

History of Meteorology and Physical Oceanography Special Interest Group



www.rmets.org/activities/groups/SIG/detail.php?ID=9

Newsletter 1, 2012

ANNIVERSARIES

For those of us who are interested in the history of meteorology and oceanography, 2012 can be considered a vintage year for jubilees, centenaries, sesquicentenaries and bicentenaries. We note some of them in this newsletter, beginning with Napoleon's retreat from Moscow in October, November and December 1812.

It is an enduring belief that Napoleon was defeated by severe weather. However, his army did not experience exceptionally cold weather until they had crossed the Neman River of western Russia, several weeks after the retreat from Moscow began. Up to then, the weather had been cold, but not especially so for western Russia in winter. The weather was but one of several factors that conspired to ensure Napoleon's humiliation. For information about the weather of November and December 1812, see 'A letter of Napoleon to Frederick VI, King of Denmark, on the cold weather in Russia late in 1812', by J. Neumann (*Weather*, 1987, Vol.42, pp.335-337).



French retreat in 1812, by Illarion Pryanishnikov

Captain Scott perished in the Antarctic a century ago, in March 1912. To what extent was he a victim of bitterly cold weather? How cold was the weather? History Group committee member Alan Heasman visits this subject in an article on page 15. And a man who had joined the Met Office in the days of Admiral FitzRoy, retired in March 1912. See page 21.

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Also a century ago, at 23:40 ship's time on 14 April 1912, the passenger liner *Titanic* struck an iceberg on the Atlantic Ocean some 375 miles south of Newfoundland. She sank two hours and forty minutes later, at 02:20 ship's time. For studies of turbulence in general and the career of Geoffrey Ingram Taylor in particular, there was an important outcome of this disaster, as History Group chairman Malcolm Walker tells us on page 4.

In 1937, i.e. 75 years ago, History Group member Oliver Ashford became Superintendent of Lerwick Observatory. For his reminiscences of encounters with distinguished meteorologists, see page 9.

The Norwegian hydrodynamicist Vilhelm Bjerknes was born 150 years ago. He was a giant of synoptic and theoretical meteorology. See page 8.

Anniversaries fifty years ago include the Great Sheffield Gale (which occurred in February 1962), and the official switch from Fahrenheit to centigrade (which began in January 1962). History Group member Philip Eden focuses on the Sheffield Gale on page 8 and Malcolm Walker tells us something of the metrication story on page 19.

Finally, 25 years ago, in October 1987, there occurred the exceptional meteorological event which has become known as the Great Storm. We shall not trouble ourselves with this hurricane that wasn't until the autumn 2012 newsletter.

DEATH BY WHIRLWIND? by Alan Heasman

Newsletter 3, 2011 gave details of the metal plaque on Platform 4 of Reading station which records the death on 24 March 1840 of Henry West, blown from the roof of the station concourse (which was in the final stages of completion prior to its opening in early April), allegedly by a 'whirlwind'. This platform was renumbered 7 in December 2011.

Fortunately, Reading benefitted from having a weekly newspaper in 1840 – *The Mercury*. In the edition for Saturday 28 March 1840, the tragic accident is recorded with a slightly optimistic 'spin': "... during the high winds on Tuesday afternoon last, which, although it hurriedly terminated the existence of one unhappy individual employed on the works, might have been attended with a much more serious result". Later it records that "at about half-past three o'clock, the whole neighbourhood of Friar Street was alarmed by a loud noise resembling the crashing of heavy timber ... or the rolling of thunder". "Labourers engaged near the spot, having repaired to the station-house, ascertained that a sudden and violent gust of wind had torn up the roof of the lantern and notwithstanding its great weight dimension and weight (about 4 tons), had carried it away over the station-house unto the other side. The body of a young man named William West who had been employed on the top of the lantern ... was found in a trench 200 feet from the station-house whither he was thrown in the fall so that death must have been almost instantaneous".

Apparently his body was then carried to the Boar's Head public house (in Friar Street). With the usual Victorian efficiency, an inquest was held that same evening by the coroner "... with a respectable jury ..." at

the Public Office. The body was there on view. The inquest heard that William West was "... a journeyman carpenter, and a single man about 25 years of age and a native of Wilton in Wiltshire". A verdict of 'accidental death' was recorded. A later edition of the paper recorded that William was buried on Sunday (*presumably the only non-work day for his colleagues*) at St Laurence's churchyard. Forty or fifty of his fellow workmen, mostly carpenters, followed his coffin from the Boar's Head. It was reported that the "... spectators' demeanour bespoke a sympathy for the fate of the deceased too seldom evinced by the working classes". [*'Evinced' means to 'reveal the presence of feeling'.*]

He must have been well-respected because his fellow carpenters erected a wooden 'rail' over his grave. This is a 'rail' in the sense of a wooden support between posts and not, despite the location of his death, a railway 'rail'. This lends ambiguity to the Platform 7 plaque. Henry's wooden 'rail' has been renewed on several occasions over the past 170 years. It carries similar words to that shown on the plaque at Platform 7. It can be readily found in the graveyard of St Laurence's, just behind Reading Town Hall. The picture below, taken in January 2012, shows that the board is again showing signs of deterioration. This 'rail' often appears in lists of unusual UK memorials and of course 'Henry' is one of the few people recorded to have been killed by a 'whirlwind' in the UK. It is rather odd that the 'whirlwind' did not get a mention as such in the newspaper reports. One might have expected other evidence of damage in the Reading area.

The remaining curiosity is that the newspapers (and presumably also the inquest) referred to him as 'William', but his memorials record him as 'Henry'.



FORTHCOMING EVENTS

□ There will not be a Summer Meeting of the History Group this year. There will, however, be a **Saturday Meeting of the Royal Meteorological Society, on 26 May 2012**, on a topic pressed for by the Group's committee, namely **phenology**, the study of periodic plant and animal life cycle events and how these are influenced by seasonal and inter-annual variations in climate. In the United Kingdom, we have some phenological records which extend over a great many years, and these can be used to study long-term trends in plant and animal behaviour. The meeting will bring together speakers from a range of different fields, including the British Trust for Ornithology, the Centre for Ecology and Hydrology, and the Woodland Trust, and it will take place in the London Wetlands Centre, Barnes, West London, SW13 9WT. Further information about the meeting can be obtained from the Royal Meteorological Society, 104 Oxford Road, Reading, RG1 7LL (tel: 01189 568500) or from the web: www.rmets.org/events/index.php.

□ **A two-day Summer Meeting of the Royal Meteorological Society** is also planned, for the **weekend of 6 to 8 July 2012, at Oxford**. At the moment, no details of this meeting are available. Again, further information can be obtained from the Royal Meteorological Society, 104 Oxford Road, Reading, RG1 7LL (tel: 01189 568500) or from the web: www.rmets.org/events/index.php.

□ **THE NEXT MEETING OF THE HISTORY GROUP** will take place on **Saturday 29 September 2012 at Farnborough** (at FAST, the Farnborough Air Sciences Trust), and it will focus **on the uses of aircraft in meteorology from the 1930s to the 1960s**. A booking form for the meeting will be sent to History Group members in May or June.

The speakers at this meeting include: **Brian Booth** on RAF meteorological flights from the 1920s to the late 1950s; **David Pedgley** on his anti-locust work in the Red Sea area in the early 1960s; **Stan Cornford** on Meteorological Research Flight (MRF) work he was involved in during the 1960s; and **Peter Rackliff** on British World War II meteorological reconnaissance flights. In addition, a paper by **John Kington**, on German World War II meteorological reconnaissance flights, will be presented. It is hoped that there will be one further paper, on the work of the MRF during the 1950s.

During an extended lunch break, there will be an opportunity to visit the FAST Museum.

The registration fee for this meeting will be £10.

□ MEETINGS IN 2013

● In March 2013, we plan to hold an all-day meeting on the history of monthly and seasonal forecasting, to mark the 50th anniversary of the exceptionally cold winter of 1962-63. Details will become available in due course.

● In June 2013, we hope to hold a meeting at Southampton on past and present instrumentation of oceanography.

● From late afternoon on Friday 6 September 2013 to mid-afternoon on Saturday the 7th, there will be a meeting at the University of East Anglia, Norwich, to mark the centenary of the birth of the distinguished climatologist Hubert Lamb. Provisionally, the title of this meeting will be 'Climate: past, present and future'. Further information will become available in due course. Meanwhile, **it would be very helpful for us for reserving overnight accommodation at the University of East Anglia to have an idea of how many rooms we need to book.**

Please let Malcolm Walker know (contact details on page 20) if you plan to attend the meeting and wish to stay overnight on campus.

● Also in the autumn of 2013, in October, the third meeting **on the uses of aircraft in meteorology** will be held, provisionally, at Farnborough. This meeting will cover the period from the 1960s to the present day. The second meeting on this subject takes place at Farnborough on 29 September 2012 (see the left-hand column of this page). Details of the meeting in October 2013 will be published in due course.

THE MOST CORRECT WORK ON PREDICTIVE METEOROLOGY

On Saturday 5 October 1844, *The Times* newspaper carried, on page 10, an advertisement for *The Meteorological Ephemeris* for 1845. It was, so the advertisement said, "Now ready, price 2s. stitched" and published by Smith, Elder, and Co., 65 Cornhill, London. Its contents included, so the advertisement said: "In addition to improved tables of the state of the weather, ruled pages for registering the weather, direction and force of the wind, maximum and minimum of thermometer, height of barometer, and quantity of rain on every day, as well as for monthly summaries". It appears that no weather forecaster could be without this publication, for the advertisement said that "The *Ephemeris* for 1844 has proved the most correct work on predictive meteorology for the current year". Hmmm!

AN OUTCOME OF A DISASTER by Malcolm Walker

At 23:40 ship's time on 14 April 1912, the widely believed unsinkable passenger liner RMS *Titanic* struck an iceberg on the Atlantic Ocean some 375 miles south of Newfoundland. She sank two hours and forty minutes later, at 02:20 ship's time. For studies of turbulence in general and the career of Geoffrey Ingram Taylor in particular, this disaster was important. I have taken what follows from pages 183 to 185 and pages 189 to 191 of my book *History of the Meteorological Office*, published by Cambridge University Press in December 2011.

Gordon Miller Bourne Dobson (1889-1976) is best known as an authority on ozone. In 1913, however, he was appointed an instructor and meteorological observer at the Central Flying School of the Royal Flying Corps (RFC) at Upavon. The first paper he published bore the title 'Pilot balloon ascents at the Central Flying School, Upavon, during the year 1913'.¹ His findings were of interest to Geoffrey Ingram Taylor, the Schuster Reader at the University of Cambridge, who was by now an authority on air motions in the lowest layer of the atmosphere. He had recently returned to England after leave of absence from Cambridge during which he had carried out meteorological research from a ship on the North Atlantic Ocean. This voyage had not been undertaken for any reason connected with aviation. It was an outcome of a maritime disaster, the loss of the RMS *Titanic* on 15 April 1912 after a collision with an iceberg.

A committee of the Board of Trade recommended that a vessel be stationed between Labrador and Greenland during the iceberg season to shed light on the occurrence of ice in the North Atlantic; and the minutes of the Meteorological Committee's meeting on 6 November 1912 stated that it was probable there would be "opportunity for special meteorological work including the investigation of the upper air over the sea".² The minutes of the Committee's meeting on 12 March 1913 show that Taylor had been appointed meteorologist for the voyage but allowed to take the post on the understanding that he would make up the time spent at sea by extending his period of tenure of the Schuster Readership for the corresponding amount

of time. In the event, he returned to Cambridge on 14 September 1913.

Details of arrangements for the voyage were given in the reply to a question asked in the House of Commons on 13 March 1913. The President of the Board of Trade, Sydney Buxton, stated that the *Scotia*, a whaler, had been chartered to cruise off the coasts of Newfoundland and Labrador to observe and report sea ice and icebergs which might pose problems for Atlantic steamships. She was equipped with long-range wireless telegraphy, provided free of charge by the Marconi Company, and would be able to keep in touch with wireless stations in Newfoundland and Labrador. She had sailed from Dundee on 8 March 1913 and would be away three to four months. The cost of the vessel was being shared equally between the Board of Trade and the steamship lines which principally used the North Atlantic.

Mr Buxton went on to say that the vessel carried a staff of three scientific observers, *viz.* a hydrographer, a meteorologist and a biologist, and he also informed the House of Commons that the Royal Prussian Aeronautical Observatory had provided a number of kites for meteorological work, as well as instruments to be attached to these kites for recording air pressure, temperature, relative humidity and wind speed. The minutes of the Committee's meeting on 12 March 1913 show that kites and winding gear were also lent by C J P Cave.³ They show, too, that the programme of work to be undertaken by Taylor included the maintenance of a four-hourly meteorological log "as taken in the Mercantile Marine", along with investigations of humidity, investigations of atmospheric conditions above fog, comparisons of wind speed and direction at different heights by means of pilot balloons, measurements of temperature in the upper air, measurements of rain at sea, studies of ice drift in relation to wind speeds and directions, comparisons of barometers with different mercury column constrictions, and measurements of sea-water salinity, density, temperature and electrical conductivity in the neighbourhood of ice and elsewhere.

Taylor made good use of his time aboard *Scotia*. He carried out the planned observational programme

¹ See Dobson, G M B (1914), 'Pilot balloon ascents at the Central Flying School, Upavon, during the year 1913', published in the *Quarterly Journal of the Royal Meteorological Society* (Vol.40, pp.123-135).

² The Meteorological Committee of the Royal Society was the body which controlled the work of the Meteorological Office.

³ Charles John Philip Cave (1871-1950) was a gentleman of leisure who wrote a classic work that was published 100 years ago. Entitled *The Structure of the Atmosphere in Clear Weather* and published by Cambridge University Press in 1912, it included results from 200 pilot-balloon ascents launched from Cave's home, Ditcham Park, Hampshire.

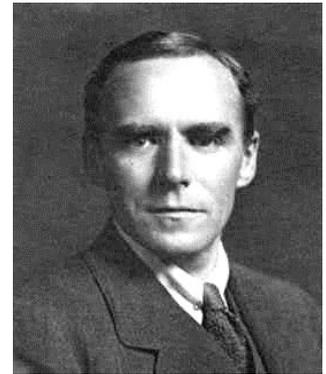
and measured profiles of temperature, humidity, wind speed and wind direction to a height of about 2,500 metres on several occasions. In so doing, he displayed considerable ingenuity. For example, he tethered a kite to the mast-head, so that turbulence from masts and rigging would not cause the kite to plunge into the sea. He described his work in a substantial report for the Board of Trade and published his theoretical analyses in a paper which is today considered a 'classic'. Entitled 'Eddy motion in the atmosphere', it was published in 1915 in the *Philosophical Transactions of the Royal Society (A)*, Vol.215, pp.1-26). Though his pioneering contributions to knowledge and understanding of turbulence in the boundary layer were not inspired by the needs of aviation, his work did subsequently prove important in aeronautics.

The Branch Office of the Meteorological Office at South Farnborough was the subject of a memorandum discussed at the meeting of the Meteorological Committee on 27 January 1915. In the memorandum, Napier Shaw, the Office's Director, pressed points he had made at the Committee's meeting on 25 November concerning the need for a meteorologist of high quality to lead the research activities of the Branch Office.

A "man of exceptional scientific ability" was required, he said, someone whose duty would be to give "advanced instruction in meteorology – especially the dynamics of the atmosphere – to the members of the RFC". This person should also discuss with aviators their "experiences in relation to aerodynamics and physics" and carry out research which could be expected to prove valuable to pilots "by enabling them to take advantage of the most complete knowledge and structure of the atmosphere and the dynamical conditions". He pointed out that no such office existed at present and suggested that the duties were "more nearly described by the title of Professor than any other". Besides the Professor, the staff of the Branch Office should include, he proposed, a meteorologist, an assistant meteorologist (or flying assistant), a clerical assistant and a laboratory assistant. The Committee agreed that Shaw's proposal be submitted first to Colonel Sefton Brancker at the War Office and Mervyn O'Gorman, Superintendent of the Royal Aircraft Factory, then to the Treasury.

The minutes of the Committee's meeting on 24 March 1915 show that Shaw's proposal, with a few amendments, had been approved by the War Office and O'Gorman. They also show that G I Taylor had expressed his willingness to undertake the duties and suggested that he should undertake a course of training as an officer of the RFC. He had

joined the staff of the Royal Aircraft Factory soon after the war began to carry out work in theoretical and experimental aeronautics. However, the Advisory Committee thought it would be inadvisable for the Professor to be a flying officer and resolved that the opinion of the War Office be sought on the question of the preliminary training. They also agreed that enquiries should be made as to whether the Schuster Readership would be tenable with the Professorship. The Meteorological Committee later heard that it would not, but this was in fact irrelevant, because Taylor had given up the Readership on outbreak of war.



*Geoffrey Ingram Taylor
(1886-1975)*

The Treasury turned down the Committee's request for a Parliamentary grant of £24,000 for the year 1915-16, proposing instead that it be £22,500. In his submission of revised estimates for the year in question, Napier Shaw included a case for Taylor to be appointed Professor of Meteorology at South Farnborough. The Committee heard at their meeting on 21 April 1915 that Brancker had expressed the opinion that if the Professorship was to continue after the war, funds should be sought from the Treasury by the Meteorological Office, not by the War Office.

Months passed, with very little progress made towards the appointment of a Professor. Meanwhile, C J P Cave was appointed Honorary Special Inspector at the Branch Office, with effect from 17 February 1915, his duty being, as it was put in the minutes of the Committee's meeting on 24 March, "to report from time to time on methods of developing the use of meteorological information in connexion with the Army and the Air Services at South Farnborough and elsewhere, and in particular upon the means of applying the pilot balloon observations to the immediate purposes of the War Services".⁴

The minutes of the Meteorological Committee's meeting on 24 November 1915 note that Taylor had received a commission in the RFC and obtained a pilot's certificate. He was "now engaged again at the Royal Aircraft Factory". Eventually, as the minutes of the Committee's meeting on 22 March 1916 show,

⁴ Cave was officially appointed Meteorologist-in-Charge of the Branch Office on 23 October 1915.

he was appointed Professor of Meteorology. These minutes state that he had taken up his duties as Professor from 14 February 1916 and been gazetted temporary Major from that date. A letter dated 16 March 1916 from Captain B C H Drew of the General Staff set out the conditions of Taylor's appointment. Sent to Shaw and to various senior officers in the RFC, including the Commandant of the Central Flying School at Upavon, it stated that Taylor was required to carry out research into the properties of the atmosphere in relation to aviation. His office would be located in the Meteorological Office headquarters at South Kensington. He would be assisted by a flying officer whenever required and also by a mechanic based at South Farnborough. His duties were to advise and cooperate with the Office on all questions concerned with atmospheric motions in relation to aviation, but he was mainly to "conduct research or investigations into the structure and properties of the atmosphere in relation to aerial navigation or the use of aircraft in military operations".

Taylor's reports for March and April 1916 show that he had written for a manual a chapter on eddy motions in the atmosphere and begun a chapter on the propagation of sound in the atmosphere. He had also carried out experimental work concerned with the design of bombs and the cooling fins of aeroplane engines. As Professor of Meteorology, he could not be considered a great success, though he did publish an important paper in 1917 on the formation of fog and mist at sea and on land, based partly on work he had carried out on the Atlantic and partly on investigations he had made whilst Professor.⁵ His work at South Farnborough turned out to be more concerned with aircraft performance than aviation meteorology. He left the Office in 1917 and became a meteorological adviser to the RFC.

Taylor returned to the University of Cambridge in October 1919 and remained there for the rest of his career, making outstanding theoretical contributions to fluid and solid mechanics and becoming a world authority on turbulence. He was knighted in 1944.

⁵ Taylor, G I (1917). 'The formation of fog and mist', *Quarterly Journal of the Royal Meteorological Society*, Vol.43, pp.241-268.

JEHUDA NEUMANN MEMORIAL PRIZE

Nominations for the History Group's Jehuda Neumann Memorial Prize are invited. Please send them BY 21 JUNE 2012 to the History Group's Chairman, Malcolm Walker (contact details on page 24 of this newsletter).

The Prize commemorates the work of Professor Jehuda Neumann (1915-1993) on relationships between weather and historical events, and the rules are as follows.

1. The Prize shall be awarded biennially to the person whom the Committee of the Royal Meteorological Society's Specialist Group for the History of Meteorology and Physical Oceanography (or delegated sub-committee) considers to have made the most outstanding contribution to the study of the history of meteorology or physical oceanography during the preceding five years. In exceptional circumstances, at the discretion of the full Committee, this qualifying period may be extended – to recognize, for example, an individual's outstanding contribution over a long period. The award shall not be confined to members of the Royal Meteorological Society or of the Group.
2. The Prize shall usually be awarded for a published paper in the English language, or for an outstanding contribution or contributions to the Group's activities, during the preceding five years. Exceptionally, the period may be extended to recognise long-term meritorious contributions.
3. Nominations for the award, with supporting reasons, should be sent to the Chairman of the Group. A decision will be made by the Committee, or by a designated sub-committee of at least three persons nominated by the Committee.
4. The Prize shall be awarded only if the Committee is satisfied that a sufficiently high standard has been attained.
5. The Prize will be presented at the Awards Dinner of the Society in 2013 and will consist of a prize to the value of £50, together with a certificate and free membership of the Group for five years.
6. No person shall be eligible for a second award.

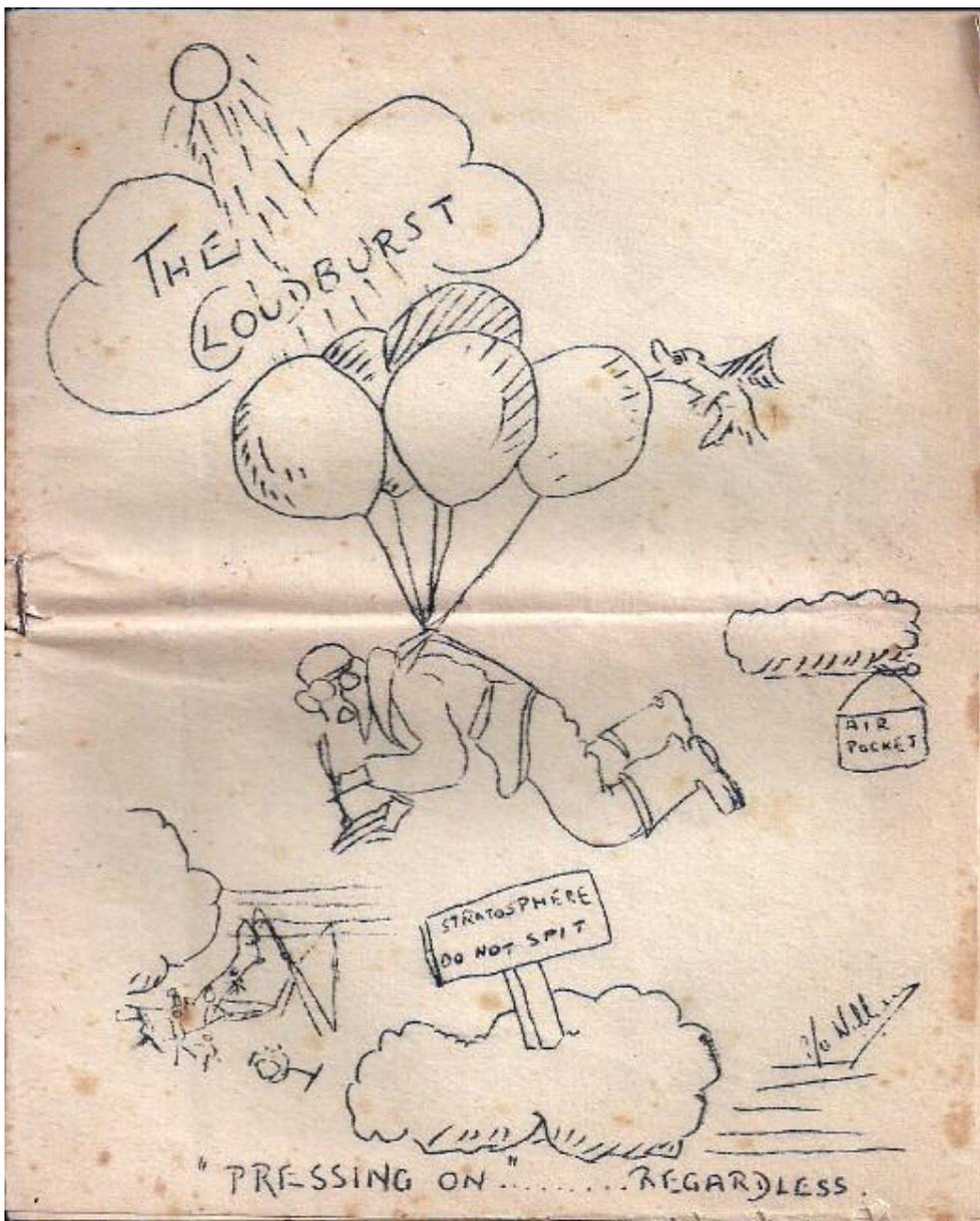
CLOUDBURST

These two pictures were sent in by Brian Booth. They were found amongst the effects of LAC Eric Heath and sent to Brian by Eric's son, Ted.

One picture shows the front cover of *The Cloudburst*, the locally produced magazine of 1565 Met Flight (Nicosia) for February 1946. It must be one of the last issues produced, as the unit disbanded on 30 April 1946. Brian says that the contents are essentially social, with nothing of meteorological interest, but the cover is appropriate to the unit's work.

This cover depicts a pilot who, despite having to abandon his aircraft (1565 was flying Spitfires at the time), is so dedicated to his work that he is continuing to make notes while gently descending to earth attached to meteorological (pilot) balloons. Brian thinks that the "Stratosphere Do not Spit" is meant to imply that a Spitfire should not consider flying that high.

The other picture shows one of the unit's aircraft, a Spitfire Mk VC, number BR 299. Unfortunately, the angle is not ideal as it shows the port side, whereas the instruments were all on the starboard side. Eric Heath was one of the aircraftsmen who serviced BR 299.



THE SHEFFIELD GALE OF 1962

by Philip Eden

One of the most common fallacies in meteorology is that mountain ranges always provide shelter to the region on the lee side of the range. That protection from wind and rain often occurs is not contested, but there are special circumstances when the normal sheltering effect is suspended. On these occasions the wind may be even stronger leeward of the mountains than to windward.

If you lived in Sheffield 50 years ago last month you will certainly recall such an event. Westerly gales swept the entire country during 16 and 17 February 1962, and wind speeds recorded at exposed hilltop and coastal sites were exceptionally high. A gust of 104 knots was measured at Lowther Hill in Lanarkshire, and one of 154 knots at Saxa Vord – a cliff-top location in Shetland – although this latter figure will not be found in the official record books since the site is non-standard.

Between six and seven o'clock in the morning on the 16th the wind in Sheffield averaged over 60 knots, with a peak gust of 84 knots; such a strength of wind is very rare for a relatively low-lying inland site in the UK. In Sheffield alone over 150,000 houses – approaching two-thirds of the city's entire housing stock – were damaged to some degree. Almost 7500 suffered serious structural defects, and 98 were so badly damaged that they had to be demolished. Three people died and about 250 reported to local hospitals with injuries sustained during the gale. Substantial damage was also reported in other West Riding towns and cities on the eastern flank of the Pennines.

Sheffield's wind speeds on that occasion contrasted dramatically with those recorded at Manchester, on the windward side of the Pennine range. Here, the highest mean hourly wind speed was 32 knots and the maximum gust was 56 knots.

The principal cause of this exceptional gale is known as the "resonant lee wave effect". The airstream covering the British Isles on 16 February 1962 had travelled from the sub-tropical Atlantic, having originated some 1500 kilometres southwest of the Azores. It was therefore an unusually warm airflow, although near the Earth's surface it had been cooled by several degrees during its journey across the ocean. This sort of temperature profile suppresses turbulence and the flow of the wind becomes strongly stratified. When such an airflow crosses a mountain range, standing waves are established downwind on the range. You can see similar standing waves in a river, downstream of an obstruction such as a weir. Sheffield lay under a

wave-trough with the airflow "squeezed" – and therefore accelerated – between the base of the trough and the ground beneath.

The destruction of property and toll of casualties were even worse on the other side of the North Sea. The westerly gale combined with a high spring tide to create a huge storm surge in the German Bight during the early hours of 17 February, and high tides were up to 4 metres above predicted values. Dykes were breached and 340 people were drowned in and around Hamburg.

VILHELM BJERKNES (1862-1951)

The obituary of Vilhelm Friman Koren Bjerknes that was published in the July 1951 issue of the *Quarterly Journal of the Royal Meteorological Society* (Vol.77, pp.529-530, written by C.K.M.Douglas) summarized his career thus: "Bjerknes was the last of the great pioneers who created the science of dynamical meteorology. He is best known as the founder and inspirer of the Bergen school of 'frontal' meteorology, but before that period he had already made a number of original contributions of the greatest importance, including the circulation theorems, the construction of contour charts of isobaric surfaces, and the introduction of absolute units of pressure".



Vilhelm Bjerknes and Sir Napier Shaw were good friends and admired each other's work. Invited by Bjerknes, Shaw led a UK Met Office delegation to Bergen in May 1920 to discuss the newly-published ideas on air masses and fronts, and L.F.Richardson was in the delegation, invited by Bjerknes because of their common interest in Numerical Weather Prediction.

Shaw and Lempfert published, in 1906, a magnum opus on 'the life history of surface air currents'. Had this work been developed, the UK Met Office would have beaten the Norwegians to the frontal concept. However, Shaw did not at the time recognize the importance of his work with Lempfert. He failed to appreciate its practical and theoretical importance.

For further information about Vilhelm Bjerknes, see:

Appropriating the weather: Vilhelm Bjerknes and the construction of a modern meteorology, by Robert Marc Friedman (1989, Cornell University Press, 251 pages). Friedman was the first winner of our History Group's Jehuda Neumann Memorial Prize.

continued on next page



'In memory of Vilhelm Bjerknes on the 100th anniversary of his birth', *Geofysiske Publikasjoner Geophysica Norvegica*, (1962, Vol.XXIV, Universitetsforlaget, Oslo, 313 pages).

Also *Obituary Notices of Fellows of the Royal Society*, 1951, Vol.7, No.20, pp.302-317 (written by E.Gold).

BRIEF ENCOUNTERS by Oliver Ashford

"We'll expect you to do some research – but it'll have to be done in your spare time". This is what the then-director of the Met Office, Sir George Simpson, told me in April 1937 on my being posted to be in charge of Lerwick Geophysical Observatory at the tender age of 21. As I was still a bachelor, he also advised me not to 'pig it' in the way that one of my predecessors had done; he thought that I should employ a housekeeper. Simpson was a busy man, deeply involved in preparing the Office to be on a war footing, but he was, nevertheless, quite relaxed and friendly. I did not meet him again until 1944, when he visited Stonehouse, where I was working in the Instruments Branch.⁶ Unfortunately, it was difficult to communicate with him as he had become very hard-of-hearing and was using a microphone and headphones attached to an amplifier, the size and weight of Lady Bracknell's handbag after she had found the baby Ernest at a London railway station.

In the course of my fifteen years in the Met Office and my subsequent 25 years in the World Meteorological Organization (WMO), I met many of the world's leading meteorologists and got to know quite a few personally, but here I will confine myself to a few fellow Brits who are no longer with us.

When Simpson retired in 1938 (he returned to the Office a year later as Superintendent of Kew Observatory), his deputy, Ernest Gold, must have been disappointed not to succeed him. The post was instead given to a somewhat younger man, Nelson Johnson.

My first encounter with Gold was during a visit to Met Office Headquarters in 1942. At Lerwick we had started, within budget and ahead of time, making

radio-sonde and then radio-wind observations. After congratulating me on this double success, Gold asked me if we had had any exceptionally strong upper-wind observations. "Yes", I replied confidently, "last week we recorded 360km/hr". "Really", he responded sharply. "I don't remember that." He then produced tables of the upper-air wind speed for the week in question. My heart sank. I could find nothing above 300km/hr. I turned desperately to the corresponding charts and, with a sigh of relief, called his attention to a day when the 500mb contours were packed closely together. "That must have been the occasion", I claimed. We then went back to the tabulations; they showed a maximum wind speed of only 60km/hr. It was obvious that his staff had made a mistake by forgetting that in those days the codes for wind speed had an upper limit of 300km/hr; winds in excess of this had to be coded by omitting the first digit and adding 50 to the wind direction.

Gold had a reputation of being something of a bully, to such an extent that many of the senior staff were in fear and trembling on being summoned to his office. I hate to think what my relationship with him would have been had I been in error. As it was, we held each other in great respect thereafter, as was evident some years later when we were both members of the Council of the Royal Meteorological Society.

Our last encounter was in 1970, when I had invited Gold to a WMO reception in London, on the occasion of a planning meeting. By then, he was showing signs of his advanced years, dependent on his niece to help him to walk. Thanks to his world-wide reputation, both as a scientist and a valued participant at international meetings, everybody was keen to meet this grand old man. The story goes that at one such meeting he had caused much amusement when, after a speech by a Swedish meteorologist, in broken but intelligible English, he had asked for an English translation.

Like Gold, Johnson also had an international reputation, having served as an excellent chairman at the first session of the WMO Congress in Paris in 1951 and then as a leading member of the WMO Executive Committee (EC). It was during the EC session in 1952 that I got to know him personally. He always addressed the meetings with a quiet voice, but what he said was nevertheless influential. With my wife and 10-year-old daughter, I took him one Sunday for a drive to Chamonix, where he remarked on how much the glaciers had retreated since the days when he had been a keen alpinist. On returning home, he wrote a charming letter of thanks to my daughter. Tragically, suffering from Parkinson's

⁶ This branch of the Met Office was evacuated from London to Stonehouse in Gloucestershire in 1939 and remained there until the end of the War.

disease, he took his own life in 1954, just six months after retiring.

Widely tipped to succeed Johnson was James Martin Stagg, a strong forceful individual with a rather stern manner, conspicuous among the senior staff for the accent of an educated Scot. I was not surprised to learn that he had been my predecessor at Lerwick who, according to Simpson, had rather 'pigged it'. My chief memory of my several encounters with this formidable person dates back to 1945, during one of my four missions to Germany as a 'boffin'. As a Group Captain he was the senior meteorologist working for the occupying forces. In the presence of his deputy, we had a useful and friendly talk about my plans for interviewing German meteorologists who had been involved in developing instruments during the war. The morning passed quickly, and at about 1.30pm his deputy intervened and invited me to lunch in the officers' mess. Stagg glared at him fiercely and almost yelled "That's my privilege".

Also with a reputation like Stagg of having a rather brusque manner and of not suffering fools gladly was Peter Sheppard, whom I first met in 1942 at the Central Forecasting Office in Dunstable, where he was responsible for the whole of the Met Office upper-air programme. I found him, however, much more openly friendly and less tense. These two scientists had over-wintered together in 1932-33 at Fort Rae in northern Canada as part of a six-man team for the Second International Polar Year. I can well believe the tales told to me by another member of the team about their many heated arguments.

Be that as it may, on this occasion Peter invited me, a complete stranger, to spend the night at his home. Together with his charming wife Phyllis, we shared an interest in music and literature and our conversation continued well into the night. Peter and I were also keen bird-watchers and took advantage of breaks during a Royal Meteorological Society conference in Toronto in 1953 to explore the local bird life. We continued to meet at WMO gatherings and in Imperial College, where he became Professor of Meteorology. Unlike some other professors that I know, his lectures were a model of clarity and logical development of the subject.

At our numerous social meetings, my wife and Phyllis became very close friends, and we had been looking forward to seeing more of them when we returned in 1977 to live in England. Unfortunately, Phyllis died in 1976 and there was only one opportunity for him to visit us before his death (in 1977). I well remember our last meal at their attractive home in Seer Green when Phyllis, following a stroke, was only able to walk with great

difficulty aided by a zimmer. Somewhat shocked, I murmured quietly to Peter: "Surely there must be some compensation for growing old and infirm?". "Believe you me, Oliver", he replied, "there isn't". I can only hope that he was wrong.

Note: *Much more about the lives and achievements of Simpson, Gold, Stagg and Sheppard will be found in Malcolm Walker's recently published book 'History of the Meteorological Office', which I can heartily recommend.*

A BRIEF HISTORY OF LYNEHAM METEOROLOGICAL OFFICE – 1942-2011 by Brian Booth

Although a grass airfield was completed at Lyneham during the winter of 1939-1940, it was not until permanent runways were laid in 1942, and the airfield became part of Ferry, later Transport, Command, that a meteorological office was opened in the old control tower. This was east of the N-S runway – immediately opposite the present control tower.

The staff maintained a 24-hour watch and all forecasts were prepared locally. Communications consisted of two teleprinters, which provided just sufficient data for flights to the Mediterranean – provided they were plugged in at the right time. The roster pattern was EM/Ns--, a pattern that persisted until about 1983 when a DNs roster was adopted.

During the autumn of 1947, Met O 6 expressed concern at the excessive hours being worked by the forecasters; this was causing an accumulation of annual leave due to the fact they were unable to take leave as it would be impossible to maintain the 24/7 roster. In retrospect, this implied there were just four forecasters plus the Senior Met Officer. To resolve the difficulty, the office ran a trial whereby forecaster cover was withdrawn from 1300 hours Saturday to 1430 hours Sunday. The sting in the tail was that a forecaster had to be nominated for call-in



Lyneham enclosure, early 1960s

should the need arise, although no on-call payment was authorised. There is no record of the outcome, but 24/7 cover was later reinstated.

In 1961 the observing office joined ATC in the present control tower, whilst the forecast office transferred to very spacious accommodation in the newly built terminal building. The move resulted in an increase in staff numbers to 24, of whom 16 were assistants, two supervisors, five forecasters and an SMetO to make tea, making it probably the largest airfield met office in the UK.

The accommodation in the terminal building consisted of a very large forecast room, the SMetO's office, next to which was the communications room which, by 1970, boasted four or five MUFAXs and a similar number of teleprinters. The supervisor had a separate office – which was converted into the kitchen/rest room around 1986.



*Lyneham forecast office, mid-1960s.
The entrance was to the right of the picture.*

During the 1950s, responsibility for preparing route forecasts remained with the Lyneham forecasters, although in the case of international flights they first conferred with both Gloucester and Upavon met offices, but following the move to the new office the conferences ceased. These locally produced forecasts were presented in cross-section format



Ron Churchill briefing a crew, circa 1965.

until about 1968, when Upavon started the routine issue of SIG WX and spot wind for all overseas flights.

After World War II, Lyneham increasingly became the military version of London Airport in that the majority of flights involved transporting troops and their families from and to the UK, but this began to change in 1968 with the arrival of the Hercules, and after this forecasts were increasingly slanted towards strategic and tactical exercises – especially if they included parachute operations.

It serves no purpose to list all the squadrons and units that used the met office, but 1409 Met Flight was based at Lyneham for about eight months from October 1945 to May 1946. During the war, the unit had flown PAMPA sorties over the continent ahead of raids by Bomber Command, but in its peacetime role it flew long range met reconnaissance sorties along developing civil airline routes.

In 1982, the office was selected to trial the first development version of what would evolve into the automated display systems used today. Known as the Remote Outstations Automated System (ROAST), it was simply a black and white terminal which displayed observations and TAFs on demand, plus leg winds. Whilst it sounds basic, it was a vast improvement over having to wade through reams of teleprinter paper. There was also an additional feed to a separate terminal from the Radar Research Establishment at Malvern, which displayed either rainfall or satellite imagery. Later, a satellite dish was erected on the roof of the terminal building, allowing the direct acquisition of Meteosat and Polar Orbiter imagery. The setup proved very useful during and after the Falklands War.

1983 saw a visit from the new Director-General, Dr John Houghton, so that he could see this marvellous piece of kit in action. His visit included a two hour low-level trip on a Hercules into Wales, finishing off with a low-level stores drop at South Cerney. We, that's myself, Dr Houghton and Ivan Potheary (Assistant Director of Met O 6), watched the stores delivery from the cargo hold with the Load Master explaining what was happening. The first drop from 250ft went as planned, but as the second load started moving the LM swore loudly, pushed us unceremoniously aside and did something to the release equipment. I never found out what happened, but Dr Houghton still doesn't know he was nearly the shortest serving Director-General on record.

In its time, Lyneham was responsible for the meteorological requirements of a number of satellite airfields, including South Marston,

Hullavington, Keevil, Wroughton and Kemble – the latter being the base of the Red Arrows. In fact, Lyneham staff, both forecasters and assistants, manned Kemble whenever the Red Arrows were flying. It was quite a nice little break from the Lyneham routine, especially as every attendance was deemed a detachment – which meant mileage and subsistence could be claimed!

The biggest bind of the 1970s and '80s were the five-day TACEVAL security exercises when the camp was effectively sealed off. The object of these was to test the RAF's response to attacks by insurgents and raids by 'enemy' aircraft dropping nuclear weapons or biological and chemical agents. Guards would patrol in their Goon suits (NBC kit) with rifles at the ready, challenging anyone they thought looked suspicious – and that usually meant civilians.

The assistants on night duty in the tower probably had the worst of it. The 'enemy' was tasked with creating as much mayhem as possible under the cover of darkness, and although the ATC complex was technically out of bounds this didn't stop assistants being ambushed on their way to the screen for observations. I use 'ambush' advisedly as the 'enemy' did not use kid gloves.

As the Senior Met Officer from 1981 to 1985, my greatest regret was the loss of Lyneham's public service commitment in 1983. Over the years, both Lyneham and Upavon had been actively encouraged to develop relationships with the general public, and both offices had developed a pretty good reputation, so much so that dedicated telephone lines were installed for the task. By 1983, Lyneham was handling around 40,000 enquires a year, whilst Upavon was approaching the quarter of a million mark. Unfortunately, Bristol Weather Centre, which had been opened with much fanfare two years previously, was receiving very few enquires (one reason, according to our customers, being the telephones were never answered). To boost the Weather Centre's trade, our public service commitment was withdrawn and the BT lines removed – almost overnight and with very little warning.

It is doubtful if there has been a major military or humanitarian operation in which Lyneham's squadrons, and hence its meteorological office, have not been involved, but there were times when the staff wondered what real impact they made in the great scheme of things over the years. The answer, for anyone who cares to look, can be found on a small piece of paper tucked between the pages of one of the early (1943?) Daily Registers. It's a 'memo' from ATC which reads:

Met, Wake ATC at 0530 hours for inbound Liberator.

Oh yes, the met office certainly provided a valuable service.

The office closed in early July 2011, after 69 years of support for the RAF.

THE METEOROLOGY AND CLOUD PHOTOGRAPHY OF CHARLES PIAZZI SMYTH by Howard Oliver

Born in Naples in 1819, Charles Piazzì Smyth became one of the most colourful and respected 19th century personalities of British science. He was famed as an astronomer (he was indeed Astronomer Royal for Scotland), surveyor, metrologist, pioneer, artist and traveller, but was also a keen amateur meteorologist and photographer.

Being based in the area, he became a leading member of the Edinburgh Photographic Society. In the 1870s, he designed a cloud camera that produced cloud images on small glass plates. At the 1876 exhibition, he won a silver medal for apparatus, sharing the distinction with Henry Fox Talbot. All his life he had enjoyed looking at skylscapes, sunsets and storms etc with their endless variety of colours and combinations of shapes. He believed that photographs of different cloud formations were greatly superior to merely verbal descriptions and that the systematic study of them "could not fail to provide a scientific basis for weather forecasting". He correctly maintained that no two clouds were ever exactly the same, because exactly the same weather circumstances can never recur, and suggested the use of photography as a serious tool for meteorological research.

THE 1890s CLOUD PHOTOGRAPH ALBUMS

Towards the end of his life, Smyth found more time to concentrate on his interest in cloud photography and weather observation. In the early 1890s, he moved with his ailing wife, who had been a weather observer herself in the past, to the clear air of Ripon, and it was here that he carried out his extensive photographic and meteorological work.

Smyth constructed his cloud camera using a lens of 1.7" diameter and 14" focal length (which had been given to him 30 years before for copying Egyptian photographs he had just made). With the help of his assistant, Mr Close, he obtained over 500 photographs of cloud formations on 3" square glass plates associated with all kinds of weather conditions covering the period 1892-94.

Each image was accompanied by a comprehensive form which recorded precise details of the photograph as well as the weather details and any other observations of interest at the time. In addition, over a similar period, he maintained a meticulous daily log of meteorological observations made at his house (named *Clova*). Towards the end of his life he presented three massive albums containing the documented images to the Royal Society in London. He also presented another set, including the negatives, to The Royal Society in Edinburgh, which are now held in its Royal Observatory, together with a range of his other meteorological publications.

With the much appreciated support of Joanna Corden, librarian and archivist at the Royal Society in London, I found that their three albums were also still in existence and was allowed to examine them and make digital photographs by using natural light from a window of the library. The paper enlargements in the albums are mounted on thin card and some have warped or faded, but it was still possible to obtain a useful record of the contents. I also discovered that bound within the albums was a continuous meteorological record covering the period January 1892 to June 1895 (with the exception, which he deeply regretted, of about three weeks when he had to be away at a "health-seeking visit to Harrogate").

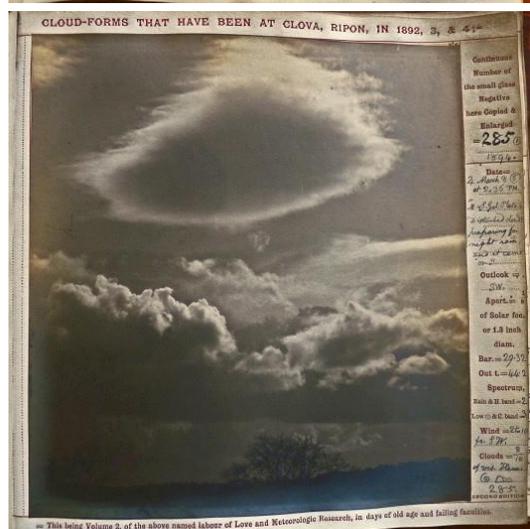
I was able to photograph most of the better photographs and their associated details together with introductory and comment sections and the entire set of the meteorological records. I now have all of these pages as jpeg images. Some are better quality than others, due to the problems of photographing them in the limited available light, but all are acceptable for transcription or data extraction as required. The observations include atmospheric pressure and detailed records of cloud types.

Some time previously, Smyth had discovered that whichever direction he had pointed his pocket spectroscope into the air he observed a darker band on the red side of the sodium absorption line indicating the presence of water vapour in the atmosphere. He developed the observation of this 'rainband' as a potential forecasting tool, grading the band intensity between 1 and 10. Two versions of such indices were included in the meteorological data sets.

Even though by this date many other photographic records of clouds, and even the first more comprehensive atlases of cloud types, were being developed, Smyth's work still represents a unique and important record for the period of cloud formations properly associated with the exact meteorological conditions at the time. The

meteorological data set has potential for further historical weather studies.

The Royal Society has kindly granted permission for any images to be published and the album contents to be used for scientific research so long as their origin is acknowledged. Some examples are shown below and on page 14.



Cloud forms at Clova in 1892

January 1892. Instrumentals normally read between 8.10 & 8.30 each day.

Date	BAROM. ¹⁰⁰ In. ₃₀₄	THERMOM. ¹⁰⁰		Spectrosc. Rain Low	WIND Vel. Direct.	EARTH 1. dry 2. wet 3. snow 4. fog	AIR 1. cl. 2. fog 3. fog 4. fog	CLOUD 10. of 10. of 10. of 10. of	Sun. Shine		RAIN		NIGHT Cal. day number	Notes to Com. Cont. No.
		In. _{Fah.}	Out. _{Fah.}						A.M.	P.M.	A.M.	P.M.		
1 29.64	59.0	37.3	1	7	3	NW	dry	cl.	1	000000			01	
2 29.95	58.0	40.0	2	5	8	W	dry	cl.	9	000000			02	
3 29.82	59.5	34.1	0	7	5	NW	dry	cl.	0	000000			03	
4 29.42	57.6	31.2	0	8	3	NW	dry	cl.	5	000000			04	
5 29.56	56.0	37.5	2	3	3	SW	wet	hg.	10	000000			05	
6 29.12	56.4	30.3	0	6	5	N	dry	cl.	3	000000			06	
7 29.18	55.4	31.0	1	5	3	NW	snow	hg.	10	000000			07	
8 29.19	55.0	31.0	0	7	1	NW	snow	cl.	9	000000			08	
9 29.37	55.6	29.5	3	6	1	N	snow	cl.	7	000000			09	
10 29.53	55.6	27.6	3	5	1	NE	snow	cl.	5 to 10	000000			10	
11 29.85	54.0	32.3	2	6	2	N	snow	cl.	8	000000			11	
12 29.70	54.8	37.0	3	6	0		snow	cl.	10	000000			12	
13 29.66	57.0	33.0	1	4	1	NW	snow	hg.	10	000000			13	
14 29.37	54.5	31.0	2	4	3	SW	snow	md.	10	000000			14	
15 29.38	55.2	29.5	2	5	0		snow	fog	10	000000			15	
16 29.37	55.3	21.5	7	4	0		snow	fog	10	000000			16	
17 29.54	52.8	31.5	2	4	7	SW	snow	md.	10	000000			17	
18 29.68	54.5	35.0	2	5	2	SW	snow	md.	10	000000			18	
19 29.77	55.2	35.0	2	4	1	SE	snow	fog	10	000000			19	
20 29.77	54.4	33.3	2	4	1	SE	snow	fog	10	000000			20	
21 29.82	55.4	24.5	10	3	1	SE	snow	fog	10	000000			21	
22 29.63	56.5	36.8	1	3	1	SW	snow	md.	10	000000			22	
23 29.78	57.2	35.2	2	5	0		snow	fog	10	000000			23	
24 29.90	57.2	39.5	1	6	1	NW	snow	cl.	1	000000			24	
25 30.25	59.0	35.5	0	7	2	NW	dry	cl.	1	000000			25	
26 30.20	59.3	40.4	2	7	4	W	dry	cl.	8	000000			26	
27 29.82	61.0	46.5	2	4	2	SW	wet	md.	9	000000			27	
28 29.98	57.5	39.4	2	7	5	W	dry	hg.	8	000000			28	
29 29.78	59.4	50.8	3	4	10	W	wet	cl.	10	000000			29	
30 29.92	60.0	47.0	2	5	7	W	wet	cl.	5	000000			30	
31 29.92	60.0	41.4	1	6	2	NW	dry	cl.	3	000000			31	

Jan. 1st, 3rd, & 6th. Described as days of most brilliant sunshine & perfect blue sky.
 From Jan. 7 to Jan. 23, a period of most unusual cloud, snow, darkness & fog.
 Sun appears again for a day, but is followed by heavy frost, rain, & darkness again.
 Snow below 30.00 on 29 days; above only on 2.

Charles Piazzi Smyth's meteorological observations January 1892 (above), June 1893 (below).

FURTHER READING

The Life of Charles Piazzi Smyth: The Peripatetic Astronomer, by H.A and M.T. Bruck, published by Adam Hilger (for the Institute of Physics), 1988.

CONCLUDING NOTE FROM HOWARD OLIVER

This article is an adapted extract from my Royal Photographic Society dissertation entitled Airborne Cloud Photography in WW1 in the Context of the History of Cloud Imagery, for which I recently gained an LRPS.

June, 1893. Instrumentals normally read between 8.10 & 8.30 A.M. each day.

Date	BAROM. ¹⁰⁰ In. ₃₀₄	THERMOM. ¹⁰⁰		Spectrosc. Rain Low	WIND Vel. Direct.	EARTH 1. dry 2. wet 3. snow 4. fog	AIR 1. cl. 2. fog 3. fog 4. fog	CLOUD 10. of 10. of 10. of 10. of	Sun. Shine		RAIN		NIGHT Cal. day number	Notes to Com. Cont. No.
		In. _{Fah.}	Out. _{Fah.}						A.M.	P.M.	A.M.	P.M.		
1 29.02	60.8	60.3	3	1	3	NE	dry	cl.	10	000000			21	
2 29.24	61.0	52.9	1	1	0	NE	wet	ms	10-8	000000			22	
3 29.83	62.2	52.2	1	2	0	SEW	dry	hg	10	000000			23	
4 29.98	63.7	63.8	3	2	1	W	wet	cl.	8 to 2	000000			24	
5 30.10	64.0	59.5	3	2	2	N	dry	cl.	3 to 0	000000			25	154
6 30.22	64.7	51.0	1	1	2	N	dry	md	10	000000			26	155
7 30.22	65.0	60.7	2	1	1	N	dry	hg	6 to 7	000000			27	
8 30.33	65.8	56.0	2	1	1	N, NE	dry	ms	5 to 8	000000			28	
9 30.33	66.2	52.5	2	1	0	NE	dry	fog.	10	000000			29	
10 30.34	65.3	54.2	2	2	1	NE	dry	hg.	10 to 9	000000			30	
11 30.23	64.2	54.3	1	1	2	NE	dry	md.	9 to 7	000000			31	
12 30.13	64.9	56.0	1	1	1	NE	dry	hg.	10	000000			32	158
13 30.03	65.7	57.8	2	1	0	SE	dry	hg	10 to 2	000000			33	
14 29.96	65.4	53.2	1	1	0	SE	dry	ms	10 to 3	000000			34	
15 29.98	66.0	58.5	2	1	0	NE	dry	hg	0	000000			35	
16 30.10	70.3	68.5	3	1	2	N	dry	cl.	0	000000			36	
17 30.18	72.0	69.6	3	2	0	N	dry	cl.	0 to 3	000000			37	
18 30.34	73.8	69.0	2	1	1	N	dry	hg	0	000000			38	
19 29.97	75.4	72.7	2	1	0 to 10	SE, N	dry	cl.	0 to 10	000000			39	
20 29.67	72.8	59.5	2	1	1	NE	dry	hg	10 to 8	000000			40	
21 29.83	70.0	59.2	2	1	0	N	dry	cl.	10	000000			41	
22 29.55	68.3	58.5	2	0	0	N, W	dry	ms	9	000000			42	159
23 29.18	66.8	57.3	4	2	0	W	wet	cl.	9 to 10	000000			43	159
24 29.33	64.0	54.2	4	2	12	N	wet	cl.	10	000000			44	159
25 29.58	63.3	54.8	2	1	16 to 12	W, SE, W	wet	cl.	10 to 4	000000			45	160
26 29.70	63.5	60.8	4	2	2	SW	dry	cl.	5 to 9	000000			46	162
27 29.42	64.4	62.0	4	2	7	SW	wet	hg.	8	000000			47	
28 29.37	66.8	64.2	4	2	10	N	dry	hg	8 to 10	000000			48	163
29 29.71	66.5	59.4	3	2	5	N, W	wet	cl.	10 to 5	000000			49	164
30 30.13	66.5	57.5	3	2	0	NW	dry	cl.	0	000000			50	

Exciting some rain at the beginning, & some at the end of the month, all the middle & major part of it was used in the extreme intense part of an almost unprecedented high mean temperature of 72.4 on June 19. It is a favorable change for moisture and probably some on toward the end of the month great part of the water, springs & supplies all over the country might have been dried up.

EXPO IN FLORENCE

From Anita McConnell:

"Graziano Ferrari tells me that he is very busy organizing a big exposition in Florence (10 January to 31 March 2013) on meteorology and seismology in Florence from the 19th century up to today. He will exhibit about 100 instruments, 50 of them seismic instruments from 1 kg to 1.3 ton. Some instruments will come from Coimbra, Athens and Barcelona. He (or presumably Istituto Nazionale di Geofisica e Vulcanologia) are restoring the most part of them. Between the seismic instruments there is also a Gray Milne that we are restoring. There will be a catalogue in Italian and English and they are making 3D photographs and videos of the historical instruments in operation. After Florence, the exposition could be installed in Barcelona, Lisbon and Naples."

THE BRITISH ANTARCTIC EXPEDITION (BAE) 1910-1913: THE METEOROLOGICAL VIEW – PART VI by Alan Heasman

In Part V of this series (Newsletter 3, 2011), we left Scott and seven colleagues at the top of the Beardmore Glacier in late December 1911. Having abandoned ponies and dogs back on the Ross Ice Barrier, everything now depended on the strenuous 'man-hauling' of the heavy sledges. Scott and his men were on the polar plateau at an altitude of some 9000ft. Altitude had been measured using two aneroid barometers and a hypsometer (a thermometer designed to show the boiling point of water which falls with increasing altitude) but unfortunately this was broken on 27 December. Temperatures on the plateau were minus 5 to minus 20°F, 'warmer' than on the Barrier but the teams were still plagued with poor snow and ice surfaces making the hauling even more difficult.

On the 3 January 1912, the last support team turned back. Unexpectedly, Scott announced that five men would go forward to the South Pole instead of the anticipated four. As they only had one four-man tent, this posed extra strain and took more fuel and more time to cook for five. This would become a telling factor in their ultimate survival.

They trudged on. Although the plateau was generally much 'flatter', they were slowed by sastrugi, the hard icy ridges, carved by the variable but relentless wind. Temperatures were generally minus 20°F but sometimes rose to just below 0°F. Ice crystals clogged the runners on the skis and sledges. Visibility was poor in this white featureless land. Scott recorded "...it is difficult to imagine what is happening to the weather ... the clouds don't seem to come from anywhere [and] form or disperse without visible reason".

On 17 January they reached the Pole to discover that Amundsen had been there on 15 December and was thus well on the way 'home' by a different route. Scott was nearly four weeks behind his target date of 22 December for the Pole. At the Pole, Scott again commented on the weather as "very curious; snow clouds ... pass overhead from the South [*a tricky concept so near to the Pole*] dropping minute ice crystals". Temperatures were minus 15 to minus 25°F with a steady wind.

The team set out on 18 January 1912 to face another gruelling 800 miles towards 'home' via the top of the Beardmore Glacier, aided somewhat by a following wind. Although still true to the BAE's scientific aims, they arguably 'wasted' time

collecting 35lbs of geological specimens, which added to their burden. They got lost in the crevasses of the glacier and arrived back on the Ice Barrier desperately weak. On 17 February, Edgar Evans, having been unwell, died.

At first, general conditions on the Barrier were not too bad; temperatures were minus 10°F or so. The men found a supply depot but the fuel stock had leaked from its cans, probably due to the persistent sub-zero temperatures. Then, as the polar winter began to set in, temperatures fell sharply to minus 30° by 27 February and to minus 40°F by 1st March. Amazingly, they still managed to slog 10 to 12 miles each day. Then Oates revealed his badly frost-bitten feet and progress slowed. They reached another depot, expecting it to have been 'topped up' by a relief party who might even have been waiting there with dog teams but 'no', that party had stopped short at One Ton Camp. They had waited a few days then, believing that the Polar party may have already perished, returned to base. Temperatures were still minus 30 to 40°F with a strong wind.

On 11 March the final formal weather observations were entered by 'Birdie' Bowers in the Polar Party's meteorological log, but Scott continued to note the general weather in his personal diary. On 16/17 March, Oates famously left the tent and vanished in the blizzard. By 21 March, the remaining three made their final camp. Confined to their tent for days by howling winds and the persistent minus 40°F temperatures, Scott, Bowers and Wilson died on or about 29 March 1912, eleven miles from the One Ton Camp.

It is generally accepted now that winter sets in particularly quickly on the Barrier by mid to late March. Even so, the persistent severe weather recorded by the team does appear to have been unusual, if not exceptional, and would have tested far fitter men. Much later, when George Simpson examined the Polar Party's weather records he concluded "...these low temperatures on the Barrier so early in the year were entirely unexpected and have no parallel in either the north or south polar regions".

So, what of the rest of the BAE? In Part V, we left the Northern Party (recently removed from their year-long stay at Cape Adare) exploring part of Victoria Land for a few weeks of the polar summer, expecting to be collected by the BAE ship *Terra Nova*. Cruelly, pack ice stopped the ship from returning. The six men just had the remains of their fuel, rations and only summer tents with which to face another polar winter. They quickly killed as many seals as they could for food and 'blubber' fuel before the sea fully froze. They famously excavated

an ice cave to live in as winter arrived. Their tale will be told in Part VII.

Terra Nova reached Cape Evans HQ on 4 February 1912, bringing the first news from the outside world since January 1911. From a letter, George Simpson, the BAE meteorologist who had been at the base since Scott's teams had left the previous November, learned that Gilbert Walker, his boss in the India Meteorological Department, was ill. Simpson felt obliged to return to his normal duties. He sailed on the *Terra Nova* on 25 February 1912, taking with him all the available meteorological results of the first year of the BAE. He left the remaining scientific staff to make the weather and geophysical observations for the remainder of the expedition. Simpson met his previous undertaking and ensured that the results thus far were passed to the Commonwealth Meteorologist in Australia for initial examination. The BAE records were later sent to Simpson in India for detailed analysis. *Terra Nova* had left Cape Evans for New Zealand before the expected return date of Scott from the Pole, so news of tragedy remained in the Antarctic for almost another year. By April 1912, those at Cape Evans had to finally accept that the Polar Party had perished – but when and where?

FOUNDER MEMBER OF THE BRITISH METEOROLOGICAL SOCIETY

The cutting in the right-hand column was sent in by History Group member John Wilson. It features Edward Joseph Lowe and appeared in the *Nottingham Post* on Saturday 3 December 2011.

Lowe was born in 1825 at Highfield House, near Nottingham. He began to make meteorological observations there when he was 15 years of age and continued to do so until 1882, when he removed to Chepstow, Monmouthshire. He published *A Treatise on Atmospheric Phenomena* in 1846 and also wrote several papers on meteors and fireballs. He observed the solar eclipse of 1860 near Santander in northern Spain and during it made a series of meteorological observations, among them measurements of temperature at various heights above the ground. He was an authority not only on meteorology but also on ferns, grasses and conchology. He was a Fellow of the Royal Society and also a Fellow of the Linnaean, Zoological, Geological and Royal Astronomical Societies. He died at his residence (Shirenewton Hall, Monmouthshire) on 10 March 1900, by coincidence the same day that George James Symons passed away. Symons was, of

Plaque honours famed scientist

A BLUE plaque commemorating the life and work of one of Notts' most eminent scientists will be unveiled at his former home.

Edward Joseph Lowe was an astronomer, botanist and founder member of the Royal Meteorological Society.

His scientific observations helped to shape understanding of the earth's atmosphere.

The plaque is the result of a campaign by civic and historical societies and has been funded by the University of Nottingham.

It will be unveiled at Broadgate House, Broadgate, Beeston, the home and observatory built by Mr Lowe in the early 1850s.

University vice-chancellor Professor David Greenaway said: "We are extremely proud of our close connections with Edward Joseph Lowe, one of Nottingham's most eminent scientists, and are delighted that we can play a part in commemorating his contribution in this way.

"Lowe's quest for knowledge and scientific endeavour are among the cornerstones of the university which has made its home on the area of parkland where Lowe spent so much of his life."

Mr Lowe became well known after publishing studies on astronomy and weather-related phenomena.

His papers included meteorological observations made during a solar eclipse in 1860.

The plaque has been spearheaded by the Beeston and District Civic Society in collaboration with Beeston and District Local History Society, the Stapleford and District Local History Society and the Bramcote Conservation Society.

course, the founder of the British Rainfall Organization.

Edward Joseph Lowe was a son of Alfred Lowe (1789-1856) and brother of Captain (later Colonel) Arthur Swann Howard Lowe (1826-1888) who both joined the British Meteorological Society on 7 May 1850.

For an obituary of Edward Lowe, see the *Quarterly Journal of the Royal Meteorological Society*, 1901, Volume 27, page 220. For an obituary of Alfred Lowe, see the *Report of the Council of the British Meteorological Society* read at the Seventh Annual General Meeting, 27 May 1857, pages 5-6. For an obituary of Arthur Lowe, see the *Quarterly Journal of the Royal Meteorological Society*, 1889, Volume 15, page 89. Alfred made meteorological observations at Highfield House until ten days before his death (which occurred on 10 August 1856). He was a keen astronomer and built an observatory, and he also grew rare and exotic plants in the grounds of his house. He was a Justice of the Peace for the County of Nottingham.

UNsung HEROES OF METEOROLOGY

by Alan Heasman

For those readers who have already been lucky enough to own or have access to a copy of the newly-published *History of the Meteorological Office* by Malcolm Walker, a search of the index will reveal six page references to 'Richard Strachan'.

In March 1999, when I was managing the National Meteorological Library (NML), I received a letter from a man who was researching his family's history and was seeking "... information on the career of Richard Strachan ... employed as a clerk in the Met Office in the 1880s ...". A quick check of the reports of the Office at that period soon revealed his name in connection with a publication. So I checked the meticulous index of the NML, built up since the very earliest days of the Office. I was surprised to find some 30 or so publications under his name ranging from the 1860s to the early 1900s and covering a wide spectrum of meteorology. So there was more to Richard than the title 'clerk' might imply. As time has passed, even more has come to light.

Richard was born in London in 1835 and started at the Greenwich Nautical School in 1845.⁷ He must have impressed, because, in 1850, he became a 'pupil teacher' at the school, which had a high reputation for teaching science. Its headmaster was

⁷ Richard's father, Thomas Strachan, was a seaman aboard HMS *Victory* at Trafalgar.

Edward Hughes (see below). In 1855, Richard obtained his Ships' Master Certificate at the highest grade and joined the Board of Trade (BoT) as Master of Navigation teaching at the Navigation School in Poplar, London, where seamen received practical and spiritual assistance.

In that same year, Captain Robert FitzRoy was establishing the BoT's new Meteorological Department, which had been formed the previous year. Its key aim was to encourage ships' masters to record wind, pressure, air and sea temperature, and ocean currents, and return the data to London for analysis.

FitzRoy and the BoT needed to supply good-quality instruments to the ships via agents at the main ports. The busiest agency was the Port of London, and the BoT appointed Edward Hughes (see above) as agent. He, in turn, chose as his assistant Richard Strachan, who conveniently lived at the Sailors' Home in the docks. It was to his home that the instruments etc. were sent and Richard delivered them to the ships. They shared a fee of 50 shillings for each ship so supplied.

In 1857, Richard successfully applied to the BoT for a post as Head of Chronometer Testing, based at London Bridge. By 1858, unfortunately, the BoT planned to shed that post. FitzRoy suggested amalgamating that testing with his own testing of barometers etc. in a base at London Docks with Richard as its Head. The BoT rejected the proposal, but FitzRoy did not want to lose Richard's expertise, so, after some persuasion, the BoT agreed to Richard joining the Meteorological Department as an extra 'clerk' in August 1858 on a wage of 30 shillings per week with a pension because he was then a 'civil servant'. FitzRoy had had Patrickson, Babington and Townsend as clerks since 1855.

FitzRoy asked Richard to "take on the subject of oceanic currents and tides as his speciality". Richard also maintained his work as the agent for the ships' instruments. These activities brought him in close contact with FitzRoy's so-called 'optician' (a term then also used for those skilled in instrument making) George James Stebbing. Sadly, Stebbing died in summer 1859. FitzRoy readily appointed Richard Strachan as successor 'optician' because of his understanding of the application of the instruments, but FitzRoy left the calibration, repairs etc, to the manufacturers. Thus, Richard took charge of the meteorological instruments and became more generally involved in meteorology.

By 1862, Richard was recorded in FitzRoy's second 'Report of the Meteorological Department of the BoT' as being "... in charge of the meteorological

instruments and optician's duties ..." and on a salary of £161 0s 4d per year.

Richard's enthusiasm for general meteorology (undoubtedly stimulated by FitzRoy) must have grown because (according to Richard's obituary in the *Quarterly Journal of the Royal Meteorological Society* in 1924) by 1864 he had initiated and edited a new monthly *Meteorological Magazine*, published and printed by Messrs 'Williams and Strahan'. This 'Strahan' (without the 'c') was Richard's elder brother William. Sadly, it appears that only four editions (April – July 1864) of this ground-breaking magazine were published. Copies of the April, May and July issues are held in the National Meteorological Archive at Exeter; that for June is missing.

There is no evidence in these magazines that they were published under the authority of the Meteorological Department or the BoT. Robert FitzRoy himself contributed one of the early articles, so Richard had support from his 'boss'. So it is probable that it was a private venture by Richard or his brother. The magazine, priced at 6 pence, invited subscriptions of 6 shillings for 12 months. It may have ceased so quickly because of lack of early sales or finance or perhaps his initiative was frowned upon by the BoT as a 'conflict of interest' with his professional duties. Of course its wonderfully alliterative title was soon to reappear as *Symons's Meteorological Magazine* from 1866 to 1919 and continued under the title *Meteorological Magazine* (published by the Meteorological Office/HMSO) from 1920 until 1993. So, arguably, Richard Strachan, rather than Symons, should be given credit for the initial conception of this influential magazine.

In one of those early 'Met Mags', there is an advertisement for a 'Portable Meteorological Register and Note Book ... and Weather Diagrams', also published/printed by Williams & Strahan. Also in Negretti & Zambra's *Treatise on Meteorological Instruments* (1864), there is a similar advertisement by the same publisher/printer. These suggest that somebody with meteorological expertise, most likely Richard Strachan, was involved. In 1868, a twenty page leaflet 'Principles of Weather Forecasts and Storm Prediction' was published by Williams & Strahan showing Richard Strachan as author. Also, he joined the Meteorological Society in 1865 and remained a Fellow for nearly 60 years. All this suggests that Richard was active in meteorology beyond his main office duties.

He survived the controversy and upheaval which affected the Meteorological Department following FitzRoy's death in 1865 and, although he failed in his application for Chief Clerk, he was appointed as 'Second Senior Clerk' when the renamed

'Meteorological Office' emerged in 1867. He moved with the Office when it relocated to premises at 116 (later re-numbered 63) Victoria Street, Westminster in 1869. He continued to be mainly in charge of the meteorological instruments and that led him to either write or significantly contribute towards several guides on that and allied subjects. Some were published through the Meteorological Office and many more appeared in the *Quarterly Journal of the Meteorological Society* (later *Royal Met. Soc.*). In 1879, Richard was given full credit (and an honorarium) by R.H.Scott (effectively the Head of the Met Office from 1877 to 1900) for writing the five parts of 'Contributions to our knowledge of the Arctic regions' published by the Meteorological Council, followed later by a similar publication covering the Antarctic.

In A.T.Bench's wonderfully evocative 'Reminiscences of the Meteorological Office 1898-1910' (*Meteorological Magazine*, Vol.110, 1981), he described Richard Strachan (in about 1898/1900 and still in charge of instruments) as "...a small wiry old man, almost entirely bald, with a very rasping voice". Despite further changes to its management over the years, Richard had remained working in the Office until, age 65, he was forced to retire in 1900. Apparently he tried hard to remain working but could not overturn the rules in place at that time. He was awarded an annuity of just £150pa after some 40+ years of illustrious service to meteorology.

Richard continued to publish weather-related articles. Many of these appeared in the *Horological Journal*, for which he was editor for a few years, and in the *QJRMetS*. Aged 75, he was joint author of a 70-page booklet concerning the *Basis of Evaporation; the temperature of the seas around the British Isles; and the climate of Ireland*. His last publication seems to have been 'Temperature in the Deep Sea', which was published in 1915 in the *English Mechanic*, when he was 80. He was still participating in Royal Meteorological Society meetings two years prior to his death. He died on 20 April 1924, aged nearly 90. He was the last member of the staff who had worked with FitzRoy.

I am indebted to a member of the Strachan family, Garry Strachan, for allowing me access to part (mainly 1835 to 1860) of his detailed biography of Richard's life researched and written by Garry for Strachan family history purposes. It was Garry's initial request to the NML in 1999 that revealed the career of this 'unsung hero' of the early days of the Meteorological Office. My thanks also to Joan Self at the National Meteorological Archive for extra information about the 1864 *Met Mags*.

CENTIGRADE, CELSIUS OR FAHRENHEIT by Malcolm Walker

Fifty years ago, in January 1962, the Met Office began to use degrees centigrade in weather information for the public. Here, in brief, is the story of this change, taken almost verbatim from pages 354 to 356 of my book *History of the Meteorological Office*, published by Cambridge University Press in December 2011.

By the early 1960s, the Meteorological Office had become respected around the world for its scientific and technological capabilities and the progress it had made towards realizing Richardson's dream of forecasting the weather by mathematical methodology. It had also long been a leading member of the international meteorological community. And yet, an international issue remained unresolved. The universal use of the metric system in meteorology had been opposed by the Office's Director at Leipzig in 1872 and the matter had continued to simmer. A partial introduction of the system in the Office had come just before the Great War, when there had been a change from inches to millimetres for measuring rainfall and inches to millibars for recording barometric pressure, but the Office and the British public had continued to use the Fahrenheit scale of temperature.

A move to clear up the matter came in 1953, when the Executive Committee of the World Meteorological Organization (WMO) decided that degrees Celsius should be used for coding temperatures in all upper-air reports; and another move came in 1955, when the Second WMO

Congress passed a resolution that, in principle, the metric system be adopted for all international exchanges of meteorological information. The Third WMO Congress, in 1959, resolved that meteorological services which had still not adopted the metric system fully should do so, at least in coded messages for international exchanges, at some time in the period 1959 to 1963.



*Budding meteorologist!
Today's History Group
Chairman with thermometer,
August 1949.*

The Meteorological Office acted on the 1953 decision in 1956, thereafter using degrees Celsius in all communications to aircraft, but the 1955 resolution was disregarded. The 1959 resolution was, however, implemented. The Office adopted Celsius for almost all internal and international purposes, thus coming into line with the great majority of other countries and with most scientific bodies in the UK.⁸ The change took effect on 1 January 1961, but still not for the public, for whom the Office continued to use degrees Fahrenheit.

The desirability of using Celsius in weather information for the public was, however, considered by the Office, but before making any change they decided to seek the views of industry, public utilities and the leading technical and scientific bodies, as well as the views of the principal makers of thermometers. They put to them a proposal that Celsius and Fahrenheit be used concurrently, except that they proposed that the term 'centigrade' be used, rather than 'Celsius', on the grounds that most people in Britain were not familiar with Celsius. When no objection was raised to the proposal, the Air Ministry authorized the use of both scales, and Sir Graham Sutton (the Office's Director-General) announced at a press conference on 5 December 1961 that centigrade would be introduced early in the new year. As a first step, both centigrade and Fahrenheit would be used, with Fahrenheit values given first. He hoped the order would be reversed in time and the use of Fahrenheit dropped eventually.

The use of centigrade in weather information for the public began on 15 January 1962, with Fahrenheit values given first. Nine months to the day later, the order was reversed, with centigrade given first. No decision was taken, though, on the omission of Fahrenheit values altogether. A possible connection of Common Market negotiations with the switch to metric units was raised in the House of Commons on 27 February 1963 by Frank Bowles MP. In reply, Hugh Fraser, the Secretary of State for Air, denied any such connection, which gained him a riposte from Mr Bowles that he did not always accept what government spokesmen said about the Common Market! Bowles went on to ask if there was any truth in the letter he had seen that morning, written by the Anti-centigrade Society, which claimed that Fahrenheit would be dropped altogether in May 1963? Could the Secretary of State assure him that

⁸ The Americans continued to use the Fahrenheit scale of temperature long after 1960, and it is said that the positions of their warships during the Vietnam War could be ascertained easily because the meteorological reports broadcast from these ships contained temperatures in degrees Fahrenheit.

Fahrenheit would never be dropped completely? Fraser's reply was that the use of Fahrenheit would cease only when acceptable to the public. In fact, it has never ceased, even though the UK has been metric officially since the 1970s. Weather presenters on radio and TV still occasionally give temperatures in degrees Fahrenheit.

Those who suspected that a switch to metric units had something to do with the Common Market were right. When the UK joined the European Economic Community (EEC), on 1 January 1973, the British government became obliged to adopt all EEC legislation and therefore stop using all non-metric units, but this merely accelerated the metrication programme that had been under way in the UK since 24 May 1965, when the British government announced that the country would be fully metric within ten years.⁹

PINK AND SALTY

The following appeared in *The Times* newspaper on 27 January 1940 (Issue 48524, page 7, column E). There was bitterly cold weather over much of the British Isles in December 1939 and in January and February 1940, with an ice storm and heavy snow in the last week of January. It may be that the author of the piece below was inspired to write about snow by the severe weather at the time, which would have been newsworthy in peacetime but could not be reported in wartime lest the enemy came to know that the weather in Britain had brought transport to a halt in many places.

In England, as is well known, we now have no weather. Or rather we have agreed for the duration of the war to give that once darling topic the cold shoulder – if that expression is permissible. We may pass a trenchant remark to each other now and then as we swelter (or shiver) in buses; we may even permit ourselves an oath or two as we throw off (or drag on) our overcoats, fling open (or slam shut) our windows, and wipe the sweat (or the icicles) from our brows; but on paper and on the air we conspire to treat the subject with studied unconcern. In other words, we are at pains to pretend that we don't care if it snows. A mere figure of speech, this, of course – one of the many meteorological metaphors which abound in the English language, betraying, even to those who do not know us, where our hearts really lie. We wonder, sometimes, what's in the wind, and

⁹ For an introduction to the use of the International System of Units (SI) in meteorology, see 'SI units in the Meteorological Office', by F E Lumb, published in the *Meteorological Magazine* in 1972 (Vol.101, pp.366-368).

tell ourselves resignedly that it never rains but it pours. We shower congratulations, thunder abuse, and subject our opponents to a hail of criticism. If we are lucky enough to bask in the sun of popularity, we are snowed under by an avalanche of invitations; but when we accept one of them we must be careful to break the ice as soon as possible, otherwise the party will be a frost, and – quick as lightning! – our popularity will melt away and we shall leave under a cloud, shutting the door behind us upon a flood of adverse criticism.

Yes, we are a weather-minded race. And, since we can no longer spend the first half of breakfast reading about our own weather, we are forced to fall back upon that of other countries. Foreign weather is, of course, not quite so satisfactory as English weather, because it is farther away. We cannot confirm the printed account of it from our own memories of the previous day – which is, after all, half the fun of reading about the weather. On the other hand, foreign weather has the merit (from the selfish reader's point of view) of being more spectacular than ours. Something – possibly the Gulf Stream, possibly our ingrained national habit of moderation – always manages to keep our English weather within the bounds of probability: even though sometimes recently – but no, we must not sail too near the wind. Foreign weather, however, like so many other foreign things, is quite unrestrained. There is apparently no limit to the wildness of its behaviour. Where else, for instance, but Abroad, would snow have the *espièglerie* to fall to the ground 'pink and salty', as it did in northern Italy a few days ago?

Pink and salty! The thing is fantastic. The thing is unnatural. The thing is definitely in the worst possible taste. We English talk jestingly sometimes about the possibility of its snowing ink: but in our widest moments we have never suggested such a thing as snowing pink. Our snow – that is, on the rare occasions when we have any – always has the decency to begin by being pure white, even though it may end up as a dirty greyish-brown. But there – we must not be too censorious towards these Continental caprices. After all, it is not the fault of the inhabitants. Indeed, it is nobody's fault at all – unless indeed it can be blamed upon the war. For the only plausible theory that has been advanced to account for this extraordinary phenomenon is that even Mother Carey herself must be feeling the effects of the European food shortage: she has evidently run short of her staple diet of geese, and has been experimenting hopefully with flamingoes.

THE HISTORY GROUP COMMITTEE

At the committee's meeting on 22 March 2012, Julian Mayes succeeded Martin Kidds as Secretary of the History Group. We are extremely grateful to Martin for his sterling work over the past few years and to Julian for succeeding him.

The committee members are now as follows:

Chairman: Malcolm Walker

Secretary: Julian Mayes

Treasurer: Mick Wood

Committee members:

Graham Bartlett

Brian Booth

Margaret Deacon

Alan Heasman

Joan Kenworthy

Martin Kidds

Howard Oliver

David Pedgley

Dennis Wheeler

and a representative of the National Meteorological Library and Archive.

Committee meetings take place three times a year at the Royal Meteorological Society's headquarters, 104 Oxford Road, Reading.

ANECDOTE

From *The Times* newspaper, 5 June 1788 (Issue 1091, page 4, column B):

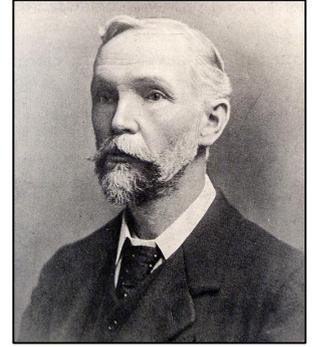
The infallibility of a Popish relict, in respect to its procuring rain in dry seasons.

In those parts of Italy where enthusiasm still reigns, it is the custom for the people to apply to their priests to invoke Heaven for a change of weather, particularly in dry seasons, where the fruits of the earth suffer so much for want of rain. It happened, however, that from the ignorance of their priests in respect to meteorology, that processions were often made to so little purpose as to bring the relicts into high disrepute. At Verona, where there is a pretty large convent of Franciscans, the ecclesiastics, finding their fees on this account grow short, fell upon the following scheme of gaining new credit to their Saints, and filling their purses. They are now very strictly attended to the Thermometrical and Barometrical presages: and having acquainted the people that they had found the relicts of Santa Jugurtha, which, when brought forth, would procure rain, they never failed, when the presages of wet

continued at the foot of the next column ...

RICHARD CURTIS (1846-1919)

One hundred years ago, on 30 March 1912, Richard Henry Curtis retired, after serving the Meteorological Office for 50 years and four months. He was the last of those who had worked under Admiral FitzRoy, having joined the Meteorological Department of the Board of Trade in November 1861, when 15 years of age.¹⁰ When he retired, he was presented with "a suitably inscribed silver tea service as a mark of esteem and a token of good wishes", as it was put in the April 1912 issue of *Symons's Meteorological Magazine* (Vol.47, pp.53-54).



Curtis was at first in the Telegraph Room and later in the Marine Branch, in which he worked side by side with George James Symons. He was placed in charge of the Observatory Branch in 1870 and retained that post until 1907, when he became Superintendent of Instruments and Observatories.

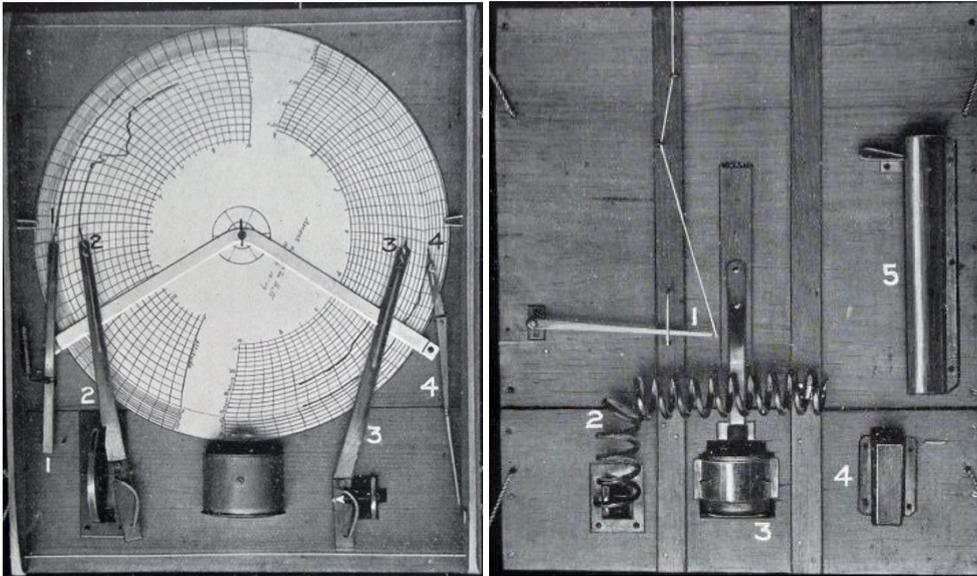
He joined the Meteorological (later Royal Meteorological) Society on 18 March 1874 and remained a Fellow until 31 December 1911, when he resigned. He served on the Society's Council from 1895 to 1908 and also published more than a dozen papers in the Society's *Quarterly Journal*, mostly on anemometry, water vapour and sunshine recording. He was an authority on the measurement of wind and it was noted in the obituary of him published in the *Quarterly Journal* in 1919 (Vol.45, pp379-380) that "it was largely by his advice that the factor 2.2, the ratio of the velocity of the wind to the velocity of the centre of the Kew Pattern Robinson cups, was adopted by the Society and by the Meteorological Office. He died on 21 May 1919, in his 73rd year.

continued from the previous column ...

from these natural scales are predominant, to bring on the relicts of Santa Jugurtha, with great pomp: and it has rarely happened, for fifty years past, but within thirty or forty hours after the Holy Maid's procession, rain has certainly followed, greatly to the astonishment of the people, who attribute all to Santa Jugurtha's prayers with the Holy Mother: and much to the profit of the Ecclesiastics.

¹⁰ Another who joined the Meteorological Office in 1861, Charles Harding, retired in September 1911.

DINES KITE METEOROGRAPHER Designed by William Henry Dines c.1901

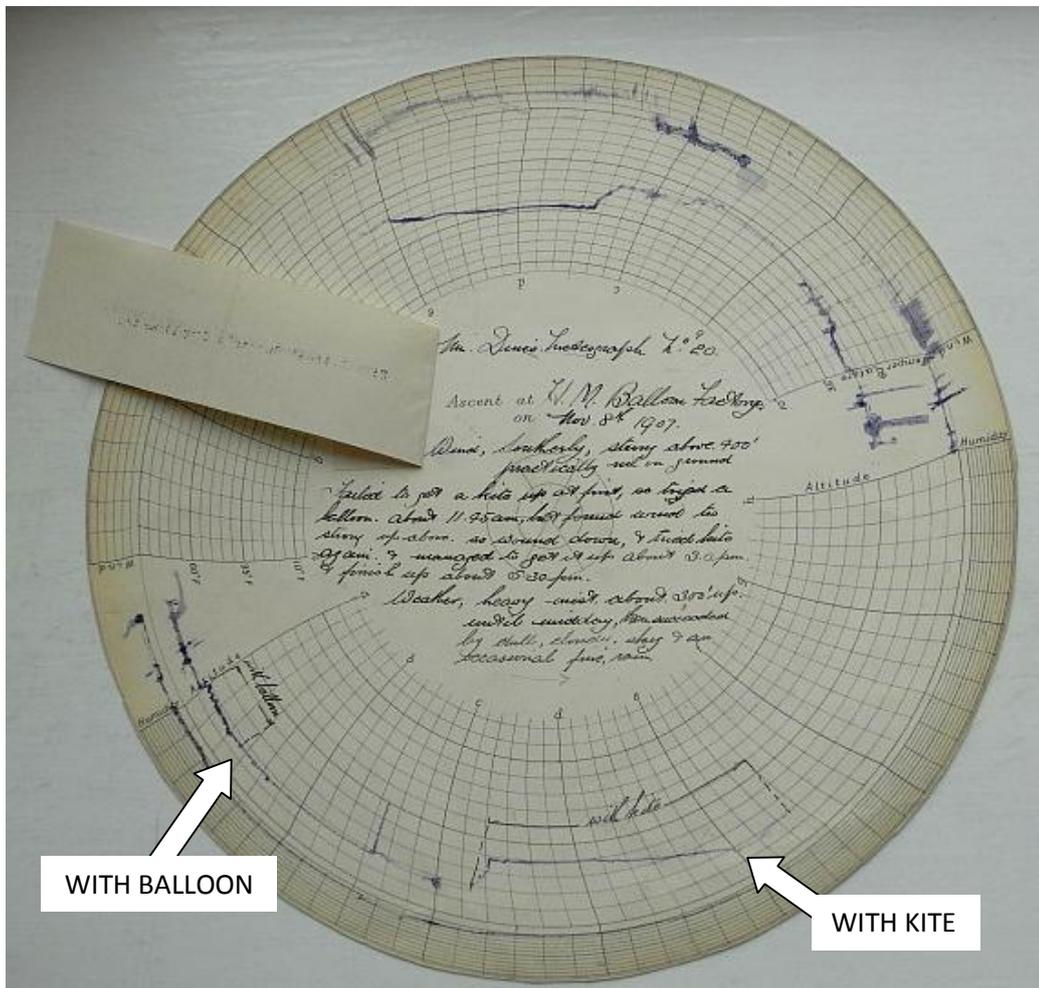


Pictures above from *The Collected Scientific Papers of William Henry Dines* (opposite page 184), published by the Royal Meteorological Society in 1931.

The picture on the left shows the recording chart, clock and pens. The pen levers are, from left to right, (1) humidity, (2) barometric pressure, (3) temperature, (4) wind speed.

The picture on the right shows (1) the lever and thread of the instrument for recording wind, (2) the metal spiral tube containing spirit and forming the thermometer, (3) the under surface of the clock, (4) the cover of the aneroid box, (5) a metal cover to guard the hair of the hygrometer.

The picture below shows a record from a Dines Kite Meteorograph. Ascents made at His Majesty's Balloon Factory on 8 November 1907.



The hand-written notes in the centre of the record state that the wind was southerly, strong above 400 feet, practically nil near the ground. The state of the weather was "heavy mist about 300 feet up until midday, then succeeded by dull, cloudy, sky and an occasional fine rain".

It is also recorded that Dines "failed to get a kite up at first, so tried a balloon about 11.45 am, but found wind too strong up above, so wound down, and tried kite again, and managed to get it up about 3.00 pm, and finish up about 5.30 pm".

RECENT PUBLICATIONS

This list of books and articles concerned with the history of meteorology and physical oceanography has been compiled by Malcolm Walker and Anita McConnell.

ALLAN, R. *et al* (2011). 'The International Atmospheric Circulation Reconstructions over the Earth (ACRE) Initiative'. *Bulletin of the American Meteorological Society*, Vol.92, pp.1421-1425.

DENT, J. (2012). 'An examination of trends and variations of temperature and rainfall in East Anglia since 1910'. *Weather*, Vol.67, pp.34-40.

DIAZ, H.F. *et al* (2011). 'Spatial and temporal characteristics of climate in medieval times revisited'. *Bulletin of the American Meteorological Society*, Vol.92, pp.1487-1500.

DOMINGUEZ-CASTRO, F. *et al* (2012). 'How useful could Arabic documentary sources be for reconstructing past climate?'. *Weather*, Vol.67, pp.76-82.

FIELD, M. (2012). 'Pen portraits of Presidents – Thomas Sopwith', *Weather*, Vol.67, pp.50-51.

GILES, B.D. (2012). 'The atmospheric tide: an historical perspective'. *Weather*, Vol.67, pp.51-53.

JEFFERSON, P. (2011). *And now the shipping forecast: a tide of history around our shores*. Cambridge, UK, UIT, 256 pages. ISBN 9781906860158

MORRIS, C. and ENDFIELD, G. (2012). 'Exploring contemporary amateur meteorology through an historical lens'. *Weather*, Vol.67, pp.4-8.
Disappointingly, this article makes no reference to the network of weather observers set up and maintained by James Glaisher in the nineteenth century. It also gives the impression there was only one Meteorological Society of London, stating that it existed from 1823-1850. In fact, there were two Meteorological Societies of London; one existed, on and off, from 1823 to 1850, the other, a completely different society, from 1848-50.

SLOAN, E. (2011). 'Meteorologist's profile: Hayman Rooke (1723-1806)'. *Weather*, Vol.66, pp.335-336.

TERRY, J.P. *et al* (2012). 'The 'terrific Tongking typhoon' of October 1881 – implications for the Red River Delta (northern Vietnam) in modern times'. *Weather*, Vol.67, pp.72-75.

WARD, C. and WHEELER, D. (2012). 'Hudson's Bay Company ship's logbooks: a source of far North Atlantic weather data'. *Polar Record*, Vol.48, pp.165-176.

ZILLMAN, J. and HARDAKER, P. (2012). 'A further touch of history'. *Weather*, Vol.67, p.26.

This historic photograph, taken in 2003, shows John Zillman with four directors of the UK's Meteorological Office, namely Sir John Mason (1965-83), Sir John Houghton (1983-1991), Lord Hunt of Chesterton (1992-97) and Mr Peter Ewins (1997-2004). Zillman was for many years Director of the Australian Bureau of Meteorology and from 1995 to 2003 served as President of the World Meteorological Organization.

AND A NUMBER OF PUBLICATIONS ABOUT POLAR REGIONS:

LARSON, E.J. (2011). *An Empire of Ice: Scott, Shackleton, and the Heroic Age of Antarctic Science*. Yale University Press, 326 pages. ISBN: 9780300154085

SAVOURS, A. (2010). "'A very interesting point in geography" revisited: the Phipps expedition towards the North Pole of 1773'. In Forgan Sophie, ed., *Northward Ho! Catalogue of the Phipps expedition at the Captain Cook Memorial Museum, Whitby*, pp.1-23. [Abridged and amended version of paper published in *Arctic*, 1984]

SAVOURS, A. (2012). *The South Polar Times. Commentary*. London, the Folio Society. [Edition of 1000 copies to accompany facsimiles of 12 original issues, produced during Captain Scott's *Discovery* and *Terra Nova* expeditions, 1901-04 and 1910-13]

THE ADÉLIE BLIZZARD: Mawson's forgotten newspaper, 1913. Preface by Emma McEwin. Introduction by Elizabeth Leane and Mark Pharaoh. Adelaide, Friends of the State Library of South Australia, in association with the Friends of Mawson at the South Australian Museum, 2010. [Edition of 999 copies. Original editor Dr Archie McLean during Sir Douglas Mawson's Austrian Antarctic Expedition, 1911-14]

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ICHO IX

The Ninth International Congress for the History of Oceanography (ICHO IX) has been postponed indefinitely. It was due to be held in Athens in July 2012 and may now be held in 2014.

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THIS IS YOUR NEWSLETTER

Please send comments and contributions to:
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THE NEXT NEWSLETTER

All being well, the next newsletter will be published in July 2012. Please send comments, articles etc to Malcolm Walker (address above) by 30 June.

Malcolm would particularly welcome reminiscences (humorous or otherwise) of life in the Met Office (at home or abroad) in the 1950s, 1960s and 1970s, also recollections of meteorological activities in universities, research institutes or the services (at home or abroad) in those decades