

## **DEDICATION**

This issue of *Atmosphere* is respectfully dedicated to Dr. Andrew Thomson, in celebration of his 80th birthday. On May 18, 1973, the Canadian Meteorological Society conferred Honorary Membership on Dr. Thomson in recognition of his outstanding dedication to the advancement of Meteorology. Many of his friends, colleagues and associates have united together to contribute articles for this issue especially to honour him for his endeavours to foster and promote the science of Meteorology.



---

## Andrew Thomson: A Profile

M.K. Thomas

*Atmospheric Environment Service, Toronto*

[Manuscript received 29 November 1973]

---

Dr. Andrew Thomson retired from government service in 1959, more than 14 years ago, and consequently, is not known personally by a large percentage of people working in Canadian meteorology today. To those of us who joined the Meteorological Branch during wartime, however, Dr. Thomson will always remain a very important person in our meteorological world. As Assistant Controller he was the man who had the final word on whether or not you were hired and where you were posted, and he was the man with whom you visited if you ever had the opportunity to go to Toronto on leave. Few of us ever saw, let alone had the opportunity of talking with, the Controller at that time, Dr. John Patterson, and while there were usually a few experienced meteorologists at Headquarters to look after the training courses and to administer the postings and other details, we knew that behind it all was "Andy" Thomson who had the last word regarding the wartime Meteorological Assistants hired for service with the British Commonwealth Air Training Plan.

In my particular case, I first visited with Dr. Thomson one January day in 1942, at the end of meteorological Short Course No. 4, to see if I could avoid a posting to Gander. Not that I had anything against Newfoundland, but when I was told that it would be four to five years before married accommodation was to be made available at that station, I knew some drastic action had to be taken. I planned to be married in a few months and fortunately was able to locate a classmate from Western Canada who in no way wanted to go back to the Prairies. With Dr. Thomson's blessings we traded postings and I started my meteorological career in Manitoba rather than in Newfoundland. Subsequently, I remember visiting Headquarters at 315 Bloor Street West on occasions during annual leave and discussing with Dr. Thomson some of the important points of the day – why we weren't in uniform, what was wrong with the pressure observations in northern Quebec, why couldn't the main forecast offices get their forecasts on the teletype faster, and what were the chances of a posting back to Ontario? I expect many aging meteorologists in the service today have similar early memories of Dr. Thomson!

If Andrew Thomson ever became exasperated with his young meteorologists and their vocal (and in retrospect very selfish) clamorings for postings nearer home, and their constant demands to be put into RCAF uniform, he didn't show it. Well he might have, however, since he had had a most unusual and widely travelled career – working and studying in several countries after graduation – and had accumulated a wealth of experience before returning to Toronto late in 1931 to join the Meteorological Service.

Of Scottish descent, Andrew Thomson was born at Dobbinton, near Owen Sound, Ontario, on May 18, 1893. He graduated in Honour Physics from the University of Toronto in 1915, and returned for a Master's degree in 1916, after which he was awarded a Townsend Fellowship at Harvard University. In May 1917 he was employed by the Carnegie Institution of Washington, D.C. and later that year became a mathematical aide to Thomas Edison. Following a brief period in the U.S. Army, he rejoined the Carnegie Institution and in 1919 was sent to northern Brazil to observe the atmospheric effects during an eclipse of the sun.

In October 1919, Dr. Thomson accepted an opportunity to carry out atmospheric electricity research on a voyage of the brigantine Carnegie around the world. During the voyage, which lasted more than two years, Dr. Thomson was fascinated with the South Pacific. Consequently, when the opportunity arose in 1922, he accepted the directorship of the geophysical observatory at Apia in Western Samoa. The territory was then under the trusteeship of New Zealand and, in 1929, Dr. Thomson moved to that country where he was employed as an aerologist. The following year, however, he decided he needed some refresher training and so went to Europe to study in Germany and Norway. In the latter country he became a good friend of Dr. Jacob Bjerknes and the other Norwegian meteorologists who had evolved, a few years earlier, the basic air-mass and frontal theory.

Following study in Europe, Dr. Thomson returned to the Carnegie Institution in Washington, but he had retained his Canadian citizenship, and soon decided to return to this country. In January 1932, he took up an appointment as head of the Physics Division at the Headquarters of the Meteorological Service of Canada. In the Service, the long regime of Sir Frederic Stupart had come to a close in 1929 and Dr. John Patterson had been appointed Director. Primarily because of the demands of aviation, increased governmental attention was being given to meteorology at this time, and it was realized that to provide the service required, the new meteorological theories and methods had to be used. However, soon after Dr. Thomson arrived back in Toronto, and before much expansion could take place, the depression snuffed out any real development of meteorological services.

Despite a slashed budget, Dr. Thomson became the prime organizer and promoter for two programs that began in 1933–34. The first was the organization of Canadian participation in the second International Polar Year. The first such year in 1883–84 had seen the establishment of observing posts in Canada by the United Kingdom and the United States, but the Meteorological Service had not participated. This time, however, and largely through Dr. Thomson's efforts, there were four special Canadian observing stations – Coppermine, Chesterfield, Cape Hope's Advance and Meanook, ALTA., all staffed by keen young scientists selected and recruited by him. This was Canada's first participation in an international geophysical research program – it was successful and it spurred research in Canadian universities and government at the very time it was needed. Dr. Thomson's other special project during his

first years in the Service was the planning and organization of an M.A. course in Meteorology at the University of Toronto, to be given in cooperation with the Meteorological Service. He planned well; both the course and the co-operation are still in evidence after 40 years and hundreds of graduates.

Despite the depression, aviation continued to develop rapidly in Canada during the mid-1930's and it became necessary for the government to plan for substantial meteorological services to support it. Accordingly, in November 1936, the Meteorological Service became the Meteorological Division of the Air Services Branch of the new Department of Transport. Dr. Thomson became the Assistant Controller of the new Division, although he was not officially appointed to the position until early in 1940. To again refresh himself in the rapidly developing field of meteorological theory, Dr. Thomson spent six weeks during 1937 visiting the meteorological services in Britain, Norway and Germany. Later the same year he participated directly in the first forecasting work at Botwood in Newfoundland for trans-Atlantic flying, and in 1938 he was instrumental in staffing and setting up forecast centres across the country for the first flights of the new Trans-Canada Airlines. Shortly after the outbreak of war in September 1939 the British Commonwealth Air Training Plan was conceived and Dr. Thomson became the main organizer and administrator of the extensive meteorological program that was subsequently required. Dr. John Patterson was, of course, the Controller throughout the 1930's and during the war; veteran AES staffers will recall that all the correspondence coming out of Toronto headquarters bore his signature. Dr. Thomson has admitted, however, that early in the war Dr. Patterson had him learn to sign a passable "J. Patterson" so that there would be continuity in all written orders coming out of headquarters regardless of where Dr. Patterson's duties took him!

Wartime administration of meteorology in Canada must have been a terrific burden on John Patterson and Andrew Thomson. Dr. Patterson, then in his early 70's, and Dr. Thomson were called upon to expand the Meteorological Service nearly tenfold within a very few years. At first, the RCAF felt that 27 meteorological officers would be needed at about two dozen training stations. Every few months the estimated need increased until by 1943-44 there were nearly 350 wartime meteorologists on duty at approximately 70 training and operational bases. In addition, the civil aviation networks of observing stations and forecast centres were expanded in size and activity. College and high school graduates had to be found and trained as meteorologists and technicians; instrument procurement became very difficult; coordination with the American and British military meteorological services was not always easy, nor were dealings with federal manpower and financial officials. A few meteorologists were taken from operational duties to assist in the administrative and training work, but the continuing and prime responsibility for the program rested with Dr. Thomson. In 1944, however, flying training began to be phased out and after mid-1945 the wartime meteorological system was quickly dismantled. As Dr. Patterson was nearing the end of his career, Andrew Thomson now took on the problem of how best to organize Canadian meteorological services for peacetime.



During Technical Commission meetings of the International Meteorological Organization at Toronto, August 1947. *Left to right:* Miss C.D. Coleman (Secretary), John Patterson, J. Keranen (FINLAND), Andrew Thomson. *Photo: Canada Pictures, Toronto*

Named an Officer of the British Empire in 1946 for his wartime contributions, Dr. Thomson became Controller of the Meteorological Division later that year. His first accomplishment was the organization of headquarters into an administrative structure which was to last for more than 25 years. He selected for his first divisional chiefs P.D. McTaggart-Cowan, A.J. Connor, R.C. Jacobsen, D.C. Archibald, J.R.H. Noble, and E.W. Hewson, and these men began to plan for and build the Service we have today. As a result of retirements and resignations during the first few years, C.C. Boughner, H.H. Bindon and D.P. McIntyre were added to this echelon and have similarly left their marks on Canadian meteorology.

During the immediate postwar years Dr. Thomson became the Service's first Ottawa commuter as he made almost weekly visits to Air Services, D.O.T., and other departmental headquarters. The Ottawa trips took longer in those days too – Dr. Thomson would catch the 11:20 p.m. sleeper from Toronto and, if he was fortunate, return the next day on the afternoon train leaving Ottawa at 3:00 p.m. If his meetings lasted all day he would return on the sleeper to Toronto, or perhaps spend another night and day in Ottawa.

It was also during this period that Dr. Thomson began to boost Canada to a rather prominent place in international meteorology. During August 1947 he was the host at Toronto meetings of the nine Technical Commissions of the then long-established International Meteorological Organization. In the years

that followed he was one of the founders of the present World Meteorological Organization and served for many years on its Executive Committee. This required long trans-Atlantic flights for the annual meetings of the Committee in Geneva where he was a well known and frequent guest at the Eden Hotel. In fact, during these years, before the introduction of jet aircraft, Dr. Thomson became a virtual globe trotter, visiting his fellow directors of meteorology in Africa, Asia and Australasia, as well as in the countries of Western Europe. At home he was host at the combined Royal Meteorological Society-American Meteorological Society meetings at Toronto in 1953, and assisted in sponsoring the Toronto meetings of the International Union of Geodesy and Geophysics in 1955. Over the years Dr. Thomson has maintained contact with many of the world leaders in meteorology – if retained and published, his exchanges of correspondence with them would make a very interesting and valuable volume.

Within the public service Dr. Thomson was not only a very resourceful administrator in dealing with departmental and other government people in Ottawa, but he was also one who got things done in his own Service. Many of us have vivid memories of his unannounced tours through the offices at headquarters during which he would stop at a desk and ask innocently “And what are you doing today Mr. ...?”. It didn’t take many visits of this kind to spur young meteorologists into not only being sure of what they were doing, but also to have a special little study underway which could be reported to Dr. Thomson. Very active in the Royal Society of Canada and always looking for papers for it, “AT” frequently encouraged a meteorologist to complete his study and present the results to the Society at its next annual meeting.

In 1952 Dr. Thomson was awarded the Gold Medal of the Professional Institute of the Public Service of Canada – an honour which only a few public servants ever acquire. In 1958 McGill University honoured him with an honorary degree of Doctor of Science, and in 1965 a few years after his retirement, he was awarded the Patterson Medal for his outstanding contribution to Canadian meteorology for more than 25 years. The citation which accompanied that award emphasized Dr. Thomson’s leadership in forging a link between the universities and the government service, and stressed his service to international meteorology through his lengthy membership on the Executive Committee of the World Meteorological Organization.

When he retired in 1959, Dr. Thomson had presided over a period of rapid and remarkable growth of the postwar Meteorological Branch. The rate of growth which the Service had acquired during wartime did not diminish during the postwar period. In 1946, when Dr. Thomson took over control, the budget of the Service was less than three million dollars, but by 1959, his last year in the Service, it had reached \$13,500,000. Accounts of the achievement of the Meteorological Branch during those postwar years are to be found in the annual reports and other histories of the Service, and they include marked advances in forecasting services, research, instrument development, climatology and training methods as meteorology flourished in Canada as never before. The man who presided over all of this was Andrew Thomson.



Presentation of the Gold Medal of the Professional Institute of the Public Service of Canada, May 22, 1952. *Left to right:* Dr. O.M. Solandt, J.S. McGiffin (Secretary-Treasurer, PI), Andrew Thomson, President H. McLeod, Hon. Paul Martin, Hon. Lester B. Pearson.

*Photo: Capital Press Service*

Today Dr. Thomson has been in retirement for many years, but in a sense he has never retired from meteorology at all. On his occasional visits to AES headquarters he still asks "And what are you doing today Mr. ...?", or makes penetrating enquiries about current departmental and Service policy. A founder of the Canadian Branch of the Royal Meteorological Society, Dr. Thomson has never ceased being a supporter of it and its successor, the Canadian Meteorological Society. He has undoubtedly attended more Society meetings in Toronto than anyone else, and for many years has subsidized the Society's "Andrew Thomson Undergraduate Student Prize". The several young Canadian meteorologists who have received this prize have been significantly encouraged in meteorology by Dr. Thomson.

In his retirement, Dr. Thomson divides his time between his long time Toronto residence and a farm in the Caledon Hills near Orangeville, thirty-four miles northwest of the city. Andrew Thomson has been a unique figure in Canadian meteorology for more than forty years, and is, in many ways, responsible for the stature the Atmospheric Environment Service has attained today, both in government circles and in the public domain. Few men have been so devoted to the subject of meteorology, and it would be difficult to find anyone in our time who has contributed so much to the Canadian meteorological scene.

### **Bibliography of Andrew Thomson**

- Results of atmospheric-electric observations made at Sobral, Brazil, during the total solar eclipse of May 29, 1919. (With S.J. MAUCHLY.) *Terr. Magn. Atmos. Elect.*, **25**, 41-48. 1920.
- Preliminary report on the atmospheric potential-gradient recorded at the Apia Observatory, Western Samoa, May 1922



- to April 1924. *Terr. Magn. Atmos. Elect.*, **29**, 97–100. 1924.
- Upper air observations – 1923–1924, Apia Observatory. Honorary Board of Advice, Wellington, N.Z., 31 pp. 1925.
- Solar radiation observations at Apia, Samoa. *Mon. Weather Rev.*, **55**, 266–267. 1927.
- Report on Niuaufau Island as station for solar eclipse observation. *Popular Astron.*, **36**, 1–5. 1928.
- Upper-air currents at Honolulu, T.H. *Mon. Weather Rev.*, **56**, 496–498. 1928.
- Upper wind observations at Apia Observatory. *Proc. 3rd Pan-Pacific Sci. Congr., Tokyo, 1926*, **2**, 1395–1400. 1928.
- Earthquake sounds heard at great distances. (LETTERS TO THE EDITOR.) *Nature*, **124**, 687–688. 1929.
- Observations of upper-air currents at Apia, Western Samoa. Dept. Sci. and Industr. Res., Wellington, 79 pp. 1929.
- Observations of upper-air currents at Apia, Western Samoa. *New Zealand J. Sci. Technol.*, **11**, 207–208. 1929.
- Audibility of sounds occurring at the eruption of Mt. Tarawera. *Quart. J. Roy. Meteorol. Soc.*, **56**, 341–344. 1930.
- Surface winds at Waitatapia, Bulls. *New Zealand J. Sci. Technol.*, **11**, 411–415. 1930.
- Thunder and lightning in the South Pacific Ocean. *Mon. Weather Rev.*, **58**, 327–329. 1930.
- The occurrence of thunderstorms in New Zealand. (With E. KIDSON.) *New Zealand J. Sci. Technol.*, **12**, 193–206. 1931.
- The International Polar Year. (NOTES AND QUERIES.) *J. Roy. Astron. Soc. Can.*, **26**, 366–368. 1932.
- The lunar atmospheric tide at Apia, Samoa (1903–1972). (With S. CHAPMAN.) *Mem. Roy. Meteorol. Soc.*, **4**, 21–25. 1932.
- Mother of pearl clouds. *J. Roy. Astron. Soc. Can.*, **26**, 437–441. 1932.
- Intertropical circulation over the Pacific Ocean. *Proc. 5th Pacific Sci. Congr., Victoria and Vancouver B.C.*, 1933, **1**, 675–680. 1934.
- Variability of Canadian winters. *J. Roy. Astron. Soc. Can.*, **29**, 129–139. 1935.
- Lunar atmospheric tides over Canada. *J. Roy. Astron. Soc. Can.*, **29**, 375–380. 1935.
- On the composition of the upper atmosphere. *Bull. Amer. Meteorol. Soc.*, **17**, 69–70. 1936.
- Sunspots and weather forecasting in Canada. *J. Roy. Astron. Soc. Can.*, **30**, 215–232. 1936.
- Scientific results of Cruise VII of the CARNEGIE during 1928–29 under command of Capt. J.P. Ault. Meteorology II. Upper-wind observations and results obtained on Cruise VII of the CARNEGIE. Carnegie Inst. of Washington, Publ. 547, 93 pp. 1943.
- The growth of meteorological knowledge of the Canadian Arctic. *Arctic*, **1**, 34–43. 1948.
- The meteorologist looks at the oceans. *Proc. Roy. Soc. Can.*, (Ser. 3), 157–162. 1949.
- Expansion of the Canadian Meteorological Service since 1939. Procès-Verbaux des Séances de l'Assoc. de Météorol. (UGGI), III Rapp. Nat., Oslo, 1948, 6–7. 1950.
- The unknown country. *J. Roy. Astron. Soc. Can.*, **44**, 41–51. 1950.
- Permafrost drilling and soil-temperature measurements at Resolute, Cornwallis Island, Canada. (With P.C. BREMNER.) *Nature*, **170**, 705–706. 1952.
- A tribute to the weatherman. (LETTERS TO THE EDITORS.) *Weather*, **7**, 189–190. 1952.
- 'Sferics' or 'spherics'? (LETTERS TO THE EDITORS.) *Weather*, **8**, 353–354. 1953.
- The climate of the Hudson Bay region. *Trans. Roy. Soc. Can.*, (Ser. 3), **48**, 1–7. 1954.
- An Introduction – (to the Canadian issue). *Weatherwise*, **9**, 39 & 70. 1956.
- Meteorological services for Agriculture. *Proc. Special Session on Agrometeorol., Can. Soc. Agronomy, UBC, June 24–27, B-17/B-20.* 1957.
- A résumé of the scientific aspects of WMO activities. *Proc. 9th Pacific Sci. Congr.*, **1**, 61–62. 1957.
- First Congress of the Canadian Meteorological Society. *Weather*, **22**, 469. 1967.