as showing the passing from the darkness of earth to the light of heaven', reported a contemporary commentator. The angels above Michael hold a scroll with the text, "He that overcometh shall inherit all things". Gabriel as the angel of the annunciation holding lilies, is a messenger, while Raphael, the archangel mentioned in the book of Tibot, is represented as a pilgrim. Archangel Raphael is the judge and councillor of men and so "shows forth the work of those who 'watch for the soul of men as those who must give an account'," announced a contemporary report. In the bases of the three lights is the memorial inscription, "In memory of Charles Maddock Arnold. Vicar of this parish 1855 – 1875. Minor Canon of Westminster Abbey. *In certes unitas. In dubus libertas. In omnibus caritas*". Although difficult to

see, it is reported that in the trefoil piece of tracery above the window is the emblem of St Mark to whom the church is dedicated.

Present evidence indicates that Charles Arnold appears to have arrived in South Norwood in 1854 following the death of Revd. E. Hutton the first incumbent of St Mark's Church whom Arnold succeeded as Curate in Charge. Subsequently, after an Order in Council had been granted constituting St. Mark's, South Norwood a separate district from All Saints', Upper Norwood, the Revd. C. M. Arnold was instituted the first Vicar of the new parish on September 23rd 1859.

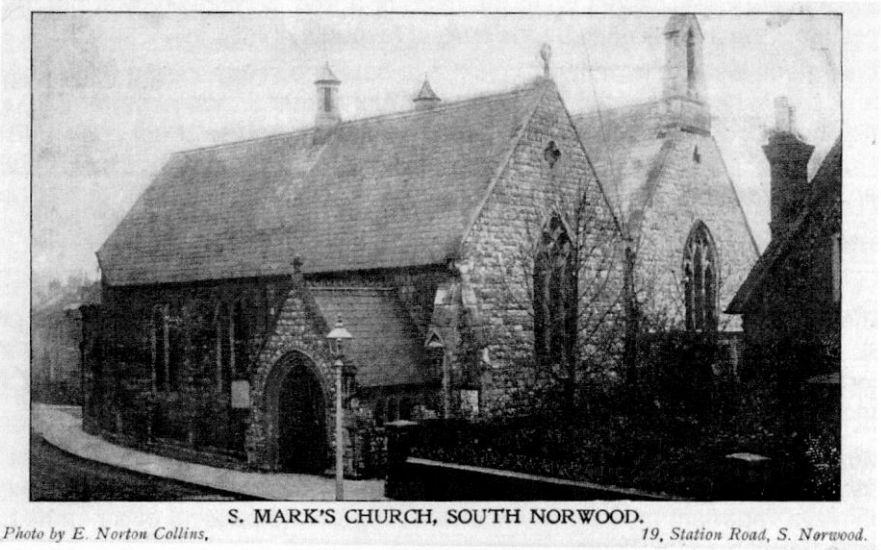

Image of St. Mark's Church (exterior), Albert Road, South Norwood.
CNHSS John Gent Postcards Collection jg-pc-sn-055

The Revd. Henry E. B. Arnold (c.1854-1944) son of Charles Arnold recalled while visiting the Church in December 1900, St. Mark's when newly built, 'It was only in its central portion, as a chapelry in the parish of All Saints'. He further told of how his father gave the name of South Norwood to the district, 'It was then a hamlet of 1 400 souls, dotted about with quaint old farmhouses of most picturesque appearance. These had altogether disappeared. In the early '60's (1860's) the population began to rapidly increase, bringing more people than wealth. The pressure on the little village church began to be severe. This is of interest because South Norwood was largely a mid-Victorian creation. During the 1860's, '... houses appeared like mushrooms overnight.' Some notable maps to the mid-19th century show the hamlet, Blind Corner (adjacent to the present

Harrington Road tram stop), when, of South Norwood, there is no mention. The Croydon Rate Books and directories record a variety of names for the location on Croydon Common, including Upper Norwood, Lower Norwood, East Norwood, (sometimes both East and Lower Norwood) and before settling on South Norwood which appears regularly in the 1860's and thereafter.

A result of Charles Arnold's residence was an increase in the congregation; reportedly from around 80 to over 300 during his early years. It continued to rise. By the close of his ministry, Saint Mark's Church was very different from the original, rectangular, coursed ragstone building designed by G. H. Lewis that opened in 1852. A gallery was erected in 1862 at the west end of the Church for Sunday School children, and in the same year a vestry was built at the South End for the clergy and choir. A south aisle with a vestry was added in 1863; a complimentary north aisle being constructed in 1864. In 1868 a corner of the south aisle was further enlarged. On 26th September 1869 the Archbishop preached at a service re-opening the Church after the construction of a Chancel built by the generosity of William Grantham (1835-1911) a Churchwarden, who after being elected Conservative M.P. for East Surrey (1874 – 1885) and Croydon (1885-6) was knighted and later raised to the Bench. It was he who, recognising the dramatic increase in population, suggested during a vestry meeting in 1870 a new church should be built in Selhurst Road. The idea being later realised in the building of Bodley's Holy Innocents' Church in 1894-5.

The considerable cost of numerous additions to the fabric of St. Mark's Church were largely met by the exertions of Charles Arnold and his wife Jane, together with generous donations from some parishioners.

The Revd. Arnold was responsible for the establishment of St. Mark's Day School and a School House built in 1860 in Victoria Road (changed to Coventry Road in May 1913). This was a mixed National School; Charles Arnold being responsible for the schooling, particularly religious education of the Church's children. The extant school room was used for evening 'Penny Readings' until the opening of the Public Hall in Station Road in the late 1860's.

Census returns record that Charles and Jane Arnold had 6 children. The small, purpose built Parsonage adjacent to the church proved inadequate for the family and a Vicarage was built at South Norwood Hill. Although located outside the Parish boundary, it is believed the ground was the private property of the Revd. E. Harden, Vicar of All Saints' which is a short distance at the top of the hill.

It is evident from his deteriorating manuscript in the Parish Register of Baptisms that by the mid-1870's Charles Arnold was a very sick man. He had apparently suffered acutely for several years, and there were periods

of absence from the Church. At the 1876 St. Mark's Easter Vestry Revd. Charles Arnold resigned the living owing to his seriously failing health. He died shortly afterwards. The west window, still referred to locally as 'The Window of Angels,' is a fitting tribute to a 'pious and earnest' man.

> Present research has yet to ascertain whether the Revd. Charles Maddock Arnold of St. Mark's Church, South Norwood and Charles Maddock Arnold Headmaster of Warminster School (Lord Weymouth's Grammar School), Wiltshire, 1841-48 are one and the same person. It is highly probable that they are. The census for 1841 records a Charles Maddock Arnold, clergyman and schoolmaster residing in Wiltshire. It is likely coincidental that there is a Warminster Road in South Norwood.

John I Hickman

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Shaking the Universe

The recent detection of gravitational waves provides, subject to confirming observations, a proof of Einstein's prediction of their existence published nearly one hundred years ago.

The event recorded by the two detectors of the Advanced Laser Interferometer Gravitational-Wave Observatory (Advanced LIGO) was identified as the spiralling in and coalescence or merger of two black holes.

During the moments of the merger, a small fraction of a second, the gravitational energy released was estimated to be 10 times the total energy released in the same period by every star in the Universe.

The two original black holes, of 29 and 36 solar masses (the mass of the Sun, 1.988×10^{30} kg), coalesced into one black hole inferred to be of 62 solar masses with a radius of 160km and spinning round at circa 100 times per second.

Einstein had recognised that the energy released by typical astronomical events would not be detectable by the instruments of his day. It is a measure of the advances in science that, when the gravitational wave from the black hole merger passed through the 4km right-angled arms of one of the Advanced LIGO detectors, the change in length of the arms was approximately $1/200^{th}$ of the radius of a proton.

The report of the Advanced LIGO collaboration has been published as Abbott, B.P. et al., *Physical Review Letters*, **116**, 061102, (2016).

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Stephen Fairhurst, University of Cardiff (Advanced LIGO collaborator). Shaking the heavens. The hunt for gravitational waves [Talk], *Relativity and Beyond*, New Scientist event, London, 5 March 2016.

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Where were they then?

John W Brown is seeking information about the exact location of a tram and two buses in old photographs; can you help him? If you can, please contact me, John Greig, bulletin@cnhss.org.uk or 96a Brighton Road, South Croydon, CR2 6AD and I will pass the information on to him.

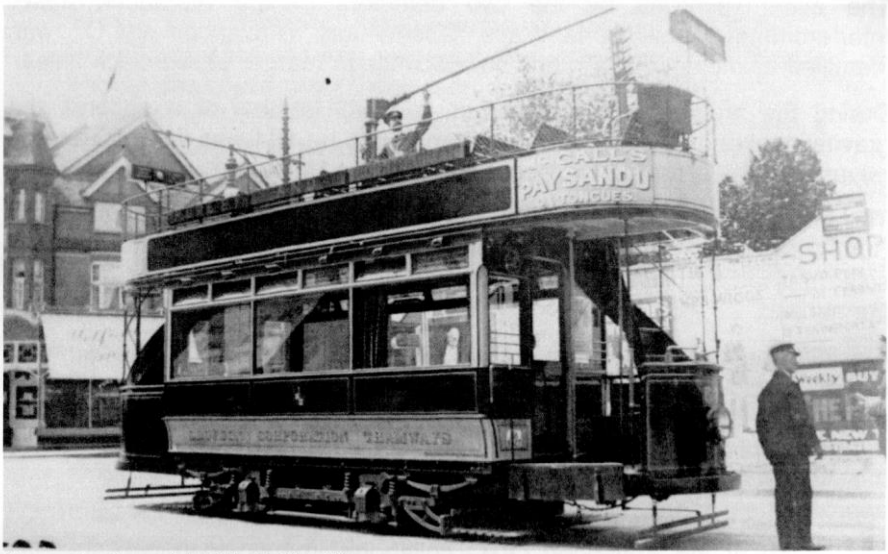

Figure 1 - Copyright Mr P. Hotchin

Figure 2 - Copyright Mr P Hotchin

Figure 3 - Copyright Mr P. Hotchin

Fungus foray

In 2015 the Society, in conjunction with the Surrey Wildlife Trust, organised a fungus foray on Sunday, November 1st on Croham Hurst. The weather was mild and sunny with the grass dampened by dew and there was a good turnout. At the start Jane McLauchlin advised us that, being a Site of Scientific Interest (SSI), there should be no collecting of mushrooms for culinary purposes. She was authorised to take limited samples for identification. She also reassured the senior members that she would not be taking us down Breakneck Hill.

Despite it being late in the season it was not long after our start that the first fungi were spotted and these provided a good indication of the diverse locations in which fungi could be found and the variety of sizes in which they occurred. Stops were made for explanations of various features that could be seen. In Figure 4 there is a well-established bracket fungus growing on a fallen trunk – can you spot the much smaller fungus with a long stalk growing in the leaf litter at the bottom left of the picture?

Figure 4: Fungi on and by log.
Copyright CNHSS from colour original copyright John B Greig

On the opposite page, Figure 5, left hand side, Jane McLauchlin is explaining the various substrates on which fungi can grow, Paul Rainey and Eleanor Redshaw listen.

On the right hand side, Figure 6, having pushed through the leaf litter there is growing a fungus that is commonly called "magpie".

By the time the foray finished we had had a morning which was informative and also, with the shallow climbs that we did, provided some exercise.

Members are reminded that the Society organises a variety of outdoor walks, some of which can cover a wide range of topics.

John Greig

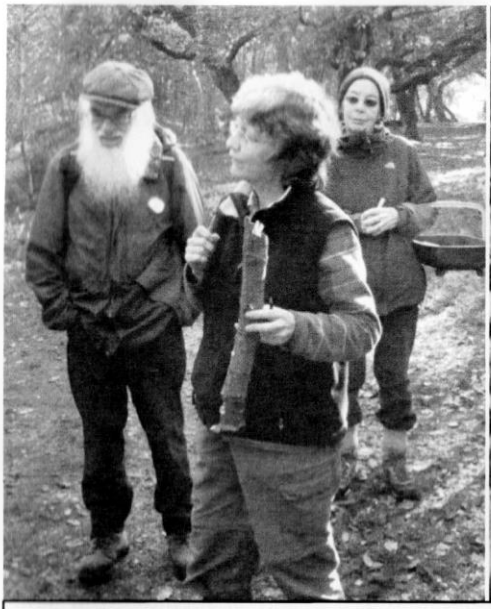

Figure 5 Image © CNHSS

Figure 6 Image © CNHSS

East and New Croydon Stations in 1890

Before the leisure hours of so many people came to be dominated by the motor car, a day out usually meant a cycle ride, or a train journey and a country walk (incidentally conducive to the fitness and health of the population). There were many guide books for walking and cycling, one such being Rustic walking routes in the London vicinity, which was published in four parts.

Walks in 1890 were possibly rather longer than most people contemplate today. A route from East Croydon to Bickley or Chislehurst (about seven or eight miles) commences with the following comment on what we now know as East Croydon Station ...

> Outset. To East Croydon (or New Croydon) by L.B. & S.C.R. 3 cl. from Victoria or London Bridge, 10d.... At the station turn to the left along the subway, out through the eastern booking office ...

The third class fare by the South Eastern Railway from Charing Cross or Cannon Street was also ten (old) pence. Or you could have come from Liverpool Street via the East London Railway for a halfpenny more. There were also London & North Western Railway trains from Willesden or Kensington.

A footnote comments as follows on `New Croydon' ...

> East Croydon and New Croydon are practically the same station, entered through the same entrance, and having only one booking office; the western platform, however, is called New Croydon, and the eastern ones East Croydon, apparently "just for fun", or on purpose to puzzle travellers.

In 1890 the station consisted of two buildings, one each side of the lines. It is a curious fact that no clear images of the pre-1896 station have been found, other than a distant photographic view showing part if it as seen from the Town Hall clock tower of 1896. In or about that year the two buildings were replaced by a single larger station building on the George Street / Addiscombe Road bridge, this being replaced again in 1990 by the present structure. The subway remained in use to link all six platforms until recently, but was blocked off when the new footbridge at the London end of the station was opened in the last year or two.

Paul W Sowan

Source

EVANS, W.R., and S, SHARPE, 1890, Rustic walking routes in the London vicinity. Fourth series: south to east district. London: George Philip & Son: 64pp + folded map.

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