

History of Meteorology and Physical Oceanography Special Interest Group



Newsletter 1, 2009

A VIEW FROM THE CHAIR

A book which is considered a scientific classic was published 150 years ago, on 24 November 1859. It was written by Charles Darwin and its title was quite long: *On the origin of species by means of natural selection, or the preservation of favoured races in the struggle for life*.

Darwin's views on natural selection took shape during the celebrated circumnavigation of the globe by HMS *Beagle* from 27 December 1831 to 2 October 1836. He was on board as a self-funded gentleman naturalist. He had graduated from Cambridge in 1831 and was only 22 years of age when *Beagle* sailed.

It is irritating to me that we so often see the circumnavigation called "Darwin's Beagle voyage". Let us not forget, this or any other year, that it was FitzRoy's Beagle voyage.

It is true that Darwin was already a celebrity in scientific circles by the time *Beagle* returned home, but the prime purpose of the voyage was hydrographic surveying, and Captain Robert FitzRoy was in command. For him, the voyage was a personal triumph which greatly enhanced his reputation as a skilled and meticulous surveyor. He was thanked in Parliament, publicly praised by the Hydrographer of the Navy and (in 1837) awarded the gold medal of the Royal Geographical Society. The voyage took him to dangerous and unexplored coasts and he often encountered heavy weather, yet he met and weathered the severest gales without the loss of anyone on board or even damage to his vessel. He was a very skilled and weather-conscious sailor and never failed to heed the warnings of the barometer.

Darwin's conclusions did not come as a total surprise to FitzRoy, for the two men had discussed Darwin's observations and their implications many times during the *Beagle* voyage. Nevertheless, publication of *The origin of species* was a great disappointment and frustration to FitzRoy. To him, a devout Christian with conservative views, Darwin's atheistic theory of organic evolution by natural selection was unacceptable. It was completely at odds

with his fundamentalist beliefs. Darwin's theory contradicted Biblical 'truth'; and, to make matters worse, the findings of palaeontologists were also making nonsense of a literal interpretation of the Bible. Whenever an opportunity arose, FitzRoy attempted to refute Darwin's theory, sometimes in writing (usually under a pseudonym), sometimes in public debates. He became obsessed with the matter and it preyed on his mind. His health began to suffer.

We should not conclude from this that publication of Darwin's theory of evolution was the sole factor that eventually led to FitzRoy's suicide (in 1865). It was not. It was but one factor among others, though a major one. There was, from 1860 onwards, much criticism of FitzRoy's weather forecasting techniques: from the scientific establishment, who considered his techniques unscientific, and also from astro-meteorologists, who were convinced changes in atmospheric state were controlled by celestial phenomena. FitzRoy was a sensitive man who was prone to depression and tended to overreact. All of these factors (and others) contributed to the deterioration of his health over the coming years.

Let us not forget in this 150th anniversary year of Darwin's book that it played a part in bringing about the demise of a man without whom the theory of evolution might never have come to be formulated. Had FitzRoy not been wanting a companion for his *Beagle* voyage, Darwin might never have had the opportunity to make the observations which he rationalized and published in his book. And if FitzRoy had not been so skilled a sailor, he and Darwin might never have returned home safely. We can only speculate on the development of meteorology in Great Britain had that happened.

Malcolm Walker

SO WHAT'S NEW?

What has been published in the past year or so? This list of books and articles concerned with the history of meteorology and physical oceanography has been compiled by Malcolm Walker and Anita McConnell.

ASHFORD, O.M., 2008. Weather in my life. *Weather*, **63**, 339-341.

BOOTH, B.J., 2007. Second World War upper air observations by the Fleet Air Arm in the Orkney Islands. *Weather*, **62**, 222-225.

BOOTH, B.J., 2008. Squadron Leader C.Crichton-Miller and the origins of meteorology for the army's airborne forces in the Second World War. *Weather*, **63**, 71-75.

BOOTH, B.J. and DAVIES, P.W., 2008. *Meteorological Office Roll of Honour 1914-1999*. Published privately 31 July 2008, 127 pages. Copy in the National Meteorological Library, Exeter, under ORGS UKMO M. This work contains numerous pictures of people, graves, ships and aircraft.

BRÁZDIL, R., ČERNUŠÁK, T. and ŘEZNÍČKOVA, L., 2008. Weather information in the diaries of the Premonstratensian Abbey at Hradisko, in the Czech Republic, 1693-1783. *Weather*, **63**, 201-207.

BURRIDGE, D., 2008. Obituary of Anthony (Tony) Hollingsworth. *Weather*, **63**, 171-172.

CARPINE-LANCRE, J. and BARR, W., 2008. The Arctic cruises of Prince Albert I of Monaco. *Polar Record*, **44**, 1-14.

CARTWRIGHT, J.H.E. and NAKAMURA, H., 2008. Tsunami: a history of the term and of scientific understanding of the phenomenon in Japanese and western culture. *Notes and Records of the Royal Society*, **62**, 151-166.

CHENOWETH, M., VAQUERO, J.M., GARCIA-HERRERA, R. and WHEELER, D., 2007. A pioneer in tropical meteorology: William Sharpe's Barbados weather journal, April-August 1680. *Bulletin of the American Meteorological Society*, **88**, 1957-1964.

CLARK, C. and PIKE, W.S., 2007. The Bruton storm and flood after 90 years. *Weather*, **62**, 300-305.

CORNES, R., 2008. The barometer measurements of the Royal Society of London. *Weather*, **63**, 230-235.

DAY, D., 2007. *The Weather Watchers: 100 years of the Bureau of Meteorology*. Melbourne, Australia: Melbourne University Publishing and the Australian Government Bureau of Meteorology, xiii+530 pages.

ISBN 13: 978-0-522-85275-2

This book tells the story of the Australian Bureau of Meteorology and was published to mark the centenary of the Bureau, which was founded in 1907.

DORST, N.M., 2007. The National Hurricane Research Project: 50 years of research, rough rides and name changes. *Bulletin of the American Meteorological Society*, **88**, 1566-1588.

DRURY, C., 2008. Obituary of W.J.Burroughs, *Weather*. **63**, 108.

GARRETT, T.J. and VERZELLA, L.L., 2008. An evolving history of Arctic aerosols. *Bulletin of the American Meteorological Society*, **89**, 299-302. This paper reviews reports and studies of haze and aerosols in the Arctic from the 19th century to the present day.

HAINÉ, T., 2008. What did the Viking discoverers of America know of the North Atlantic environment? *Weather*, **63**, pp.60-65.

HARPER, K.C., 2008. *Weather by the numbers: the genesis of modern meteorology*. Cambridge, Mass., USA: MIT Press, ix+308 pages. ISBN 13: 978-0-262-08378-2

To quote from the blurb, this book "tells the story of the transformation of meteorology from a 'guessing science' into a sophisticated scientific discipline based on physics and mathematics".

HOLMES, E.R., 2008. *Airship meteorologist: biography of M.A.Giblett, Superintendent of Airship Meteorology during Britain's Airship Programme of the 1920s to 1930*. Typescript, published privately, 381 pages. This biography has been written by Giblett's daughter, Enid R.Holmes. Copy in the National Meteorological Library, Exeter, under 629.733.5 HOL.

HOUGHTON, Sir John, 2008. Obituary of Professor Alan Brewer. *Weather*, **63**, 312-313.

KENWORTHY, J.M., BURT, T.P. and COX, N.J., 2007. Durham University Observatory and its meteorological record. *Weather*, **62**, 265-269.

KINGTON, J.A., 2008. Hubert H.Lamb – a review of his life and work. *Weather*, **63**, 187-189.

- LAUDER, SIR THOMAS DICK, 2008. *The Great Moray Floods of 1829*. Kinloss, Scotland: Librario Publishing Ltd, xxx+431 pages. ISBN 13: 978-1-904-44026-0
This is a reproduction of the first (1831) edition of *An Account Of The Great Floods Of August 1829, In The Province Of Moray And Adjoining Districts*, with inclusions from the 1873 edition.
- LEHOUX, D., 2007. *Astronomy, Weather and Calendars in the Ancient World: parapegmata and related texts in Classical and Near Eastern Societies*. Cambridge University Press, xiv+580 pages. ISBN 13: 978-0-521-85181-7
- LEWIS, J.M., 2008. Smagorinsky's GFDL: building the team. *Bulletin of the American Meteorological Society*, **89**, 1339-1353. This is the story of climate-prediction pioneer Joe Smagorinsky (1924-2005) and the Geophysical Fluid Dynamics Laboratory.
- LYNCH, P. and O., 2008. Forecasts by PHONICAC. *Weather*, **63**, 324-326.
- LYNAGH, N., 2008. Obituary of Captain Arthur Blackham. *Weather*, **63**, 315-316.
- McNALLY, L.K., MAASCH, K.A. and ZUILL, K.J., 2008. The use of ships' protests for reconstruction of synoptic-scale weather and tropical storm identification in the late eighteenth century. *Weather*, **63**, 208-213.
- MIKAMI, T., 2008. Climatic variations in Japan reconstructed from historical documents. *Weather*, **63**, 190-193.
- MILFORD, J., 2008. Obituary of J.E. (John) Simpson. *Weather*, **63**, 128.
- MILLS, A., 2008. The chemical weather glass: composition and operation. *Weather*, **63**, 161-163.
- MILLS, G., 2008. Luke Howard and *The Climate of London*. *Weather*, **63**, 153-157.
- VERTON, A.K. and STRANGWAYS, I., 2008. Pen portrait – W.E.Knowles Middleton. *Weather*, **63**, 164-166.
- VERTON, A.K., 2008. Jungfrauoch high altitude research station. *Weather*, **63**, 76-79.
- VERTON, A.K., 2008. Swiss municipal weather stations. *Weather*, **63**, 342-344.
- PEDGLEY, D.E., 2008. Weather in my life. *Weather*, Vol.63, pp.141-142.
- PERSSON, A., 2008. Hadley's Principle: Part 1 – a brainchild with many fathers. *Weather*, **63**, 335-338.
- PETERSON, T.C., CONNOLLEY, W.M. and FLECK, J., 2008. The myth of the 1970s global cooling scientific consensus. *Bulletin of the American Meteorological Society*, **89**, 1325-1337.
- RIBERA, P., GARCIA-HERRERA, R. and GIMENO, L., 2008. Historical deadly typhoons in the Philippines. *Weather*, **63**, 194-199.
- SAUNDERS, P.M., 2008. A meteorologist in Woods Hole in the 1960s. *Weather*, **63**, 80-82.
- SIDER, D. and BRUNSCHÖN, C.W., 2007. *Theophrastus of Eresus on Weather Signs*. Leiden: Brill; x+263 pages. ISBN 13: 978-90-04-15593-0
- SINGLETON, F., 2008. The Beaufort scale of winds – its relevance, and its use by sailors. *Weather*, **63**, 37-41.
- SOMERVILLE, R.C.J., 2008. Obituary of Bert Bolin (1925-2007). *Bulletin of the American Meteorological Society*, **89**, 1046-1048.
- VAQUERO, J.M., GARCIA-HERRERA, R., WHEELER, D., CHENOWETH, M. and MOCK, C.J., 2008. A historical analog of 2005 Hurricane Vince. *Bulletin of the American Meteorological Society*, **89**, 191-201. This paper focuses on a storm which visited the southwest of Spain in October 1842 and shows that the passage of Hurricane Vince as a tropical depression over Spain and Portugal in October 2005 should not be considered a unique historical event.
- WALKER, J.M., 2008. How the Society became 'Royal'. *Weather*, **63**, 294-295.
- WOOD, M.J., 2008. Meteorologist's profile: Thomas Griffith Taylor (1880-1963). *Weather*, **63**, 361-364.
- YOUNGSIN CHUN, HI-KU CHO, HYO-SANG CHUNG and MEEHYE LEE, 2008. Historical records of Asian dust events (*hwangsa*) in Korea. *Bulletin of the American Meteorological Society*, **89**, 823-827.

AND COMING SOON

A contribution to meteorology by Spencer Cowper, Dean of Durham 1746-74, by J.M.Kenworthy and M.S.McCollum, in *Notes and Records of the Royal Society*.

350 YEARS OF THE CENTRAL ENGLAND TEMPERATURE SERIES, 1659-2009 by John Kington

Drawing on his incomparable knowledge of English historical weather data, the late Professor Gordon Manley made an intensive study of temperature records from various sources in the English Midlands including many meteorological journals and weather diaries. In 1953, he presented this research in the form of monthly-mean values of air temperature representative of Central England from 1698 (Manley 1953).

The original Central England concept of Manley was to determine a series of average air temperatures for a typical lowland site more or less in the centre of England based on observations made at three stations, one in the Lancashire Plain and two others situated at the western and eastern extremities of the south Midlands. In practice, a standardised series of mean temperatures for Central England were derived by meticulously employing overlapping runs of observations made at several different sites situated in the triangular area defined by the original scheme.

In 1974 Manley published an updated version of his monthly-mean Central England Temperature series; this work incorporated minor revisions and extended the earlier series back to 1659 (Manley 1974).

As the longest available instrumental record of temperature in the world, the Central England Temperature series has proved invaluable for the study of climatic change over the past three and a half centuries. For instance, it shows that following a fall during the period, 1650-1700, temperatures recovered in the 1700s to fluctuate around a mean value for the 18th and 19th centuries up to about 1910. From then on, during the course of the 20th century, values rose to unprecedented levels, although they came to a halt in the 1950s and 1960s. Since around 1990, another sharp rising trend has developed and so far in the first decade of the 21st century values are notably different in all seasons from long-term period averages.

A series of daily mean temperatures for Central England representative of a triangular area enclosed by Lancashire, Bristol and London has also been compiled back to 1772 (Parker et al. 1992). The two series are routinely updated by the Hadley Centre of the Meteorological Office employing mean values for stations selected

from the present surface synoptic network comparable as far as possible with those used historically. The data collectives are then adjusted to ensure consistency with the historical series (Met Office Hadley Centre).

REFERENCES

Manley, G. (1953). The mean temperature of Central England, 1698-1952, *Quarterly Journal of the Royal Meteorological Society*, **79**, 242-261

Manley, G. (1974). Central England Temperatures: monthly means 1659 to 1973, *Quarterly Journal of the Royal Meteorological Society*, **100**, 389-405

Parker, D.E., T.P. Legg, and C.K. Folland (1992). A new daily Central England Temperature Series, 1772-1991, *International Journal of Climatology*, **12**, 317-342

Met Office Hadley Centre
<http://www.metoffice.gov.uk/research/hadleycentre/obsdata/cet.html>

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<http://www.cru.uea.ac.uk/cru/people/kington/>

DO YOU KNOW...

... the whereabouts of any diaries with daily weather records for January 1809? I would like to look at the changing synoptic pattern during that month when 'prodigious snow', glaze and then a rapid thaw with heavy rain led to severe flooding over southern England, with bridges washed away and much damage to property. So far, I have records for Plaistow (Essex), central London, Syon House (Middx), Sunbury (Middx), Mongewell (Oxfordshire), Stroud (Glos), Bristol, Holywell (Flintshire), Fiars (Kincardineshire) and Gordon Castle (Morayshire). Cornwall/Devon, the Midlands and eastern England in particular need filling. I also have notes on particular days from a few other places, as well as newspaper reports.

If you can help, please contact me at 01491-837298. Thanks, from David Pedgley.

REMINISCENCES OF A NATIONAL SERVICE MET MAN by Maurice Crewe

By 1956, the motivation to study at school had worn a bit thin, what with a new athletics season, the best girl friend in the world and National Service looming. Hence I left school with 10 GCE O-levels and only A-level Geography. Having long been interested in aviation, I fancied a career as a RAF pilot, but failed the aircrew selection procedures at RAF Hornchurch. After a couple of boring temporary jobs, my call-up papers arrived and I reported to RAF Cardington on 17 January 1957. My geography teacher, Jack Long, had been a weather forecaster during World War II and told us something about meteorology during our A-level course. So when the RAF listed meteorology among the jobs available to new recruits I thought I'd give it a try. I cannot remember the name of the gentleman who interviewed me in the Met Office at Cardington; I just remember it was up a long stairway. He seemed to think I was worth the risk, so I went off to square-bashing destined to be a met man.



Figure 1: Aircraftman Crewe, 5039647

At Bridgenorth for basic training, I joined the band and escaped some of the less pleasant military training. Band practice and passing-out parades were far more amenable.

My first real contact with meteorologists was when I arrived at the Meteorological Office Training School, Government Buildings Stanmore. At this time, I was billeted at RAF Ruislip and travelled by tube to the training school. The welcome

from Met Office staff was encouraging, as my course didn't start for four weeks, and rather than send me back to Ruislip to do fatigues or peel spuds they gave me a book and a blank map and said "teach yourself to plot" and do any odd jobs that instructors requested, so I became a competent projectionist and a dab hand at filling pilot balloons.

In the 21st century, there must be an increasing number of junior meteorologists with no idea of

what it was like to plot charts by hand with two pens stuck together. To convert a string of numbers from a teleprinter to a set of symbols and numbers and put them on the chart, we used two HMSO dip-in pens joined together: one dipped in black (blue) ink and the other in red. Ideally, each observation plot should fit under a sixpenny piece (ask your granddad). One became fairly slick at managing real wet ink and blotting paper. Modern meteorologists probably don't realise how lucky they are to have computers doing so much of the donkey work, but in those days we in the outfield were hardly aware of the existence of electronic computers.

Observing the weather in those days depended on actually looking at things, like the sky, the horizon, mercury-in-glass thermometers etc. Remote sensing and automatic recording were relatively rare luxuries. Even facsimile machines were not available at all stations, so in some cases hourly charts had to be plotted by hand in between observing continuously at an airfield.

It should be remembered that UK observations of temperature were all in Fahrenheit and the rest of the continent used Centigrade (as we called it then). Those plotting charts usually managed to memorise virtually the whole of the table with temperature conversions of °C into °F. Of course, a few years later we went over to using Centigrade in the UK, so if you worked on charts crossing the Atlantic you had to convert °F to °C. One also got used to Russian wind speeds in metres per second being doubled and called knots.

We also had to hand-plot tephigrams and upper-air charts, and at some stations one had to work quite hard to complete all the plotting on a night shift when you also became tired: surface charts covering all Europe and the North Atlantic, upper-air charts at perhaps five levels and anything up to 25 tephigrams, plus hourly observations without any remote readings. Then, after 03:30Z, you had to make the tea and wake up the duty forecaster. Fortunately, only a couple of stations I ever worked at were that busy.

Having to go outside to do all the observations certainly cured one of worry about going out in the rain.

Once my course as a Met Assistant was completed, under a bright young chap named Pedgley, I proceeded on my first posting, all the way from Stanmore to RAF Uxbridge. In addition to the Central Band of the RAF and

what is now called the Queen's Colour Squadron, there was Southern Air Traffic Control (SATC) and a Met Office group headquarters. Basically, the work of Group stations both at home and abroad was much the same, and that was to oversee and support the outstations. Observations were collected and passed on, forecast guidance was sent to outstations and data and forecasts provided for the RAF HQ. With wider responsibilities than an outstation, we were expected to plot big charts and tephigrams faster than I previously thought possible, but I learned how to touch type numbers when compiling our collective of observations to be sent to Dunstable.

After two months discovering the joys of shift work, it was thought that I should broaden my experience before qualifying for promotion so I was sent to RAF Duxford to develop my observing skills on one of the frontline fighter stations. It was there that I met another National Serviceman who had been a Scientific Officer in the Met Office so was called up as a Pilot Officer forecaster. He could talk the hind legs off a tephigram but with my rather new observing experience I found myself teaching him how to recognise the difference between stratocumulus and altocumulus. We remained friendly for many years although never worked together again.

The day came when I was deemed competent enough to be promoted to SAC (Senior Aircraftsman) and this coincided with a posting to RAF Gaydon, an operational training unit for the new Victor V bombers – a whole new level of what we now call noise pollution; the Office windows threatened to shake off their hinges. The high security of the station led to a fairly regular night duty diversion of nearly tripping over RAF police dogs on the way to the observing enclosure, and making friends with both dogs and handlers by feeding them slices of toast from one's night duty rations.

I can think of three advantages of being a National Service Met Man. The Met Office was an island of civilian influence in a service environment. Shift workers generally were excused station parades. Travelling in uniform half century ago made it fairly easy to hitchhike home fairly regularly, and on National Service pay that helped a lot – especially if one was keen to see one's fiancée.

In March 1958, I had a real shock to the system, never having been abroad. I was posted to 83 Group Headquarters, Wahn, a group station in Germany between Köln (Cologne) and Bonn.

The nearby Köln/Bonn airport was also known *Konrad-Adenauer-Flughafen*, though it was no longer anything to do with us.

It was quite a surprise to find German met men working as assistants on an RAF station. One remembers they were good at the job. Herr Enseleit was the fastest plotter of tephigrams I ever saw at any station, and he was quite friendly bearing in mind he carried an injury from the First World War.

One of the other boys in blue was a chap younger than me by some eight days with an odd sense of humour and – not for the last time – Mick Wood and I were on the same team. I was lucky that some of the other chaps had their own transport, especially those that had jobs before National Service. I had many interesting trips around

the Köln/Bonn area on the back of Mick Wood's two-stroke motor bike, a tour round the Nürburgring, among other places, in Roy Prater's pre-war BMW 327 sports car.



Figure 2: SAC Wood on a day off

Then, four or five of us jammed into Bob Hunt's 1936 Mercedes with camping gear to visit the 1958 World Fair near Brussels. At one stage, we also had a trip to Luxembourg, which included a tour of the Radio Luxembourg studios.

The summer was rather hot at times and the civilian management allowed us to wear civilian clothes on night duty instead of the thick blue serge uniform. Christmas 50 years ago passed in a bit of a blur. Airmen and unaccompanied staff sort of "volunteered" for many of the shifts over the holiday period, and between shifts we enjoyed the hospitality of families in married quarters.

These reminiscences are mostly from a period spent as what may be described as an amateur meteorologist, although the main difference between us and the "professionals" was the colour of our suits. So, with impending demobilisation, I had to consider my future and decided that working with the weather was a fairly interesting job – having done it on the cheap for nearly two years. So, on 23 February

1959, I joined the Meteorological Office at RAF Duxford as an Assistant (Scientific), with plans to marry and settle down. The rash decision was that I should become a forecaster, so I duly embarked on retaking A-level Physics and Mathematics at Cambridge Technical College. The other big step facing us half a century ago was becoming an Established Civil Servant. I cannot recall the benefits of becoming 'established', but at that time it was deemed important. At that time, it involved a formal interview before a board, in London in my case and I was pleased to be successful in 1960.

NEW OCCASIONAL PAPER

Occasional Paper No.7 was recently added to the website of the Royal Meteorological Society. Entitled *Weather Services at War*, it was written by K.D.Anderson and includes an introduction by Maurice Crewe. It is based on Mr.Anderson's war diary from Friday 10 May to Thursday 30 May 1940 and, as Maurice says, forms the only known record of weather men involved directly in the real war, in Mr.Anderson's case the war in central and western Belgium and the Nord-Pas-De-Calais. This is a compelling read and shows graphically the horrors of war and the conditions under which some meteorologists had to operate during World War II. The paper has been published online only. See:

<http://www.rmets.org/pdf/hist07.pdf>

If, however, you do not have internet access and would like a copy of the paper, please contact Malcolm Walker, 2 Eastwick Barton, Nomansland, Tiverton, EX16 8PP.

FORTHCOMING MEETINGS

SATURDAY 28 MARCH 2009 ***Meteorologists and astronomers*** **Royal Astronomical Society, London**

There will be a meeting of the History Group jointly with the Society for the History of Astronomy at the Royal Astronomical Society on Saturday 28 March. This meeting will explore links between meteorologists and astronomers and will include the Group's Annual General Meeting. You should find enclosed with this newsletter a notice about the meeting. If one is not enclosed, please contact Malcolm Walker by email or write to him at 2 Eastwick Barton, Nomansland, Tiverton, EX16 8PP. The email address is MetSochHistoryGroup@gmail.com.

SATURDAY 6 JUNE 2009 **Agricultural Meteorology** **Rothamsted, Hertfordshire**

Details of this meeting and booking form will be sent to Group members in due course. Meanwhile, please put the date in your diary.

MEETING REPORT **by David Pedgley**

See-saws, oscillations and seasonal foreshadowing: the pioneering work of Sir Gilbert Walker and modern day understanding of climate variability

19 November 2008 **at Reading University**

Introducing the meeting, the organizer Malcolm Walker explained that its aim, like that of other 'classic paper' meetings, was to high-light the significance of the papers that introduced new ideas, and then to examine how those ideas have been developed subsequently. In this meeting, researchers from the Hadley Centre of the Met Office and the universities of Reading and East Anglia did a splendid job of outlining the many results that have followed on from the pioneering work of Gilbert Walker.

As explained by Rob Allan, when Walker came to the India Meteorological Department as its third Director, in 1904, despite being a mathematician with no experience in meteorology, his principal task was to improve seasonal forecasting in the subcontinent. In the absence of any real understanding of the dynamics of the monsoon, the methods he chose were statistical – the seeking of tele-connections between weather in India and other areas in a search for possible predictors. An example is the Southern Oscillation, an east-west see-saw linking Tahiti with Darwin. Although Walker appointed some assistants who became outstanding meteorologists (including George Simpson and Charles Normand), and despite much effort, the problem of monsoon forecasting was still largely unsolved when he retired, in 1924, to take up a professorship of meteorology at Imperial College. There, he continued his researches into global weather correlations, partly in collaboration with Ernest Bliss, a mathematician who had returned to England from Egypt in the same year. Some of their papers are now classical; they can be seen on the Society's

website at

www.rmets.org/about/history/classics.php

Broadening the scale from regional to global, Malcolm Walker emphasised that understanding of tropical and equatorial meteorology at first made slow progress as a result of difficulties in applying mid-latitude concepts of air masses and fronts. Although these concepts do have some regional relevance, particularly where there are strong humidity rather than temperature contrasts, they are not useful for forecasting the weather. However, Gilbert Walker's observational studies did provide a background to subsequent developments. These were set in motion particularly as a result of increased observational coverage during World War II, which led to studies of synoptic disturbances – for example, waves and cyclones in the easterly trade winds. Analyses relied more on streamlines than isobars because of the weak geostrophic balance at low latitudes.

Before the 1950s, there were sparse data from the upper air. Indeed, there were sparse data of any kind from wide areas before the introduction of satellites in the 1960s. Nevertheless, the Inter-Tropical Convergence Zone (where trade winds from opposite hemispheres meet) was shown to contain many cumulonimbus clouds releasing sufficient latent heat to provide energy to drive the general circulation. But it was not until the 1960s and 1970s that large multinational projects were possible, leading to a better understanding of the dynamics of some individual tropical weather systems.

Malcolm reviewed empirical work in the 1950s and 1960s, including the identification of subtropical cyclones in monsoon rain systems over western India during the International Indian Ocean Expedition of 1963-64. He also mentioned his own studies of upper-tropospheric outflows from monsoon cumulonimbus systems over western India, the Ethiopian Highlands and West Africa which had shown how these outflows descended downstream and were subsequently prepared for ascent in mid-latitude trough-ridge systems. Thus, he proposed a mechanism whereby weather systems in low latitudes could to some extent control synoptic-scale developments in the extra-tropics.

By the 1960s, the Southern Oscillation was being linked to El Niño. Eric Guilyardi explained how forecasting the combined ENSO phenomenon was soon shown to be essentially

an oceanographic problem. Crucial to this improved understanding of ENSO had been advances in observations, including satellite altimetry to monitor small changes in sea-level, and networks of buoys – both moored and drifting – taking routine soundings of ocean temperature and salinity.

By the 1980s, the first theories and models were being developed in the form of oscillators whereby sea-surface temperature anomalies in the equatorial ocean induced wave-like distortions propagating both eastward and westward within the overall easterly trade winds. With the appearance of coupled atmosphere-ocean general circulation models, ENSO could be simulated during the 1990s as a self-sustaining oscillation that eventually destroyed the original temperature anomaly. Such oscillations have a periodicity of some 2-7 years, matching observations. Some models still have errors, probably in part because, although the physical mechanisms have been unravelled, the exact sequence of events remains uncertain, and in part because the role of scale interactions needs to be clarified.

Tim Osborn took us away from low latitudes and extended the time scale, by considering climate variability over and around the North Atlantic. This has been examined using observations of surface pressure and the concept of the North Atlantic Oscillation (tele-connections between different parts). Variations are not periodic, but they are important because, for example, they modify storm tracks, wave heights, and rainfall (and hence hydro-electric power generation and vegetation cover), and consequently can influence government long-term planning. Variations over the 20th century can be interpreted in different ways leading, for example, to deduced trends that were subsequently found to be false. Understanding the influence on this variability of, for example, increasing greenhouse gases has been approached using climate simulations in coupled models. Whereas there are marked differences between models, their average is much the same as the observed variability. Increased greenhouse forcing leads to lower pressures in the Arctic but higher pressures over the Mediterranean, thereby increasing the NAO. Other forcings still need to be studied, such as changes in ozone content, volcanic eruptions, solar variability and sulphate aerosol concentration.

Another outcome in the 1970s, resulting from analysis of a 10-year time series from the

improved observational network in the equatorial Pacific, was the recognition of 40-50-day Madden-Julian oscillations (MJOs) moving eastwards against the surface trade winds, with inferred propagating zones of deep convection. Adrian Matthews showed that subsequent studies of accompanying changes in upper tropospheric winds have revealed global influences. Coupled models can now simulate the MJO, and there is some indication that a sequence of strong oscillations can trigger an El Niño event. Satellite imagery shows that zones of deep convection contain a mix of systems on different scales. This emphasises the need to incorporate individual cumulonimbus clouds into the models – a development that is probably still decades away.

Finally, Tim Palmer amused us with a personalised account of the current status of seasonal forecasting. A start had been made in the 1980s, but the introduction of coupled models and the availability of improved data led to remarkably accurate seasonal forecasts by the late 1990s. He emphasised how important it is that these models should be able to make full use of the improved data. Such forecasts have had a variety of applications, including malaria outbreaks in South Africa, crop yields in Europe, hurricane numbers over the Atlantic, and river discharges in Bangladesh (where lives have been saved by taking timely action). To improve the forecasts, where greenhouse gas concentrations are involved, there is a need to understand the various links that eventually lead to climate change.

If Walker and Bliss had the opportunity to see how their ideas have been developed they would surely have been impressed, not only by the confirmation of long-range weather correlations such as they had been seeking but also by the progressively improving understanding of the dynamics of those correlations.

MEETING REPORT **by David Pedgley**

Weather and Photography

22 November 2008

One of the speakers at this meeting, held in the Mechanical Engineering Building of Imperial College London, was Malcolm Walker, who gave us a review of pre-1930 work by pioneering weather photographers. It was

astonishing to learn that the earliest known photograph of lightning was taken in 1847 – a daguerreotype taken only eight years after the announcement of its invention. A landscape photographer of the 1850s, known for including sky effects, was Gustave Le Gray, but it was not until the 1880s and 1890s that weather photography took off. By then, meteorologists had started to use photographs to identify cloud types. For example, the Hon. Ralph Abercromby went on a world voyage to prove that cloud forms were universal. Our Society set up a Thunderstorm Committee in 1887 with a particular interest in getting good photographs of lightning; and the British Association set up a Committee on Meteorological Photography in 1890 to arouse interest, to spread knowledge and to record events for study. By 1896 the International Meteorological Committee was able to publish the first international cloud atlas.

With the coming of the 20th century, three British names were particularly prominent in providing collections of cloud photographs: Clayden, Cave and Clarke. A.W. (Arthur) Clayden's *Cloud Studies* (1905) was written to improve precision when discussing cloud forms. It had a chapter on cloud photography that included measuring cloud altitude by using two cameras.

C.J.P. (Charles) Cave took his first cloud photograph in 1896, and he appears to have been the first meteorologist to photograph clouds from an airplane, in 1915. *Clouds* (1920), by G.A. (George) Clarke, who for many years from 1903 was observer at King's College, Aberdeen, was 'a descriptive illustrated guide-book to the observation and classification of clouds'. Both the Cave and Clarke collections are now part of the National Meteorological Archive. The biggest name in cloud photography from airplanes around this time was C.K.M. (Charles) Douglas, until recently thought to have been the pioneer. The whereabouts of his original negatives are unknown.

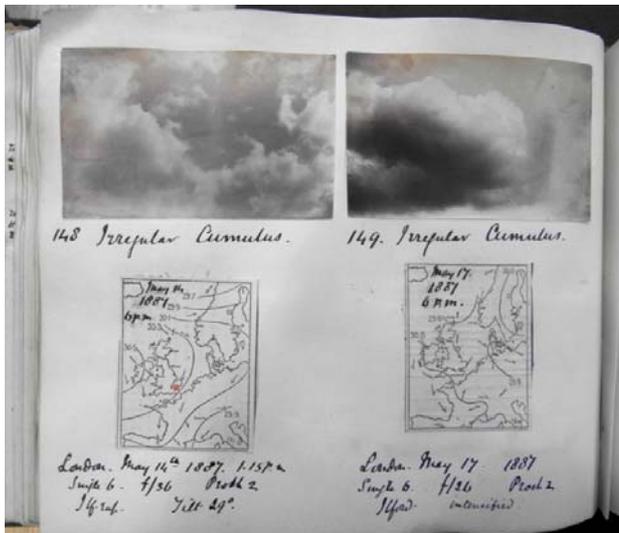
In addition to his well-illustrated talk, Malcolm provided a convenient list of early references (1885-1925) to cloud photography, mostly from the *Quarterly Journal of the Royal Meteorological Society*.

THE HON RALPH ABERCROMBY **by Mick Wood**

The Hon. Ralph Abercromby was mentioned by Malcolm Walker at the meeting on *Weather and Photography*. I did a fair amount of research on

Ralph for my profile of him published in *Weather* in March 2001; and I would like to elaborate a bit about the rich, and supposedly in poor health, Ralph Abercromby and how he was able to indulge in his passion for meteorology. He produced a textbook in 1887 that, with updates by A.H.R.Goldie, was still in libraries of Met Offices in 1949. His model of a mid-latitude depression, shown in early editions of the book, was considered by some to have delayed the progress of meteorology by some decades.*

He travelled the world and produced a wonderful book *Seas and Skies in many Latitudes or Wanderings in Search of Weather* in 1888. The special object of the voyages was to investigate the phenomena of the sky and weather in various parts of the world and to photograph them. The album of photographs is in the National Meteorological Archive at Exeter, along with his diaries.



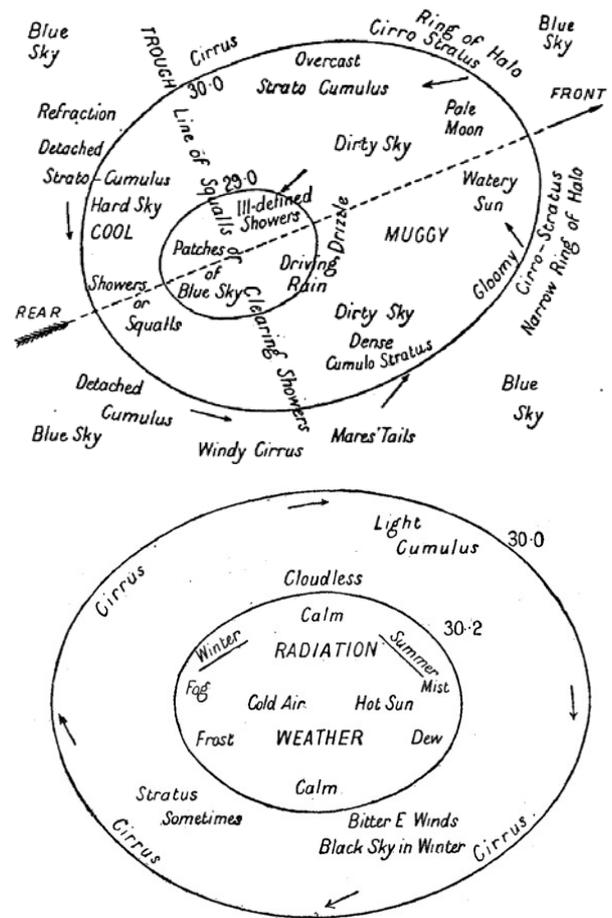
A page of Abercromby's album of photographs, showing pictures of cumulus taken in May 1887 and isobaric charts for the days they were taken.

Abercromby should be more famous for his input into the classification of clouds. With H.H.Hildebrandsson, he developed the classifications, from Luke Howard's original ideas, that were adopted by the International Meteorological Organization in Paris in 1896. The photographs he had taken of clouds over many parts of the world had given him a great insight into the different types and thus he was able to assist in what is now today *The International Cloud Atlas*. The World Meteorological Organization still acknowledges the work of Abercromby.

Malcolm showed a photograph of Tenerife. In 1887, Ralph Abercromby walked to the top of

Mount Teide and also saw at Oratavia "small boys in part of surf on boards"!

* The 1887 textbook was called *Weather: a popular exposition of the nature of weather changes from day to day*. Abercromby's models of depressions and anticyclones were included in this book, having first appeared in a paper entitled "Popular weather prognostics", which was read at a meeting of the Meteorological Society on 20 December 1882 and published in the Society's *Quarterly Journal* in 1883 (Vol.9, pp.27-47).



Above: Abercromby's cyclone model, containing what he called "cyclone prognostics".

Below: His "anticyclone prognostics".

Both diagrams taken from *Popular weather prognostics*, by R.Abercromby and W.Marriott, published in the *Quarterly Journal of the Meteorological Society*, 1883, 9, 27-47.

Comment from Malcolm Walker:

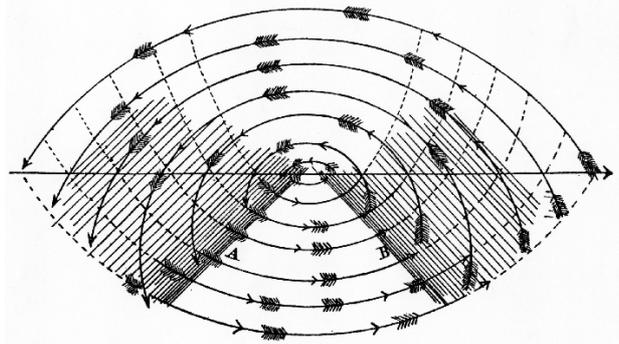
In the discussion which followed the reading of the paper by Abercromby and Marriott on 20 December 1882 (see pages 43-47), there

was only lukewarm support for the weather prognostics proposed by Abercromby. None the less, his cyclone model was widely accepted, as were, too, his models of anticyclones, straight isobars and wedge-shaped isobars. Not until the first decade of the 20th century were his prognostics seriously questioned – when the studies of trajectories of air in depressions made by R.G.K.Lempfert and William Napier Shaw refocused attention on flows of air rather than pressure patterns and also shed light on the physical processes responsible for precipitation in the principal rain belts.

In his Inaugural Lecture as Professor of Meteorology in the University of London, on *The Cyclone Problem: a history of models of the cyclonic storm*, delivered on 8 November 1966, Frank Ludlam called Abercromby's isobaric cyclone model "peculiarly uninformative" and pointed out that Abercromby had deliberately chosen an interpretation of the facts which suppressed the existence of the sudden changes associated with the confluence lines". He also pointed out that Abercromby's 'Trough Line of Squalls or Clearing Showers' should not extend north of the cyclone's track.

Around 1920, the Swedish meteorologist Tor Bergeron, using the same observations as Abercromby, produced a completely different representation of the same depression, one that was very like a model advocated in 1859 by Master Mariner George Jinman. The latter's model contained forward and rear confluence lines (A and B in the diagram below), these separating two distinct air currents flowing in opposite directions and crossing each other on either side of the centre. The hatching shows areas of rain.

But Jinman did not endear himself to the Establishment by saying a trifle tactlessly that his daily life allowed him to test "by practical experience *at sea* the laws which closet philosophers were elaborating *on shore*"! His ideas were ahead of their time. Some say that Abercromby's delayed the progress of meteorology by three or four decades.



Master Mariner Jinman's model of a mid-latitude cyclone, from the Second Edition of "Winds and their courses; or A practical exposition of the laws which govern the movements of hurricanes and gales" (George Philip & Son, 1861). First Edition published 1859, Third Edition 1865.

MEETING REPORT

by Malcolm Walker and Margaret Deacon

Four members of the History Group spoke at the 42nd Exeter Maritime History Conference, which was held at the University of Exeter on 13 and 14 September 2008. The title of the conference was *Weather at Sea: climate change and its effects on the maritime world*. Two other members of the Group, Margaret Deacon and Andrew Cook, were also at the conference.

The first paper was given by Malcolm Walker (Chairman of the Group), on "Meteorological pathfinders of the sea in the nineteenth century", in which he focused on the efforts of Maury, FitzRoy and others to help seafarers by constructing better models of weather systems and reliable charts of prevailing winds, weather and ocean currents and thus improve safety and comfort, save voyage time and reduce costs. He focused particularly on storm warnings for shipping and FitzRoy's efforts to help fishermen through provision of coastal barometers.

Another member of the Group who spoke on the first day of the conference was Clive Wilkinson (NOAA Climate Database Modernization Programme), on "History, climate change and the tropical Atlantic in the age of sail". In this paper, he showed that sailors learned over the years how to exploit prevailing winds, weather and ocean currents, an important finding being that winter was the best time of year for ships on the Atlantic to cross the equator, with 18-24°W the best longitude band to cross it.

On the second day of the conference, Dennis Wheeler (University of Sunderland) and Rob

Allan (Met Office Hadley Centre) spoke, the former on “Royal Navy logbooks: how the Nelsonian legacy helps the science of climate change”, the latter on “Historical ship logbook digitisation activities under the ACRE initiative” (the acronym ACRE standing for Atmospheric Circulation Reconstructions over the Earth).

Dennis showed how weather observations from the days of sail extracted from the logbooks of naval ships were now offering new insights into climate change; and he showed how this work involves interpreting verbal descriptions which used conventional wording to convey a fairly precise meaning at the time but can sometimes be misleading today because of changes that have since taken place in the meaning of words. For example: “gale” in the 18th century meant something more benign than would be assumed today.

Rob explained how digitised weather observations from the logbooks of sailing ships are helping him and his colleagues produce re-analyses of surface weather observations back to the 18th century.

Other papers at the conference not by members of the History Group were:

“Storms and submarines: the influence of weather on the Battle of the Atlantic in the Second World War”, by Eric Grove (University of Salford);

“Climate change and the decline of British Arctic whaling 1820-1850”, by Caroline Gunn (University of Hull);

“A century of change: climate, fishing and the fish communities of the western English Channel”, by Martin Genner (Marine Biological Association of the UK);

“Measuring climate change: getting global temperature change from marine weather observations” and “Royal Navy deck logs and the climate of World War II”, both by Philip Brohan (Met Office Hadley Centre);

“The records of the Chinese Maritime Customs in relation to climate”, by Robert Bickers and Catherine Ladds (University of Bristol);

“Arctic whaling and naval logs as sources of climatic information”, by Bernard Stonehouse (University of Hull);

“The validation of weather-related entries in British Arctic whaling logs, 1810-1820”, by Dinah Molloy-Thompson (Scott Polar Research Institute, Cambridge).

Most of the papers dealt with the use of historical data of various kinds that may provide information on changes in weather and climate, either to throw light on specific events in the past or to assist in the understanding of long-term change in climate and its causes.

All in all, this was a fascinating and enjoyable meeting, made all the more enjoyable by being held on the beautiful Streatham Campus of Exeter University.

EIGHTEENTH CENTURY DATA

by Keith Tinkler

Professor of Earth Sciences,
Brock University, Canada

I am a member of this group thanks to the kind offices of Joan Kenworthy and our common background at Liverpool University, decades ago.

In the light of the recent announcement of the ACRE Project, I thought it worthwhile to announce the existence of some data I have been uploading to my web site. It began when searching for a distant uncle, one William Hutchinson, onetime Privateer and later Dockmaster at Liverpool from 1759 to 1793, I encountered Dr Philip Woodworth at the Proudman Institute of Oceanography (Liverpool University). Dr Woodworth had been pursuing Hutchinson for his data on tides and weather at Liverpool: a journal he kept twice a day between 1 January 1768 and 11 August 1793. To cut to the chase, we have between us and with the help of students, transcribed the entire Tide and Weather Journal digitally – including the twice daily comments on the weather – and the whole is on a CD for this, Liverpool's year of European Culture, issued by the Proudman Institute at Liverpool, and with a version available on-line through a specially designed web page at Brock University, Canada.

<http://www.brocku.ca/liverpool/>

In the course of pursuing Hutchinson's career as a Privateer, I became aware that the *Gentleman's Magazine* (founded 1731) carried some, and varied, meteorological data. Initially (starting in January 1747), daily wind directions at Deal and at the *Magazine's* London Office above St. John's Gate were appended in their own column at the page of Stock Market prices (which provided a convenient daily calendrical framework). Originally, this was to aid readers in their comprehension of Fleet movements in the

Channel during the war ending January 1748, but in peacetime it presumably served a similar purpose for explaining the delay of merchant shipping into the Thames. It also served the developing public appetite for weather information that had previously been skewed towards anecdotal accounts of extreme events. Then, in March 1747, a barometric pressure measurement appeared, together with a temperature measurement in Fahrenheit units, but with the scale reversed from what expect now. Both of these records, being from sensitive instruments, were in the Offices in London. The subsequent vicissitudes of the weather records are too tortuous to recount here – and some years have none at all. However, after 1763 an almost continuous daily record can be compiled (although the magazine year 1768 printed the years 1763-1767, a month at a time). Usually, the daily record ran up to the day (I presume) that the magazine went to press – about the 26th of the month, when they would even work Sunday to meet the press, and so a month's record typically begins on the 27th of the previous month. Alternatively, the whole month was printed, but for the previous year. Since the magazine was printed at the end of the month, this was still little guide to the forthcoming weather! Thus, later in the century it was sometimes printed with an eleven month delay, so that when the December magazine arrived in the mail one had some comparison for January ahead on the basis of the previous January!

It seemed to me, with an interest in genealogy as well, that these records and others like them deserved to be available to the general public, so that one could know the weather when an ancestor was born or married or buried, or for any other historical purpose. They are interesting in their own right too, and as the ACRE project suggests, they form the only instrumental data available for earlier centuries - however flawed they may appear to be. There is a lot of scope for analysis, especially in cross-checking their accuracy. London for example, usually has several contemporary records by the later eighteenth century.

Thanks to the EBCO, ECCO and JSTOR databases, many printed records are becoming available, but just as many are likely available on microfilm. A great many (but by no means all) eighteenth century magazines and newspapers carried weather records of one sort or another, and as things stand we have little or no idea what is available from these less usual sources. Prior to Hutchinson's record, the

"Liverpool Advertiser and Mercantile Register" carried a record of wind in the previous week, for morning and afternoon, and with weather remarks up to three times a day (I have compiled 5 months from a brief session on microfilm). Hutchinson's record stopped when he resigned in frustration in 1793. But a careful reading of the *Gentleman's Magazine* shows that another Liverpool record kept by John Holt the agriculturalist started up in April 1791 and extends at least as far as 1799. "Buddy checking" the pressure record with Hutchinson for overlapping months shows an exceptionally good match for the months I have checked so far. Another author appeared in January 1801, when a record for Liverpool appears, after Holt's death, but without barometer or temperature, and it was, I suspect, short-lived. Subsequently, the *Liverpool Mercury* carries another weekly record that was being printed in January 1812, and thereafter. These I know from stray purchases, but systematic searches are needed. Some of the missing years in the *Gentleman's Magazine's* London record may be patched by those in the *Universal Magazine* that, again, I discovered in a stray purchase. The *London Chronicle* seems to have published a half-monthly record, but so far I have only one example. In the 1790s, it seems that the *Universal Magazine's* records are those of Edward Bent – the Publisher who also issued them separately as his own and seemed to have had a "medicinal" interest in weather. The *London Magazine*, the *Gentleman's Magazine's* constant competitor, is less helpful – I have found only winds at Deal. In April 1754, the two magazines agree nicely for the most part – though one batch of days show little match. The *European Magazine* had a record for London from Thomas Blunt, and the *Gentleman's Magazine's* had one from William Cary well into the nineteenth century. Both of these gentlemen were instrument makers and so had a vested interest in their generosity.

Finally, I should make some mention of the Whites – the most famous being Gilbert White of Selborne – whose daily Journal is an almost exact contemporary to Hutchinson's. However, Gilbert's brother Thomas, later Thomas Holt White, kept a diary at south Lambeth, but would travel in the summer to Selborne, and then on to Fyfield to stay with brother Henry. Thomas published his diary with the *Gentleman's Magazine's*. Gilbert's is now available in a three-volume transcription (Mabey & Greenoaks), but brother John's records, who was first of all in

Gibraltar, and then Blackburn (Lancs), never made it into print. Gilbert's sister was married to Thomas Barker of Rutland, also famous for his weather and naturalist's diary (see Kington, J., editor, 1988, *The weather journals of a Rutland squire: Thomas Barker of Lyndon Hall*, Oakham: Rutland Record Society, 217 pages).

I am having student interns transcribe late eighteenth century data – notably from the twice-daily Royal Society record, and we are now up to the early 1790s.

My transcriptions can be viewed at

<http://web.mac.com/keithjinkler/iWeb/Weatherbytheday/DailyWeather.html>

as part of an eighteenth century Liverpool digital data page.

MEETING REPORT by Malcolm Walker

Special Exhibition 24 November 2008

Nine members of the Group assembled in the Science Museum's Smith Centre on 24 November to view a special exhibition curated by History Group member Jane Insley to serve as a taster for sponsorship for a much larger Climate Change exhibition. This special exhibition, which was not open to the general public, was in space that was for many years the home of the Meteorological Office.

A fascinating collection of exhibits had been gathered together, including a diagonal barometer by Watkins and Smith (1763), a FitzRoy storm barometer (c.1860), a Quare barometer (c.1700), a precision aneroid barometer (1984), an alcohol thermometer by Casartel (Amsterdam, 1720-50), a mercury thermometer by George Adams (late 18th century), Luke Howard's rain gauge (1800-18), a Campbell sunshine recorder (1891-2), a rebbelib or shell map from the Marshall islands, a Vaisala radiosonde (1983), a stern bearing bush of the SS *Royal Charter* (wrecked on the coast of Anglesey in October 1859 in the greatest storm of the 19th century) and a broadsheet featuring Winstanley's Eddystone Lighthouse, which was swept away in the great storm of 1703.

Other exhibits focused on the coal, gas and electricity industries, with various pieces of apparatus on show, including Stephenson, Davy, Clanny, Gray, Marsault and Mueseler

miners' lamps, seals of gas and coke companies, a wind-up radio (1995), a 1787 etching of Joseph Black (who discovered carbon dioxide in 1753), an 1872 *Vanity Fair* cartoon of John Tyndall (who speculated that human activities might bring about atmospheric warming), an 1890 photographic portrait of Svante Arrhenius (who suggested, in 1896, that carbon dioxide emissions from the burning of coal would lead to global warming), and various models, paintings and posters concerned with power generation, transport issues and climate change.

Also exhibited were a Global Warming mug and the first carbon footprint computer, a gadget which monitors the wearer's carbon emissions in real time.

Jane Insley kindly arranged and hosted the meeting, and all of us who attended were very grateful to her for giving us the opportunity to view this most interesting exhibition.

PEN PORTRAITS OF PRESIDENTS OF THE ROYAL METEOROLOGICAL SOCIETY

Since 1992, there have been published in *Weather* pen portraits of Presidents of the Royal Meteorological Society and the meteorological societies which preceded our Society.

The Royal Meteorological Society was founded in 1850 as the British Meteorological Society, becoming in 1866 the Meteorological Society and in 1883 the Royal Meteorological Society. The first Meteorological Society of London was formed in 1823 and continued to exist until 1850, but it was active only in 1823 and 1824 and from 1836 to 1843. In the early 1840s, it was sometimes called the Meteorological Society of Great Britain. The other Meteorological Society of London existed from 1848 to 1850.

Pen portraits of almost all of the Presidents who are no longer alive have been published, and the following list gives the names of the deceased Presidents, along with the years when they served as President and the issue of *Weather* which contains their pen portrait.

INTRODUCTION **September 1992**
Samuel Charles Whitbread
1850-52; 1864 **December 1997**

George Leach 1853-55	March 2001	Richard Bentley 1905-06	Not yet published
John Fiott Lee 1855-57	July 1996	Hugh Robert Mill 1907-08	April 1994
Robert Stephenson 1857-58	February 1995	Lt-Col Henry Mellish 1909-10	November 1996
Thomas Sopwith 1859-60	Not yet published	Henry Newton Dickson 1911-12	May 1995
Nathaniel Beardmore 1861-62	September 2000	Charles John Philip Cave 1913-14; 1924-25	October 1993
Robert Dundas Thomson 1863-64	August 1998	Sir Henry George Lyons 1915-17	March 1998
Charles Brooke 1865-66	January 1998	Sir William Napier Shaw 1918-19	March 1995 and November 2004
James Glaisher 1867-68	November 1995	Reginald Hawthorn Hooker 1920-21	January 1995
Charles Vincent Walker 1869-70	May 1998	Charles Chree 1922-23	June 1994
John William Tripe 1871-72	March 1996	Sir Gilbert Thomas Walker 1926-27	July 1997
Robert James Mann 1873-75	January 2001	Sir Richard Arman Gregory 1928-29	July 1994
Henry Storcks Eaton 1876-77	May 1997	Rudolf Gustav Karl Lempfert 1930-31	September 1996
Charles Greaves 1878-79	September 2001	Sydney Chapman 1932-33	October 1994
George James Symons 1880-81; 1900	March 1993	Ernest Gold 1934-35	October 2003
Sir John Knox Laughton 1882-83	January 1999	Francis John Welsh Whipple 1936-37	September 1993
Robert Henry Scott 1884-85	September 1994	Sir Bernard Augustus Keen 1938-39	November 1993
William Ellis 1886-87	Not yet published	Sir George Clarke Simpson 1940-41	October 1995
William Marcet 1888-89	March 1997	Sir David Brunt 1942-44	September 1992
Baldwin Latham 1890-91	April 1997	Gordon Manley 1945-46	August 1993
Charles Theodore Williams 1892-93; 1900	December 1992	Gordon Miller Bourne Dobson 1947-48	May 2007
Richard Inwards 1894-95	August 1995	Sir Robert Watson-Watt 1949-51	November 1992
Edward Mawley 1896-97	April 1998	Sir Charles William Blyth Normand 1951-53	January 1993
Francis Campbell Bayard 1898-99	October 1999	Sir Oliver Graham Sutton 1953-55	January 2009
William Henry Dines 1901-02	November 2005	Reginald Cockcroft Sutcliffe 1955-57	August 2003
Sir David Wilson Barker 1903-04	December 1999	Percival Albert Sheppard 1957-59	Not yet published

James Martin Stagg 1959-61	May 1994
Howard Latimer Penman 1961-63	December 1994
John Stanley Sawyer 1963-65	June 2006
George David Robinson 1965-67	February 1999
Frederick Kenneth Hare 1967-68	March 2003
Frank Pasquill 1970-72	April 2000
Henry Charnock 1982-84	Not yet published

PRESIDENTS OF THE METEOROLOGICAL SOCIETIES OF LONDON

George Birkbeck 1823-39	December 1993
Lord Robert Grosvenor 1839-50	March 1994
Richard James Morrison 1848-50	February 1994
Article about the Meteorological Societies of London	November 1993

OBITUARY – ALAN WALL by Malcolm Walker

We are very sorry to report that History Group member Alan Wall died on 15 September 2008, aged 83. He was born on 16 January 1925 and became a Fellow of the Royal Meteorological Society in February 1986. He was born in Ewell, Surrey, and died in West End, Southampton.

His meteorological career began at Gloucester in August 1941, when he joined an Initial Training Course for Meteorological Assistants. After that, he was posted to the Photographic Reconnaissance Unit (PRU) at RAF Benson and transferred in 1942 to the PRU at RAF Hartford Bridge (later Blackbushe). At both places, he was engaged in weather observing, chart-plotting and operational briefing.

He was mobilised in the RAF in May 1943, receiving initial training (square-bashing and weapons training) at Skegness. Then, he served as a meteorological assistant in Iceland and later, in 1944, received aircrew training at various places: RAF Felixstowe; the Air Crew Receiving Centre at Paignton; No.2(O) Advanced Flying Unit RAF Millom; and No.5(C)

Operational Training Unit RAF Turnberry. In December 1944 and for much of 1945, he was a Meteorological Air Observer on reconnaissance flights with Nos.251 and 53 Squadrons. After the War, until demobilised in June 1947, he was engaged in weather observing and chart plotting at RAF Chivenor and RAF Benson.

After his demobilisation, he was again engaged in weather observing and chart plotting, first at RAF Hendon, later at Heathrow (North Side). He also spent a short time in administration at Victory House, London. Then, in 1950, he attended weather forecasting courses at Kingsway (London) and Northolt; and in 1951 he attended radio-sonde training courses at Downham Market and Leuchars. From 1951 to 1953, he served aboard Ocean Weather Ship *Weather Watcher*, after which he served as a civil aviation forecaster at Northolt, before, in 1954, attending an advanced forecasting course at Stanmore. From 1954 to 1956, he was a forecaster at Heathrow, and then, in December 1956, he was appointed Officer-in-Charge of the Radio-Sonde Unit at RAF Khormaksar, Aden. This posting coincided with the International Geophysical Year (1957-58), during which there was at Aden an enhanced programme of radio-sonde flights and a routine programme of sun and sky radiation measurements.

After his return to the United Kingdom in early 1959, Alan served at the Uxbridge Air Traffic Control Centre, London Weather Centre and HQ Bomber Command (High Wycombe). Then, in December 1963, he was seconded to the East African Meteorological Department (EAMD), Nairobi, where his job was initially weather analysis and forecasting for intercontinental civil aviation at Embakasi and Dagoretti. Later (in 1965), he was placed in charge of the EAMD's Initial Training School, Dagoretti, where he lectured on elementary meteorology and observing. At the same time, he lectured on aviation meteorology to Air Traffic Control (ATC) cadets at the ATC Training School, Wilson Airfield, Nairobi, and on equatorial climatology to Ecology students at the University of East Africa, Nairobi.

When he returned to the UK, in 1969, Alan worked in the Meteorological Office at Bracknell, in Met O 3, the Climate Branch, answering climatological enquiries and editing the UK *Monthly Weather Report*. Four years later, he moved to Met O 13, the International and Planning Branch, where he helped establish additional radio-sonde stations around the world

for the World Weather Watch facet of the Global Atmospheric Research Programme.

The rest of his career was spent at Bracknell – from 1975 to 1978 in the Central Forecasting Office and thereafter in Met O 13 again. He retired from the Met Office in April 1984.

He had a number of hobbies. One was carpentry, at which he excelled. Another was photography, especially of clouds and steam trains; and he was also keen on bird-watching and classical music.

His wife died four weeks to the day after he did. He is survived by one son, two daughters and three grandsons. We send our very sincere condolences to them all.

150 YEARS AGO

To find out what our Society was doing in 1859, let us turn to the *Ninth and Tenth Reports of the Council of the British Meteorological Society for the years 1859 and 1860*. Why these reports were combined when reports had previously been published annually was not explained.

From the 1859-60 report (copy in the National Meteorological Archive, Exeter), we learn that meetings of the Society during these two years had been held in the rooms of the Institution of Civil Engineers, “free of rent, for which the best thanks of the Society are due”.

We learn, too, that the papers which had been read at the Society’s meetings had “possessed much interest” and had “in many instances excited lively and interesting discussions”. In the words of the report, “those on ozone perhaps caused more interest than any others, as it is a comparatively new study, and one which has not been fully worked out”.

We are talking here of ozone near the earth’s surface. Two decades were to elapse before the idea of there being ozone high up was put forward. That came in 1880, when Walter Noel Hartley postulated the existence of a layer in the upper atmosphere in which ozone absorbs solar radiation of wavelengths 200-300 nanometres. Not until 1913 was it demonstrated, by Charles Fabry and Henry Buisson, that ozone is plentiful in the stratosphere and responsible for filtering out harmful ultraviolet radiation from the sun.

The reports of the British Meteorological Society in the 1850s contained scientific papers and the 1859-60 report included the following:

(pp.6-11) *On the meteorology of the Arctic Seas during the ‘Fox’ Arctic Expedition*, by David Walker, Esq., MD, Surgeon to the Expedition.

(pp.11-31) *On the determination of the mean pressure of the atmosphere, on every day in the year, as deduced from all the barometrical observations taken at the Royal Observatory, Greenwich, from the year 1841 to 1858*, by James Glaisher, Esq., FRS, &c, Secretary to the British Meteorological Society.

(pp.32-45) *On some of the atmospheric conditions favourable to the development of ozone, as deduced from observations taken at Little Bridy, Dorset, from February 20th 1857 to February 20th 1859*, by Henry Storks Eaton, MA.

(pp.46-54) *On the meteorology and mortality of 1858*, by J.W.Tripe, MD, LRCPE, Medical Officer of Health for the Hackney District.

(pp.54-62) *On the meteorology of scarlatina*, by George V.Vernon, FRAS, MBMS, Manchester.

(pp.68-83) *Medical meteorology and atmospheric ozone*, by Thomas Moffat, MD, FRAS, FGS, MBMS, &c.

(pp.62-65) *On a cold term which occurred in Canada in January 1859, from observations taken at St.Martin, Isle Jesus, Canada East, Lat. 45°32’N Long.73°36’W, 118 feet above the sea-level*, by Charles Smallwood, MD, LLD, Professor of Meteorology in the University of McGill College, Montreal.

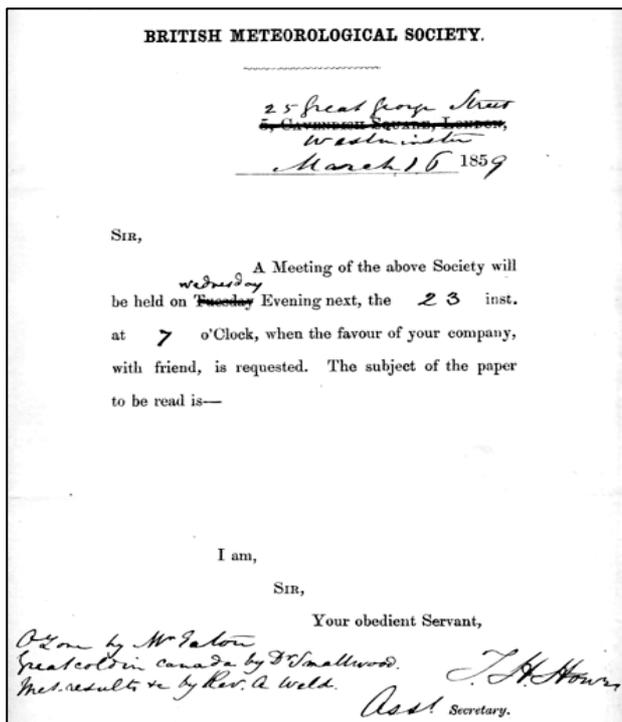
Professor Smallwood stated that “mercury froze in open vessels, and mercury in the tube of the thermometer marked 43°.6 below zero, showing that mercury contracts by temperature below its freezing-point”. He added that “Sir E.Belcher is said to have observed it descend as low as 46° below zero”.

Reference was made in the 1859-60 report to the Duke of Northumberland’s great interest in the weather, and attention was drawn to his benevolence. In the words of the report:

In October 1859, the Duke’s attention was given to some registers of the weather kept at one of his farms near Alnwick, and in consequence of some inaccuracies which had arisen from the use of imperfect instruments, His Grace provided a set of Standard Instruments, which have since been in use, and the results of the observations made by Mr James Scott have been regularly recorded in the Quarterly Reports of this Society. During the same month, His Grace, in a letter to Mr Sopwith (President of the British Meteorological Society), suggested that correct meteorological instruments would probably prove useful if placed at the fishing

villages and harbours along the Northumbrian coast, and he offered to pay one-half of the cost of such instruments, the Meteorological Society taking the management of the observations and the several stations to be mutually agreed on.

There followed an account of how this proposal had been implemented. Fourteen barometers had been prepared by Negretti and Zambra of London "in conformity with views expressed by the Duke of Northumberland, and more especially was attention bestowed on their being plain, strong, easily read, not readily liable to injury by movement, and as moderate in price as is consistent with good workmanship".



Notice to members of the British Meteorological Society from T.H.Howe, Assistant Secretary, dated 16 March 1859, to inform them that a meeting of the Society would be held the following Wednesday, the 23 inst. at 7 o'clock, when the favour of their company, with friend, was requested. Papers were to be read by Mr Eaton on Ozone, Dr Smallwood on Great cold in Canada and the Rev.A.Weld on Meteorological results, etc.

Earlier in the report, we find the following:

The Council congratulate the Members on a new and important work in connexion with Meteorology, which entirely owes its origin to the humane liberality of His Grace the Duke of Northumberland, and has to a great extent been completed by the exertions of the President and

Secretary, in placing barometers and other instruments at numerous stations along the coast of Northumberland, by which there is satisfactory evidence for believing that more than thirty lives have already been saved, and this induces a hope that they will be found of very material service in preventing calamities at sea to which the fishermen on our coasts are peculiarly liable. His Grace has contributed £100 towards this object; many of the local Clergy and Gentry have taken a warm interest in its progress, and several local subscriptions have been given.

Reference was also made in the 1859-60 report to the *Royal Charter* disaster of October 1859, an event of great significance in the history of the Met Office, as we shall see in the autumn 2009 issue of the History Group's Newsletter.

The accounts of the British Meteorological Society for the year 1859 show that the balance carried forward from 1858 was £94 1s 3d and the balance carried forward into 1860 was £39 13s 6d. Income for the year amounted to £104 16s 9d, made up of £94 3s 0d from subscriptions and the rest from dividends. Expenditure amounted to £159 4s 6d, so the excess of expenditure over income for the year was £54 7s 9d. The Assistant Secretary was paid £52 0s 0d in 1859 and the Secretary's Petty Expenses amounted to £4 0s 0d. The cost of printing the annual report for 1858 was £51 16s 6d, and expenditure on the Registrar-General's Quarterly Reports for December 1858, March, June and September 1859 was £4 10s 0d. The cost of printing 10,000 "Forms for Observations" was £22 12s 0d, paid on 17 March 1859, and the cost of buying a "Lever Stamping Press for marking books, &c" was £1 15s 6d, paid on 22 November 1859. Collectors were used for obtaining subscriptions (Messrs Austin and Fisher of Moorgate Street, City of London), and in 1859 they were paid £1 17s 0d for their efforts. Other expenditure during 1859 was on postage and stationery and on refreshments at meetings.

Finally, we note that the President, Thomas Sopwith, spoke at the Society's meeting on 16 November 1859 *On the practical importance of meteorology*. His paper was published in pamphlet form (by Taylor and Francis, 1859, 15 pages, copy in the National Meteorological Archive, Exeter) and includes the following: *We may say that Meteorology is the most universally observed of all sciences; that the whole family of mankind form a Meteorological Society, constantly engaged in observing results*

which, though vague and inaccurate, are more frequently communicated in words and in writing than any other general topic, unless it be health, which is, as we all know, closely connected with, and dependent on, meteorological conditions – so much so that an enlarged and practical view constantly recognizes their mutual connexion.

He then commented that Meteorology had not as a science, however, attained its due place and proceeded to consider “the necessity which exists for some means of causing and promoting a more general acquaintance with meteorology’s principles, and deriving more practical benefits from its results.

FROM THE QJRMetS 100 YEARS AGO

We saw in the last issue of the Newsletter (No.3, 2008), and in the October 2008 issue of *Weather* (Vol.63, pp.294-295), that our Society was granted the “Royal” handle in the autumn of 1883. Another notable 125th anniversary in the autumn of 2008 was that of the German Meteorological Society, formed in 1883. A paper in the January 1909 issue of the *Quarterly Journal of the Royal Meteorological Society* (Vol.35, pp.1-6) reviewed the silver jubilee celebrations of the German society. The author was Henry Harries, who represented the Royal Meteorological Society at these celebrations.

Harries mentioned that the German society had been formed in Hamburg on 18 November 1883, with Dr Georg von Neumayer its first President, and he drew attention to a practical difficulty faced by the new society. As he put it: *Owing to the extensive area of the German Empire rendering it impossible to hold frequent meetings, it was from the first deemed desirable to enrol the members in local branches, so as to get over this difficulty. The Hamburg-Altona branch was formed on January 14, 1884; the Berlin one on January 29; the Munich one on February 13; and so on. This sufficiently explains why the Society as a whole holds a general meeting only once in two or three years, at some convenient holiday season, when members from all parts of the country can be brought together. For many years it was the practice for the German Geographical and Meteorological Societies to combine their forces so as to attract a goodly company at these occasional reunions, but of recent years this custom has been abandoned, each Society being strong enough in itself to hold independent meetings.*

The German Meteorological Society’s 25th anniversary conference was held in Hamburg from 28 to 30 September 1908, and we learn from Harries that “a large number of members attended, every quarter of the [German] Empire being represented”. He mentioned that the idea of forming the German Meteorological Society had come from Professor Wladimir Köppen and reported that “the keenest regret” had been expressed at the absence of von Neumayer “on account of his advanced age and the very long distance of his residence from Hamburg” (Neustadt in the Palatinate). He went on to remind readers of the *QJRMetS* that von Neumayer, a very distinguished meteorologist, had been an Honorary Member of the Royal Meteorological Society since 1874. Sadly, the centenary of von Neumayer’s death occurs in 2009. He was born on 21 June 1826 and died on 24 May 1909.

A further noteworthy article in the 1909 volume of the *Quarterly Journal* was that by another of the Society’s Honorary Members, Richard Assmann, concerning the aerological expedition of the Royal Prussian Aeronautical Observatory to tropical East Africa from July to December 1908 (*QJRMetS*, 1909, **35**, 51-54).

Assmann stated that the object of the expedition was “the exploration of the upper air in the heart of a tropical continent, in the very middle of the equatorial belt”, and he explained that:

The large Victoria Nyanza, whose extent of surface equals the Kingdom of Bavaria, was considered not only the best, but the only spot suitable for the purpose of making kite and self-registering balloon ascents on board a steamer, thus affording the opportunity of increasing or lessening the relative velocity of the wind, the chief object, though, being the recovery of the instruments sent up by balloons-sondes.

The expedition was also intended, he said, to shed light on a “well-known important problem, the origin and interior structure of the monsoon winds of the Indian Ocean” and would be “valuable in supplementing the exploration of the Atlantic trade winds, successfully carried out by Hergesell and the assistants of Teisserenc de Bort and Rotch on board the *Otaria*”.

Assmann presented what he called “a brief summary of the meteorological results”, saying that it was not yet possible to provide any more than that, but he believed the expedition would yield “very interesting and important new data”.

The Royal Meteorological Society's Presidential Address in 1909 was delivered by Hugh Robert Mill (on 20 January 1909), on *Some aims and efforts of the Royal Meteorological Society in its relation to the public and to meteorological science* (published in the April 1909 issue of the Society's *Quarterly Journal*, Vol.35, pp.65-79).

Mill ranged widely and put forward a number of interesting proposals, among them this one:

We like to look forward to a day when, in some great central building in London, all the meteorological agencies of the British Isles, and a central department for the Empire, would dwell together in co-operative independence; and I like to think that with the exercise of the principle of mutual concession, which has been successful hitherto, this splendid dream might ultimately be realised.

Along with the Royal Meteorological Society, these agencies included, Mill said, the Scottish Meteorological Society, the British Rainfall Organization and the Meteorological Office. In what he called an "Imperial Meteorological Institute", there would be, he suggested, the meteorological services of India, Australia, Canada and South Africa, together with various tropical and other colonies which he said were "much in need of some fostering care".

In several places, Mill put his views strongly. On page 68, for example, we find the following:

But freely as I would admit all honest originality of thought, there is no room in such a Society as this for discussing the type of ideas, usually of doubtful originality, known to the scientific man as "paradoxes", ideas which originate in satisfied ignorance either of those fundamental principles of physics on which the whole science of Meteorology necessarily rests, or of those logical processes which are required for the very act of reasoning. ... Ignorance of the history of Meteorology and of the possibilities of Nature are at the bottom of most of the preposterous theories of cycles of weather whereby the showers and breezes of every day are predicted for all time, and for those perennial claims to regulation of the weather, bringing rain or dispersing fog, that every now and again trouble and disappoint the oversea dominions of the British Crown or the Mother-country itself. An even less excusable ignorance, that of the recorded weather of past years, leads to such absurd assertions as that the wireless telegraphy installations in Cornwall in 1903 brought about the very wet summer of that year.

And on page 69, we find these words:

I wish to call attention specially to two lines of usefulness which lie open to our Society at the present time. One is the correction of the impulsive sensationalism and anti-scientific spirit in meteorological matters of a certain section of the press of this country which no doubt faithfully reflects the somewhat muddled ideas of that body which I have defined as the careless public; the other is the advance which has been made in meteorological science during the last few years and the new opportunities it brings.

In Mill's opinion, the Royal Meteorological Society had been "too modest in its estimate of its own importance as regards the public", and he considered that the Society deserved to "have a place of its own provided by the nation".

It did indeed have a place of its own only twelve years later (No.49 Cromwell Road, South Kensington), but purchased with its own money and loans from Fellows, not provided by the nation.

Mill's 1909 Presidential Address can surely be considered a 'classic'. He was forward-looking, forthright, critical and sometimes scornful, but always constructively so. A century on, this Address is still a good read.

THE INTERNATIONAL ENVIRONMENTAL DATA RESCUE ORGANIZATION

In October 2008, the following was received from Dr Richard Crouthamel, Executive Director of the International Environmental Data Rescue Organization, Maryland, USA. He has given us permission to reproduce his e-mail here, in the hope that readers will spread the word and perhaps offer him some advice. If you can help in any way, please contact him. You will find his contact details below.

The story...

I retired from NOAA / National Weather Service in 2004 and formed **IEDRO** (International Environmental Data Rescue Organization). The US government calls us a "certified 501(c)(3) non-profit organization" (donations are tax-deductable for US citizens) consisting of 27 unpaid volunteers – scientists, programmers, writers, accountants and people from various professions all believing in our Mission Statement – *Rescuing historic environmental data will do more to prevent humankind's suffering and death than any other endeavour.*

Using NOAA funds and private donations, we establish and maintain data rescue and digitization (DR&D) projects throughout the world, mainly in developing countries. To date, these include Kenya, Malawi, Mozambique, Niger, Senegal, Tanzania, Zambia, the Dominican Republic, Chile and Uruguay. We have "rescued" nearly 1,000,000 surface and upper-air historic weather observations.

The Process...

Our volunteers find data in need of rescue, set up the projects, usually within the national meteorological services, and provide the equipment and training for the local staff to photograph each page of weather observations, transferring the images to CD-ROMs which come back to IEDRO. We provide quality control and send the images to NOAA's National Climatic Data Center where personnel key the data into the NOAA World Data Base for the open and unrestricted use of the world community per WMO Resolution 40. A set of digitized observations is returned to the country of origin.

What we have...

Our web site currently hosts about 60 pages of information <http://IEDRO.ORG> and we publish a free monthly newsletter. We are working with Hama Kontongomde of the World Meteorological Organization to coordinate our future efforts. The American Meteorological Society endorses our work in that they provide IEDRO a free booth space at their annual meetings (January 2009 in Phoenix, Arizona will mark IEDRO's fourth participation).

What we need...

Publicity – We need to let people know that there is one non-profit organization in the world dedicated to the rescue and digitization of all environmental data, and part of our mandate is to seek funds to enable that to be done.

Volunteers – We need virtual volunteers from all over the world to help, these volunteers to:

- A. Search out data rescue opportunities;
- B. Author articles on DR&D for our web site and our newsletter;
- C. Give presentations in their local area on the importance of DR&D (we have some already constructed using PowerPoint);
- D. Travel to new data rescue countries to procure and install equipment and provide training (we pay travel costs, volunteers provide their time);

E. Provide translation services – we always conduct our correspondence in the local language;

F. Research additional uses for the practical application of digitized environmental data;

G. And the most difficult endeavour of all – suggest possible funding opportunities

Advice – We need professional advice on a variety of topics ranging from which direction IEDRO should take to how we can integrate our operations into other data rescue organizations.

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MY LIFE ON THE OCEAN WAVES **by Alan Heasman**

The note by Dennis Wheeler (in Newsletter 2, 2008) on the recovery of instrumental data from the East India Company ships' logbooks reminded me of my very earliest career activity in the UK Meteorological Office.

I began working in the Met Office on 4 November 1963. Unusually for a new 'Scientific Assistant' I was not sent for Observer training. My first post was on 'day duties' in M.O.1 (later Met O 1), the Marine Department at the Met Office HQ, Bracknell. I quickly learned that M.O.1 was so designated because it had its roots in the original Meteorological Department of the Board of Trade as formed by FitzRoy in 1854/55. M.O.1's work remained that of Marine Meteorology. As such, one of its main tasks was the maintenance of the 'Voluntary Observing Fleet' (VOF) much as laid down on the principles of Maury and FitzRoy.

One section of M.O.1 supplied meteorological equipment to the VOF ships, inspected the ships when in port and retrieved the special 'Weather Logbooks' kept by the VOF ships. At that time, there were over 700 UK merchant ships in the VOF, many making more than one voyage each year. Each trip yielded several hundred observations. Thus, thousands of detailed marine weather observations including sea temperature, (derived) ocean current data

and 'strange' non-weather phenomena became available for later analysis in M.O.1.

Along with four or five other staff, one of my tasks was the extraction and 'Quality Control' (QC) of these data. I recall having personal 'targets' to extract upward of 2000 observations each week! Observations were prone to various 'human' errors of mis-coding, incorrect units, positional errors of Lat/Long and time zones, etc. These had to be resolved before the data could be copied manually on to large tabulation sheets which were double-checked by a colleague before being despatched for 'punch card' production and ultimately for inclusion in 'embryo' computer data sets. Observational methods were also noted. These data sets were exchanged with other nations, each of whom were tasked with producing marine climate atlases. As well as keeping pace with the 1960s data, some effort was spent processing logbooks from earlier decades. Thousands of these older weather logbooks, from FitzRoy's days to the late 20th century were (and still are) stored in the National Met. Archive, then at Bracknell and now at Exeter.

My second key task was to assist in the production of near 'real time' 10-day and monthly charts of sea temperature and sea ice conditions for most of the Northern Hemisphere. Every day, yards/metres of teleprinter paper containing ships' synoptic reports, were delivered from the Met Office communications centre (M.O.5). From these, sea temperature data were plotted on to large working charts, each value being allotted to a one degree square of Lat/Long. From these hundreds of observations, mean 10-day sea temperature isotherms were drawn. In addition, and where appropriate, reports of sea ice and/or icebergs were noted and added to the working charts. Reports were also received from the International Ice Patrol (for areas of the NW Atlantic), maritime agencies in the Baltic countries, USSR, Canada, etc. Trawlers operating in Arctic waters also reported, though often in encrypted code for fear of letting their fishing rivals know of their whereabouts! In later years it transpired that these 'trawlers' were not just after fish but played a clandestine role in the so-called 'Cold War' of the 1960s; another reason to 'hide' their location. Even trans-polar commercial airlines, e.g. SAS, were asked to sketch aerial observations of the ice cover on to cards which were then posted to Bracknell after landing! The very earliest satellites were able to provide a few 'blurred' visual images of the main

sea ice cover – daylight permitting! At that time, the USA and the USSR had manned 'ice islands' based on the floating polar sea ice which drifted with time across the Arctic polar basin reporting weather and other data. Where direct ice observations could not be made (which was in fact most of the Arctic!), a combination of polar climatology and a 'cunning' method of estimating ice cover derived from accumulated sub-zero air temperature data from land-based synoptic observations was used to estimate the seasonal growth and retreat of the ice and icebergs. During the early 1960s, the ice cover was significant in the Greenland and Iceland areas.

The resultant charts were published every 10 days with a 'fine' coloured version produced at the end of each month. These latter charts are (as far as I know) still in the National Met. Archive. The charts were distributed to military and naval commands, commercial shipping companies, research institutes etc. both in UK and overseas.

The sea temperature and ice cover data were also subject to close personal study in real time by Professor Hubert Lamb, then in charge of the embryo 'long range forecast' section of M.O.13. These 'primitive' forecasts were released to the public in the early 1960s but were subject to much criticism for their poor guidance and were later withdrawn. In that respect they suffered much the same 'bad press' as FitzRoy's early 'forecasts' had done exactly a century earlier.

I should not forget that another key role of M.O.1 at that time was the management of the UK ships of the Ocean Weather Ship network in the North Atlantic. These ships provided vital mid-Atlantic synoptic observations to help anticipate weather developments over the UK and Europe before the days of remote sensing weather satellites.

The staff of M.O.1 were indeed a 'motley crew' and the working conditions were somewhat 'quaint'. Space does not permit me covering this aspect at present but look out for more in a future Newsletter.

BOOK REVIEW by Maurice Crewe

Larkhill's wartime locators : the history of twelve artillery survey regiments (RA and IA) in the Second World War, by Massimo (Max) Mangilli-Climpson (Barnsley: Pen & Sword Military, 2007, hbk, 698 pages, [24] pp. of plates: ill., maps, ports). ISBN 13: 9781844155149. Includes extensive bibliographical references (pp.690-698) and indexes of people, places and general aspects.

This is probably a unique record of an aspect of military activities that has been almost totally ignored from the historical point of view, and was known to very few 'ordinary' working meteorologists at the time.

Many routinely non-combatant specialists provided scientific and technical support that was (and still is) essential to the effectiveness of military activities. Surveying to produce maps of battle areas is obviously needed to plan both strategy and tactics. The gunners cannot function unless they know both where to site their weapons and where to aim them. This latter was the job of flash spotters, sound rangers and the surveyors of gun-lines. The surveyors also had to produce maps of possibly new terrain and include such hazards as mine-fields as well as suitable base areas. In addition to cartography, there were also meteorological (Met) units, mostly manned by RAF personnel but attached to the army survey battalions or troops. Meteorological data were used in calculations of sound ranging, and upper winds were used to produce 'meteor' messages used by the gunners setting up the artillery.

The author is well qualified to produce this book as he is the son of an officer in a survey regiment and has himself written about military history amongst other works. Mangilli-Climpson has worked in universities for many years, so it is perhaps not surprising that the book is so well researched. However, the academic approach results in an authoritative, detailed, reference work that is not an easy read. In the acknowledgements, the author refers to the "feast of knowledge" that should not be "sampled at one sitting, otherwise they (the readers) will risk permanent indigestion and nausea." There are interesting stories tucked away in the vast amount of detail, but they are mostly found by accident, unless you are using the book as a reference document and looking up a known name or place. A family historian of the Ensom family, for example, would be

interested to find the memories of Gunner Donald Ensom when he was working on his 3rd class trade test for Battery Surveyors just before D-Day. It may also be of interest if you are a military historian.

From a meteorologist's point of view, I was disappointed to find no reference in the index to any aspect of meteorological activities. I did come across mention of Robert Murgatroyd and J. Briggs as Flight Lieutenants, and I recognised the names of men who became senior members of the Meteorological Office after the war. Also mentioned is Bruce Lack, who ultimately retired as Librarian of the National Meteorological Library. There are other names related to meteorological units but with little description of their contribution to the overall surveying story, often just a bald statement such as "Attached to the Sound rangers was the RAF Met Section" After a while, I discovered that some names of meteorological personnel could be found via entries indexed under RAF, but in many cases there was little other detail. One name listed is LAC Kenneth Anderson whose memories are published on the internet by the Royal Meteorological Society. They include his harrowing experiences of escape via Dunkirk.

One can find interesting items when dipping into this book, but it is not a relaxing read. Its size alone discourages anything longer than a browse, unless you seek specific information such as where and when particular survey units operated, and with which staff. Essentially, this is a reference book which should be held in specialist libraries such as the National Meteorological Library, as it adds a unique contribution to military history.

E-MAIL COMMUNICATIONS

We are drawing up a new list of History Group members who prefer to receive newsletters, notices of meetings and other communications electronically. If you wish us to use e-mail as the usual means of communicating with you, please let us know at MetSocHistoryGroup@gmail.com

If you have previously expressed a preference for e-mails with attachments, please DO reply, as we are starting from scratch and none of the old information is being carried forward. Above all, we want to create a list of e-mail addresses that is up to date.

If we do not hear from you, we shall assume that you do not wish us to send you e-mails.

ROYAL METEOROLOGICAL SOCIETY ARCHIVES CATALOGUE

Regarding the cataloguing of the Royal Meteorological Society Archives, this is now effectively complete. In the lead-up to the move of the Met Office Archives to Exeter, much uncatalogued material was unearthed; fortunately, the allocation of ownership was not too difficult and all the items were added to their respective catalogues.

Eric Harris

WWI METEOROLOGY – A PPS

" My first posting in the Met Office was to Larkhill in April 1941. The sound-ranging training was run by Professor Baxter from Durham University. In conversation, when I said that I had been at the Regent Street Polytechnic Grammar School, it was mentioned that the Headmaster, B. L. Worsnop, who wrote the standard practical physics book in use during the inter-war years, was involved with the development of sound-ranging during WWI".

Eric Harris

Please send any comments or contributions to:
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The annual subscription for membership of the History Group is £5 (payable to Royal Meteorological Society History Group). Members will be sent a reminder when their sub is due.

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