## Celebrating the life and work of the Seismologist **Professor John Milne** 1850 – 1913

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## 'Earthquake Milne'

The one hundredth anniversary of the death of Professor John Milne 'The Father of Modern Seismology' will be commemorated on the 31<sup>st</sup> July 2013. The purpose of this web page is to bring together events and material held not only on the Isle of Wight but elsewhere around the world to celebrate the achievements of a man who can only be described as one of the world's outstanding Victorian / Edwardian polymaths.



Contact the compiler of these John Milne pages via the Isle of Wight Society or patrick.nott@btopenworld.com

Additional information on John Milne such as the location of archive material, other websites and the like is welcome

Return to the Isle of Wight Society home page





## **Permanent exhibition**

## **Carisbrooke Castle Museum**

www.carisbrookecastlemuseum,org.uk

The film '*The man who measured the shaking earth*' can be seen in the Milne-Twycross Room at the Museum

> Please let the compiler know of any forthcoming events so that they may be displayed in this section

See the following pages for the John Milne Trail and other Isle of Wight memorials



## John Mílne Anníversary Legacy

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### Explanatory Board at Shide



To mark the hundred anniversary of the death of Professor John Milne the Newport parish Council provided an explanatory board situated on the river bank just along the old rail track from the bridge at Shide. The board overlooks the old Shide Hill House Estate and the map shows the buildings that are still extent. The illustrations and text help to give an outline of his work and interests both in Japan and here on the Isle of Wight where he lived from 1895 until 1913.

See or email www.newportwight.org.uk clerk@newportwight.org.uk

## The Man who Measured the Shaking Earth



A year or so before the anniversary a small group led by Will Twycross went around the world in John Milne's footsteps to produce a film of his life, work and interests which they have donated to Carisbrooke Castle Museum. Visitors can see this high definition TV film in full or in short sections in the Milne-Twycross Room at the Museum.

## The Milne - Twcross Room

A room off the upper gallery at Carisbrooke Castle Museum has been equipped through the generosity of the Twycross Family with audio visual equipment for showing the John Milne film and providing space for a small permanent exhibition dedicated to his work and interests. John Milne's mother was a Twycross hence the name of the room. William and Christine Twycross are John's closest relatives being his great nephew and great niece respectively.

www.carisbrookecastlemuseum.org.uk

### The Newport Milne Trail

Newport Parish Council produced for the 2013 anniversary a trail covering many of the places in the centre of the town with connections to John Milne or those he would have known. Distance prevented the inclusion of his grave at St Paul's, Staplers and the Golf Club on St George's Down (see elsewhere). Copies of the trail can be obtained from the Newport Parish Council Office, Riverside Centre, The Quay, Newport, PO30 2QR and at many other tourists sites.

See or email <u>www.newportwight.org.uk</u> <u>clerk@newportwight.org.uk</u>



## St Paul's Church, Staplers, Newport Website



The church at Barton, where John Milne, his mother and stepfather are all buried, has an excellent website with may pages and hyperlinks to other relevant sites <u>www.stpaulsbarton.co.uk</u> Both the church and graves are well worth a visit. St Paul's is a short walk up Staplers Road and is on the no 9 bus route via Staplers to Ryde. The graves are in the newer part of the churchyard on the northern side of the church building.

## Building Plaques

To mark the anniversary Newport Parish Council erected plaques on or near the remaining buildings left on the Shide Hill House Estate which were associated with the Milne's. The one shown opposite is on the gate post of the Lodge, another is at the entrance to the Laboratory Block and a third it is hoped will be placed on the remaining domestic annex to Shide Hill House (The later having been demolished)

See <u>www.newportwight.org.uk</u> or email <u>clerk@newportwight.org.uk</u>



### Public Artwork

The Isle of Wight Council together with the Quay Arts Centre were instrumental in obtaining funding for a public artwork to commemorate the life and work of John Milne. The winning artist, chosen from four finalist by public ballot, was Kevin Dean (see '*More of the John Milne Story*' below). The site at the corner of Sea Street and Little London at Newport is appropriate as it was formerly that of Hurt's Foundry which cast and fabricated parts for the Side Earthquake Observatory including perhaps the upright for the well know Newport Lamp-Post seismograph.



www.quayarts.org

## The Art of Invention



Further to the public artwork grants became available for a number of activities and projects to be undertaken during the anniversary year with the theme <u>'The Art of Invention'</u> Further information can be obtained from the Quay Arts Centre, Sea Street.

Although John Milne is best remembered for his pioneering work in Seismology, Volcanology, Geology and Mining Engineering together with his wide-ranging researches into Natural History, Anthropology and Archaeology whilst in Japan, throughout his whole life he was greatly interested in many of the Arts.

A number of his drawings and watercolours survive and John Milne early demonstrated his skill in a professional capacity accompanying Charles Beke on his search for the 'true' Mount Sinai as his geologist and artist. His illustrations were used by Beke in his papers and book on the expedition.

John Milne also had a great love and understanding of music ranging from British sea shanties to classical Japanese music which he shared with his wife Toné.

## Lecture and Book

The **Mallet Milne Lecture** is a biannual event of the Society for Earthquake and Civil Engineering Dynamics (SECED) part of the Institute of Civil Engineers, One Great George Street, Westminster, SW1P 3AA. It is usually a cutting edge technical lecture accompanied by a book on developments in seismic related technologies. In 2013 in honour of John Milne's anniversary it was devoted to 'A *History of British Seismology*' with Roger Musson being invited to be the lecturer.

www.ice.org.uk

The recording of the lecture 'A History of British Seismology' by Roger Musson can be found at: http://vimeo.com/icegroup/review/67311706/64f31d516d

The published paper accompanying the 14<sup>th</sup> Mallet-Milne Lecture'A *History of British Seismology*' Roger Musson is a full account of the development of british seismology.

http://link.springer.com/journal/10518/11/3/page/1

## John Mílne Golf Trophy



The Milne Cup winner 2013 is seen with Will Twycross, Milne's great-nephew, and on the right the commemorative board which he unveiled. The cup in memory of the Club's founder captain is played for annually, this year the competition was held at the start of the week of celebrations to mark the anniversary. The club has a short history on its website.

www.newportgolfclub.co.uk

### Permanent Collections

The Island proudly owns two major collections of John Milne Material which are available to the public by appointment:

**Record-Office** 

Carisbrooke castle Museum

www.carisbrookecastlemuseum.org.uk www.historicimages.co.uk/

The Isle of Wight Record Office

### Other Memorials

Other local, national and international memorials are listed elsewhere on these pages.

See Places and Buildings Memorials Museums and Archives

## John Mílne 1850 -1913

A brief account of his life, work and Travel

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The disaster a little while ago at the Japanese Fukushima Nuclear Plant was serious enough, but without the pioneering work of an almost forgotten Isle of Wight scientist and engineer it would certainly have been cataclysmic. John Milne, the Father of Modern Seismology, who lived and worked at Shide Hill House, Newport from 1895 until his death in 1913, was instrumental in not only establishing serious scientific study of earthquakes but also in producing the first codes of practice for civil engineers building in seismic regions.

Born in the Mount Vernon district of Liverpool into a family trading in wool, he spent the early years of his life at Drake Street in Rochdale. Attended a dame school there he

later entered the Liverpool Collegiate School. His undergraduate years were spent at King's College, London. He continued his training as a geologist at the then new London Royal School of Mines, at Freiburg in Saxony and at Camborne in Cornwall. By now his home was at Richmond, Surrey.

Milne was from his early years a great traveller. He went during a holiday to Ireland and with a friend canoed along the canals of Southern England. In his undergraduate years he sailed to Iceland and explored the Vatna Jokul glacier. In 1871 that must have been quite an adventure.



Two years later Cyrus Field employed him on a survey for minerals in Newfoundland. John Milne took this opportunity to study the extinct Great Auk and publish a paper. It was one of the many hundred of academic papers and articles he was to write during his life. By the age of 23 he had been elected a fellow of the Geological Society of London. That same year he accompanied Charles Beke as artist and geologist on his expedition to discover the 'true' Mount Sinai.



Courtesy IW Record Office

By 1876, following the Meiji restoration, the Japanese were scouring Europe and America for outstanding lecturers and teachers to drive the modernisation of their country, it resulted in John Milne being appointed lecturer in geology

and mining at the new Imperial College of Engineering in Tokyo. Not enjoying sea travel and grasping the opportunity to investigate the geology and cultures of then seldom visited regions he decided to make the mammoth journey overland via Russia, Mongolia and China to Japan. Much of his route followed what was to be that of the Trans-Siberian Railway during what was a hard winter. One his first night in Japan he experienced his first earthquake  $-8^{th}$  March 1876.

Having to set up his geology and mining department at the college, preparing teaching notes and adjusting to life in what was a very foreign country to him and his British colleagues was demanding. However, during every vocation he travelled Japan, recording not only its geology but the natural history, archaeology and local customs. In 1878 he travelled to the Kurile Islands on the way he stays at the Ganjo-je Temple on Hokkaido, falls in love with Abbot Jokye Horikawa's daughter, Toné who he marries in Tokyo during1881.



But it was the Tokyo-Yokohama earthquake on  $22^{nd}$ February 1880 which brought about the major turning point in Mile's life. Earthquakes could he realised be systematically studied, their effects greater understood, their devastation reduced and he wondered are they possible to predict. His enthusiasm fired not only his companions but also the controlling Japanese authorities and the first working meeting Seismological Society of Japan takes place on  $26^{th}$  April that year. It was the first society for the exclusive study of earthquakes in the world. For political

expediency a Japanese official was its head, but John Milne as its secretary was for the time he stayed in Japan its driving forces, writing millions of words in its journal and for other papers published in Britain and elsewhere.

With Gray, Milne designed a seismograph which not only recorded the time of an earthquake but gave some indication of its epicentre and by 1881 it was being manufactured in Britain. In the next few years the first textbook on seismology "Earthquake and other Earth Movements" was published, he had been given a prize from the East Indian Section of the Dutch Royal Institution of Engineers, he had travelled back to England via San Francisco, published a papers on the Stone Age in Japan and one on crystallo-physics as well as writing a fair number of fictional stories for the Tokyo Times. But above all he had written under the pseudonym of Mark Kershaw 'Colonial Facts and Fictions' covering journeys to new Zealand and Australia and highlighting the sickening animal cruelty he at times observed. It was a best seller on British railway station bookstalls.

In 1887, at the early age of 37 he was elected as a Fellow of the Royal Society and read the paper 'Earthquake Effects – Emotional and Moral'. The Royal Society in his later years was to honour him not only with its Bakerian Medal but in 1908 its prestigious Royal Medal putting him in the same league with such as Faraday and Kelvin to name just two. In the same year he was appointed to the Japanese Committee of Building which formulated the first codes of practice for construction in seismic areas. A year later he was, as a foreigner, decorated by the Emperor and elevated to Chokunin.





Before fire destroyed his home in 1895 and he returned to settle at Shide, then just a hamlet outside Newport, he had published with W.K. Burton 'The great Earthquake of 1891' and 'The Volcanoes of Japan', been awarded the Lyell Medal of the Geological Society and had printed a catalogue of 8331 earthquake in Japan from 1885 to 1892. His 'Miners Handbook' published in London was still in use in the late 1920s. He also found time between writing and teaching to have his marriage to Toné confirmed in Tokyo according to British Law.

After nearly twenty years in Japan, early all only had their four year contract at the most renewed once, he resigned form the University. Before leaving the Emperor awarded him the Third Order of Merit with the Order of the Rising Sun and a pension of 1000 yen per year for life. With his Japanese wife, Toné, he moved into Shide Hill House during July 1895.



He quickly set to work, built an observatory in the coach-house for the Milne Horizontal Seismograph the latest of his instruments which was so sensitive that it detected even quite small earthquakes from around the world. A laboratory, now 27 Blackwater Road, was built using a gift from M H Gray. Many locals caught his enthusiasm and joined his team processing information from 30 stations around the world. The Shide Circulars, now the International Seismic Summary, were regularly published (the longest printing contract the IW County Press has ever had). In 1902 he was given the title 'Emeritus Professor of Seismology Tokyo University' and shortly afterwards Oxford added an honorary doctorate. Many scientists and other visitors from around the world called at his home including the then Prince of Wales and foreign dignitaries. He lectured both locally and nationally, developed better seismographs and took an active part in Island life especially its golf. In 1912 professor John Milne featured as an 'Eminent Living Geologist' in the Geological Magazine.

After a short illness he died on the evening of 31<sup>st</sup> July 1913. The observatory moved to Oxford after the war in 1919, the site and home sold and Toné returned to Japan and died there in 1926. They had no children. The gravestone at St Paul's, Barton is a Royal Society memorial.

Space prevents so many other fascinating aspects of this Victorian polymath's life being included. His humour and love of life, interest in music, Japanese culture and other arts, participation in local politics, his objection to 'the daylight saving bill', local golf and ghost stories are a few left out. There is no mention either of the volcanos which bears his name in the Pacific or how the Toné and her Japanese visitors influence the quiet life of Shide.

(Toné and John Milne photograph and the watercolour of Shide Hill House by F M Mimms are courtesy and copyright Carisbrooke Castle Museum)

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## John Mílne Chronology

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### **Early Years**

1850 John Milne born 30th December in Liverpool1851 Moved to Rochdale

Educated at:

Liverpool Collegiate Institute King's College, London Royal School of Mines, London School of mines Freiburg, Saxony

Visits Ireland Father dies Mother remarries Living at Richmond, Surrey Canoes on the canals of Southern England Sailed to Iceland explores glacier Vatna

- 1871 Sailed to Iceland explores glacier Vatna Jokul with friend W. L. Watts
  1872 Rewrote Icelandic journal as a narrative
- (manuscript in IW Record Office)



Reports courtesy and copyright IW Record Office

- 1873 Starts Newfoundland geological survey for Cyrus Field Geologist & artist on Charles Beke's expedition to find 'true' Mount Sinai Elected fellow of the Geological Society, London
- 1874 Paper on the physical features of Newfoundland
- 1875 Appointed to teach mining and geology Imperial College of Engineering, Tokyo Paper on the extinct Great Auk Starts epic overland journey across Europe and Asia to Japan

#### <u>Japan</u>

1876	Arrives in Japan and on 8 <sup>th</sup> March experiences his first earthquake
1877	Paper on the action of coastal ice
	Visited volcano on Oshima, Hokkaido for first time and perhaps Hakodate
1878	Travelled to the Kurile Islands
	Stays at the Ganjo-je Temple Jokye Horikawa of which Toné's is the abbot
	'Sinai in Arabia' by Charles Beke is published with John Milne illustrations
1970	Paper on his journey to Japan is read at the Goological Society

1879 Paper on his journey to Japan is read at the Geological Society 'Notes on Crystallography and Crystallo-physics' published

#### **Seismologist**

- TheTokyo-Yokohama earthquake on 22<sup>nd</sup> February produces major turning point in Mile's life
   First working meeting Seismological Society of Japan takes place on 26<sup>th</sup>
   April 1880
   The Stone Age in Japan' paper published
- Ton and John Milne married at the Rananza-kõ in Tokyo
   Paper on the Stone Age in Japan published
   The Gray-Milne seismograph manufactured in Britain
- 1882 Travelled back to Britain via San Francisco
- 1883 'Earthquake and other Earth Movements' First edition published
  1885 Essay prize awarded in East Indian section of the Dutch Royal Institution of Engineers
- 1886 c 'Colonial Facts and Fictions' published under the name of Mark Kershaw
- 1887 Elected a Fellow of the Royal Society Read paper 'Earthquake Effects - Emotional and Moral'
- 1888 Appointed a member of the 'Building Committee' by Minister Arinore Mori

### Portraits courtesy Tywcross Family





Decorated by Emperor 'Order of Merit' with the 'Cordon of the Sacred Treasure' elevated to Chokunin Visited Britain again McDonald –Milne vibration recorder manufactured

- 1892 The Great Earthquake of 1891' published with W.K.Burton 'The Volcanoes of Japan' published with W.K.Burton
- 1893 Milne Horizontal Pendulum Seismograph had been designed and tested The Miners Handbook' published in London Short visit to Britain
- 1894 Awarded the Lyell Medal of the Geological Society of London
- Fire destroyed home and library on 17th February
   'Catalogue of 8331 Earthquakes in Japan 1885-1892' published
   Formal marriage to Tone again at British Consulate in June
   A warded the Third order of Merit with the Order of the Rising Sun by Emperor
   Life pension of 1000 yen per year Resigned from University
   Returns to Britain

#### Shide, Isle of Wight

- 1895 Arrived Shide Hill House July
- 1898 'Seismology' published by Kegan, Paul, Trench, Trubner and Co
- 1900 Gift from M.H.Gray used to built the Laboratory at Shide
- 1902 Given title of Emeritus Professor of Seismology Tokyo University More than 30 recording stations around the world operating in the Milne network
- 1908 Received the Royal Medal from the Royal Society of London Honorary Doctorate from Oxford University
- 1911 Vocal critic of the Daylight Saving Bill
- 1912 'Catalogue of Destructive Earthquakes' publishedSubject of 'Eminent Living Geologists in the Geological Magazine
- 1913 Final development of the Milne-Shaw seismograph
   John Milne dies at Shide after a short illness on evening of 31st July
   H.H. Turner runs Shide Observatory
   Ton Milne continues to live at Shide Hill House



### Post Milne

- 1919 Earthquake Observatory move to Oxford Tone Milne returns to Japan
- 1926 Ton Milne dies Memorial to John & Ton Milne erected in Hakodate
- 1927 Charles Davison wrote 'Founders of Seismology'
- 1939 A. W. Lea re-writes Milne's Earthquake and Other Earth Movements'
- 1950 Exhibition on Milne at Carisbrooke Castle by E Pollard a local amateur seismologist
- 1963 Commemorative exhibition by University of Tokyo in Japan
- 1974 University Tokyo presents trees to IW planted at Shide and IW College by Ambassador Mori
- 1975 Before the Royal visit to Japan John Milne featured as a major figure in publicity by Japanese Embassy
- 1980 'John Milne, Father of Modern Seismology' A.L.K.D Herbert-Gustar and P.A.Nott published in English
- 1981 'John Milne, Father of Modern Seismology' Published in Japanese
- 2007 'John Milne –the man who mapped the shaking earth' published Paul Kabrna, Craven & Pendle Geology Society
- 2010 Exhibition and related workshops at Carisbrooke Castle Museum
- 2013 Special events worldwide to celebrate the work and achievements of Professor John Milne FRS



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## Memorials to John Milne

### Milne Trophy Newport Golf Club

The club, now situated on the top of St George's Down behind Shide Hill House, has a loving cup competed for each year in memory of their Captain / Founder. John Milne entertained many celebrities of his day. Whenever possible they were taken to one of the local course to relax - Chale, Shanklin or Newport. Harry Vardon and Captain Scott of the Antarctic were two famous names visiting Shide, but John Milne was equally happy playing with friends many of whom took an active part in helping to run the Shide Earthquake Observatory. See Places of Interest for more information on the www.newportgolfclub.co.uk club.

Milne Way



Mr M Smith 2012 winner John Milne cup

### Celebrating John Milne

A public artwork of three enamelled panels depicting his life and work commissioned in 2012 Little London, Newport Harbour, Isle of Wight adjacent to the Quay Arts Centre For further information contact the IW Council Arts Development Officer www.iwight.com



### Shide Chalk Pit which is on the east side of the estate. In the days of the Milnes this area was only a small hamlet on the outskirts of Newport, although it had two mills, a working pit extracting chalk and its own railway station. At the top of the hill up St George's Lane which runs behind the estate was, and still is, a working gravel pit. The rest of the area was farmland. **Explanatory Board and Plaques**

Milne Way is a post war cul-de sac in Newport, Isle of Wight off Shide Road just a short walk and across the river from the Blackwater Road and the site of Shide Hill House estate. Over the rooftops of the bungalows can be seen the

In the near future an explanatory board with details of the life and work of John Milne will be erected on the riverbank cycle track at Shide looking east across to what was the Shide Hill House estate on the far side of the main road. Small plaques near the estate gatehouse and to the entrance to what was the laboratory building. There is a cairn marking the site of the commemorative cherry tree planted across the other side of the river. www.newportwight.org.uk

### The John Milne

The John Milne on Newhey Road, Rochdale OL16 4JF, one of the few British pubs and restaurants to be named after a geologist, is part of the Table Table chain of restaurants belonging to Premier Inns. www.tabletable.co.uk

### John Milne Avenue

John Milne Avenue is a road off a roundabout on the A6193 at Balderstone, Rochdale in Lancashire. He is in good company for another of the exits from the rondabout is named after Isaac Newton www.rochdale.gov.uk



### Mallet Milne Lecture

The Society for Earthquake and Civil Engineering Dynamics, Institute of Civil Engineers, hold a lecture every two years named in honour of the memories of Robert Mallet and John Milne. www.seced.org.uk

### See also Organisations connected with John Milne & More of the John Milne Story

The compiler will be pleased to hear of any other John Milne memorial

## Associated Buildings and Places

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### The Shide Hill House Estate

The Shide Hill House estate formed a triangle of several acres with the Lodge at the corner of St Georges Lane and the Blackwater Road out of Newport. In 1919 the estate was sold for housing along the main roadway which. In the early 1970s the road was widened, Shide Hill House demolished and more housing built up St George's Lane. However the servants and laboratory annexes to the main house still remain standing and with the lodge roughly mark the boundaries of the old estate.



On the right hand side is the Lodge with the original gate pillars and driveway. Below left to right the old Shide Hill House photographed in the snow photographed by John Milne or 'Snowy' Hirota (courtesy and copyright Carisbrooke Castle Museum), the Laboratory annex to the house seen through the trees from St George's Lane and the servants annex to the main house. The rear of Shide Hill House was to the right this annex and stood back from the lane.



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### Newport Golf Club



John Milne had a great passion for golf and was the founder captain of the club. Milne's influence continues today for it still has that special atmosphere he helped create "Built by golfers for golfers". One of their valued trophies is the John Milne Cup - see also the page on Memorials. The club's website has a page on its history www.newportgolfclub.co.uk

### Isle of Wight County Club

About a mile from his home at Shide, John Milne used this as his social meeting place when in Newport Situated on the first floor at the corner of the High Street and St James Square, Newport, Isle of Wight PO30 1UX

### Drake Street, Rochdale

Born in the Vernon, Edge Hill district of Liverpool, John Milne spent much of his childhood living in Drake Street, Rochdale. In later life he told friends that he remembered as a child two things – the skylight in the high ceiling with the clouds rolling by and finding the knob which controlled the curtained off shower bath. His first school was in Milkstone Road run by a Miss Fisher. Following that he became a private pupil of the Rector of Knutsford before entering at about thirteen the Liverpool Collegiate Institute in the year it changed its name to



Liverpool College. Having moved to Richmond, Surrey his university life started at King's College, London. Photograph courtesy & copyright Paul Kabrna



### Carisbrooke Castle

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With Princess Beatrice's permission, for a while a seismograph was installed at the Castle. Today the independent Museum, which is housed in the Governor's House, has a working pendulum seismograph similar to those used by the British Geological Survey with their schools science project. It enhances the Milne archive collection and exhibits. The Castle Museum which was established by Princess Beatrice, the youngest daughter of Queen Victoria, still retains its independence. It houses a collection which amongst other things contains several thousand black and white Milne negatives with nearly four hundred hand coloured magic lantern slides used to illustrate his many lectures.

www.carisbrookecastlemuseum.org.uk

### Royal Victoria Yacht Old Clubhouse

Two things attracted John Milne to frequent the old clubhouse of the Royal Victoria Yacht Club on the Western Beach in Ryde. The first was that at the time he was interested in measuring the tilting of beaches with the ebb and flow of tides. The second perhaps as, if not more, important being that it held the best selection of whiskies on the Island. However to his surprise it is said he found that the seismograms whilst recording the tidal influence each day also had a weekly unexplained trace. Some while later he was to discover that two of the clubs servants had the same time off and regularly made use of the store room adjacent to the seismograph. Any researcher knowing this story and handling Milne seismograms always looks carefully, for somewhere there may well still be the evidence of the first use of a



horizontal pendulum seismograph to record what for the two concerned may well have been 'an earth moving event'!

The compiler will be pleased to hear of any other John Milne place, museum or archive

## John Mílne ín Museums and Archíves



Courtesy and copyright Carisbrooke Castle Museum

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### Carisbrooke Castle Museum

A museum founded by Princess Beatrice, daughter of Queen Victoria, is housed in the Castle. The collection includes artefacts relating to John Milne including some unpublished material, over 2,000 John Milne's own glass negatives with nearly 400 hand coloured magic lantern slides

The Curator, Carisbrooke Castle Museum, Newport, Isle of Wight PO30 1XY Telephone 01983 523 112
<a href="https://www.carisbrookecastlemuseum.org.uk">www.carisbrookecastlemuseum.org.uk</a>
<a href="https://www.carisbrookecastlemuseum.org.uk">www.carisbrookecastlemuseum.org.uk</a>
<a href="https://www.carisbrookecastlemuseum.org.uk">www.carisbrookecastlemuseum.org.uk</a>

### Isle of Wight Record Office

Several boxes of John Milne material are housed in the archive some showing damage from the Japanese fire. The collection includes sketches, notes from his Iceland journey and other unpublished material and letters plus many photographs and seismograph drawings

The Archivist, 26 Hillside, Newport, PO30 2EB Telephone 01983 823820 / 1

www.iwight.com/recordoffice

### British Geological Survey

The British Geological Survey preserves much archive material associated with John Milne and links to other sources. Global Seismology Series, Technical report WL/99/14. Their schools seismology project uses a pendulum seismograph

www.earthquakes.bgs.ac.uk

The John Milne Seismological Library

Science Museum at Wroughton, Hackpen Lane, Wroughton, Swindon SN4 9NS Extensive site see website for travel details. The large item store houses the Newport Lamp-post Seismograph

www.sciencemuseum.org.uk/wroughton

## See also Professional Bodies

The compiler will be pleased to hear of any other John Milne museum or archive

# Associated Educational and Professional Bodies

### The Royal Society

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John Milne was a Fellow of the Society, was awarded the prestigious Gold Medal in 1908 and Bakerian lecture in 1906 'Recent Developments in Seismology'. The Royal Society with others contributed to the upkeep of the home stations and following his death the grave stone and kerb in St Paul's, Barton churchyard The Royal Society 6 Carlton House Terrace, London SW1Y 5AG telephone 0207451 2500 www.royalsociety.org

### King's College, University of London

The first three years of John Milne's higher education were spent at King's College before further study at the Royal School of Mines. One of the large window facing the Strand has a reproduction of the photograph taken a year or so before his death by Kime of Newport for Eminent Living Geologist. Archive Services, King's College, Strand Building, London WC2R 2LS www.kcl.ac.uk/library

### Royal School of Mines

After King's College, London John Milne spent time at the newly established Royal School of Mines. It was one of the three bodies that combined to form Imperial College in South Kensington. The departments of Earth Science and Engineering & Materials both in the Faculty of Engineering are the direct decedents of the School. Imperial College London SW7 2AZ. www3.imperial.ac.uk/a\_to\_z

### The Royal Geographical Society

One of the most travelled individuals of the Victorian / Edwardian age must be John Milne. Royal Geographical Society, 1 Kensington Gore, London SW7 2AR www.rgs.org/collections

### The Geological Society

John Milne now remembered mainly for his seismological work contributed much to other aspects of geology. He became a Fellow of the Geological Society at the early age of 23, read many papers and contributed to its journals. It was this Society which in 1912 published Eminent Living Geologis. The Geological Society, Burlington House, Piccadilly, London W1J 0BG www.geosoc.org.uk

### The British Science Association

The Association formerly known as the British Association for the Advancement of Science had John Milne as the secretary of its sub-committee for the purpose of investigating the earthquake phenomena of Japan from 1881 until 1895 and also after it had changed its title to the sub-committee for seismological investigation until his death in 1913. The bulk of John Milne's papers were contributed to the journal of the Seismological Society of Japan and the British Association for the Advancement of Science. The BAAS supported John Milne's work at the home stations together with the Royal Society, Daily Mail and individuals such as M. H. Gray. British Science Association, Wellcome Wolfson Building, 165 Queen's www.britishscienceassociation.org Gate, London SW7 5HD

### The British Geological Survey

The seismological section of the Survey houses in an excellent archive much material and references to John Milne and the history of seismological work. British Geological Survey, Kingsley Dunham Centre, Keyworth, Nottingham, NG12 5GG www.bgs.ac.uk

### The Institute of Civil Engineers

ICE, One Great George Street, Westminster, London, SW1P 3AA The Society for Earthquake and Civil Engineering Dynamics hold the Mallet Milne Lecture every other year. The next lecture is in May 2013 www.seced.org.uk

### The Camborne School of Mines

John Milne obtained practical mining experience in Cornwall, Lancashire and Freiberg, Saxony. The Camborne School of mines was not formally established when he was a student, however they welcome the connection with Cornwall. Camborne School of Mines, Cornwall Campus, University of Exeter, Penryn, TR10 9EZ http://emps.exeter.ac.uk

International Seismological Centre Has references to John Milne and a link to a biographical page

http://www.isc.ac.uk/about/history/

The compiler will be pleased to hear of any other associated organisation

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### www.ice.org.uk

## Some Publications by John Milne

John Milne, Father of Modern Seismology - L K Herbert-Gustar and P. A. Nott 1980 lists in Appendix 2 using a very small font size over seven pages of books, papers and other works by John Milne.

Paul Kabrna in *John Milne, the man who measured the shaking earth* on pages 117 to 119 catalogues the major published works.





*Earthquake and other Earth Movements* London, Kegan Paul & Trench 1886 http://archive.org/details/earthquakesando00milngoog

*Colonial Fact and Fictions* London, Chatto & Windus 1886 (under pseudonym Mark Kershaw)

*The Great Earthquake in Japan 1891* with W. K. Burton, London & Yokohama, Standford 1892

The Volcanoes of Japan with W. K. Burton Yokohama, Kelly & Walsh 1892

*The Miners Handbook* London, Crosby & Lockwood 1893 http://archive.org/details/minershandbookha00milnrich

*Catalogue of 8331 Earthquakes in Japan 1885 to 1892* Tokyo, Seis Journal, Japan1895

*Seismology* London, International Science Series 1898 http://archive.org/details/seismology01milngoog

Catalogue of Destructive Earthquakes AD 7 to AD 1899 British Association 1912

Earthquakes and Other earth Movements re-written by A. W. Lea 1939

Shide Circulars Isle of Wight County Press

Journal of the Seismological Society of Japan http://ia700307.us.archive.org/15/items/seismologicaljo07milngoog/seismologicaljo07milngoog.pdf

## Some Publications devoted to John Milne

### John Milne – Father of Modern Seismology L K Herbert-Gustar and P. A. Nott Published Paul Norbury, Tenterden, Kent 1980 ISBN 0 904 404 34 X

A full length biography with a detailed bibliography of John Milne's massive list of publications.

Chapters devoted to his life on the Isle of Wight including material obtained from people who had worked for, met or remember him



John Milne Paul Kabrna

John Milne – the man who mapped the shaking earth Paul Kabrna Published Craven & Pendle Geological Society 2007 ISBN 978 0 9555289 03

A well illustrated publication with useful references and further reading including a list of relevant websites.

The author is a geologist living and working in the Rochdale area where John Milne spent much of his childhood before moving to Richmond, Surrey

*Eminent Living Geologists* 1912 Geological Magazine 5 Volume 9 pp 337 – 346

> **The Founders of seismology – Survey of Milne's work Charles Davidson** Cambridge 1927 pp 172 – 202

Seismology John Wartnaby 1957 Published Science Museum HMSO

*Early Scientific Works of John Milne* John Wartnaby 1969 History of Science Soc Japan Early Scientific Works John Milne John Wartnaby 1967 MSc dissertation , University London

Nineteenth Century Seismology John Wartnaby 1972 PhD thesis University of London

 Biographical Sketches of Prof Milne, F M Walker – Fore, Isle of Wight Golfing Magazine Vol 1 1913 Biographical Sketch of Prof Milne, Prof Omon – Gatugizashi, Tokyo 1913 Obituary John Milne, J. Perry – Proceedings of Royal Society Vol 89 1914
 Works of John Milne, Comte de Montessus de Ballore – Bulletin of Seis Soc of America Vol 4 1914 Works of Milne Science, Charles Davison – Science Progress 1914 Professor and Mrs Milne – Pamphlet Hakodate Library 1926

See also the **British Library Catalogue** and the **British Newspaper Archive** http://www.bl.uk/catalogues/listings.html/ www.britishnewspaperarchive.co.uk

## John Milne on Other Websites

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Paul Kabrna in 'John Milne, the man who mapped the shaking earth' lists on page 120 some sixteen relevant website addresses active in 2007

Useful website search phrases john milne seismologist earthquake milne history seismology history seismographs

**Wikipedia** has a quite useful article and there are a number useful links from the reference section to other source material <u>http://en.wikipedia.org/wiki/John\_Milne</u>

**National Dictionary of Biography** - either a subscribing public library ticket number or other subscription is needed www.oxforddnb.com

**Baxley Stamps and Books** – this company buys and sells specialist books A web search using say *john milne baxley books* or the like brings up many titles and providing fascinating facts and illustrations from their collection of rare books

### John Milne and Toné Horikawa

www.mix-d.org/museum/timeline/1900-john-milne-and-tone-noritsune

### Britanica on line Encyclopedia

www.britannica.com/EBchecked/topic/383031/John-Milne

Scientific visitors to **Milne's** Observatory - British Geological Survey http://earthquakes.bgs.ac.uk/archive/archive\_collections/milv.htm

#### **Towards a global School Seismic Network**

http://www.iris.edu/hq/NSFProposal/Volume2/EO.pdf

### **International Seismological Centre**

http://www.isc.ac.uk/about/history/

### 14<sup>th</sup> Mallet Milne Lecture – Roger Musson

http://vimeo.com/icegroup/review/67311706/64f31d516d the recording of the lecture http://link.springer.com/journal/10518/11/3/page/1 the paper accompanying the lecture

Asahi Shimbun article published after the magnitude 9.0 Great East Japan Earthquake and Tsunami of 2011 http://ajw.asahi.com/article/0311disaster/quake\_tsunami/AJ201205010007

**Dr William Twycross** of Mansfield, Australia remembers in a local newspaper article his great-uncle's pioneering work on earthquakes <a href="http://www.theage.com.au/national/melbourne-life/the-father-of-seismology-20110317-1bz0l.html">http://www.theage.com.au/national/melbourne-life/the-father-of-seismology-20110317-1bz0l.html</a>

The Isle of Wight County Press has a number of article on John Milne which can be found by searching their on line edition www.iwcp.co.uk

**On the Wight** (which was for many years known as the Ventnor Blog) has a number of short articles related to John Milne www.onthewight.com

### Further items will be added as they are reported

The compiler will be pleased to hear of any other John Milne sites





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This section contains material and articles added after the main pdf file was written - click on the subject of interest

**Public Artwork at Little London, Newport, IW – Artist Kevin Dean** Information on the production of the artwork itself and the artist

**The Shide Earthquake Observatory 1895 - 1919 – Patrick Nott** Based on a talk prepared for the IW Industrial Archaeology Society 8<sup>th</sup> March 2013

### MORE PAGES WILL BE ADDED LATER

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### THE NEWPORT, ISLE OF WIGHT, PUBLIC ARTWORK



During the summer of 2012 members of the community were invited to vote for one of four proposed designs of a public artwork to commemorate John Milne. Kevin Dean, the winner, was commissioned to produce the three enamelled panels to be erected in an empty recess of the surrounding wall of the carpark at Little London, opposite the Quay Arts Centre, in Newport. The work was unveiled at the end of November 2012.



The two main panels are some 1600mm x 1400mm. The one on the left depicts John Milne's life and work undertaken during twenty years in Japan and the one on the right his connections with the Isle of Wight from 1895 until 1913. The centre linking panel 2900mm x 500mm has the title and a timeline in the form of a seismogram. Not only do the panels convey the feel of Japan and the Isle of Wight but there are subtle references to the horizontal pendulum, other seismographs and experiments.

Artist Kevin Dean lives just across the Solent in Southsea. He was educated at the Royal College of Art. This project was his first undertaken on enamel. Use was made of rollers and sponges to create a textured affect, and to discover which works best on enamel. Further information about his work can be found at the website: <u>ww.kevindean.co.uk</u>

The enamelling was undertaken by the local Isle of Wight firm A.J. Wells & Sons Ltd located at Newport internationally known for the quality of their artwork. There website: <u>http://www.ajwells.co.uk</u>



The £8,000, externally funded, project was coordinated by Nina

Cullinane of the Isle of Wight Council Arts Development Unit and supported by Hurst's & Sons who own the wall that now surrounds what was their foundry site. An appropriate place for a John Milne memorial as parts needed for the observatory, including the famous Newport lamp-post seismograph, may well have been cast there.



There is placed at the side of the left hand panel an explanation board giving the visitor the opportunity to gain further information on both the project and John Milne.

As it is not possible to include high definition images on this page, it is suggested that the reader should log on to the artist's own webpage or better still visit the Isle of Wight and Little London at Newport Harbour.



A watercolour by Miss F.M. Minns - Carisbrooke Castle Museum collection

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### Arrival at Shide

On July 30<sup>th</sup> 1985 John and Toné Milne reached their new home, Shide Hill House on the Isle of Wight, where his mother and step father were already living. He writes shortly afterwards as secretary in a British Association report as it Seismological Section secretary:

"The position where instrument 'T' is installed, is approximately 50° 14 18" N lat and 1°17 10" W long. It is near to the Shide railway station, at the foot of the western side of Pan Down, which is a portion of the chalk backbone of the Isle of W ight. Up on the Down the chalk reaches to within a few inches of the surface. At Shide Hill House disintegrated chalk, which may have a thickness of about 6ft, is met at a depth of 3 feet. In front of the house, or towards the west, at a distance of about 150 yards on the other side of a small stream (the River Medina), there is a railway station. In a NE direction, at a distance of 242 yards, there is a chalk quarry, where at certain fixed times basting takes place. At the back of the house within a few yards of the building in which the instrument is placed there is a lane down which on week days carts heavily laden with gravel pass."

"I reached Shide on July 30 (1895) and on the following day a pit was excavated in a dry



John & Toné Milne walking at Shide

stable, about 3ft 6ins in depth, down to the upper surface of the disintegrated chalk.. On August 6<sup>th</sup> and 7<sup>th</sup> a brick pier 6ft in height and 1ft 6in square was built on a concrete bed to rise freely in the pit. The necessary wooden covering for this was completed at noon on the 16<sup>th</sup>, and that evening an extremely light horizontal pendulum was installed and set to work. The instrument, which I call 'T', gave a beautifully defined two-line diagram until the 21<sup>st</sup> when the clock ceased to drive the film which had become damp and sticky"

Mrs Lou Henry Hoover, who was to become the first lady of the USA, wrote a few years later in the *'Bulletin of the American Seismological Society':* 

"The two seismographs that are in active service at Shide are installed in a little building of their own, with a wonderful old door, far out in the garden, where there is no chance of their being disturbed.



It is a quaint conceit that to the utter quiet of this pretty tree-encircled old house; with its grassy stone-stepped terraces leading down towards the little valley, with the great peaceful down rising at its back, should come the earthquakes of the world to be classified and studied. But come they do, and a vast amount of work they make for Professor Milne and his clever Japanese assistant, Mr Hirota. There are about sixty stations whose reports come, some monthly, some twice yearly and some when a chance boat may bring then. These must all be carefully correlated and filed away, and every six months

a circular contain all the recent registers is sent out to all the stations. This is practically a labour of love on Professors Milne's part. He holds no official position."

### Shide as it was and is

A few picture of the Shide Hill House estate as it was in John Milne's day and as it is now:



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Two slides that were more than likely taken by 'Snowy' Hirota, John Milne's Japanese friend and assistant, or by John Milne himself. The picture on the left shows the gatehouse to the estate and the one on the right is of Lower Shide Mill and pond. It was roughly on the site of the relatively new St George's Road built to join the widened Blackwater Road to the town centre.



The two photographs above show part of what is left of the estate today. The gatehouse lodge has been changed very little. The pillars for the gate and the line of the original drive to Shide Hill House are still in the same place. The house shown on the right butted onto the main building, demolished in the 1970s, and was used as the servants' quarters. It is the last building as one goes up St George's Lane. Although the grounds of the original estate have been built over for many

years now, its name 'Milne House' is a reminder of its owner and hay day. Behind it to the west John Milne added the laboratory block of which more later. Shide Hill House, designed by the architect John Pennethorne a nephew of John Nash, backed onto St George's Lane but the front faced towards the west taking advantage of the view across its extensive gardens down to the Blackwater Road and the Medina valley beyond. The next two slide again from the John Mine collection, now housed at Carisbrooke Castle Museum, show roughly the same view of the front of the house taken from the Blackwater Road boundary looking eastwards towards the Pan chalk pit.



Theses photographs and the Miss Minns watercolour must all be post 1900 as seen on the right is the roof line of the Laboratory Block.

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### Some early seismometers and seismographs



From the early Chinese detectors until the last part of the nineteenth century little progress anywhere had been made in the detection of earthquakes. Most instruments were in fact just detectors; few gave indication of the strength or direction yet alone the time of the event. Early on John Milne and his fellow collaborators in Japan realised that the direction of fall of tombstones and other monuments indicated direction but they needed to know more. Recording the time of any tremors was of

essence, hence the need to develop seismographs. Amongst the

surviving hand tinted magic lantern slides used for his Oxford University Extension Lectures (forerunner of the Workers Education Association) and other talks given on the Island and elsewhere is one of an early vibration recorder being used on a bridge. The stylus marking the revolving smoked glass plate at least gave indication of both time and strength of the shaking. By the early 1880's with his colleagues the Gray-Milne seismograph was developed. His slide is of one of the latest models by then recording on a paper chart and capable of tracing the vibrations in both east-west and north-south direction. But it was the greatly more sensitive Milne Horizontal Pendulum Seismograph developed and manufactured just a year or so



before he left Japan in 1895 that was to make a step change in seismological recording.





The photographs of John and Toné Milne are thought to be of about 1883. Although spending considerable time researching, experimenting, recording and writing about seismology following the establishment of the Seismological Society of Japan with its first meeting on Monday 26<sup>th</sup> April 1880 just two months after the decisive earthquake in the Tokyo-Yokohama area on Sunday 22<sup>nd</sup> February 1880, John was still teaching mining and geology as a lecturer at the Imperial College of Engineering in Tokyo.



enhanced the sensitivity of this instrument. Moreover it was directional and the trace could detect the arrival of the various parts of the shock waves reaching the observation station. With accurate time this allowed epicentres to be located with accuracy as the number of recording stations in the network mainly across the Empire was increased. These were correlated by the team at Shide and produced as the Shide Circulars later the International Seismic Summary and printed

The Milne horizontal pendulum seismograph was capable of detecting quite small tremors originating around the world. The slender pendulum (boom) with its small weights attached near the suspension point of the tie to the top of the stand, together with the machined pivot where the pendulum contacted the stand, plus the initiative use of photosensitive recording by using light passing through a slit in the pendulum all greatly



initially by H. Burgess at the IW County Press. It produced the international summary for well over fifty years, long after the observatory had moved to Oxford in 1919. This model of seismograph was the workhorse of the Shide Observatory. Even to day it forms the basis of the British Geological Survey's schools science project seismograph, but now as one would expect with electronic detection and digital output.

### Building the Laboratory block

With financial help mainly from the British Association for the Advancement of Science together with a friend and fellow seismologist, Matthew H, Gray (not the same Gray as his colleague in Japan), John Milne was able to build in 1900 a laboratory block adjacent to the house. Here he was able to experiment with new instruments well away from his main recording instruments house in the stable block. It also provided a working area and essential storage space for the many returns now coming from the network of seismological station set up around the world.



On the left is the laboratory block as it is today sitting on the site that is seen being cleared in one of John Milne's own black and white magic lantern slides. In what is now a bedroom is a plaque commemorating the event – it featured as a highlight in an item on '*Blue* Peter' which briefly covered the life of the Professor both in Japan and here at Shide Hill House.



Mrs Lou Henry Hoover wrote in the Bulletin of the American Seismological Society

"The experimental laboratory is separate from the house, nut is approached from the study by a sheltered veranda. All is methodical within, and as spotless as though a speck of chalk from the overhanging downs might disturb one of those glass-encased horizontal pendulums. The writing table stands in the centre; by the door is a great black globe, with the earth's surface scantily outlined in white, all the stations having Milne's seismographs marked, and cryptic characters scattered over it; nearby are shelves full of files of station registers, all neatly jacketed; windows face both north and south, with shelves of books between them, and the walls are hung with prints of unusual seismograms and earthquake picture."

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Above on the left are some of the Japanese visitors to Shide and on the right a John Milne magic lantern slide of Toné relaxing in the the laboratory area of the building

### Other Seismographs

John Milne experimented with seismographs of varying sizes both in height, beam length and the mass placed on the pendulum. One which caught the attention of many visitors was make using a Newport lamp-post. Mrs Hoover in her paper for the American Seismological Society writes:



The pillar going down into the chalk is larger than those used now; the mast is a lamp post of the day, brought up from Newport town; the six foot booms are made of bicycle tubing ----- But the indicators are the modern grass-straw ones, grown in the pasture one sees from the south window; and they register on a roll of smoked paper. All the other instruments record photographically ----- On the other side of the room is a later instrument, but with a mast a couple of feet high, and a corresponding short boom. A push of one's thumb against the stone pedestal

on which it stands causes the indicator to swing the full amplitude of its case. ----- "

All the Milne horizontal pendulum seismographs whether large or small suffered somewhat from lack of damping. J.J. Shaw from West Bromwich, an amateur seismologist, who had become a close friend of the Milnes, often visiting and staying at Shide, found a solution by adding electromagnetic damping. Below on the right can be seen that the somewhat shorter pendulum passes through a magnetic field which creates eddy current damping when the pendulum moves. A Milne-Shaw seismograph exhibited at an exhibition in Birmingham is seen in the left hand side picture with a more detailed close-up on the right.

In the centre of this illustration of the Newport lamp-post seismograph is seen Prince Galitzin, the Russian seismologist who introduced electromagnetic induction to record the pendulum movement in the next generation of seismographs.



### The Time Problem

As the Shide Observatory was not linked directly to any university or government body the government of the day would not provide a free telegraph link for Greenwich time signals to be received. The General Post Office wanted to charge him the considerable sum of  $\pounds 30$  for a connection even though having accurate time could establish whether seismic activity or hostile action had broken a telegraph cable link which most would consider vital to the defence of the empire.

One way over the problem was for the Professor to take his watch to the Newport Post Office. But as a member of the public he was not allowed into the telegraph machine room upstairs. He was kept at the counter while the operator walked across the room to the speaking tube to say "*It's eleven o'clock sir*" many seconds late. But John had heard the signal drop and had already set his watch.

A second method is recounted by Mrs Hoover:

"High up on the south wall is a queer vertical slit in the thick wall, looking like an archer's window in an old castle. A question reveals a mark slanting across the floor and ascending the opposite wall. At noon the line of sunshine coincides with this mark and from it Professor Milne gets his time to within one second"

The final solution was provided when J. J. Shaw built a crystal set. William Bullock a local Isle of Wight builder and golfing friend recounted in an interview:

"Early in the twentieth century the Eiffel Tower in Paris started sending out time signals by radio and almost immediately Mr Shaw of West Bromwich offered to make a crystal receiver and aerial so that Milne could tune to the signal in his own home. This he did and the apparatus duly arrived at the observatory. They decided to erect the aerial on the morning of Boxing Day. It was a cumbersome six-stranded affair, 7 feet wide and about 40 feet long, one end of which was to be fitted to the observatory roof and the other to a chimney of the main house.

Boxing Day arrived, blowing a gale and raining heavily. The Professor suggested we should put it off but Mr Shaw would not hear of it. "We can get it up in five minutes," he insisted. So we made a start and secured the observatory end before we realised that there was an intervening chimney on the main house that had not been allowed for and while we were discussing this the wind took charge and wrapped the six strands in a glorious tangle around it. After working for nearly an hour to free this aerial, soaked to the skin and not helped particularly by john's humorous remarks, we found that the

whole thing was 10 feet too long anyway and then he decided not to have it fixed to the house at all. A few days later it was erected between two elm trees and the Eiffel Tower signal came through very well on the crystal set so that the problem of the correct time was solved to John's satisfaction at last. After that episode, however, I often heard the Prof remind Shaw slyly about 'one of those five minute jobs'"

Space does not permit inclusion of the many visitors to Shide Hill House between 1895 and 1913 including the Prince of Wales, Scott of the Antarctic, other notable seismologists, geologists and scientists, those famous in other walks of life and the many distinguished foreigners from Japan and around the world. Nor does it permit the inclusion of the Shide ghost story or the antics of two members of staff at the Ryde Victoria Yacht Club when off duty at the same time each week.

Following the death of Professor John Milne on 31<sup>st</sup> July 1913 the observatory was under the control of Professor H. H. Turner of Oxford University, but the routine work was mainly undertaken by John's local devoted friends

Patrick Nott



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Contact the compiler of these John Milne pages via the Isle of Wight Society or patrick.nott@btopenworld.com

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