

## Sir Ernest Rutherford PRS ,lecture tour of Australia & New Zealand, 1925.

Prepared by: R.W Madsen, August 2022.

### Introduction.

On 7 May 1924, on learning that Sir Ernest Rutherford FRS (1871-1937) was planning to visit his family in New Zealand in 1925, the Sydney University Senate in co-operation with the other Australian Universities (Adelaide, Melbourne, Brisbane & Perth) asked that he give a series of lectures in Australia & New Zealand. The 1925 visit was the 3<sup>rd</sup> & final such visit after his marriage to Mary Newton (1851-1933) in Christchurch in 1900, the previous two being to Dunedin (1904 AAAS - Australasian Association for Advancement of Science) & to the 1914 British Association Meeting held in Australia. The principal purpose of these visits to New Zealand was to see Rutherford's parents, James Rutherford (1838-1928) & his mother Martha (1843-1935) as well as Mary's mother, Mary Newton (1851-1933) in Christchurch. Sir Ernest & Lady Mary departed Liverpool on July 25, 1925 on the RMS Ascanius & arrived in Adelaide on 4 September for the start of a very busy schedule of lectures ( 2 in Adelaide & Brisbane, 3 in Melbourne & Sydney & 1 in Perth) & other engagements (Royal Society welcome functions) before leaving Sydney by ship for New Zealand on 24 September for similar lectures in Auckland, Wellington, Christchurch & Dunedin as well as a Cawthron Lecture in Nelson ( Mary continued on arrival in Adelaide by train for Sydney & sailed straight on to NZ, after a 4 day wait spent with the Gordon Craigs-[Robert Gordon Craig a Urologist from Sydney University & Royal Prince Alfred Hospital {c. 1868-1931} ). The Rutherford's finally departed from Perth on 1 December by the Naldera ( by which time Rutherford was PRS Elect) returning to Cairo & Luxor (although Tutankhaman's tomb was closed & under guard) for a weeks visit there & then arriving back in Cambridge on the 2<sup>nd</sup> or 3<sup>rd</sup> of January 1926. Throughout Australia & NZ very large audiences attended Rutherford's lectures ( In Sydney the 2<sup>nd</sup> Lecture from the Adyar Hall in Bligh Street was broadcast on 2FC radio) & in NZ he was welcomed as a national hero, as their most famous son.(In 1931 Rutherford chose to be called Lord Rutherford of Nelson-coat of Arms with kiwi & Maori).

In November 1925 Rutherford was elected President of the Royal Society & as such became Sir Ernest Rutherford PRS on the final Australian lecture in Perth. During the 1925 tour Rutherford kept a 16 page notebook- diary which in a typed version is available online from his Cambridge University Library as an AJCP (Australian Joint Copying Project) document in which he notes when in Sydney that Professor Madsen (1879-1969) with friends, took him for a long motor journey through the Reserve Park & had a very enjoyable day's excursion. At this time Dr J P V Madsen (John Percival Vissing Madsen-JPVM) (1879-1969) would have been considering the role he could play with University research as part of the CSIR (Council for Science & Industrial Research) being formed in the areas of radio research & physical standards, both areas in which Rutherford was experienced.

The Rutherford legacy throughout the Commonwealth (New Zealand, Australia, Canada, India & South Africa) has been commemorated since 1952 by "Rutherford Memorial Lectures" delivered in the early years by physicists closely associated with Rutherford, however since 2000 the Lectures have mainly been in NZ. Sir Ernest & Lady Mary "May" only had one child, a daughter Eileen (1901-1930) who married Ralph Fowler FRS (1889-1944) in 1921 & the children & grandchildren have had a strong interest in science.

In the following slides (1-14),the photographs identified are from left to right.

### **1. Rutherford Memorial Lectures.**

Photographs: ER doing a radio broadcast in NZ in 1925; Sir Lawrence Bragg FRS (1890-1971); the DNA model at the Cavendish Museum; Jack (J.A) Ratcliffe (1902-1987); Sir James Chadwick (1891-1974); Adelaide bust of WLB ; Sir Mark Oliphant (1901-2000); Pyotr Kapitsa FRS (1894-1984).

In September 1960 Sir Lawrence Bragg (WLB) delivered a very entertaining lecture on the history of the Royal Institution (RI) at Canterbury University. On his earlier arrival at Auckland WLB put on show a complex molecular model of myoglobin brought in a special case which travelled by air on its own seat. The 3 dimensional model comprised of some 2,500 atoms shows the chemical which holds the oxygen in the muscles of mammals. The earlier very famous discovery of the DNA molecule at the Cavendish in WLB's lab is shown, where it is held at the Cavendish Museum.

In 1966 Jack Ratcliffe, the radio-ionosphere specialist at the Cavendish came to Sydney for the Rutherford Lecture & JPVM took this opportunity to ask him to deliver the original of ER's letter of 8 March 1911 to JPVM on the structure of the atom (announced by ER the previous night in Manchester at the Literary & Philosophical Society ) back to the Cambridge University Library to be with the 27 boxes of ER material transferred there from the Cavendish.

For 1952, Sir James Chadwick delivered a Lecture in Canada, most likely at the McGill University in Montreal, following his vital role during the War on the Manhattan Project..

The WLB bust & one of his father, Sir William Bragg PRS (1862-1942) are in Adelaide which claims them both as its own.

In 1955 Sir Mark Oliphant delivered the lecture in India & Pakistan. In the 1930's under ER at the Cavendish there were some 60 investigators from many countries working there whom Oliphant got to know including Peter Kapitsa who delivered the Lecture in Canada in 1969. In 3 December 1935, ER in a letter to JPVM, refers to the very involved negotiations involving the Soviet Government, the Royal Society, DSIR, the University & the Mond Laboratory Committee to transfer the apparatus for Kapitsa to use in Russia.

## **2. Rutherford's parents & wife Mary "May".**

Photographs: Rutherford's parents, James & Martha c. 1885; ER & his parents in 1925; ER & "May" 1930; flax drying; flax mill processing.

Ern's father James, arrived in NZ at the age of 3 when he was brought out from Scotland by his father George. In 1882 James moved to Havelock on Pelorus Sound in the Marlborough district on the north coast of the South Island, with his wife Martha who taught as a primary school teacher at Springvale having arrived from London, near where she was born in c.1856. At Ruapaka, 4 ½ miles from Havelock, James established a flax mill at which time the flax price was quite good & he was able to support his large family. Ern attended the Havelock School 1882-1887.

From the time ER went to Cambridge in 1895 on his 1851 Exhibition Scholarship, & for many years later, he would write to his mother telling her candidly the matters of interest of his work & people he met. Unfortunately these letters have not survived as apparently they were deposited for safety in a box in a solicitor's office but when the office was demolished & boxes moved to a temporary location, it was somehow lost & when they were requested around 1938 to include in ER's biography, the box supplied had different documents in it & despite a diligent search no trace could be found of ER's letters, which was a great loss.

In 1925 ER is seen with his parents at New Plymouth in good health, who had their 60<sup>th</sup> wedding anniversary in 1926. In his notebook of 1925 ER recorded that both his Mother & Father are very well & cheerful & insisted in putting my wife & myself up at the house. In 1930 ER & "May" are shown together having been married for 30 years.

The flax growing & processing ended up in bales of dressed linen flax for export where the fibre had various uses, such as rope making.

### **3. Rutherford family 1885-1886.**

Photographs: Martha & 5 children; Two boys drowned Newspaper article; ER at Cambridge 1896; James & Martha with the children c. 1886.

It appears that Martha is seen with her 4 sons, George (1867-1938), Ern (1871-1937), Jim (1873- ) & Arthur (1882-1942). George was 4 ½ years older than Ern, who was the 2<sup>nd</sup> son. ( a fifth son, Percy, had died as an infant of whooping cough aged about 18 months). Ern was the 4<sup>th</sup> child.

On 11 January 1886 a sad accident was reported in the Marlborough Times when 2 boys (Rutherford brothers Herbert & Charles) drowned after the sailing boat they were in capsized in a squall. On Friday the 8<sup>th</sup> of January, 6 boys (George Price [17], James Rutherford [13], Charles Matthews [13], Fred Matthews [5 ½], Herbert Rutherford [12] & Charles Rutherford [10 ½] were returning from a fishing expedition at around 4.00 pm from Havelock when a SE squall suddenly came up & Charles Matthews stood up to put the gaff up which had come off the mast, but the boat capsized & the boys were in the water for some time holding onto the boat with Fred Matthews [5 ½] on his brother's shoulders & helped by Jim Rutherford but after sometime Herbert & Charles Rutherford disappeared. Luckily around 6.00 pm another boat spotted them & the 4 remaining boys were rescued. ER would have been on this expedition also had he not made a delivery to his father's flax mill, but it was he who gave the news to his mother who was apparently playing the piano & after that she never did play it again- (she then made Ern & Jim have swimming lessons).

At Cambridge in 1895 Ern quickly established himself as being a very good experimenter & is shown with fellow students around that time.. The family photo at Havelock c.1886 includes Ern's sisters Alice, Eve, Nell, Ethel & Flo.

### **4. Mary "May" Rutherford (Newton).**

Photographs: Mary Newton (1896), Mary, ER & Mary wedding 1900.

It was announced in the Lyttleton Times, 4 July 1900 that. "Marriage. Rutherford-Newton on June 28, 1900 at St Paul's Church, Papanui (Christchurch), Ernest Rutherford of McGill University, the 2<sup>nd</sup> son of James Rutherford of Taranaki, to Mary Georgina daughter of the late Arthur C Newton of Christchurch, formerly of Predwardine, Herefordshire, England".

Arthur Charles Newton (1853-1888) died when Mary was 12 years old & her mother took in boarders for income which is where ER stayed when he was at Canterbury University before leaving for Cambridge in 1895.

Ern's mother-in-law, Mary Newton (1851-1933) in 1925 was living in Christchurch at the house of her son , Dr Charles Newton (1883-1969) in 1925 & that is where ER & "May" stayed.

After Ern's death from 1939, "May" made several lengthy visits to Christchurch staying with her brother Dr Newton & in 1950 decided to move there permanently which she did soon after.

## **5. 17 Wilmslow Rd, Manchester, N Bohr.**

Photographs: "Mays home in Manchester, Nov 1916"; ER & WHB; ER & Neils Bohr with wives Mary & Margrethe; letter heading from ER to JPVM from 17 Wilmslow Rd, Withington on 8 March 1911 the day after ER's announcement of his nuclear atom on the previous night at the Manchester Literary & Philosophical Society (est. 1781).

ER & "May" rented the house at 17 Wilmslow Rd, Withington (Manchester) from 1907 when they moved from McGill until ER went back to Cambridge in 1919 at the Cavendish.

ER & WHB had become very close as early as 1904 at the Dunedin AAAS (Australasian Association for Advancement of Science) Congress when ER's presence from McGill had inspired WHB to present his Presidential Address to the Physics Section & return to Adelaide University to carry out fundamental research starting at the relatively old age of 42. The very productive period for WHB in 1904-1908 involving research with JPVM & other collaborators lead to WHB's desire to be closer to ER & in 1909 he returned to England to take up a position at Leeds University. (JPVM at this time returned to Sydney University however WHB over the next 3 years went to great length in writing to JPVM to keep him informed of research developments in Europe).

It was WHB who drew ER's attention to JPVM's beta scattering experiments & later investigation which ER acknowledges in his letter to JPVM.

Neils Bohr (1885-1962) is shown with his wife Margrethe (1890-1984) with ER & Mary. It was Bohr who in 1913 published details of his further the investigations on electron shells in the structure of the atom after spending time with ER who had announced his nuclear atom & had carried out a series of experiments to conclusively prove his theory.

It appears that Mary had a great deal to do with ER's correspondence in typing letters & documents & the eventual supervision of these papers for the preparation of ER's biography by "Stewie" Eve (1862-1948) in 1938-39.

Two months prior to ER's letter of 8 March 1911 announcing his nuclear atom theory, JPVM had read a paper at the Sydney Meeting of the XIII th AAAS, "The Scattering of Cathode Rays" no 14 in the Physics Section in which he describes the structure of the atom as a solar system in which the electrons are comets. (It appears that the only full record of the content of this paper is a newspaper report in the Daily Telegraph Sydney, Friday 13 January 1911, titled "Radium's Beta Rays. Atoms like solar systems. Beta rays the comets" which can be retrieved with Trove. On the same day the Sydney Morning Herald published an article under the heading of "Science Congress-Astronomy & Physics- Experiments with Radium" which had a reduced version of the Telegraph article but the wording indicating in both cases that they were copying from material provided to them by JPVM. The AAAS handbook report in 1911 does not have a printed copy of what was read, only listing the paper as No 14 in the Physics Section. (There is no copy of this paper with the NSW State Library had the AAAS deposited it there).

## **6. Daughter Eileen Fowler (Rutherford).**

Photographs: Eileen Rutherford (1901-1930); Eileen & Ralph Fowler (1889-1944) wedding 1921; Peter Fowler (1923-1996); Mary Fowler (1950- ).

ER & Mary's only child was their daughter Eileen, born in 1901 whilst at McGill who married Ralph Fowler FRS in 1921 & they had four children ( Peter, Elizabeth, Patrick & Ruth) but

unfortunately Eileen died after the birth of the fourth child, Ruth, from a blood clot. Peter Fowler was an RAF radar operator 1942-1946 who worked on the location of German GEE jamming stations & married Rosemary Brown in 1949 & had 3 daughters (Mary, Anne & Susan).who all read science at university.

Professor Mary Fowler (1950- ) FRAS, FGS, FRCGS is a Geologist from Cambridge who married Euan Nisbet (Professor of Earth Sciences) in 1975 & they have 3 children.

## **7. Hobbies of Golf & Motoring.**

Photographs: 1908 Wolseley-Siddely; "Talking Foursome" (Sir Ralph Fowler FRS [1889-1944], Francis Aston FRS [1877-1945] {1922 Nobel in Chemistry}, ER, Sir Geoffrey Taylor FRS [1886-1975] {Physicist & Mathematician}); 1925 Cadillac 60 HP; "Chantry Cottage" Chute, Wiltshire Downs 1932; Harry Wimperis (1876-1960) {Scientific Air Defence}.

After receiving the Nobel Prize for Chemistry in 1908 it appears that ER acquired a 1908 Wolseley-Siddeley & was fond of taking motoring holidays with friends including down to Wales & later built a holiday cottage, "Chantry Cottage" in 1932 on the Wiltshire Downs near the village of Chute with a south facing aspect.

In ER's notebook for his travels in the South Island in 1925 he says "the Government arranged to place a motor at our disposal for the trip to Nelson & Christchurch. The motor was a 60 horse power Cadillac, the latest pattern with oil pressure brakes & was an exceedingly pleasant car for our travels. We parted regretfully with the car & chauffeur in Christchurch who were due to go back to Blenheim. The garage at Blenheim burnt down 2 weeks later & 40 cars consumed but hope our Cadillac escaped".

ER enjoyed his Sunday game of golf with friends especially the "Talking Foursome" (Ralph Fowler [son-in-law], Francis Aston, ER & Geoffrey Taylor). In July 1937 ER wrote to JPVM from the Cavendish concerning publication of Australian Radio Research Board papers & mentioned that his friend Wimperis would be visiting Australia & NZ shortly concerning the Air Ministry & hoped JPVM will have the opportunity to meet him (which he did in Melbourne)- ER added "he is a thoroughly sound fellow & a good friend of mine. We have played many a game of golf together.

## **8. RMS Ascanius trip to Adelaide; Cloud Chamber.**

Photographs: RMS Ascanius; Wilson Cloud Chamber-Cavendish; Alpha particle tracks in cloud chamber; Patrick Blackett FRS (1897-1974).[PRS 1965, Baron Blackett 1969].

The Rutherfords left Liverpool on 25 July 1925 by the Blue Funnel steamer RMS Ascanius & arrived in Adelaide on Thursday morning 3 September after a fine weather trip to Cape Town but after leaving there ran into a heavy south westerly gale which continued for several days & on the 7<sup>th</sup> day out a huge wave carried away part of the teak wood railing but no other damage.

It appears that the slides ER used to illustrate his Lectures were cloud chamber photographs of alpha particle (ie. Helium nucleus of 2 protons) collisions in different gases. C T R Wilson (1869-1959) a Scottish physicist at the Cavendish 1<sup>st</sup> perfected the cloud chamber in 1911 (the original is shown at the Cavendish Laboratory) whereby a plunger in a small cylinder containing air or some other gas saturated with water vapour is pulled out slightly so that the gas is cooled by expansion & becomes super saturated & Wilson discovered that charged ions produced by alpha particles become nuclei for the condensation of water vapour & if the number of drops created following one another is sufficiently large, the track can be followed.

In his Lectures (as at Cawthron Institute on 30 October) ER explained that the attack using the cloud chamber to identify the constituents of the atomic nuclei was done in the hope that occasionally an alpha particle will enter the nucleus & cause a disintegration which had been shown in the case of certain light atoms when a proton is ejected. After the ejection of the proton in this way the atom loses its former identity & becomes an atom of some element of smaller atomic weight.

In early 1925 Patrick Blackett at the Cavendish produced cloud chamber photographs of these alpha particle collisions, however in the example shown something different has apparently occurred, as Nitrogen is claimed to have become Oxygen, the next heavier element, which apparently is correct but there does seem to be an anomaly here..

The topics of Lectures given by ER were "Structure of Atoms", "Disintegration of Atoms", "Radiology & Medicine", "Method of detecting single Atoms"-Counting Atoms". "Radiation".

In Melbourne ER notes that "Photographs & cinema in operation" which may refer to the films & lantern slides to be given at the Melbourne University Public Lecture Theatre reported in the Argus.

### **9. SS Niagara, Maheno & Naldera.**

Photographs: Niagara, Maheno, Steam engine "Passchendaele"; Lecture Advertisement; Naldera.

Within Australia, Adelaide-Melbourne-Sydney-Brisbane-Sydney ER travelled by train, by the night express & left Sydney 1 day early on 24 September by the SS Niagara for Auckland & a planned 6 week stay in the Dominion. The return trip to Sydney from Wellington was delayed 4 days due to a crew industrial dispute & the departure of the Maheno on November 18 meant they missed the Sydney departure of the SS Naldera returning via Perth to Great Britain & had to catch the night train to Melbourne & the Naldera waited ½ hour there so the Rutherfords could come aboard on November 24. ER spoke to the Union Company & P & O officers on his arrival by the Maheno in Sydney on the afternoon to explain the predicament & they very generously offered to delay the departure of the Naldera in Melbourne by 2 hours which was unheard of & great compliment to ER. In Melbourne ER was met by Sir Orme Masson (1858-1937), David Rivett (1885-1961) & Sir Frank Heath (1863-1946).

From Melbourne the Naldera stopped in Adelaide before sailing to Albany from where the Rutherfords were motored to Perth & Fremantle to rejoin the steamer after ER had delivered his lecture at the University at 12.00 o'clock to a large audience.

After the BA meeting in Sydney in 1914 & his visit to NZ, ER had returned to Vancouver on the SS Niagara also.

On arrival in Auckland on 28 September, ER was given an enthusiastic civic reception & he gave a lecture in Scotts Hall with an audience of 1500 (500 seated, 500 standing in the Hall & 500 outside).

In NZ it appears that ER made a number of journeys by motor car: from Te Kuiti to New Plymouth with the friend of his brother Jim who couldn't go due to influenza, from Nelson to Blenheim in the evening on 7 November & narrowly missed 3 heavy trucks with no lights, & from Oamaru to Dunedin (75 miles). ER observed that the NZ trains were more comfortable than those he had experienced in Australia & Canada. ER made a number of train journeys in NZ,

sometimes with his wife, & on the Christchurch-Dunedin trips with his brother-in-law Dr Newton (1883-1969) of Christchurch with whom they stayed.

ER noted that the passage to Picton was a very fine one & the Sound was at its best.

The Passchendaele memorial locomotive, built in Christchurch in 1915, was taken to Dunedin for the South Seas Exhibition as the NZ Rail exhibit in November 1925 until May 7 1926. starting shortly after ER left Dunedin.

An advertisement in Dunedin for a lecture by Sir Ernest Rutherford on "the Structure of Atoms" in Burns Hall, states that an admission charge was to be paid, in Auckland a similar advertisement said "Free Admission".

#### **10. Adyar House & Union Club, Sydney.**

Photographs: Bligh Street & Adyar House; Union Club. Bligh Street; Royal Society of NSW seal; ER notebook on "Madsen" excursion; Professor O U Von Willer (1882-1972).

ER was welcomed by science representatives at Central Station on his arrival from Melbourne on Sunday morning, 13 September. & stayed at the Union Club in Bligh Street during his stay & gave his 1<sup>st</sup> Lecture on Monday the 14<sup>th</sup> at 8.00 pm at the Adyar House hall which was the premises of the Theosophical Society, after an official welcome by the Royal Society of NSW at their Elizabeth Street rooms. After returning from Brisbane ER delivered the 2<sup>nd</sup> & 3<sup>rd</sup> of his Sydney Lectures on Monday & Wednesday the 21<sup>st</sup> & 23<sup>rd</sup> & whilst it is not clear on which day ER refers to his enjoyable day's excursion with Professor Madsen, it may have been Tuesday the 22<sup>nd</sup>.

The 2nd Lecture in Sydney was broadcast by 2FC which would normally do an outside music programme at 8.00 pm from one of the Sydney theatres such as Her Majestys, the Theatre Royal & the Tivoli.. The wavelength of 2FC at this time was 1,100 metres which limited its broadcast coverage but nevertheless it was a good initiative to get ER on the air. At this time 2FC transmitted from Willoughby.

Professor Von Willer of Sydney University Physics was very involved with ER's activities in Sydney & at the University showing him around the Physics Laboratories & the Engineering Dept. He contributed a lengthy biography of ER to the Sydney Morning Herald which was also published in the "Union Recorder" of the University on 20 August, advertising the 3 Lecture details.

#### **11. Brisbane Albert Hall & Qld. Club.**

Photographs: Albert Hall; the Queensland Club, Brisbane.

The 2 lectures in Brisbane were on the evenings of Thursday & Friday the 17<sup>th</sup> & 18<sup>th</sup> of September being on the topics of "Structure of the Atom" & "Radiation". ER found the Queensland Club very comfortable & enjoyed his stay there.

ER travelled to Brisbane & back on the "Brisbane Limited" which 9 months later was involved in a serious derailment at Aberdeen heading towards Scone in which 4 people were killed & 27 seriously injured. The 1<sup>st</sup> class carriage with sleepers was smashed to pieces & many carriages overturned as well as the lead locomotive.

#### **12. Nelson College & Cawthron Institute.**

Photographs: Nelson College 1929; Fellworth House (Cawthron Institute-Nelson).

After 5 years at Havelock School, ER won a scholarship to attend Nelson College as a boarder before going to Canterbury College in Christchurch in 1890-1894 & then obtained an 1851 Exhibition Scholarship to go to Cambridge. The photograph of Nelson College shows the damage from the 1929 earthquake.

The Cawthron Institute is a privately funded research organization in Nelson which in 1925 was located in Fellworth House. The Lecture ER delivered there on October 30 was on the topic "Electricity & Matter" & was published in full by the Institute as a record of the "Cawthron Lecture". As previously mentioned, the slides presented during this lecture were of Cloud Chamber photographs of various alpha particle collisions.

When in New Zealand the Rutherfords spent a very enjoyable time especially in the Hamilton & Nelson localities meeting brothers (George & Jim), sisters, cousins, nieces & nephews, aunts & many friends & acquaintances many of whom had not been seen for over 30 years.

On travelling to Christchurch from Nelson the Rutherfords were given a civic reception at the Town Hall when a crowd of undergraduates in cap & gown tied a long rope to the Cadillac & hauled ER & his wife in State & at the conclusion were given a fine rendering of the Maori Haka.

### **13. DSIR for NZ, Westminster Abbey.**

Photographs: Sir Frank Heath (1863-1946); Otago University, Dunedin; Rutherford biography by A. S Eve (1862-1948); Westminster Abbey.

In May 1925, Prime Minister S M Bruce (1883-1967) in Australia, convened a conference to make recommendations concerning CSIR (Council for Scientific & Industrial Research) & invited Sir Frank Heath (1863-1946) the Secretary of DSIR in England to come to Australia & advise the Government on the best form of re-organisation for the enhanced future of the Council for Scientific & Industrial Research. Sir Frank's visit to Australia started in early October 1925 & in a similar vein he went to NZ from early February 1926 until March 16 visiting all the major centres & submitted a report which was considered in conjunction with the one prepared by ER before he left at the request of the NZ Government. Both the CSIR & NZ DSIR organisations concentrated on research for their predominantly primary industries, but in Australia it was JPM who submitted 2 proposals for secondary industry research, viz. Radio Research & a Physical Standards Laboratory. In 1929 ER became Chairman of the Board of the National Physical Laboratory at Teddington.

During his tour of NZ in 1925 ER was greatly impressed by the high value of the work at the University of Otago.

In 1939, "Stewie" Eve, who had worked with ER from the beginning at McGill published his biography of ER prepared under "Mays" supervision.

ER's ashes were laid to rest in the nave of Westminster Abbey near the graves of Isaac Newton (1642-1726) & Lord Kelvin (1824-1907).

### **14. Rutherford's notebook.**

Two of the pages of ER's notebook of his 1925 tour are shown covering his activities in Sydney & Brisbane. It is very fortunate that the notebook has been typed (possibly by "May") as his hand writing is not easy to read.





# Ernest Rutherford Lecture Tour in 1925 of Australia & New Zealand.

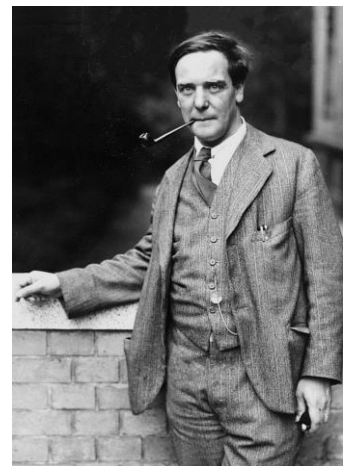
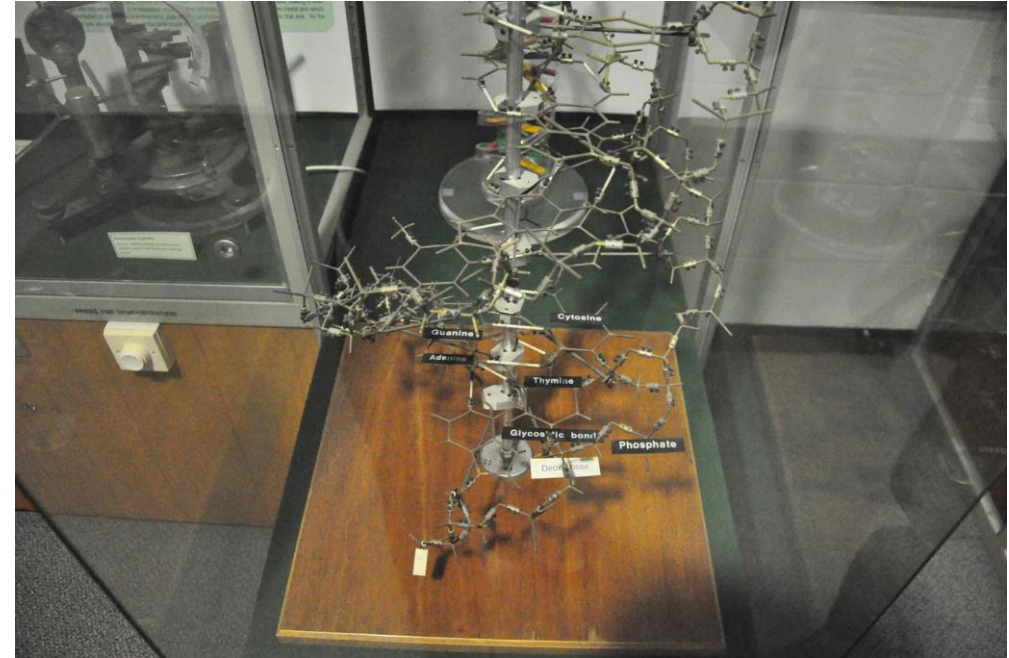
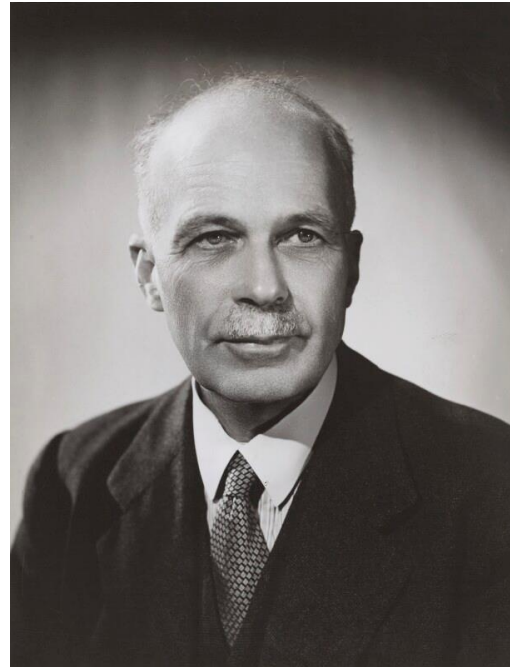
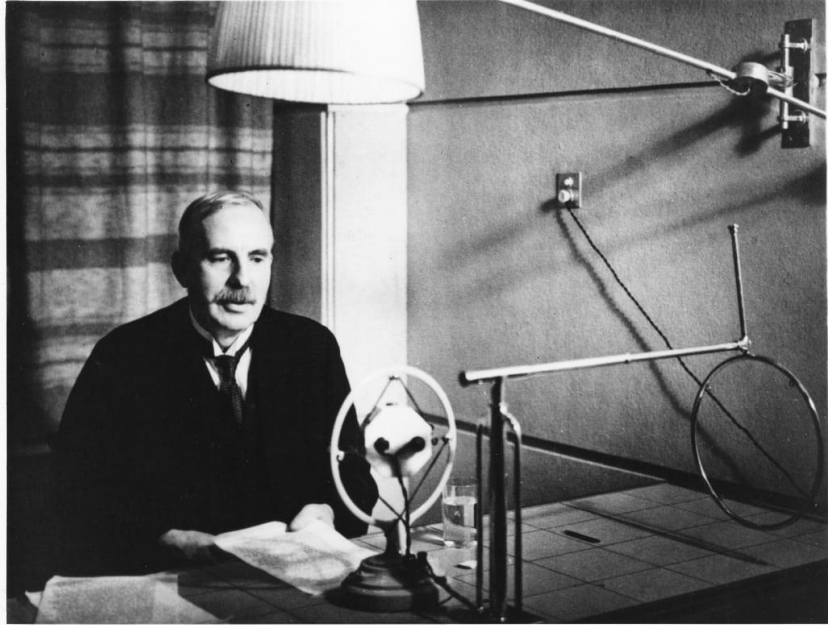
Rutherford's parents, family, wife, daughter & grandchildren.

17 Wilmslow Rd Manchester, Motoring & Golf.

The Commonwealth Legacy.



# 1. Rutherford Memorial Lectures.



## 2. Rutherford parents & wife Mary "May".

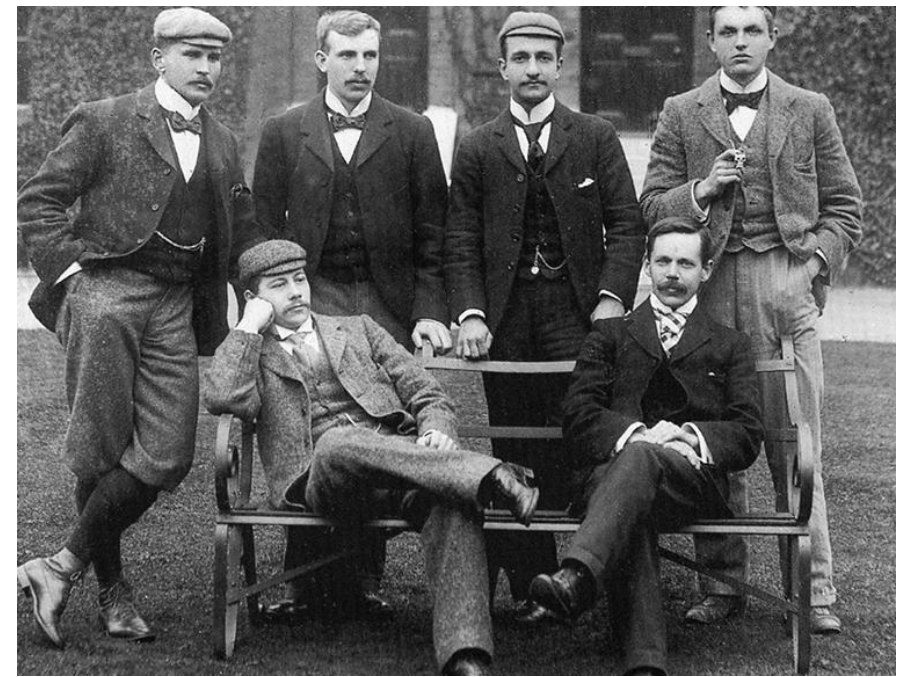


### 3. Rutherford family 1885-86.



#### TWO BOYS DROWNED.

On Friday morning a party of boys named George Price, James Rutherford, Charles Matthews, Charles Rutherford, Fred Matthews, and Herbert Rutherford left Havelock to go fishing down Hood's Bay, and when returning between 4 and 5 o'clock, the wind, which had suddenly sprung up from the S.W. freshened, and something getting astray near the jaws of the gaff, Charles Mathe



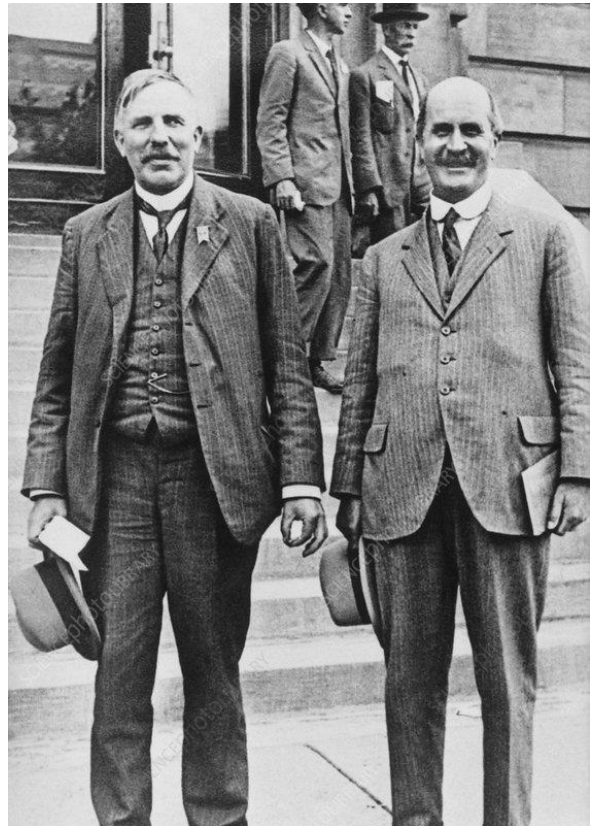
# 4. Mary "May" Rutherford (Newton).



# 5. 17 Wilmslow Rd, Manchester. N. Bohr.



MAY'S HOME MANCHESTER  
NOV 1916



17, Wilmslow Road,  
Withington.

March 8th, 1911.

Dear Mr. *Madson*

I saw Bragg yesterday and he was telling me about your work on the large scattering of  $\beta$  particles for different water

## 6. Daughter Eileen Fowler (Rutherford).

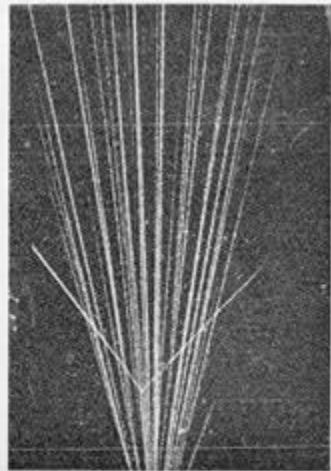




# 7. Hobbies of Golf & Motoring.



# 8. Ascanius trip to Adelaide: Cloud Chamber.



Alpha particle strikes helium nucleus and they part at right angles (Blackett)

See p. 293

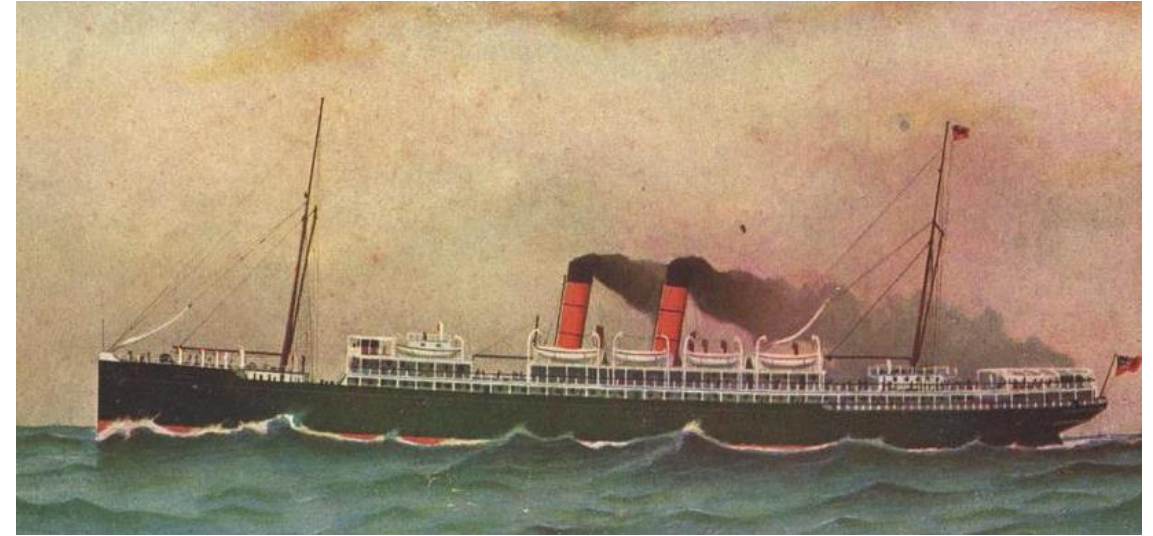
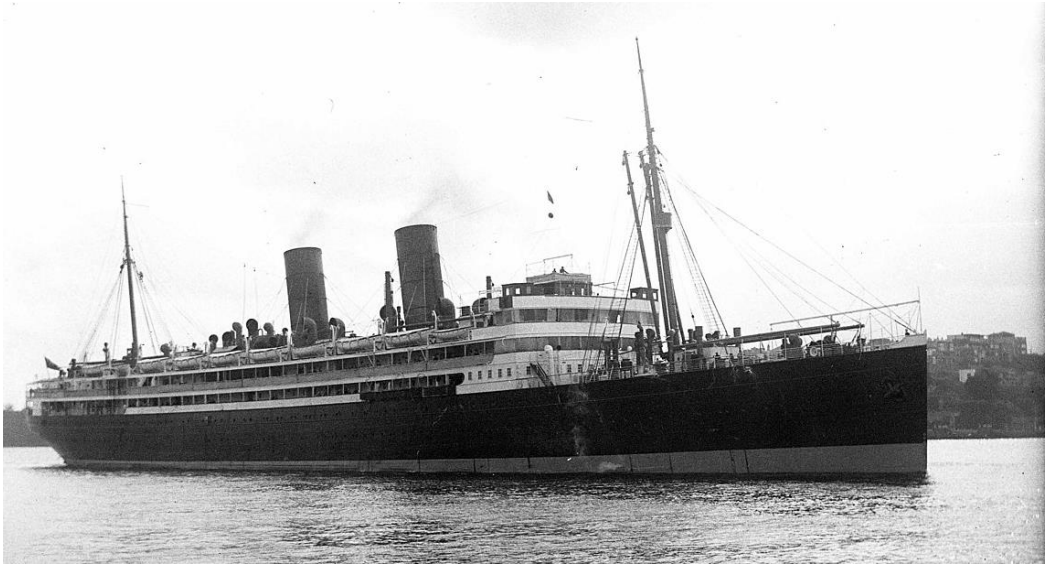


Alpha particle enters nitrogen which ejects proton and becomes oxygen (Blackett)

See p. 306



# 9. SS Niagara, Maheno & Naldera.



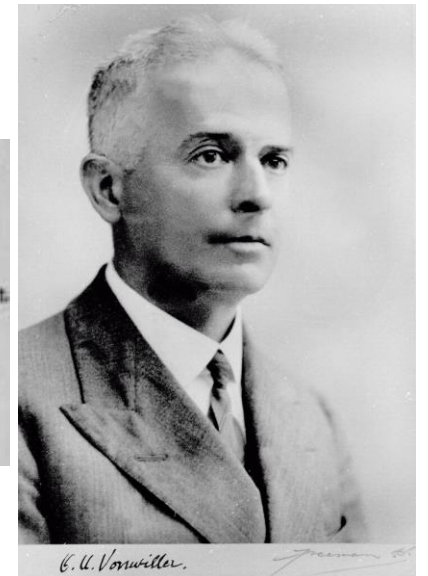
LECTURE BY SIR ERNEST RUTHERFORD.  
— SIR ERNEST RUTHERFORD —  
The EMINENT SCIENTIST, will LECTURE in the  
BURNS HALL, On BURNS HALL,  
FRIDAY, NOVEMBER 6,  
At 8 p.m.  
Title of Lecture:  
"ATOMS AND THEIR STRUCTURE,"  
Illustrated by Lantern Slides and Kinematograph films.  
ADMISSION.—Reserved Seats, 3s; Unreserved, 2s. Box Plan in now Opened at  
THE BRISTOL.



# 10. Adyar House & Union Club, Sydney.



McCallum, acting V.-C. & had a most pleasant time. Had a formal reception by the Royal Society & other bodies & had to make the usual speech. Was taken by Professor Madsen & friends for a long motor journey through the Reserve Park & had a very enjoyable day's excursion. Paid several visits to the new Physical Lab. & the Engineering Lab, & was given a dinner by the staff in the University Union. Saw a good deal of Von Willer & Professor Bailey. Went to lunch with the Governor Admiral de Char - a private



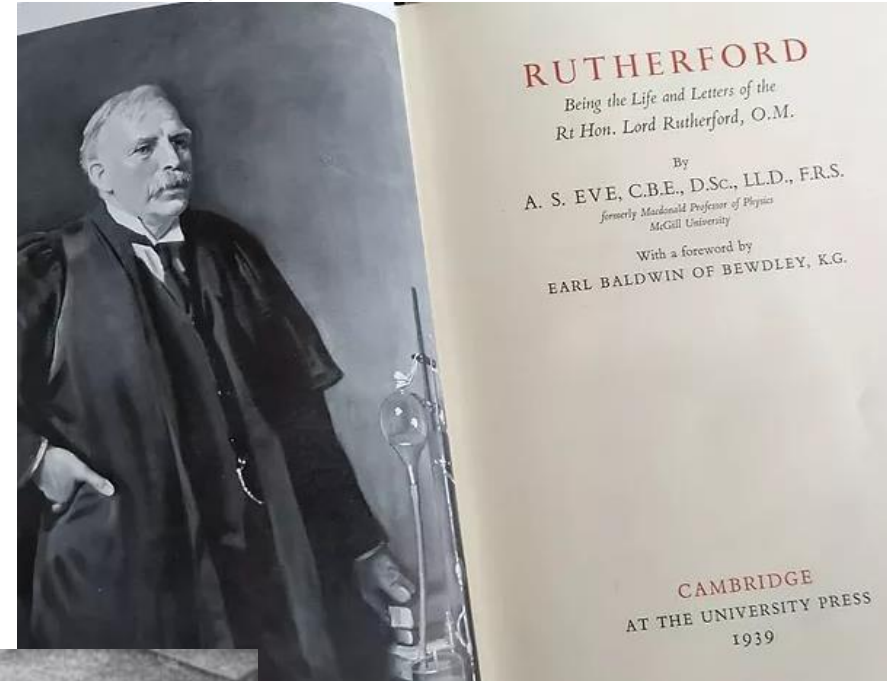
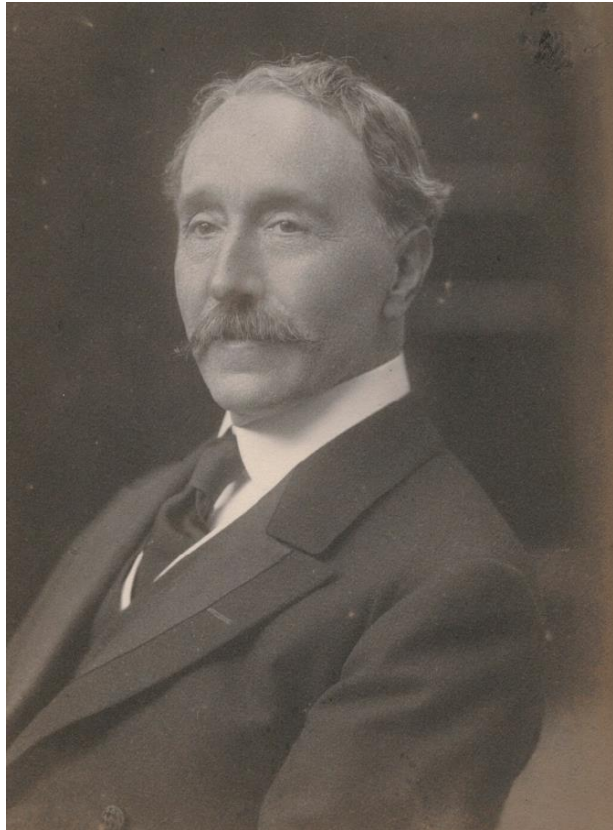
# 11. Brisbane Albert Hall & Qld. Club.



# 12. Nelson College & Cawthron Institute.



# 13. DSIR for NZ, Westminster Abbey.



excellent one. Unfortunately I had to receive with the President of the Victorian League, which I should have preferred to escape. Finished up by refreshments & general talk.

Tuesday. Given lunch in the Club by the Hon. G. Clarke, the President, & saw a good deal of him during my stay, a very pleasant & agreeable companion. Gave three lectures in Melbourne, two on the "Atomic Constitution" and one on "Radiology". Attended a reception in the evening given by Lady Grice & in the afternoon by Mrs. Allen.

On Wednesday lunched with my old friend J.A. Erskine, & on Saturday was taken by Sala for a motor excursion in the country. Returned in time to leave by the evening train for Sydney. My time in Melbourne was very much occupied with interviews with the Press & a number of visitors; amongst others several who claimed relationship but on no grounds that I could find out.

Sydney.

Arrived Sydney on Sunday the 15th, and was met by a number of scientific friends and stayed at the Sydney Club. The Club was comfortable but my host forgot to introduce me to any resident members & so had rather a dull time at ordinary meals. Gave one lecture in Sydney & a talk at the Physical Laboratory, & then went by train to Brisbane.

Brisbane.

I was met at the station by a number of old friends, including Professors Steele & Priestley & put up by Prof. M. at the Queensland Club, an exceedingly comfortable & pleasant Club & adapted for semi-tropical conditions. Next morning we were taken a drive by Professor Steele to the highest point in the neighbourhood & returned in time to give an informal lecture to the students. A good & appreciative audience. Visited the Physical & Chemical laboratories; in the afternoon there was a reception

given by the acting Vice-Chancellor in the open air. I was introduced to a number of students & had afternoon tea. Lecture that evening & the next, & next day lunched with a number of members of the Faculty. A pleasant but hurried visit & I did not have much time to see much of the city or country.

Returned by train to Sydney & was met some distance from the City by Professor Von Willer with a motor car, & left the train there. Taken home for lunch & in the afternoon had a long run in the country with a picnic tea. Gave in all three public lectures. The hall was crowded & there was a good deal of discussion in the papers on the fault of the University in not getting a bigger hall. Was given a dinner on the first evening by Dr. McCallum, acting V.-C. & had a most pleasant time. Had a formal reception by the Royal Society & other bodies & had to make the usual speech. Was taken by Professor Madsen & friends for a long motor journey through the Reserve Park & had a very enjoyable day's excursion. Paid several visits to the new Physical Lab. & the Engineering Lab, & was given a dinner by the staff in the University Union. Saw a good deal of Von Willer & Professor Bailey. Went to lunch with the Governor Admiral de <sup>Cher</sup> - a private affair. Left Sydney earlier than was intended by the S.S. "Niagara" &

rolled our way to Auckland. Had a comfortable berth but rather rough weather most of the way. Met a number of New Zealand acquaintances on the boat.

Auckland.

Arrived Auckland on September 28th at an early hour, & was met at the boat by old friends - Dr. Marsden, Prof. Burbidge, Prof. Wordey & La Trobe, now in charge of the Technical Education. Proceeded at once to the Grand Hotel, where I stayed for the next few days. I had informed my family that I would not be in till mid-day but a number turned up by train about