

Valentia Observatory



*A History of the Early Years
(1868 - 1937)*

John O'Sullivan

Meteorological Service

Cover photograph

'Revenue House' on Valentia Island, circa 1868
(photo: courtesy Valentia Heritage Centre)

Valentia Island's association with meteorology goes back to 1860 when Admiral FitzRoy set up a telegraphic weather reporting station there. Valentia Observatory was originally established on the island in 1868. It was situated on the south side of the island close to the shore on the Portmagee channel, in a house known as the 'Revenue House' which belonged to Sir Peter Fitzgerald, the Knight of Kerry. The Observatory continued to operate there until it was transferred in March 1892 to its present site on the mainland, one kilometre south-west of the town of Cahirciveen.

Although weather and climate were the most important factors in shaping the behaviour of man from his primitive stage through the dark and middle ages, he failed to recognise that weather phenomena originated from natural rather than supernatural causes. Clouds were regarded as demons of the air and tempests and thunderstorms were considered as mischievous spirits let loose to injure and destroy men and animals. Even the pious and learned had recourse to prayer and supplication as the only means of protection from the fury of the storm. Church bells were rung and every effort was made to exorcise the evil spirits. In the fifth century B.C. Socrates questioned the established beliefs of his time. He explained the formation of clouds and their role in weather patterns, but his theories were ridiculed and regarded as profane. It was not until the early and middle seventeenth century, the age of Galileo and Boyle, that the study of meteorology as we know it, began. With the invention of the barometer and thermometer during that period, individual scientists began making measurements of meteorological parameters.

By 1850 several governments of maritime countries were involved in meteorological observations as were some scientific bodies. The Royal Irish Academy, with the co-operation of the Coast Guard and some scientific institutions, organised the taking of observations in Ireland in 1851. The Coast Guard station in Cahirciveen was involved in the project and data are available for that area for 1852. In that year, Sir John Burgoyne, Inspector General of Fortifications, Royal Engineers, suggested that the British Government, which up to that stage had not been involved in meteorology, establish a number of meteorological observatories on land. Subsequently, observatories were set up by the Royal Engineers at a number of different locations in the colonies, as far apart as Mauritius and Bermuda, but none was set up in mainland Britain or Ireland.

A conference, organised mainly by Lieutenant Maury of the United States Navy and attended by representatives of ten maritime countries, some of whose governments were engaged in meteorological observations, was held in Brussels in August and September 1853. The purpose of the Brussels Conference was to organise the taking of meteorological observations on a national basis and to standardise instruments and procedures.

As a result of this meeting, the British Parliament set up the Meteorological Department of the Board of Trade, with Admiral FitzRoy at its head. This Department was under the direction of the Royal Society, and its activities were confined to supplying instruments to Navy and merchant ships and the study and publication of observations made by them at sea. By 1865, 1,000 Navy vessels and approximately the same number of merchant ships had been supplied with instruments and were forwarding data to the Meteorological Department. These observations were collected and published in a format suitable for the use of navigators. For this purpose, the oceans were divided into 10 degree squares of longitude and latitude and the averages of air and sea temperatures, mean winds and ocean currents etc. for each square were published for the different seasons.

In the summer of 1860, Admiral FitzRoy made arrangements for the regular transmission to London, by telegraph, of weather reports from 15 stations strategically located in Ireland and Britain. Valentia was chosen as one of these stations because it had a telegraphic link to service the Atlantic Telegraphic Company's trans-Atlantic cable, the first of which was laid in 1857. This cable was landed at the White Strand on the mainland and a cable hut and a tent were erected. Sir Peter Fitzgerald, the Knight of Kerry, who had many contacts in the British Parliament and elsewhere, used his influence to have the cable transferred to Knightstown in 1858. Valentia Harbour was at that time well known in Admiralty circles as it had, for many years, been much used as an anchorage by the ships of the British Navy. It was proposed in the 1830s that Valentia be developed as a major trans-Atlantic port and be connected by rail to Dublin and Waterford, but the scheme never materialised.

A set of instruments was sent to Mr. R. J. Lecky, a fellow of the Royal Meteorological Society, who was manager of the slate yard and acting manager of the British and Irish Magnetic Telegraphic Station. On receipt of the instruments, Mr. Lecky taught E. O'Sullivan, a telegraphic clerk, to read them and to draw up and transmit the weather reports. The first report issued from Valentia was for 8 a.m., October 8th, 1860. The Post Office took over the inland telegraphic companies in 1870 and continued these observations until 1876, when the work was taken over by Mr. J.E. Cullum, Superintendent of the Observatory.

The importance of Valentia as a location for meteorological observations was recognised at an early stage. In the early 1860s Mr. M. LeVerrier, acting on behalf of L'Association Scientifique de France, organised a system by means of which he received weather reports from various European stations. In 1863, LeVerrier requested reports each morning from six of the telegraphic stations set up by FitzRoy in addition to a report each morning and evening from Valentia. In return, daily telegrams of weather from various places in Europe were sent to the Meteorological Department in London.

When the telegraphic reporting service was operational, FitzRoy made arrangements for the distribution by telegraph to outlying ports of warnings of approaching gales or storms. He devised a system for displaying these warnings at the ports. Canvas shapes were hoisted on a pole to indicate the direction and force of the expected storm. The shapes used were a drum and a cone while lamps were used at night. Valentia was one of the stations in this network. The first storm warning was issued on 5th February 1862. In August of the same year forecasts of general weather were issued and carried in the daily papers.

FitzRoy also designed the 'Fishery Barometer' which was simple, durable and sufficiently accurate for all practical purposes as a weather glass. 120 of these barometers were placed at exposed positions on the coasts of Ireland and Britain for the use of fishermen, seafarers and the general public. The Valentia instrument was housed in the Coast Guard watch house at Knightstown. In 1862, in reply to a questionnaire on the usefulness of the barometer, the Knight of Kerry stated: 'The masters of vessels and seafaring men consider it of great importance, and frequently refer to it'. On its accuracy he stated: 'Its indications have been very faithful'.

Admiral FitzRoy died in April 1865. His death, or rather subsequent events, had a big bearing on the history of meteorology in Ireland and Britain and especially so in Valentia. It was felt that this was an appropriate time to examine the work of the Meteorological Department. A Parliamentary Committee was appointed 'to consider certain questions relating to the Meteorological Department of the Board of Trade'.

The Committee of enquiry found that, in the issuing of forecasts, FitzRoy had gone far beyond the original programme which was to collect data for the scientific investigation of weather laws and to transmit warnings of the probable travel of storms which were affecting outlying stations. It also reached the conclusion that the state of knowledge of the laws of weather and the measure of success attained by the forecasts did not justify the large proportion of the resources of the Meteorological Department, both in manpower and in finances (due to the cost of telegraphy) expended on them. Subsequently, weather forecasts and storm warnings were discontinued from November 1866. Storm warnings were reintroduced early in 1868 as a result of petitions presented to Parliament. General weather forecasts were not resumed until 1st April 1879.

At the suggestion of the Royal Society, the Committee decided that the work of the telegraphic weather reporting stations should be expanded by the setting up of land stations with self-recording instruments in some established institutions. Suggested locations were Kew Observatory, Falmouth Polytechnic Institute, Stonyhurst College, Armagh Observatory, Glasgow and Aberdeen Universities. The Royal Society also suggested that 'to these six stations the President and Council would have been very glad to have added two others, one in the south-west and one in the north-west of

Ireland. For the former of these possibly Valentia may present a fitting locality, when an establishment shall have been formed there as the connection link by means of the Atlantic telegraph between Europe and America'.

At that stage, the future of the cable company in Valentia was uncertain as the 1857/58 cable failed to work and the Anglo American Telegraph Company did not retain any staff at its temporary office in the slate yard from 1861. In 1865/66 a new cable was brought ashore at Foilhammorum Bay on the western side of the island. This cable operated satisfactorily and the station was housed in a wooden hut in which it operated until 1868 when it was transferred to the newly built station at Knightstown. The wooden building at Foilhammorum was presented to the people of the island and was also moved to Knightstown for use as a cottage hospital.

As a result of the Parliamentary enquiry, the Meteorological Department was detached from the Board of Trade in 1867, renamed the Meteorological Office, and placed under the administration of the Meteorological Committee of the Royal Society. Dr. Robert H. Scott, a professor in Trinity College, Dublin, was appointed Director of the Office. The Meteorological Committee proceeded to set up observatories in the six institutions suggested by the Royal Society. It was decided that Kew Observatory, which had recording instruments in use for many months, be the central observatory and that the instruments there be the standards for verification and calibration of the other instruments, and also that personnel for the new stations should be trained there. Mr. Stewart and Mr. Beckley of Kew Observatory supervised the installation and setting up of the instruments in the other observatories.

It was also decided to set up an observatory in Valentia at the Committee's own expense and manned by its own staff. The Parliamentary Committee of 1865 envisaged the observatory being set up in the cable company offices, but the cable station at Foilhammorum was less than suitable and had hardly enough space for its own operations. So a dwelling house, at the Revenue on Valentia Island, was leased from the Knight of Kerry in 1867 and was fitted out for the reception of the instruments in April 1868. This two storey house was described as 'an ordinary dwelling house of small size'. However its location was exceptionally good for the exposure of meteorological instruments.

Rev. Thomas Kerr, a former Navigation Lieutenant in the Royal Navy, having been trained at Kew Observatory in 1867/68 was appointed Director of the Observatory. He took up residence on 15th June 1868. The instruments were transported by the Navy ship HMS Wyvern under the command of Captain Brooker and were landed at Valentia on 26th June. They were set up by the Rev. Kerr and the Observatory began operations on 1st August 1868.

The recording instruments were an Adie Photographic Barograph and Thermograph and a Robinson Beckley Anemograph. In 1869 the station was supplied with the

Beckley Rain Recorder and in 1879 with the Campbell-Stokes Sunshine Recorder. These instruments are part of the display in the museum at the present Observatory in Cahirciveen.

Valentia was the furthest outpost in the Meteorological Service network and accepting an appointment there must have been somewhat daunting for the Rev. Kerr. It was far removed from the hustle and bustle of the mainstream cultural and scientific activity of London of the time. Geographically there was isolation from friends and colleagues and travel to the island was time consuming, arduous and expensive. A trip from London to Valentia involved a journey by railroad to either Liverpool or Southampton to connect with a ship to Dublin or Cork, from where the onward journey to Killarney was again made by railroad. Having disembarked from the train at Killarney the weary traveller was faced with the forty mile journey to Cahirciveen in an open horse-drawn coach. This was followed by a three mile trip by pony and trap to Valentia Harbour to connect with a ferry to the island.

Valentia itself must have been pleasantly surprising to newcomers, with its natural beauty, its abundance of sub-tropical flora and its mild, if somewhat damp, climate. The lifestyle there was easy going and laid back and they had a good circle of friends in their own social stratum. The island boasted a specially planned harbour village in Knightstown, designed in the 1840s by Alexander Nimmo, a first class hotel, well-designed coastguard and lightkeepers' terraces as well as the newly built cable station.

Sir Peter Fitzgerald, who held the title of Knight of Kerry, was the local landlord and was resident on Valentia Island. He used his influence to promote the island at every opportunity. He was anxious that Valentia would be developed as a major trans-Atlantic port and was also a good salesman for the products of the local slate quarry. Valentia slate was used in many public buildings in Ireland, England and elsewhere, among them being the House of Lords, the National Gallery and Admiralty House in London and the Paris Opera House. However, conditions generally on the island were no better or worse than in the rest of the country at the time. Sir Peter, in a letter to the Pall Mall Gazette in 1869, gives the following description of his estate. 'When I became owner of the property in 1853, I found every one of the dwellings in ruin or nearly so, the estate divided among 298 holders of land and 205 cottiers, or cabin holders, most of whom were of the very poorest class, the holdings averaging from eight to ten acres of quasi-arable land'.

There were two distinct communities on the island. Rev. Kerr, who was on a salary of £250 per annum, was a member of the more affluent community; the average labourer's wage was one shilling a day. The affluent group would also include the newly-arrived cable station staff, the coastguard officers etc., who lived in their own tight circle and had little contact with the less advantaged. They created a good social life for themselves modelled on that of the colonies of the era. They were mainly of

the Protestant faith, a different religious persuasion to the indigenous population who were mostly Roman Catholic.

As a result of a proposal adopted at the International Conference held in Vienna in 1873, weather observations were taken as 1243 GMT each day, worldwide, and the results were transmitted to London and Washington. These observations commenced at the beginning of 1874 and were taken at the Observatory. This was the beginning of telegraphic weather reporting at the Observatory as, up until this time, the work involved only climatology. In 1876 the telegraphic weather reporting, which had been carried out by the Post Office Telegraphic Station since 1860 was transferred to the Observatory.

The Rev. Kerr ran the Observatory on his own until mid-1874, when Mr. Michael Sugrue of Ballyhearney, Valentia, was appointed to the station as an assistant on 16th June. Mr. Sugrue served at Valentia and at the present Observatory until his retirement in 1926.

Rev. Kerr died on 21st August 1875 and is buried in the Church of Ireland cemetery on the island. Mr. John Edward Cullum, a magnetic assistant at Kew Observatory, was transferred to Valentia to temporarily take charge of the Observatory. He took up duty on 22nd of August and was appointed to the vacant post of Superintendent on 1st November, a position he held until his retirement in 1915, when he moved to Oxford where he died on 11th January 1918.

Magnetic observations were begun at the Observatory at the instigation of Professor George Francis Fitzgerald of Trinity College, Dublin, who was anxious to have a series of magnetic observations made in Ireland.

Valentia was chosen because it was a considerable distance from other magnetic observatories and also because Mr. J.E. Cullum, who had been trained at Kew Observatory in making magnetic observations, was willing to undertake the work. Having obtained the consent of the



J.E. Cullum (circa 1876)
(photo: courtesy Valentia Heritage Centre)

Meteorological Council, a wooden hut to house the instruments was constructed in 1877 on the Observatory grounds, with funds supplied by the Royal Irish Academy. A unifilar Magnetometer by Jones and Dip Circle by Barrow, on loan to the Observatory from Trinity College, were tested at Kew Observatory and had their constants and corrections determined. Absolute measurements of declination, horizontal force and inclination commenced in March 1888. Four complete sets of observations were made on the first and third week of each month. When the Observatory was moved to the mainland in 1892, the observing hut was transferred to the new site, without dismantling, by floating it across the harbour on a raft. The observations were continued until 1896, when the instruments were required back by Trinity College.

Soon afterwards, due to the great interest in the observations and the number of enquiries received for the data, Professor Fitzgerald decided to re-establish the observations on a permanent basis by obtaining a new set of instruments from the Royal Irish Academy. These instruments, a Dover Magnetometer No. 139 and a Dover Dip Circle No. 118 were used until 1954 and are now on display in the museum at the present Observatory.

A gratuity of £12 a year, from the J.P. Gassiot Trust Fund, which was set up in 1871 for the promotion of magnetic, meteorological and physical observations, was paid for the work involved. A distant-recording electrical anemometer was received from Kew Observatory in the beginning of 1888, and set up on Killbeg hill. A base was built on the hill on which the Post Office Engineering Department mounted the anemometer and connected it to the recording section in the Observatory using copper wire on poles. This base is still intact and is a landmark on the island known as 'Cullum's Cup'. Great difficulty was experienced in getting the instrument to work satisfactorily but, as a result of much time and effort on the part of the Post Office engineering staff, it became operational on 1st December 1888. It was regarded as somewhat of a curiosity on the island and attracted much attention, particularly that of the local boys. It suffered damage on several occasions as a result of stone throwing, but the problem was solved by Mr. Cullum asking the local parish priest to speak about the matter from the pulpit. It was maintained in operation on the hill for only one month and on 2nd January, 1889, was relocated on a chimney on the Observatory building. It functioned reasonably well, although it required regular repairs and alterations, until it was dismantled and returned to Kew Observatory on 14th May 1889.

The Observatory had by this stage become a well known institution both in Ireland and abroad. Its 'Visitors Book' holds the signatures of many well known members of the religious, political and scientific communities of the day, among them being that of Prince Albert Patrick, who visited the station on 23rd April 1869.

In August 1890, Westwood House, Cahirciveen, became vacant on the death of the owner Miss Needham. The house was built in 1866 by her father, Captain Needham, the local agent for Trinity College, which had major land holdings in the area. Mr. Cullum immediately sought sanction from the Meteorological Council to negotiate a lease on the house, as a new home for the Observatory, as the lease on the Revenue House was due to expire in 1891. Sanction was granted and Mr. Cullum began negotiations in November 1890 with the Rev. Thomas Halloran, executor of Miss Needham's will. It was then discovered that the house and accompanying land would have to be sold rather than leased as there were mortgages on the property which had to be met. Mr. Cullum was prepared to buy the property himself if it could be procured for £700 to £800 and lease part of the house to the Meteorological Council to house the Observatory. However, the asking price of £1,500 was beyond his means. Mr. Cullum then made the case to the Meteorological Council that they purchase the property on the grounds that, with the expanding work programme of the Observatory, the Revenue House was too small and would have to be enlarged and improved and that it would be more expedient to spend money on their own property rather than on that of someone else. The Council decided that they could not purchase the property, due to financial constraints, but suggested that Trinity College might do so and make it available to them. Trinity College declined involvement in the project.

Mr. Cullum had remarried in 1889; the first Mrs Cullum died in 1883 and is buried, with their infant son who predeceased her, on Valentia Island. The fact that Mrs Cullum was also eager to move to the more spacious Westwood House on the mainland was probably the main reason why Mr. Cullum persisted with his efforts to have the Observatory moved there. Dr. Scott was well aware of this and in a letter to Mr. Cullum in December 1890 he states, 'Of course it is just like a man asking for better rooms because he gets married'. In the same month Mr. Cullum informed Dr. Scott that Mrs Cullum's trustees were willing to purchase the house and lease portion of it to the Meteorological Council at the same rent as the Council was paying for the Revenue House.

The Meteorological Council rejected this proposal and decided to purchase the property themselves at the agreed price of £1,400. The transaction was not completed until 25th February 1892, due to the fact that the Great Southern Railway Company was negotiating the purchase of the foreshore section for their new branch line which was opened in 1893. In the meantime, repairs were carried out to the house and alterations necessary for the installation of the instruments were completed by a local contractor, Mr. T. Galvin of Waterville.

Changing over the instruments from the old to the new Observatory began on 6th March and was completed by 23rd of the month on which date the present Observatory became fully operational. The operation was supervised by Mr. Whipple



*Valentia Observatory in the 1920s
(photo: Meteorological Office, The Observatories' Yearbook, 1922)*

of Kew Observatory and went very smoothly, the only casualty being that one standard thermometer was broken in transit. The station had been supplied with a Richards thermograph and barograph in 1891 in order that records of temperature and pressure would be maintained during the changeover. Only a few days' wind and humidity records were lost.

The saga of the Meteorological Council's involvement in the Revenue House did not end with the move to the new Observatory but continued for another year and a half. When repairs, necessitated by the removal of the instruments and alterations made to the house for their reception in 1868, were effected, the Knight of Kerry's agent, Mr. Richard Fitzgerald in Tralee, refused to take possession of the property on the grounds that the repairs did not meet the conditions laid down in the lease. Mr. Fitzgerald submitted a claim to the Council for £138 for dilapidations which they refused to meet. Experts were called in on both sides and the claim was reduced to £100. The Council would not agree to this and legal action was threatened. The Meteorological Council did not want the matter to go to court because as Dr. Scott put it, 'As to going to court, no Irish jury would find for a London office against an Irishman'. In March 1893 both sides agreed to the appointment of a Mr. William Healy, a building

contractor from Tralee, as umpire in the claim. Much to the annoyance of the Council, Mr. Healy did not submit any recommendation until September, when he awarded Mr. Fitzgerald £93. The Meteorological Council agreed to this and thus finally severed its links with the property. The Revenue House was demolished in 1939 and the stone used in the building of the new church at Chapeltown.

The Observatory settled into its routine very quickly. The work-load, at that stage, included weather observations daily at 8 and 10 a.m., 12 noon, 2, 4, 6 and 10 p.m., as well as the tabulation of the autographic records and magnetic measurements. Special weather telegrams were also dispatched to various European meteorological services and to some London daily papers. The fact that this schedule was completed, without fail on any occasion, by a staff of two, was a tribute to the good working relationship which they had with each other and to their dedication to duty. Mr. Cullum never took a day's sick leave until May 1911, when he had a severe attack of gout. Mr. Sugrue, whose wife was a teacher in Valentia, continued to live on the island, where he had a farm, and commuted daily to the Observatory.

The height of the Observatory was determined by the Ordnance Office in 1893. A bench mark, at a height of 45.45 feet above mean sea level, was cut on the east window of the barometer room. In 1894, Mr. Cullum added a conservatory to the house at his own expense, sanction having been given by the Meteorological Council. It was demolished in 1941.

Arrangements were made, at the instigation of Professor Cleve in conjunction with the Meteorological Council, for a survey of plankton in Valentia Harbour by Mr. Cullum in 1897. The necessary equipment, nets, flasks and spirit were received at the Observatory but the project never got off the ground as the finances necessary for the project, boat hire etc. were not available. Another attempt was made to resurrect the project in 1898 and a grant was requested from the Swedish Government who were involved in a similar project at other locations. The request was not acceded to and the project was abandoned. A survey of the fauna and flora of the harbour was conducted by Dr. E. T. Brown, University College London, and a group of scientists between 1895 and 1898. This survey was funded by the Royal Society.

Dr. Scott retired from the Meteorological Office in February 1900 having reached the mandatory age for retirement in the British Civil Service. Dr Scott, a regular visitor to the area, had been responsible for setting up the Observatory on Valentia Island in 1868. He was also very much involved in the purchase of Westwood House and in the transfer to the present location. He died in 1916 and in his will he bequeathed the meteorological section of his library to the Royal Society to set up a library at Valentia Observatory. Scott's books still form the most important section of the Observatory library. He was replaced as Director of the Meteorological Office by Mr. William Napier Shaw F.R.S., who visited the Observatory in 1900.

Mr. J. Walsh, who had been employed as a messenger at the Observatory from the changeover in 1892, resigned on 4th April 1903. Mr. Samuel Mansfield was engaged as a 'general man' in May of the same year. Mr. Mansfield left his position in June 1907 and was replaced on 20th August by Mr. John P. O'Sullivan.

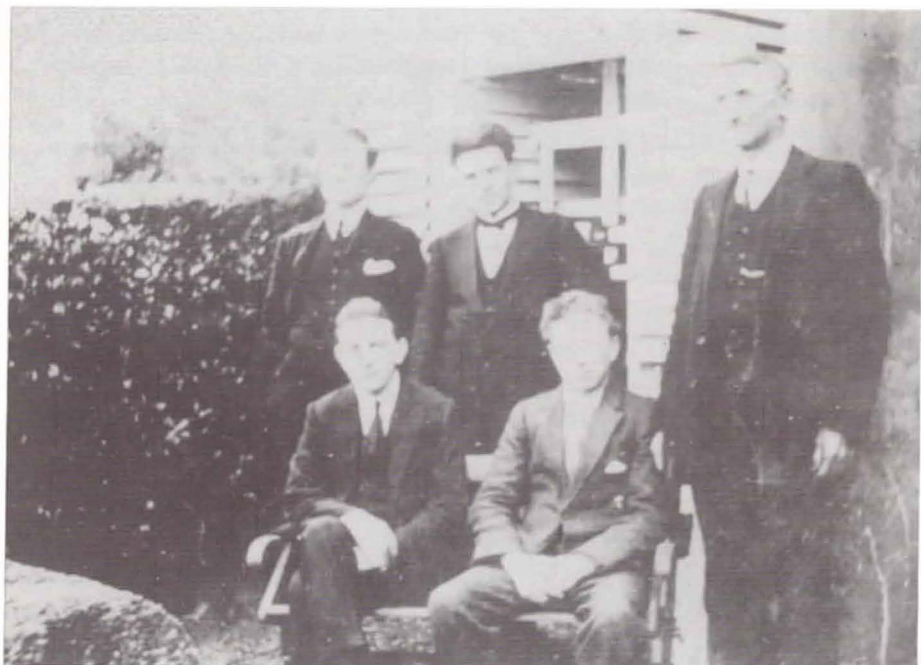
The first measurements of upper winds were made at the Observatory in 1904 using a Fineman nephoscope, received on 18th June. These observations were conducted in conjunction with a series of international balloon ascents made by Professor Hergesell, Strasbourg. Observations continued using the Fineman instrument until February 1919 when it was replaced by the Benson Comb nephoscope.

Monthly rain samples for chemical analysis were taken at the station from October 1912 and were forwarded to Dr. Miller, Lawes Agricultural Trust, Rothamsted Experimental Station, Harpenden, England. Sampling was discontinued in January 1917 due to the death of Dr. Miller. A series of rain samples were collected at the Observatory in 1870 by Angus Smith, whose tests concluded that 'they were very pure'.

With the entry of Britain into World War 1 on 4th August 1914, meteorology took on a new and far more important significance. The work of the Meteorological Office was greatly expanded with the increased demand for forecasts for military manoeuvres, despite the fact that staff numbers were reduced through enlistment. Weather reports, which formerly were readily available to other meteorological services and institutions, were now treated as strictly confidential. The following telegram, from the Meteorological Office, was received by Mr. Cullum on the morning of the 5th August: 'Until further orders weather reports should be sent only to this Office. No information should be given out without government authority except by telegram to this Office'.

Forecasting for aviation began in October 1914. Early morning forecasts were required to reach Naval Airship Stations before sunrise. In order to supply these, the Meteorological Office organised the taking of special observations at 3 a.m. at selected reporting stations. These observations were requested from the Observatory but the Post Office could not provide the service necessary for their transmission from Cahirciveen but suggested that the Valentia Wireless Station would transmit them. Subsequently a barometer and the Richards barograph were set up in the Wireless Station on the island and the staff instructed in the taking of the observations which were transmitted from there to London. This arrangement for the 3 a.m. observation continued until the Irish Government took over the Meteorological Service.

Mr. Cullum retired from his post as Superintendent of the Observatory on 30th April 1915 having completed forty years' service there. In his term of office he saw the extension of the work to include telegraphic reporting and magnetic observations and also the transfer of the Observatory from Valentia Island to its present site. He moved



*Staff at the Observatory, circa 1920:
from left, L.H.G.Dines (Superintendent), Michael and John Morley (Boy Clerks),
P.I.Mulholland (Professional Assistant), and M.Sugrue (Supernumerary Clerk)
(photo: F.E.Dixon)*

to Oxford where he died on 11th January 1918. Mr. Cullum with the Rev. Kerr and Mr. Sugrue and their peers were the pioneers of the present high-tech and sophisticated Irish Meteorological Service and British Meteorological Office.

Mr. L.H.G. Dines, a Senior Professional Assistant at Eskdalemuir Observatory took up his appointment as Superintendent on 1st May 1915. Mr. Dines' father, W.H. Dines, was well known in the meteorological community for his contribution to the development of meteorological instruments such as the Dines Pressure-Tube Anemometer, Dines Tilting-Syphon Rain Recorder, Dines Float Barograph and the Shaw-Dines Microbarograph. He also developed upper-air recording equipment.

During Mr. Dines' term as Superintendent, the number of meteorological staff was increased from two to five. He was given responsibility for inspecting the Irish telegraphic reporting and climatological stations. During this period the station was used as a testing ground for Meteorological Office instruments, many of which were developed for the war effort. An instrument workshop was set up for the repair and

modification of both the Observatory instruments and those on test. In 1917 he set up a system for the automatic time-marking of the Observatory instruments using a grandfather clock, which he purchased second-hand in England for 35 shillings, fitted with electrical contacts. On receipt of the Scott books in 1917 the station library was set up and the laboratory was equipped during the period 1919/20.

Mr. Michael J. Morley, a pupil of Carhan School, Cahirciveen, where his father, Thomas, was headmaster, was appointed as a Boy Clerk on 20th September 1915. His brother Mr. John B. Morley was appointed to the same grade on 10th November 1917. Michael transferred to Foynes on 27th March 1939 and to Dublin Airport on 17th June 1940. He retired from the Meteorological Service in 1964 after 49 years service. Mr. Philip I. Mulholland, Armagh, a graduate of Queens University, Belfast was appointed to the station in July 1918 as a Professional Assistant. He was transferred to the Climatology Division at Meteorological Office Headquarters, London, in April 1921 and was replaced by Mr. C. W. Lamb.

The station was supplied with a Dines Pressure-Tube Anemometer in early 1916. Mr. Dines had some difficulty in getting a local builder to erect the mast and to build a hut to house the instrument. Whenever he had a problem he tended to seek the advice of his father to whom he complained in a letter in May, stating that as things happen so slowly here he had no idea as to when he could get the job completed. In a reply the father's advice was, 'If things there are as leisurely as you state, why not plant a tree in the required spot and when it has grown to sufficient dimensions attach a block, pull up the pole, cut down the tree - the job is done!!' The matter eventually resolved itself and the instrument was erected in November 1916. This instrument remained in operation until May 1931 when it was replaced by one of a similar type.

In April 1917, a system for receiving time signals from Greenwich Observatory was set up. A deflection galvanometer was connected by phone line to Greenwich and received a pulse at 1000 GMT each morning. Radio signals were being transmitted from the Eiffel Tower at this time and wireless receiving apparatus could have been made available to the station but it was thought that 'the military authorities would be by no means desirous of allowing a private wireless set here, considering the doubtful sympathies of many people in this part of the British Isles'.

Upper-air wind ascents began in October 1917, using a theodolite and pilot balloons, to measure wind direction and speed at various levels in the atmosphere. A theodolite was supplied to the station in June 1915 but was found to be broken in transit. Due to war work it was not repaired and returned to the station until February 1916. Weather permitting, ascents were made at 7, 13 and 18 GMT each day and the results transmitted to the Meteorological Office with the next weather report.

The station received a Shaw-Dines microbarograph, No. M.O. 1, in May 1917. A Dines Tilting-Bucket rain recorder was set up in the instruments enclosure in

December 1920. The Dines float barograph was installed in August 1921 and is still maintained in operation. A concrete evaporation tank was built in the instruments enclosure at the end of 1920 and readings began on 1st February 1921. This was the first evaporimeter to be set up in Ireland and is still in operation. Rainfall readings for the tank site were obtained from an eight inch gauge which was placed a few feet to the west of the tank. A Piche evaporimeter was supplied to the station in July 1921.

The Observatory routine suffered little disruption during the War of Independence, 1920/21. In the spring of 1921 all railway and postal communications were suspended for a period of ten weeks. Mr. Dines organised a system whereby he received mail from the Meteorological Office via Punch and Co., Cork, which they in turn delivered, by steamer, to a Mr. Sweetnam, a merchant in Cahirciveen, for collection by Mr. Dines. Monthly salaries were lodged in the National Bank in London, for payment at their branch in Cahirciveen. In June the Observatory was raided one night by a group of armed people and a theodolite and a telephone set removed. Telegraphic communications were maintained throughout the period and all normal reports were sent without interruption. By the end of the year, with the truce in operation, conditions were near normal again.

Mr. C. D. Stewart, who was in the Royal Air Force reserve, took up his appointment as Superintendent of the Observatory on 1st July 1922. Mr. Dines remained on at the station until 5th of the month. Mr. Stewart had scarcely been able to acquaint himself with the station routine when the area was embroiled in the full fury of the civil war. It must have been a traumatic time for him as he would have had little first-hand knowledge of local affairs. By the end of the month postal and telegraphic communications were regularly disrupted and the situation was deteriorating daily.

Mr Stewart's report of work for August 1922 reads:

All land communications with this place broke down from the 5th of August, the Republican forces wrecking the railway and the telegraphic wires. On 23rd the Irish Free State forces took the town of Cahirciveen after some fighting, most of the actual shooting taking place in the vicinity of the Observatory. The whole operation was easily visible from the Observatory windows. The 18h and 21h observations were incidentally rendered extremely unpleasant by the constant cross fire of the two sides. At 11.30 p.m. the occupants of the Observatory were wakened by a party of Free State troops requiring food and shelter. They left about 2 a.m. for the town which since then has been in their hands. This has not, however, led to any resumption of communications up to the present, although we are now hoping to get the usual telegraphic messages through shortly by the Valentia Wireless Station. In any case this is likely to be only a spasmodic service since the messages require to be telephoned to the wireless station by the Cahirciveen Post

Office and the line connecting these two is sure to be broken frequently even if the Post Office or the military authorities keep repairing it.....The Observatory, being outside the town, is not directly protected by the troops and it is not yet certain that the Republican forces will not raid it with the object of destroying the equipment of the place as they seem to have adopted this kind of practice.

Further notes from the station records indicate that for the next month or so there was a good deal of firing in the vicinity of the Observatory. The occupants of the building were practically confined indoors during the hours of darkness and any operations during this period were extremely unpleasant. On one occasion there were armed people in the field while Mr. Stewart was doing the 2100 observations. Mails were brought in at irregular intervals on steamers calling to Cahirciveen but outward mail was even less regular as the Post Office would only allow it on steamers bound for Cork. This avenue was closed from the end of December 1922 to mid-February 1923 due to stormy weather and a dock strike. Telegraphic communications with London could only be made via the Wireless Station in Valentia. This arrangement was not very dependable as the wires from Cahirciveen to Valentia were cut regularly and were often out of order for long periods. The area was at this stage virtually isolated.

This situation was not fully comprehended at Meteorological Office Headquarters in London, as requests were being continuously made for data and returns to be sent in on time. The Superintendent refers to it in the report of work for February 1923 as follows: 'The stormy weather has meant a renewal of the condition of isolation as hardly any ships have come into Cahirciveen during February. Damage to the Radio Station at Valentia caused a cessation of telegraphic reports from 7h on the 7th to 18h on the 26th and again from 16h on the 27th to 13h on the 28th. It does not appear to be understood at Headquarters that the isolation of this station is almost complete and that the isolation is no fault of the staff and cannot be remedied by us. Complaints of delay in receipt of returns etc are not merely unreasonable but, in the circumstances, are trivial. Wires calling for the urgent rendering of returns are ludicrous, since to commence with, the wire never reaches us in less than a week, and more frequently takes three weeks'.

There was no change in the situation during March but the communication problem began to ease considerably from April onwards. In that month the Post Office laid on an unregistered letter service by road three times a week. Parcels and registered post were still sent by steamer and the service was anything but regular. Conditions improved greatly during May. Land telegraphic lines were repaired and normal telephone services were restored. The railway reopened on 28th of the month after a suspension of services which lasted about ten months. The last service to be restored to the Observatory was the time signal from Greenwich which was received on 30th

August 1923 for the first time since the middle of July 1922. In the absence of the Post Office signal observations of the sun were taken, whenever possible, for time signal purposes.

All services having now been restored, the Observatory settled back into its normal routine. Referring to this period in a report, Mr. Stewart writes that it was 'a matter for satisfaction that during the whole of the time in which these considerable difficulties were experienced no observation was missed and no record was lost from an autographic instrument except through the failure of the instrument'. He also states that 'the Observatory itself suffered no molestation'.

Mr. N.H. Smith, who replaced Mr. C. W. Lamb on the latter's transfer to Instruments Division at Headquarters in December 1921, travelled to London on annual leave at the beginning of August 1922 and was prevented from returning due to the unsettled state of the country. He was permanently assigned to Meteorological Office Headquarters in December 1922.

Mr. Gerald O'Sullivan was appointed to the Observatory on 3rd June 1926. He was transferred to Foynes on 9th January 1941 and to Headquarters in Dublin in 1943. He retired in 1974.

Mr. Michael Sugrue retired on 30th July 1926 after forty two years service and was replaced by Mr. Michael (Miko) O'Shea on 5th August. Mr. O'Shea served at the Observatory, apart for one period of temporary duty at Foynes in 1941, until his retirement on 6th May 1977.

Mr. John B. Morley resigned on 17th September 1927 and was replaced by his brother Thomas Morley on 19th of the month. Following a brief stay in Foynes in early 1941, Thomas transferred to Headquarters on 1st March of that year. He resigned from the Meteorological Service and joined the newly established School of Cosmic Physics on 1st November 1947.

Mr. C. D. Stewart left the station on 4th November 1927 on a temporary transfer to the Forecast Division. The Senior Assistant at the station, Mr. Michael J. Morley, assumed responsibility for the work of the station and acted as resident observer until the arrival of the new Superintendent, Mr. T. J. Spence, on 21st April 1928.

The Jardi rate of rainfall recorder was installed in the station in December 1932. Major renovations were made to the Observatory buildings during 1930/31. Additional office space was provided and a hot water system and central heating were installed.

Mr. John P. O'Sullivan, Handyman at the station, retired on 6th February 1932, after twenty five years service and was replaced on the 8th by his nephew, Mr. Patrick O'Sullivan. Mr. O'Sullivan was the first member of the Observatory staff taken over

by the Irish Free State Meteorological Service. He was appointed to that Service on 1st October 1937 and served at the Observatory until his retirement on 26th April 1980.

Professor F. Eredia, Chief of the Forecast Service of Italy, was on Valentia Island from 11th July to 4th August 1933, to provide forecasts in connection with the trans-Atlantic flight of Italian seaplanes under the command of General Balbo. The Observatory supplied any meteorological data requested for the project and Mr. Spence co-operated with the professor in the analysis of synoptic charts between 24th July and 4th August. When making their forecasts, the Italians relied on the old system of pressure distribution in the Atlantic while Mr Spence based his on the new ideas of the Norwegian school. General Valle of the Italian Air Force joined Professor Eredia on 1st August, the day before the expected arrival of General Balbo. However there was low cloud at 600 feet and drizzle on the 2nd so no landing took place.

Mr. H. F. Jackson arrived to take up duty as Superintendent on 3rd January 1934. Mr. Spence's departure from the station was delayed until 10th. This delay was caused by the removal vans, which were to bring in Mr. Jackson's effects and to remove those of Mr. Spence, being incorrectly shipped at Fishguard. Mr. Jackson was to be the last Superintendent at the Observatory under the British Meteorological Office.

The Irish Free State Meteorological Service was set up on 8th December 1936. Mr. Austin H. Nagle, who had served in the British Meteorological Office from 1927 was appointed Director. He immediately set about the task of recruiting and training staff and getting the organisational details of the infant Service in place. The Irish Service assumed control of the Observatory and the telegraphic reporting and climatological stations on 1st April 1937. As there were no trained staff in the new Service the Observatory was run by the British Meteorological Office on an agency basis until Mr. Stephen G. Kelliher, a former Director of the Meteorological Service of Malaya, arrived on 30th September 1937 to take over as Officer-in-Charge. Mr. Jackson left on 2nd October and Mr. Kelliher took charge of the Observatory on that date and remained there until the end of February 1939.

The position of the four assistants was uncertain after the takeover. They did not know whether they were to be transferred to stations in the British Meteorological Office or to be taken over by the Irish Service. They were technically British staff working directly under Irish Free State control. To overcome the irregularity of this situation, Mr. Nagle had them seconded to the Irish Meteorological Service, in October 1937, as a temporary measure. This arrangement continued until 1st June 1939, when they were transferred permanently to the new Service.

The Observatory had seen many changes since its foundation on Valentia Island in 1868 but this was by far the most significant. It had gone through a period of stagnation, with little expansion of the work programme or instrumentation, since

the foundation of the State. This was the beginning of a period of rapid change and development at the station, which included the introduction of upper-air radio sounding and wind finding, solar radiation measurements, radio activity and pollution monitoring, continuous recording of the magnetic elements, atmospheric electricity measurements and seismology as well as minor activities such as condensation nuclei counting, evapotranspiration measurements and phenology.

The Observatory continues to keep abreast with modern technology and developments but is still very proud of its beginnings and its past. While always looking to the future it has the highest regard for its history and traditions. This regard is clearly manifest in the fact that, after one hundred years on the mainland, it still holds the title 'Valentia Observatory'.

