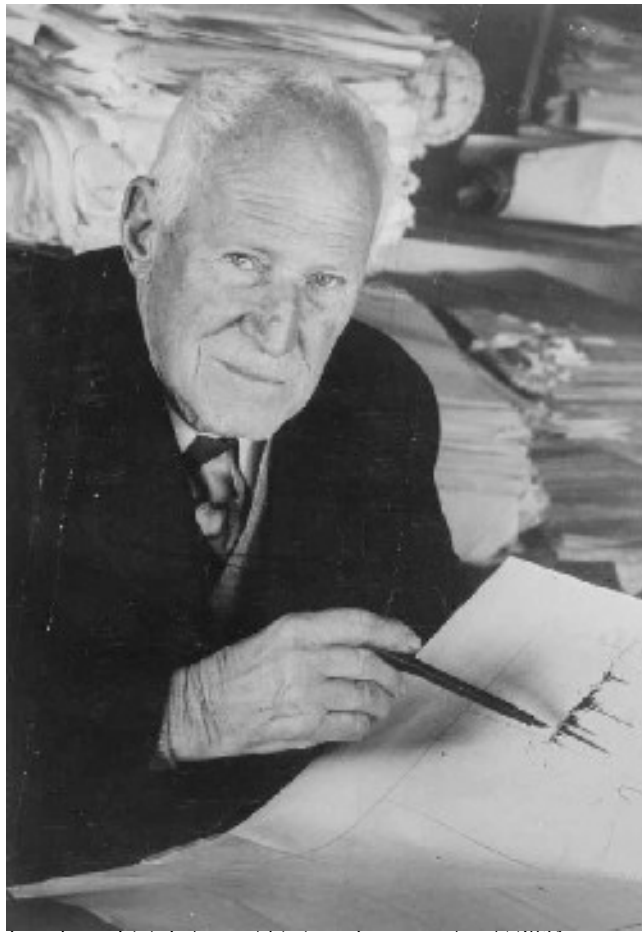


Inigo Jones

the weather
prophet



Inigo Jones. State Library of Victoria, Image number: b52831.

*'Who was I, a little country cockie, to tell
them things they had not seen?'*

Tim Sherratt

Contents

Prologue.....	3
The man and his system.....	7
Meteorologists.....	18
Scientists.....	31
Supporters.....	41
Epilogue.....	57
Acknowledgements.....	58
Sources.....	59

Prologue

Canberra 1939

Canberra was in the grip of a heatwave — the longest in its recorded history. After two weeks of hot weather, the temperature topped the century once more, as 800 visitors swarmed into town for the 1939 meeting of the Australian and New Zealand Association for the Advancement of Science (otherwise known as ANZAAS). All accommodation was booked; delegates were billeted to homes in Canberra and Queanbeyan, while some of the more adventurous took to camping, creating ‘a miniature scientists’ settlement’ on the banks of the Molonglo River. As well as the heat, visitors grappled with the city’s unusual layout. The *Canberra Times* reported, ‘even members of the geography and astronomical sections lost their bearings’.¹

The following day, 11 January 1939, delegates gathered at Telopea Park School for the opening of the congress. As the temperature soared again to a record 108.5°, the *Canberra Times* observed that ‘most interest of a scientific character centred [on] a courageous prophecy by Mr Inigo Jones the famous Queensland weather forecaster’. Jones predicted an early end to the broiling conditions. ‘The heat wave’, he explained, ‘was cyclical, occurring at 35 year intervals’. There had been similar spells in the 1867-68 season and again, 35 years later, in 1902-3. Therefore the current heat wave, Jones claimed confidently, ‘was following expected lines’.² As the death toll mounted and the threat of bushfire loomed, everyone hoped that he was right.

The ANZAAS meeting brought together the nation’s scientific elite, as well as a number of eminent visitors — including HG Wells. But amidst this jostle of intellectual worthies, Inigo Jones was, according to the *Canberra Times*, ‘one of the outstanding figures’. Jones was a determined battler whose ‘fight for recognition as a long range forecaster’ had begun in the early 1920s. Although he had received some support from the Queensland government, the newspaper noted that commonwealth authorities had been ‘stubbornly turning deaf ears to his claims’. However, it seemed that this attitude might finally be changing, for the federal government had recently announced the formation of a special committee to investigate Jones’s methods.³

With the details of this committee still to be finalised, the ANZAAS meeting offered Jones a timely platform from which to espouse the benefits of his system. 'I am getting along with the paper for the Congress and trust to make a good job of it', Jones wrote to David Rivett in December 1938, 'perhaps some of the committee of enquiry may hear it read'.⁴ His paper, entitled 'Meteorology as a branch of astronomy', surveyed international research into the use of astronomical cycles for long range weather forecasting.⁵ As Jones explained, the idea that our weather might be determined by celestial events was 'by no means new'.⁶

The appearance of spots on the surface of the sun had long been the source of conjecture, particularly when it was recognised, around the middle of the nineteenth century, that the number of sunspots increases and decreases on a regular cycle of around 11 years. Given that the sun dominates our experience of weather, might not this sunspot cycle set in motion regular changes in the Earth's climate? In the late nineteenth and early twentieth centuries, many scientists and enthusiastic amateurs embarked on the hunt for climatic cycles, believing that if such patterns could be found, then it might at last be possible to forecast the weather not just months, but perhaps even years ahead.

'After fifty years' study' Inigo Jones was convinced that he had discovered the 'key to the puzzle'.⁷ The sunspot cycle, he explained, was determined by the movements of the outer planets — Jupiter, Saturn, Neptune, and Uranus. This critical insight enabled him to derive a series of cycles, of varying length and importance, that could be used to develop long-range forecasts. 'I am convinced... that the sunspot period is due to the action of Jupiter first and the other planets later', he concluded his address, 'and just as Pythagorus and Hipparchus, and later Copernicus, grasped the truth but not the whole truth, so may this work yet need its Kepler to place the coping stone of completion upon it'.⁸ On that modest note, Queensland's Copernicus commended his paper to the further study of the assembled scientists.

Discussion followed amongst members of the 'Astronomy, Mathematics, and Physics' section of ANZAAS. 'We have worked out all the cycles in England', commented Sir George Simpson, the Director of the British Meteorological Bureau, 'but they only give you an explanation of about 1 per cent of the weather variations'. Nonetheless, he advised Jones to continue his observations in the hope of finding some mathematical relation from which 'reliable deductions' could be made.⁹ Speaking 'as one prophet to a brother prophet',

Professor VA Bailey similarly urged Jones to make predictions that were open to scientific verification.¹⁰

The mood changed, however, when Edward Kidson, the New Zealand government meteorologist, took the floor. Detailed criticism of Jones's paper 'would be merely a waste of time', he asserted. Indeed, he insisted that Jones himself had 'no clear mental picture' of the mechanisms he was describing. Kidson was in no mind to indulge the fancies of the elderly Queenslander, and moved that the section express an opinion that the paper 'fell far below the standard which should be expected in a communication to such a gathering of scientists'.¹¹ Discussion was quashed, and Jones withdrew, disappointed.

This 'harsh and ill-mannered' treatment outraged *The Land* newspaper, one of Jones's most steadfast supporters. 'It was a clear indication', the newspaper thundered, 'of just what Mr Jones can expect at the hands of those scientists who believe that because a system is new, or not universally accepted, it lacks merit or is not even worthy of investigation'. It warned the government to ensure that such 'biased critics' were not appointed to the committee that was to review Jones's system.¹² *Country Life* lambasted 'so-called scientists' whose intolerance made the newspaper 'inclined to despair of "homo sapiens"'. But 'the joke is on them', the article concluded, for while Inigo Jones's efforts at long-range forecasting had won him the admiration of ordinary farmers, 'the official academicised meteorologists of the world cannot accurately forecast the weather a day ahead'.¹³

The ANZAAS Congress marked a critical moment in Jones's career, as he waited for the review committee to pass judgement on his system. But the Congress also highlighted the dramatic divergence in opinions surrounding the weather prophet himself. For some Inigo Jones was a neglected visionary, to others nothing more than a crank. While now he is generally cast as an amusing sidelight in the development of Australian meteorology, he is still remembered by many as a great Queensland scientist, and his forecasts continue to attract attention — particularly in times of drought. As we grapple still with the unpredictability of our climate, with the difficulties of seasonal forecasting, it seems worthwhile to reconsider the life and work of a man who was believed to hold the answer to our uncertainties. This is not a complete biography of Inigo Jones. Instead it is an attempt to trace some of the events, influences, and relationships that culminated in the review of his system in 1939. The focus is

on the way Jones and his quest were perceived — by meteorologists, by scientists, by supporters, and, of course, by himself.

¹ *Canberra Times*, 11 January 1939, p. 4.

² *Canberra Times*, 12 January 1939, pp. 2 & 4.

³ *Canberra Times*, 18 January 1939, p. 6.

⁴ Jones to ACD Rivett, 23 December 1938, NAA: A9778/3, G25/32 Part 3.

⁵ Jones published his paper as: Inigo Jones, 'On the methods adopted as a means of seasonal forecasting at Crohamhurst Observatory and the reasons therefor, Presented to the Jubilee Meeting of the Australian and New Zealand Association for the Advancement of Science at Canberra, January, 1939', *Crohamhurst Observatory, Observatory Paper*, no. 10, 1939.

⁶ *ibid.*, p. 1.

⁷ *ibid.*, p. 12.

⁸ *ibid.*, p. 15.

⁹ *Brisbane Courier Mail*, 18 January 1939, p. 2.

¹⁰ *Sydney Morning Herald*, 18 January 1939, p. 19.

¹¹ *ibid.*

¹² Editorial, *Land*, 20 January 1939, p. 11.

¹³ *Country Life and Stock and Station Journal*, 20 January 1939, p. 1.

The man and his system

From pioneer settler to pioneer scientist or the other way round

In April 1952, Inigo Jones regaled the Historical Society of Queensland with recollections drawn from his seventy-seven years in the colony and state. He was a farmer who had made the acquaintance of governors, archbishops, business leaders and politicians. He was a man of limited education who had worked to enrich the cultural life of his community through the Historical Society, the Astronomical Society, the Town Planning Association and the Authors and Artists Association. He had lobbied for a dam on the Stanley River. He had advocated the construction of a 'Queensland Hall of Fame' as part of Brisbane's own Acropolis atop Spring Hill. He had rescued the Creek Street Fig Tree from development, and resisted attempts to relocate the Boer War memorial. But, nearing eighty years of age, his 'main fight' was 'still raging'.¹

From a 'pioneer settler to pioneer scientist', Jones's 'discoveries of the real nature of the universe' had lead him into a 'forbidden field' where 'heavy clashes' were inevitable. 'I thought I saw the light', he explained, 'and offered it to my confreres, but as usual only a few responded; the others would have none of me and I paid the price of a Forerunner'. He imagined himself as Louis Pasteur facing the contempt of medical authorities — 'Who is this little country doctor to presume to teach us?'.² Who was he, this 'country cockie' who claimed to have penetrated the mysteries of the weather? Who was Inigo Jones?

Inigo Owen Jones was not yet two years old when he arrived in Brisbane with his parents in December 1874. His father, Owen, was a civil engineer who found work in Brisbane, Maryborough, and the goldfields of Gympie, before retiring to 'seek in a country life that peace which the world of the city could not give'. Owen's 'earthly paradise' was discovered in the Glasshouse Mountains—a property he named 'Crohamhurst' after an estate near his former home in Surrey.³

Amongst his father's friends in Brisbane, young Inigo made the acquaintance of a tall, wiry, red-haired meteorologist with the habit of dressing 'as if he had robbed the proverbial scarecrow'.⁴ This man, Clement Wragge, was to have 'a very great influence' on Jones's life.⁵ Energetic, eccentric, innovative and aggravating, Clement Wragge's career ranged from unsettled to stormy. Already recognised by the meteorological community for the 'almost

superhuman' feat of climbing Ben Nevis every day for five months to make observations, Wragge had moved to Australia in 1883 in search of further conquests.⁶ In 1887 he took up the post of Queensland government meteorologist, and set about developing his network of observers—amongst them, young Inigo Jones.



Clement Wragge, 1901
John Oxley Library, Image Number: 161210

'He had that gift which distinguishes all geniuses of being able to assess the mental powers of his contacts almost instantly', explained Jones, 'and when I first met him as a lad of fourteen he seemed at once to sense a future observer'.⁷ Wragge supplied his protégé with a set of meteorological instruments, which Jones used to record the weather, first in Brisbane, and later at Crohamhurst. For more than sixty-five years Jones continued to compile his observations, making him, he mused, 'probably the doyen of Australian observers'.⁸

Wragge took it upon himself to chart the direction of Inigo's further education. Rather than completing his time at Brisbane Grammar and proceeding to university, Wragge argued that the young man's interest in meteorology would be better served if he came to work with him. And so in 1888, Inigo Jones joined the staff of the Queensland weather office, where Wragge's intense devotion to his science made him a 'martinet for precise and careful work'. Under his 'training and supervision', Jones recalled, 'no one did anything unwelcome, except by an absolute accident'.⁹

In 1890, the German-born MLA Theodore Unmack took control of the Queensland Postmaster-General's department, and with it the weather office.¹⁰ Unmack became 'convinced of the vast importance of seasonal forecasts' to Queensland, and asked Wragge to investigate.¹¹ According to Jones, he also drew Wragge's attention to the recently published work of Austrian scientist Eduard Bruckner, who claimed to have discovered a 35 year cycle in the climatic records of Europe.¹² Although Wragge was initially sceptical, he began to investigate the possibility of using the 'Bruckner cycle' as the basis for long-range weather forecasting, combining it with the well-known sunspot cycle of just over eleven years. This early work left its impression on Wragge's young apprentice. When, in 1892, Jones left the weather office to join his family at Crohamhurst, he packed up his instruments and left for the bush 'armed with a knowledge of the plan which Mr Wragge had for the solution of the problem of seasonal forecasting'.¹³

But the fuse burned slowly. For the next thirty years Jones lived 'the usual routine of land pioneers'—'hard work, long hours, strength and health and iron muscles and accidents and blows and falls with horses and cattle'.¹⁴ His observations continued, but scientific interests yielded to the practicalities of rural life. And yet, as Jones would later suggest, this was not time wasted. Wragge had introduced him to the possibility of long-range forecasting, however, it was through his own experience on the land that he 'saw and felt the need of it'.¹⁵ The 'practical experience' of 'what the weather really meant to people engaged in the primary industries', gave his education 'the conclusive environmental touch'—it prepared him for what was to come.¹⁶ The labours and hardships of life at Crohamhurst had, Jones reflected, 'a special meaning and a sacred message for me'.¹⁷

'It needs no argument', Jones wrote in 1935, 'to convince anyone that in a country of primary industry like Australia and which is subject to such vicissitudes of rainfall, there can hardly be a more important matter than a foreknowledge of the general trend of the seasons'.¹⁸ But for Inigo Jones, it seemed, the quest for long-range forecasting was also a matter of personal destiny. Whenever he recounted his own history, Jones took pains to trace the confluence of heredity and environment, of chance and training, that all seemed to point him to the mysteries of the weather.

‘I suppose that the spirit of scientific enquiry has always been in my blood’, Jones mused, ‘since on both my father’s and mother’s sides I am descended from long lines of philosophers, astronomers, engineers and mathematicians’.¹⁹ Another ‘important hereditary leaning’ was an ‘inherent love of the country’ passed down through ‘long lines of landed proprietors’. It was this combination, Jones supposed, ‘of the feelings of a countryman and a scientific mind’ that drew him so strongly to the question of seasonal forecasting.²⁰ Similarly, it was Wragge’s tutelage combined with his experience as a pioneer settler that together shaped his life. ‘[T]hese two phases’, he wrote, ‘were apparently part of the decrees of destiny and among the things that are beyond our comprehension or control’.²¹

Jones observed a ‘foreshadowing’ of his future in his earliest days as an infant in Surrey.²² Excursions into the countryside took his family to the original Crohamhurst, as well as to Hurstmonceux Castle, which would eventually house the Royal Greenwich Observatory. ‘Later I was to become a correspondent of that Observatory’, Jones noted, ‘and receive its publications as an important part of my own Observatory Library’.²³ Another family outing took him to the site of the ‘Gipsy Parliament’, where gipsies from all over Europe were gathered. ‘I often think that my unorthodoxy may have come from the unconscious contact of that meeting’, Jones pondered, ‘On the other hand it may simply be that there are strains of blood behind me drawn from men who have fought for liberty and against oppression and such men often take their lives in their hands when they know that the right is at stake’.²⁴

Nature, ‘the Grand Old Nurse’, also played its part, placing ‘many notable phenomena’ in the budding scientist’s path.²⁵ ‘My earliest recollections are of weather’, Jones observed.²⁶ But the event that seemed to confirm his destiny was his father’s purchase of their own ‘Crohamhurst’, near Peachester in the Glasshouse Mountains. Crohamhurst plays a critical role in Jones’s accounts of his long-range forecasting system. It was, he argued, ‘situated in one of the most remarkable climatic situations in the world’, showing an ‘extremely sensitive reaction to sunspot effects’.²⁷ Crohamhurst was thus an ideal location for a ‘national observatory’ to study seasonal forecasting.²⁸ This was surely more than a ‘lucky accident’, Jones insisted, ‘we can only believe that the discovery [of Crohamhurst] was the result of a guidance beyond our control, or our ability to comprehend’.²⁹ ‘Lead to it by circumstances that almost savour of the supernatural’, he concluded, ‘Crohamhurst itself has been a wonderful and almost uncanny factor in the research’.³⁰



*Inigo and Marion Jones in their garden at Crohamhurst, c. 1935.
John Oxley Library, Image Number: 110522.*

Evidence of Crohamhurst's unique qualities came less than six months after Jones moved on to the land. On 2 February 1893, he observed the Australian record rainfall — 35.714 inches in twenty four hours. 'Very curiously', Jones's mentor, Clement Wragge, had observed the record rainfall for Brisbane just three weeks after he took up his duties in Queensland.³¹ Was this merely a coincidence?

Clement Wragge was a theosophist, believing that all in nature was connected in the playing out some eternal plan. Wragge's timely rainfall record, Jones suggested, 'might be taken as a signal of approbation from the mystic powers in whose activities he so very enthusiastically believed'.³² Jones's own religious leanings were more conventional, but he seemed to have been infected by Wragge's enthusiasm for a infinite, interconnected universe, operating according to some greater design. There were no accidents, no mere coincidences. 'He held the view that we are here under the control of powers and beings utterly beyond our conception', Jones explained of his teacher, 'and he also firmly believed that of our mental activities nothing is ever lost'. Perhaps teacher and pupil were bound together in their destiny. '[I]t seems in this connection a very strange yet curious fact', Jones added, 'that it was soon after his death, that I, his favourite pupil, began to actively prosecute the studies that were begun during my first years with him'.³³ Wragge died in December 1922. The following year Inigo Jones made his first tentative forecast.

Whatever cosmic forces were conspiring to set Jones upon his predestined path, it was a book by the American geographer Ellsworth Huntington that inspired his final assault upon the problem of long-range weather forecasting. In 1923, Jones used his own observations and the Bruckner cycle to forecast an end to the current dry period. His success encouraged him to continue his study, aided by a copy of Huntington's *Earth and Sun* sent to him by a friend. In his book, Huntington had masterfully gathered a wide range of evidence to argue that solar variation was crucial to an understanding of climatic changes on earth. Jones was particularly struck by Huntington's report of an experiment carried out by the Norwegian physicist Kristian Birkeland, who was able to reproduce the observed behaviour of sunspots by rotating a charged metal sphere within a magnetic field. This experiment, together with the oft noted similarity between the orbital period of Jupiter and the average length of the sunspot cycle, provided Jones with the solution that enabled him at last to 'complete the work of my late illustrious chief'.³⁴

Like the sphere in Birkeland's experiment, Jones supposed that the sun was enveloped by an enormous electro-magnetic field, many times larger than our solar system. This field was maintained by vast streams of energy flowing between the sun and surrounding stars. It was like a 'great electro-magnetic machine', balanced and eternal. 'As fast as it gives out its tremendous stores of energy', Jones explained, the sun 'is recharged by means of similar emanations of corpuscular matter from all the other stars'. Poetically speaking, he mused, 'Light is the blood of the cosmos'.³⁵

Variations in the sun's activity, as demonstrated by the sunspot cycle, were the result of disruptions within this field. Jones was convinced that Jupiter was the main culprit. It seemed reasonable to suspect that the magnetic field of this massive planet would deflect some of the streams of interstellar energy away from the sun. This effect, Jones further surmised, might reach its peak when Jupiter crossed the path of the Sun's own motion through space—known as the apex of the sun's way. He tested his hypothesis and found not only was there 'a distinct tendency' for sunspot minima to occur when Jupiter was at this point in its orbit, but also that 'on every occasion' these dates corresponded with droughts in Eastern Australia.³⁶

'Here at one stroke was found what was being looked for', he proclaimed, 'a possible datum point for the sunspot periods, and also a means of predicting in general terms the droughts

that afflict our great primary industries'.³⁷ Discovered by 'simply applying the great principle of Copernicus', this 'datum point' provided the foundation upon which Jones would elaborate his obsessions.³⁸ '[I]f I had drawn attention to this alone', he proudly asserted, 'my work would have been worthy of the highest consideration'.³⁹

But, of course, droughts were not all eleven years apart, and they varied in intensity and duration. If Jupiter alone was affecting the sun then forecasting would be a simple business indeed. Many hopeful weather prophets had tried and failed to develop a forecasting system based on a single cycle. Jones argued that the magnetic fields of the other outer planets, Saturn, Uranus, and Neptune, exerted a similar, though smaller effect. 'Each great planetary magnetic field sets up a cycle of events of its own', he explained, 'so that there are at least four main cycles always in continuous operation, each one slightly affecting the progress of the others and creating fresh combinations'.⁴⁰ The complexity of this system met the objections of those who pointed out that no two years appeared to be exactly the same. When you combined the orbits of the four planets, Jones noted, 'an exact repeat was not to be expected within historic experience let alone that of any living man'.⁴¹

In any case, there were further complications. Jones believed that some droughts were the result of a lag effect involving the melting of Antarctic ice. Changes in solar activity, he argued, took time to accumulate in the polar region, delaying the release of cold water and drift ice into the Pacific Ocean currents. This cooler water gradually circulated along the western coast of South America then back to Australia, causing a secondary series of droughts well after the original sunspot minima. What was needed to predict these secondary effects, Jones insisted, was the establishment of permanent meteorological stations in the Antarctic, as well as the systematic study of sea temperatures around Australia.⁴²

But as he continued to develop his system Jones downplayed the role of the Antarctic, focusing instead on the rather more distant influence of the Milky Way. Discoveries in the emerging field of radioastronomy in the 1940s, were taken as further evidence of the vast, eternal streams of energy that flow between the stars. 'This energy which we see as light and feel as heat has also many other forms', he observed, 'such as chemical and electro-magnetic rays, and... the long waves of radio'.⁴³ One of the strongest sources of radio emissions was found to be the constellation of Sagittarius, positioned at Jones's 'datum point'—the apex of

the sun's way. But what about the other stars of the Milky Way, surely these too must have some effect? Jones set out the positions and characteristics of the constellations along the ecliptic to suggest how other planetary positions might exert their own particular influence on the sun. The 'real mechanism of the major planets', he argued, 'is to shield the sun from the direct emanations of the various intense parts of the Galaxy, especially the region of Sagittarius'.⁴⁴ Moreover, as the planets 'shut off...the particular emanations association with that portion of the Galaxy, ...so a special character is prevented from reaching our system at the time'.⁴⁵

By taking account of the specific effects of each planetary position and their combinations, Jones hoped to mop up any remaining anomalies in the climatic data. The influence of the Milky Way added another level of complexity to his system, but it also underlined the unity of the cosmos—'an automatic system' which 'goes on and on for ever without change and without fear of failure'. 'I do not think it possible', he added, 'to overestimate the magnitude, importance, or the sublime beauty of the mechanism in contemplation of which the human mind stands appalled'.⁴⁶ The problem was how to interpret this glorious, cosmic machinery to meet the earthly needs of farmers seeking a reliable knowledge of drought. How could you use it to make forecasts?

'In reality it is not a matter of forecasting or prophesying or anything of that nature', Jones explained, 'What is done is simply to construct the graph on the of the basis of definite physical reactions, and then to announce the interpretation'. Combining the orbital periods of the planets, Jones derived five main cyclical periods of 35, 59, 71, 84, and 165 years. To make a forecast he would graph climatic data from each period and simply compare the graphs. For example, to make a forecast for 1940, he would line up graphs from 1905, 1881, 1869, 1856, and 1775 (assuming, of course, that reliable data existed). Where all graphs indicated a rainy or dry period, a recurrence in the current year seemed likely. If the graphs disagreed, then it was necessary to judge the relative importance of the cycles, to determine what Jones described as the 'character' of the season. 'This interpretation must of necessity often contain modifying phrases when the whole series of cycle[s] do not agree', Jones emphasised, but this was 'merely a full statement of all the possibilities, and... not in the nature of a safety clause'.⁴⁷

More 'modifying clauses' were inevitably appended to Jones's forecasts as the state of the sun was monitored for short-term effects. While the motions of the planets controlled the sun's overall activity, there remained some variability in the actual size and location of sunspots. This specific character of the sunspots at any time was the 'final determinant' of the manner in which the cyclical pattern was expressed. If predicted rains failed to eventuate, Jones explained, 'then reference is made to the state of the southern sunspots to see if the failure is due to their unfavourable disposition, and this is then watched and its changes reported through the press daily'.⁴⁸ Only southern sunspots were relevant as Jones claimed to have shown that sunspots to the south of the sun's equator mainly affected weather in the earth's southern hemisphere, and vice versa. Moreover, his observations had led him to the conclusion that sunspots had their greatest effect on the weather when they were near the edge of the sun. As the sun itself rotated with a period of 27 days, careful observation could yield useful short term predictions.⁴⁹ Immediate sunspot effects were thus 'not entirely erratic', and 'long years of comparative observation' would no doubt remove any remaining uncertainty.⁵⁰

Subtle variations in local conditions further added to the complexity of Jones's forecasts. Rather than a single climatic cycle covering a broad region, Jones insisted that there were an innumerable series of local cycles that had to be studied and understood separately. 'There is very little correlation between one region or locality and another', he argued, thus 'each locality as it has its own climate so has its own sequence'.⁵¹

While Jones was in no doubt that he had created 'a new conception of the solar system altogether', his forecasts remained comparatively modest in their claims.⁵² He lacked the brash egotism of his mentor, Clement Wragge, who fired intercolonial anger by issuing weather maps for the whole of Australasia from the 'Chief Weather Bureau, Brisbane'.⁵³ Jones readily admitted that his system was still a work in progress. The only way to develop it was through 'a forward constructional program' of observation and prediction.⁵⁴ Each forecast offered an opportunity to test and refine his hypothesis.

'At the present stage', Jones noted in 1934, 'we are patiently testing out position after position as it is presented and when this is done each event is either to be included in the immediate series or set aside for reference at a later date'.⁵⁵ Jones's main difficulty was in deciding to

which cycle a particular weather event belonged. If for example a dry period predicted by the 35 year cycle failed to eventuate, then it was possible that the event was not a product of this cycle at all, but an expression of an earlier 59 year cycle. This possibility then had to be flagged for future testing. The regressions might continue through to the 165 year cycle and, perhaps, beyond. And so, predictions and observations had to be ‘carefully watched and recorded, and the reasons of each departure discovered, if possible’. Only then could all weather events be finally ‘sorted out into their cyclical positions’.⁵⁶

Of course, according to this method a forecast could never be wholly wrong. A failed prediction was merely an opportunity to fine-tune the system. If the vagaries of sunspot behaviour failed to explain away an errant rainstorm, it could simply be ‘set aside’ until its true home could be found. The other important consequence of Jones’s forecasting system was that if the research was to be successful, it had to be continued for a very, very long time. Jones was fond of quoting the opinion of Queensland University’s professor of mathematics that a full test of his theory could not be made without three hundred years worth of data.⁵⁷ It was obvious, he told the 1939 ANZAAS congress, that the problem required ‘an infinity of further work’.⁵⁸

Once the records were complete, once each drought or flooding rain had been allocated its proper place amidst the complex panoply of cycles, the long-held dream of generations would at last be close at hand. ‘Then the so-called chances of the weather would be eliminated, loss of crops and cattle would be prevented’, the weather prophet proclaimed, ‘as it will be recognised that the weather has no element of caprice in it, and is bound like all else in nature by laws laid down from everlasting’.⁵⁹ But the work had to be kept alive. Jones’s unwavering dedication to the problem of long-range forecasting was sustained by the glimpses of destiny peeking through his own life history. He had no choice, it was his life. He may have imagined himself a neglected prophet, or scientific revolutionary, but what was most important was not that he should feted for his successes — it was the work, the work had to be kept alive.

¹ Inigo Jones, ‘Seventy-seven years in Queensland’, *Journal of the Historical Society of Queensland*, vol. 4, no. 5, December 1952, pp. 687-701.

² *ibid.*, p. 698-99.

³ *ibid.*, p. 694.

⁴ Inigo Jones, ‘The life and work of Clement Lindley Wragge’, *Queensland Geographical Journal*, vol. 14 (new series), no. 40, 1949-1952, p. 49.

⁵ Jones, ‘Seventy-seven years in Queensland’, p. 693.

⁶ Jones, ‘The life and work of Clement Lindley Wragge’, p. 45.

- ⁷ *ibid.*, p. 48.
- ⁸ Jones, 'Seventy-seven years in Queensland', p. 694.
- ⁹ Jones, 'The life and work of Clement Lindley Wragge', p. 49.
- ¹⁰ D B Waterson, *Biographical register of the Queensland Parliament 1860-1929*, 2nd revised ed., Casket Publications, Sydney, 2001, p. 192.
- ¹¹ *Brisbane Courier*, 24 October 1892, pp. 5-6.
- ¹² Jones, 'Seventy-seven years in Queensland', p. 694-95.
- ¹³ Inigo Jones, 'Long range weather forecasting', *Queensland Geographical Journal*, vol. 18, p. 4.
- ¹⁴ Jones, 'Seventy-seven years in Queensland', p.694.
- ¹⁵ Inigo Jones, *My 'Nephelo-Coccygia': An account of the researches and reasons leading to the establishment of Crohamhurst Observatory*, Brisbane, c. 1953, p. 3.
- ¹⁶ *ibid.*, p. 12.
- ¹⁷ Jones, 'Seventy-seven years in Queensland', p.694.
- ¹⁸ Inigo Jones, 'The Crohamhurst Observatory: Its location and functions and the inaugural Ceremony', *Crohamhurst Observatory Paper*, no. 1, 1935.
- ¹⁹ Inigo Jones, 'Why I built the Crohamhurst Observatory', NAA: A1 1938/24704.
- ²⁰ *ibid.*
- ²¹ Jones, *My 'Nephelo-Coccygia'*, p. 51.
- ²² Jones, 'Seventy-seven years in Queensland', p. 687.
- ²³ *ibid.*
- ²⁴ *ibid.*, p. 688.
- ²⁵ Jones, *My 'Nephelo-Coccygia'*, p. 3.
- ²⁶ *ibid.*, p. 11.
- ²⁷ *Country Life and Stock and Station Journal*, 10 May 1935, p. 13.
- ²⁸ Jones, 'Why I built the Crohamhurst Observatory', NAA: A1 1938/24704.
- ²⁹ *Country Life and Stock and Station Journal*, 29 June 1934, p. 13.
- ³⁰ Jones, 'Long range weather forecasting', p. 14.
- ³¹ Jones, *My 'Nephelo-Coccygia'*, p. 45.
- ³² Jones, 'The life and work of Clement Lindley Wragge', p. 46.
- ³³ *ibid.*, p. 48.
- ³⁴ Jones, *My 'Nephelo-Coccygia'*, p. 3
- ³⁵ Jones, 'Long range weather forecasting', pp. 10-11.
- ³⁶ Jones, *My 'Nephelo-Coccygia'*, p. 23.
- ³⁷ *ibid.*, pp. 23-4.
- ³⁸ *Country Life and Stock and Station Journal*, 7 February 1936, p. 11.
- ³⁹ *Country Life and Stock and Station Journal*, 2 November 1934, p. 9.
- ⁴⁰ *Country Life and Stock and Station Journal*, 7 July 1936, p. 1.
- ⁴¹ Jones, *My 'Nephelo-Coccygia'*, p. 31
- ⁴² Inigo Jones, 'Discussion on the Antarctic meteorological stations', in *Seasonal forecasting: Meteorology as a branch of astronomy, Papers read before the Australian and New Zealand Association for the Advancement of Science at the Sydney Meeting, August 1932*, Brisbane, c. 1932, pp. 13-14.
- ⁴³ Inigo Jones, *The Milky Way and its functions in relation to the solar system*, reprinted from the *Queensland Geographical Journal*, new series, vol. 52, Brisbane, 1947, p. 12.
- ⁴⁴ *ibid.*, p. 10.
- ⁴⁵ *ibid.*, p. 14.
- ⁴⁶ *ibid.*, pp. 14-15.
- ⁴⁷ *Country Life and Stock and Station Journal*, 21 August 1936, p. 11.
- ⁴⁸ Jones, 'On the methods adopted as a means of seasonal forecasting at Crohamhurst Observatory and the reason therefor', p. 11.
- ⁴⁹ See RB Bousfield, 'The work of Inigo Jones and his contributions to human knowledge', an appendix to Inigo Jones, *My 'Nephelo-coocgygia': an account of the researches and reasons leading to the establishment of Crohamhurst Observatory*, Brisbane, c. 1953, pp. 62-64.
- ⁵⁰ Jones, *My 'Nephelo-Coccygia'*, pp. 10, 28.
- ⁵¹ Jones, 'On the methods adopted as a means of seasonal forecasting at Crohamhurst Observatory and the reason therefor', p. 12.
- ⁵² CLSSJ 12 April 1935, p. 22

⁵³ Jones, 'The life and work of Clement Lindley Wragge', p. 47; Home, RW and Livingston, KT, 'Science and Technology in the Story of Australian Federation: The Case of Meteorology, 1876-1908', *Historical Records of Australian Science*, vol. 10, no. 2, December 1994, pp. 109-27.

⁵⁴ Jones, 'Long range weather forecasting', p. 21.

⁵⁵ *Country Life and Stock and Station Journal*, 1 June 1934, p. 16.

⁵⁶ *Country Life and Stock and Station Journal*, 7 February 1936, p. 11.

⁵⁷ HJ Priestley (University of Queensland) to JD Story (Public Service Commissioner), 30 June 1925, NAA: A1, 1938/3981.

⁵⁸ Jones, 'On the methods adopted as a means of seasonal forecasting at Crohamhurst Observatory and the reason therefor', p. 15.

⁵⁹ *Brisbane Telegraph*, 26 January 1924, p. 13.

Meteorologists

‘A worker distinguished more by his enthusiasm than by a passion for precision’

‘I recently ran into an official of the Weather Bureau’, Inigo Jones wrote to Fritz Loewe in 1940, ‘and from his remarks gathered that the news of my decease would not be altogether received with the deepest regret’.¹ Jones was so encouraged by his early forays into forecasting that he wrote to the Commonwealth Bureau of Meteorology in 1923 to share his discoveries. Coming ‘from a former member of staff of one of the State Offices’, he expected that ‘they would act at once on my suggestions’.² Instead, it was the beginning of a long and unhappy relationship.

The Commonwealth Meteorologist, Henry Ambrose Hunt, seemed unable to restrain his sarcasm as he disposed of Jones’s hopeful suggestion that he might be appointed to the Weather Bureau’s staff. ‘I should only be too pleased’, Hunt replied, to find positions ‘for genuine meteorological enthusiasts such as yourself’. Unfortunately, he explained, public service regulations made this simply impossible.³ Hunt was less polite the following year as Jones continued to push for a research position within the Bureau. This time Jones enlisted the support of Sir Littleton Groom the Attorney-General, and member for Darling Downs. Groom had a long interest in the application of science to rural development, and he also just happened to have been the minister responsible for the establishment of the Weather Bureau in 1906. But Groom’s advocacy didn’t help. Hunt informed the Attorney-General that Jones’s comments on the relationship between sunspots and rainfall ‘where interesting are certainly not novel’. Research in this field was already being pursued, he explained, ‘by men... capable of critically examining their material by accepted statistical standards’. Jones, on the other hand, ‘presents as proved facts and established relationships sets of figures that will not even bear a cursory visual comparison’.⁴



*Henry Ambrose Hunt
Bureau of Meteorology Library*

Hunt expanded his critique in a note for the Secretary of his department in 1925. 'Mr Jones is an enthusiastic observer and an interested reader in matters regarding rainfall and its possible relation to solar phenomena', he remarked acidly, 'but enthusiasm is only one element in the essentials of a good research worker'. Hunt could find no 'evidence of an attempt to put his results into a precise formula suitable for forecasting purposes'. Either Jones lacked the ability to undertake a statistical treatment of his data, or he was simply unable 'to grasp the importance of precision in such matters'. In any case, Hunt added, 'in so far as Mr Jones' work is intelligible, and much of it is not, it contains no new principle'. He concluded with a warning to his political masters, that 'to accord official recognition to a worker distinguished more by his enthusiasm than by a passion for precision might seriously embarrass the Government'.⁵

But while meteorological authorities remained unmoved, a hopeful public had begun to embrace the would-be weather prophet. Following the success of his early forecasts, Jones recalled, he was 'instantly plunged into a vortex of applause and controversy'. The dairy farmer from Peachester, who previously 'shrank from such publicity', was suddenly a familiar fixture in the columns of the Brisbane press.⁶ As well as his regular forecasts for the *Daily Mail*, Jones expounded his theories of sunspots, planetary movements, and climatic cycles in a series of feature articles for all of the city's major newspapers. Specialist journals such as the *Livestock Bulletin* and the *Graziers' Review* also published his reports monthly.⁷ By 1927, Jones could proudly boast that his work had been well publicised in the Queensland press, and had even found its way into the *Sydney Morning Herald*. 'My addresses and wireless speeches are

listened to with apparent appreciation', he added, 'and whenever I have occasion to make personal expositions of my work, people seem invariably pleased and favourably impressed'.⁸

Jones's efforts also won the gratitude of the Queensland Council of Agriculture, comprising representatives of the state's commodity marketing boards. While the Council was unable to offer Jones any immediate financial assistance, it bestowed upon him an institutional home, and a title. From 1926, Jones was able to issue his missives on the Council's letterhead, styling himself as Honorary Director of the Bureau of Seasonal Forecasting. The Council hoped that this honorary appointment would foster Jones's research by providing him with 'an official standing in his communications with other scientists'.⁹ At home, his forecasts and articles brought him public admiration; internationally, Jones sought legitimation through his correspondence with a growing network of sympathetic scientists and institutions.

The life of a farmer was quickly giving way to the labours of a weather prophet. By 1927, Jones was complaining that the farm was 'a decided hindrance' to his work.¹⁰ Nor could a private house provide the necessary space for his records and charts.¹¹ Finally he decided to quit Crohamhurst and live with his daughters in Brisbane. 'I will be able to devote myself without interruption to my work', he explained to Earle Page, 'although the remuneration will not be great and the necessity of doing press work will use up a great deal of time which should be devoted exclusively to research pure and simple'.¹² The Council of Agriculture prevailed upon the Public Service Commissioner to provide Jones with an office, while the Surveyor-General loaned him a telescope.¹³ With support growing, Jones decided it was time to dedicate his life fully to the task.

'If I were in his position', Fred MacNish wrote to Littleton Groom about Jones, 'I would commercialise his ideas'.¹⁴ Having left the farm, Jones earned most of his income writing for the press. Unlike other long-range forecasters, however, he refused to provide a fully commercial forecasting service. 'Forecasts issued to individuals are gratis', he explained to Sir William Glasgow, the Minister for Home and Territories, 'and this is one of the principles which I do not want to infringe'.¹⁵ This reluctance to exploit his burgeoning public profile was evidence, MacNish assumed, of Jones's 'scientific turn of mind'.¹⁶ The research mattered more than his own financial security.

Jones was already in his mid-fifties and the task he set himself was extremely complex and time-consuming. There were masses of data to be collected and analysed. Moreover, if the system was to be fully perfected, many more years of work were necessary. Jones could not manage alone. 'Personally I am absolutely convinced not only of the value of this research to Queensland but also of the possibility of its extension to other states', Jones wrote to Sir William Glasgow in 1927, 'I therefore desire that it be established so that the staff may be quite familiar with my methods and ideas and the whole thing be in working order when I retire'.¹⁷ Retirement never came. Instead, Jones spent the next twenty-seven years trying to ensure that his research did not die with him. Either he needed resources to train an eager, young apprentice to carry on his labours, or the Weather Bureau itself would have to adopt and develop his system. Political support was crucial.

Jones turned to political lobbying with the same sort of obsessive, dogmatic determination that fuelled his quest to know the secrets of the weather. In February 1926, he laid the virtues of his 'wonderful hypothesis' before the Minister for Home and Territories, at the same time warning Prime Minister Bruce of a 'strong feeling of disappointment in Queensland' should his efforts be allowed to wither.¹⁸ 'I trust in making this appeal to you as the highest authority in Australia I shall not have appealed in vain', he pleaded, 'and I believe I may assure you that you will never have cause to regret having given a helping hand to this work'.¹⁹ Such frontal assaults were backed up by regular sprays of covering fire from the ranks of his parliamentary admirers. Almost all of Queensland's elected representatives were drawn into the forecaster's putsch. Letters from Jones were dutifully forwarded up the political hierarchy, often accompanied by an encouraging sentence or two.

The consequent flow of rejections and refusals only served to inspire further complaints about the prejudices of meteorological officials. Demands for a fair hearing of Jones's claims continued to accumulate, with each new minister offered the chance to redress this history of injustice. 'Under present circumstances', HA Hunt complained in 1927, 'any change in the Ministry for Home and Territories or in the personnel along any of the other avenues by which it is possible to approach the Government for assistance in scientific investigations means that a fresh move will be made by Mr Jones using all the direct and indirect means which he can devise to press his case'.²⁰ Hunt, of course, was well placed to observe Jones's lobbying tactics. For the letters that flowed from Jones and his friends, that passed through

the hands of MPs, ministers, and departmental secretaries, invariably found their way to the desk of the Commonwealth Meteorologist.

‘In the first place’, Hunt wrote grumpily to the secretary of his department in 1927, ‘I would like to point out that my considered opinion with regard to Mr Jones’ work has been quite clearly expressed on numerous occasions’. With the Bureau facing a barrage of requests to assess and reassess Jones’s claims, the ‘total inroad on the time’ of his staff had ‘assumed very serious proportions’. Hunt had had enough. ‘I feel that the time has come’, he fumed, ‘when my Minister should protect me from these disturbances of the work of my Branch’.²¹

Shouldering much of this unwelcome burden was the head of the Bureau’s research section — none other than Edward Kidson. Kidson was a member of the Bureau’s staff from 1921, but even his appointment as Director of the New Zealand Meteorological Service in 1927 failed to shield him from Jones’s persistent pleading. Shortly after taking up his new post, Kidson was forced to explain to Jones that he considered ‘to have been wasted’ the many hours he had spent in Australia investigating the weather prophet’s claims. ‘I do not intend to repeat the process here’, he added, foreshadowing, perhaps, events at Canberra in 1939.²²



Edward Kidson, 1927.
Alexander Turnbull Library, Reference Number: PAColl-6303-39.

Such comments merely fuelled Jones’s indignation at the obstinate ill-will of the country’s meteorological establishment. ‘It is quite true’, he wrote to Earle Page, ‘that for several years

the Government expert advisers have kept on repeating their OPINION in unaltered terms, but I do not think they have anything to go on'.²³ To Frank Forde, one of his steadfast parliamentary supporters, he wryly noted that the wording of the government's latest rejection was all too familiar: 'I think it time that some new remarks were concocted'.²⁴

Hunt, on the other hand, was desperately seeking some form of words that would rid him of this troublesome prophet once and for all. 'Mr Jones' letter consists of the same useless reiteration of the difficulty of explaining his theories', he noted wearily in 1929, 'I should be grateful if in the future you would free me from any obligation to spend further valuable time in examining Mr Jones' work or claims'.²⁵ But within a few months, Jones had secured a personal interview with Prime Minister Bruce and the resulting submission inevitably wound its way to Hunt for comment.²⁶ 'Long years of familiarity with Mr Jones writings have failed to disclose any scientific attack on the problems he essays to solve', came his scathing assessment, 'nor do analyses of his forecasts show any notable measure of success'. Already anticipating a flood of supporting letters from the Queensland members of parliament, Hunt helpfully suggested 'that each Member might be saved some unnecessary correspondence if informed individually in the above terms that Mr Jones' claims had already received full consideration'.²⁷

The Bureau's unflinching rejection of the weather prophet's pleas identified three major shortcomings in his work. First, his theories either couldn't be understood, or comprised merely a pastiche of ideas drawn from the popular scientific literature. Secondly, Jones had not exposed his work to scientific scrutiny by publishing in a reputable journal. And thirdly, Jones had made no attempt to describe his system in mathematical terms or provide a statistical analysis of his forecasts.

Certainly few could appreciate the 'extreme simplicity' that Jones himself claimed for his system. Even his writings for the popular press tended to be vague, obscure and repetitive. In 1935, Jones published a series of 'easy to understand' graphs in the *Country Life and Stock and Station Journal*.²⁸ If the reader was to compare these diagrams with his own local rainfall, Jones insisted, 'the wonderful simplicity of this hypothesis will be more and more impressed upon him'.²⁹ But readers made heavy weather of the graphs, and Jones was urged to make his explanations 'as simple as possible'.³⁰ To Jones the system seemed self-evident — it was there

in the data, in the graphs, in the cycles — but he struggled to present his case in a concise or compelling way.

It's also true that Jones mined the popular scientific literature for ideas and evidence to pad out his system, but this was hardly the full extent of his scientific reading. *Nature* kept him up-to-date with the latest research, as did correspondence and exchanges with scientific institutions around the world. What was more problematic was the way he used these references, shovelling them into his articles without any clear explanation of how they related to his system. It often seems more like a frenzy of scientific name-dropping than an attempt to build a reasoned argument. Even in his most formal presentations Jones tended to indulge in whiggish whimsies, invoking Bacon, Galileo, Herschel and others to demonstrate the lineage of his ideas. He was also inclined to wander off into Wragge-inspired reveries about the miraculous machinery of the heavens. None of this helped to convince sceptics of his scientific credentials.

However, despite his convoluted writing style and mystical meanderings, Jones's central idea was a simple one: climate is determined by solar activity, which, in turn, is controlled by the movements of the planets. Hunt seemed offended by the intrusion of astronomy into meteorology and only referred to this central tenet of Jones's system by way of the occasional insult. When asked to comment on one of Jones's published papers, for example, Hunt snidely remarked that his 'dependence upon the somewhat mystical significance of the position of Jupiter in relation to the sun's path savours of Astrology rather than Physical Science'.³¹

Jones's writings were difficult to decipher, but the Bureau was, perhaps, a little too eager to add him to the long list of weather cranks. In 1933, a report on Jones's system in the *Telegraph* explained that droughts were more likely to occur when Jupiter and Saturn were passing 'across the face of the sun'. Of course, it is impossible for the outer planets to pass between the sun and the earth, and Jones knew it. Clearly the reporter had misunderstood Jones's reference to the planets moving across the sun's path through space. But that didn't stop some Bureau official from highlighting the offending passage, and pasting the article into a file with the note: 'Should be specialy preserved as an example of the rubbish he publishes'.³²

The weather prophet's lobbying campaign won him no friends at the Bureau of Meteorology. But while personal antagonism might have flavoured the meteorologists' assessments, there was also a strongly-held scepticism about the practical possibilities of long-range forecasting in general. In 1912, Hunt cast a wary eye over a number of the most popular climatic cycles and found that they 'leave very wide margins for justification by the long-range forecaster'. Similarly, claims that sunspot minima brought droughts to Australia were simply not supported by the available data.³³ 'We have gone into all the cycles that are known', he claimed in 1923, 'one finds many coincidences that are encouraging, and then comes to a point where the bottom falls out of any theory'.³⁴

Hunt's opinions also featured prominently in a 1925 newspaper article headed 'Why long distance forecasts are valueless'. While admitting that certain climatic features showed cyclical characteristics, the article argued that 'so many factors combine to affect the weather, that the presence of one or more features that appear in cycles is negligible'. Long-range forecasting was not an activity for serious scientists or 'meteorological experts', it concluded, as 'no scientific data for such forecasting are obtainable'.³⁵

But who was to say what the progress of science might bring? While the Bureau continued to damp down public expectations, it also pursued its own investigations into the cyclical characteristics of Australian weather. In 1929, Hunt himself proposed the existence of a four year cycle, based not on celestial interventions, but on the interaction of temperature, rainfall, and vegetation in Australia's interior. These factors, he suggested, were linked in a chain of causation that caused 'heart-like pulsations that first attract and then repel the moisture-laden winds that bring the life-giving rainfall to the interior'.³⁶ Edward Kidson published a report entitled 'Some periods in Australian weather', which focused the influence of a three year cycle observed in air pressures at Darwin, as well as the sunspot cycle.³⁷ The cycles seemed real enough, but they were also complex, variable, and likely to be overshadowed by local factors. There was no key here to unlock the mystery of seasonal forecasting. As Kidson commented in a study of the effect of sunspot numbers on rainfall in New Zealand, the value of such research lay in its contribution to an understanding of 'fluctuations of the general circulation of the atmosphere', rather than as 'a direct means of forecasting'.³⁸

Internationally, the search for cycles was gathering pace, particularly in the United States. AE Douglass found evidence for climatic cycles in the growth rings of trees, while the Director of the Smithsonian Astrophysical Society, CG Abbot, embarked upon a lifelong obsession to link weather patterns with periodic solar variations.³⁹ Cycle hunters gathered at special conferences sponsored by the Carnegie Institution. In the early 1930s, Sir Napier Shaw estimated that more than 100 climatic cycles had been proposed.⁴⁰ All this activity was evidence, Jones argued, that his own research was deserving of support. He supposed himself to be in the vanguard of this blossoming field of scientific endeavour, and corresponded with many of the notable figures, including CG Abbot and his close collaborator, Henry Helm Clayton.

But for all this excitement and energy, what had actually been achieved? In 1930, Sir Richard Gregory's presidential address to the Royal Meteorological Society surveyed the field of weather cycles. The search for the 'golden cycle', he mused, was perhaps similar to the 'search for the philosopher's stone — it has not been found, and we are more and more compelled to the belief that it does not exist'. Nonetheless, he admitted, such beliefs were 'still cherished by many amateur meteorologists, as well as by the general body of the public'. But what did the evidence say? Gregory examined the usual suspects, from supposed weekly recurrences, to long periods of many years. While the literature on the eleven-year sunspot cycle was 'enormous', he admitted, it could 'be reduced to very little'. Overall, he concluded, the cycles put forward were 'either indefinite, or if they are expressed precisely they usually break down when tested over long periods'. Undoubtedly there were periodicities in the weather, but, as Gregory argued, 'they are usually so small in amplitude to be of academic interest only, or they show baffling changes of phase and amplitude'.⁴¹

The Bureau of Meteorology, it seemed, was well justified in its caution. Particularly when the field of long-range forecasting was notoriously infested with charlatans. The US meteorologist, Charles F Brooks, prefaced a study of the field with a brief account of 'fakes', 'quack forecasters', and 'calamity howls'. 'Here during the past 10 years well over 50 long-rangers of greater or lesser repute have been publishing', he noted in 1927, 'and, in a great many cases, accepting money for worthless or damaging forecasts'. Weather cranks the world over all seemed to exhibit a number of characteristics: they were 'self-praising'; they 'quoted letters from people in high positions'; they attacked meteorologists and scientific societies; and they

gained much of their support from the ‘sensational daily press’, which ‘opens its columns to them and occasionally carries some propaganda in their favour’.⁴²

Inigo Jones certainly exhibited many of these hallmarks of quackery. He did not, however, seek to make money from his forecasts. Nor, unlike many long-rangers, was he secretive about his methods. More than money and fame, Jones wanted disciples — he wanted people to take up his system, to develop it for the benefit of the nation. Though Hunt could rightly point out that Jones had not published his ideas in a refereed scientific journal, the weather prophet did make considerable efforts to engage with the scientific community. As well as corresponding with scientists in Australia and overseas, he presented papers at ANZAAS congresses in 1930, 1932, and 1939. He also delivered detailed descriptions of his system to meetings of the Astronomical Society of Queensland, and the Royal Geographical Society of Australasia. He even managed to have a notice about his work included in *Nature*, one of the world’s leading scientific journals.⁴³

Jones arranged for his ANZAAS presentations to be printed and distributed to libraries, scientific institutions, and interested individuals. In 1935, he inaugurated his own series of ‘Observatory Papers’, publishing rainfall data as well as material documenting his continuing research program. Hunt was predictably dismissive of Jones’s move into self-publishing. He warned the secretary of his department that Jones might attempt to cite his pamphlets as evidence of ‘compliance with my previous condition’ that his theories be accepted for publication by a reputable scientific society. ‘The form of private publication adopted’, he observed dryly, ‘does not carry any such mark of acceptance’.⁴⁴ Hunt failed to add that his Bureau published most of its research through its own series of ‘Bulletins’.

But Jones’s failure to have his theories published on their own scientific merits, might not have mattered if he had been able to demonstrate their practical efficacy. Sir Richard Gregory rejected the idea that a weather cycle was only of interest if its causes were known, arguing that ‘purely empirical knowledge may be the basis of methods of forecasting weather’.⁴⁵ If a cycle could be found which was of ‘real practical value in forecasting’, he noted in concluding his address, ‘it will be welcomed by meteorologists even though science may be unable to furnish any clue as to its origin’.⁴⁶

The Bureau's most telling criticism of Jones was that he attempted no statistical analysis of the accuracy of his forecasts — beyond a few anecdotes and the avowals of believers, he offered no proof that his methods worked. Given the nature of Jones's system, of course, no forecast could be wholly wrong. Forecasting was an ongoing process of testing and refinement, which would ultimately reveal the truth and power of his system. 'The time is not yet ripe for Mathematics in this research', he insisted, the complexity of his system and the lack of observational data made for 'infinite complications'.⁴⁷ Jones grappled with the very idea of a 'test', at first agreeing to undertake the necessary analysis, but later claiming it was impossible. 'In reply to my suggestions of co-operative discussion', Jones complained to the Treasurer, Earle Page, in 1927, 'mathematical tests were suggested when it must have been evident that such tests were quite beyond the powers of a single individual, even if the materials for them were available'.⁴⁸

Surrounded by his graphs and tables the truth of his system was plain to see. Jones was confident that his research would change rural life forever. 'What I pride myself on in my own work is its extreme simplicity', the weather prophet explained to Henry Helm Clayton, 'so that any farmer or pastoralist will be able to apply it to his own area'. Statistical analyses and mathematical formulae seemed an unnecessary intrusion upon a system which was rooted in practicality. He grumbled to Clayton, about 'so called mathematical approaches which seem to be fashionable of late years'. 'They leave me very cold', he admitted, 'but unless you put this sort of thing in a paper it seems not to be thought to be "scientific"'. 'The most important thing', he added, 'is that this system works'.⁴⁹

The Bureau wanted a test, but Jones thought it was impossible. Jones wanted a face to face discussion, but the Bureau thought it would be a waste of time. The Bureau believed that Jones lacked the intellectual ability to make a real contribution to science, while Jones was frustrated by continuing evidence of an 'aloof or dissenting' attitude prejudicing the Bureau's assessments.⁵⁰ There seemed no way forward.

¹ Jones to Fritz Loewe, 28 August 1940, University of Melbourne Archives (UMA): Loewe papers, series 3, box 59.

² Jones to Littleton Groom, 4 February 1931, NAA: A1, 1938/3981.

³ HA Hunt's letter of 3 January 1923 is quoted in Jones to PE Deane (Secretary, PM's Department), 22 April 1926, NAA: A1, 1938/3981.

⁴ HA Hunt to Littleton Groom, 7 July 1924, NAA: A1, 1938/3981.

⁵ HA Hunt to Secretary, Home and Territories Department, 28 February 1925, NAA: A1, 1938/3981.

⁶ Jones, 'Seventy-seven years in Queensland', p. 695.

- ⁷ The quantity of Jones's newspaper work can be gauged from the clippings books kept by the Weather Bureau's Queensland office, see for example, NAA: J1116, 8/9/35.
- ⁸ Jones to Earle Page, 18 July 1927, NAA: A1, 1938/3981.
- ⁹ *Daily Mail*, 13 October 1926.
- ¹⁰ Jones to Earle Page, 18 July 1927, NAA: A1, 1938/3981.
- ¹¹ Jones, 'Seventy-seven years', p. 695.
- ¹² Jones to Earle Page, 18 July 1927, NAA: A1, 1938/3981.
- ¹³ Jones to Colonel Cameron, 28 June 1928, NAA: A1, 1938/3981.
- ¹⁴ Fred MacNish to Littleton Groom, 18 November 1925, NAA: A1, 1938/3981.
- ¹⁵ Jones to Sir William Glasgow (Minister for the Interior), 28 Feb 1927, NAA: A1, 1938/3981.
- ¹⁶ Fred MacNish to Littleton Groom, 18 November 1925, NAA: A1, 1938/39
- ¹⁷ Jones to Sir William Glasgow (Minister for the Interior), 28 Feb 1927, NAA: A1, 1938/3981.
- ¹⁸ Jones to PE Deane (Secretary, PM's Department), 10 February 1926, NAA: A1, 1938/3981; Jones to SM Bruce (Prime Minister), 10 February 1926, NAA: A1, 1938/3981.
- ¹⁹ Jones to SM Bruce (Prime Minister), 10 February 1926, NAA: A1, 1938/3981.
- ²⁰ HA Hunt to Secretary, Home and Territories Department, 9 March 1927, NAA: A1, 1938/3981.
- ²¹ HA Hunt to Secretary, Home and Territories Department, 9 March 1927, NAA: A1, 1938/3981.
- ²² Kidson's letter of 16 November 1927 is quoted in Jones's 'Report to the Ways and Means Committee of the Inigo Jones Seasonal Weather Forecasting Trust', 26 February 1931, NAA: A1, 1938/3981.
- ²³ Jones to Earle Page, 5 November 1927, NAA: A1, 1938/3981.
- ²⁴ Jones to FM Forde, 29 April 1929, NAA: A1, 1938/3981.
- ²⁵ HA Hunt to Secretary, Department of Home Affairs, 7 May 1929, NAA: A1, 1938/3981.
- ²⁶ Note of interview with Jones by SM Bruce (Prime Minister), 2 August 1928, NAA: A1, 1938/3981.
- ²⁷ HA Hunt to Secretary, Department of Home Affairs, 15 January 1930, NAA: A1, 1938/3981.
- ²⁸ *Country Life and Stock and Station Journal*, 6 September 1935, p. 15
- ²⁹ *Country Life and Stock and Station Journal*, 4 October 1935, p. 15.
- ³⁰ JW Allen to Jones, 2 December 1935, NBA: E256/382.
- ³¹ Hunt to Secretary, Department of Home Affairs, 16 September 1930, NAA: A1, 1938/3981.
- ³² File notes dated 14 and 15 December 1933, NAA: B441, 70/140 Part 1.
- ³³ *Argus*, 18 May 1912, p. 19.
- ³⁴ *Argus*, 7 April 1923, p. 8.
- ³⁵ *Age*, 23 October 1925, p. 9.
- ³⁶ *Argus*, 28 January 1930, p. 9.
- ³⁷ Edward Kidson, 'Some periods in Australian weather', *Bureau of Meteorology, Bulletin*, no. 17, 1925; see also, Edward Kidson, *Meteorology: Reports on the scientific investigations, British Antarctic Expedition, 1907-1909*, Government Printer, Melbourne, 1930. pp. 118-9.
- ³⁸ Edward Kidson, 'Sun-spot numbers and annual rainfall in New Zealand', *New Zealand Journal of Science and Technology*, vol. 10, no. 2, July 1928, pp. 90-97.
- ³⁹ David H Devorkin, 'Charles Greeley Abbot, May 31 1872–December 17 1973', *National Academy of Sciences, Biographical Memoirs*, online at <<http://www.nap.edu/readingroom/books/biomems/cabbot.pdf>>.
- ⁴⁰ William James Burroughs, *Weather cycles: real of imaginary?*, second edition, Cambridge University Press, Cambridge, 2003, p. 7.
- ⁴¹ Richard Gregory, 'Weather recurrences and weather cycles', *Monthly Weather Review*, vol. 58, no. 12, December 1930, pp. 483-490.
- ⁴² Brooks, Charles F, 'Performance in long-range weather forecasting', *Monthly Weather Review*, vol. 55, no. 9, September 1927, pp. 390-395.
- ⁴³ 'Sunspots, planets, and weather', *Nature*, vol. 130, no. 3270, 2 July 1932, pp. 31-32.
- ⁴⁴ HA Hunt to Secretary, Department of Home Affairs, 16 September 1930, NAA: A1, 1938/3981.
- ⁴⁵ Gregory, 'Weather recurrences and weather cycles', p. 483.
- ⁴⁶ *ibid.*, p. 490.
- ⁴⁷ Jones to PE Deane, 22 April 1926, NAA: A1, 1938/3981.
- ⁴⁸ Jones to Earle Page, 18 July 1927, NAA: A1, 1938/3981.
- ⁴⁹ Jones to HH Clayton, 4 January 1940, SIA: RU 7153, Henry Helm Clayton Papers, Box 5, Folder 5.
- ⁵⁰ Jones to PE Deane, 22 April 1926, NAA: A1, 1938/3981.

Scientists

‘He is not the type at all’

‘The question of meteorology hardly enters into the matter as it is an entirely new departure’, Inigo Jones explained to David Rivett, Chief Executive Officer of the Council for Scientific and Industrial Research, in 1938.¹ Rivett was reluctant to pass judgement on Jones’s work, citing his own lack of experience in the field of meteorology. ‘If you were a meteorologist that would not help in any way’, Jones reassured him ‘because this is not in the scope of meteorology as at present understood or accepted’.² Spurned by the nation’s meteorological experts, Jones took comfort in the idea that he was a ‘forerunner’ — a scientific revolutionary whose ideas threatened the established orthodoxy. Even if meteorologists were unable to follow him along ‘the road through the dark forest’ towards the truth, perhaps there were those amongst the broader scientific community whose minds had not yet closed against him.³

Established in 1926, CSIR sought to bring science to bear upon the problems of Australia’s primary industries. But what could be more of a problem than drought? Jones was quick to sense an opportunity and, at the suggestion of HC Richards, chairman of CSIR’s Queensland State Committee, submitted an outline of his proposed research program, along with a request for support.⁴ The request was duly forwarded to the CSIR Executive, which, having decided to consult the relevant experts, promptly delivered it to the overloaded in-tray of the Commonwealth Meteorologist. Hunt’s reply was predictably scathing. ‘It is quite obvious that to do good original work in this field high qualifications would be required from a researcher’, he noted, ‘[w]e have no reason to believe that Mr Inigo Jones possesses these qualifications’.⁵

The other expert consulted by CSIR was similarly underwhelmed. Walter Geoffrey Duffield was Director of the Commonwealth Solar Observatory, then under construction on Mount Stromlo in the new Federal Capital Territory. Duffield knew well the frustrations and disappointments of political lobbying. The Solar Observatory largely owed its existence to his persistent efforts over many years to win federal government support.⁶ But whatever sympathy Duffield might have felt for the weather prophet’s plight, was outweighed by his unflattering assessment of Jones’s scientific abilities. ‘I am sorry to say that I cannot understand his hypothesis or his method’, he commented, ‘and I am afraid we must agree that Mr Inigo Jones’ enthusiasm is not backed by a scientific training or insight’.⁷

Like Hunt, Duffield confessed that he had already suffered through ‘a considerable amount of correspondence’ on the subject of Inigo Jones. After criticising one of his earlier pleas for government assistance, Duffield had, he explained, attempted ‘to induce Mr Jones to adopt a more rigid scientific method’. The attempt, however, had failed. ‘As he possesses no critical faculty that I have been able to discover’, Duffield concluded, ‘he is not able to discriminate in the selection of his material’.⁸

Duffield’s report made it impossible for CSIR to accommodate Jones’s requests. However, the fact that Duffield had been able to extract funds from Commonwealth coffers to initiate research into the sun, was evidence that Jones was, at least, venturing into a field of significant scientific and popular interest. In 1922, a total eclipse of the sun brought scientific parties from Britain and the US to test Einstein’s prediction that light rays passing near the sun would appear to be bent.⁹ While Einstein’s theories themselves were deemed to be of obscure academic interest, the popular press reported keenly on the eclipse preparations. A greater knowledge of the sun, it was hinted, might bring practical benefits to Australia.

At about the same time, a group of scientists and businessmen in Sydney sought to contribute to CG Abbot’s research on solar variations, by establishing a solar radiation station at the Riverview Observatory. The plan was strongly supported by primary producers, excited by the prospect of more accurate and longer range weather forecasts. In a deputation to the NSW government, the geographer and meteorologist Griffith Taylor quoted Ellsworth Huntington’s view that a weather forecast six months ahead ‘would be of more value than the many thousands of pounds spent in research in the hope of getting something out of irrigation’. As ‘solar energy was the basis of meteorological phenomena’, Taylor added, ‘it was obviously essential to measure solar radiation as it was to determine changes in the weather’.¹⁰ Significantly, Taylor’s former boss, HA Hunt, was critical of the proposal, arguing that ‘to make promises of direct practical advantages’ as a result of the research was ‘both a pernicious and dangerous practice’.¹¹

The lure of practical weather knowledge also helped bolster support for the Commonwealth Solar Observatory. Announcing the establishment of the observatory in 1923, the Minister for Home and Territories explained that it would play its part in an international program of astrophysical research. But other benefits were expected. ‘One of the results hoped for from

Australia's participation in the international scheme of solar research', he noted, 'is a better knowledge of the causes of weather changes, which, in turn, should lead to more accurate and longer range weather forecasting'.¹² As the nature of the sun itself was illuminated, so, it was imagined, the patterns underlying our weather would finally become clear.

Did Inigo Jones have the intellectual capacity to join this battle against the darkness? As Australian scientists voiced their doubts, the weather prophet's supporters rallied to arm him for the fight. In 1928, Jones addressed a meeting of the Town Planning Association of Queensland. The members present were 'so seized with the reasonableness of Mr Inigo Jones' contentions', that they decided at once 'to take some definite action in support'.¹³ A public meeting was called to establish the 'Inigo Jones Seasonal Weather Forecasting Trust', aimed at securing a fund that would enable Jones 'to give whole-time service to working out his theories of seasonal weather forecasting'.¹⁴ The Trust's committee boasted a parade of civic worthies, with businessmen, lawyers and doctors, as well as the mayors of Brisbane and Toowoomba. The Trust sought donations from individuals, organisations and government, providing yet another angle of attack for Jones's lobbying campaigns.

The Queensland Council of Agriculture also continued its support. In 1931, it sought CSIR approval for an application for funding to the Empire Marketing Board.¹⁵ CSIR served as Australian gatekeeper for the Board's largess, aimed at fostering scientific research with the potential to bulwark imperial trade. The Council's request to CSIR admitted that the previously-expressed opinions of Hunt, Duffield and Kidson weighed heavily against any chance of success. But pointing to Hunt's recent entry in the cycle race, and Kidson's publications on sunspots, the Council contended that these learned gentlemen now seemed to have changed their minds.¹⁶

Even retirement could not protect HA Hunt from the unwelcome intrusion of Inigo Jones. CSIR investigated the Council of Agriculture's claims by writing to Hunt and Kidson about their supposed change of heart. Predictably, both denied that their opinions of Jones had changed in the slightest. 'No one will dispute that the connection between solar activity and weather is worthy of investigation', Kidson asserted, but the Council's arguments did nothing to establish that Jones had the capacity to undertake such research. 'It is pertinent to ask what

is the origin of the “Council of Agriculture”, he added sniffily, ‘and how and by whom is it appointed?’¹⁷

While CSIR declined once again to take up Jones’s cause, its Queensland State Committee continued to offer some encouragement. At the suggestion of HC Richards, Jones wrote directly to David Rivett, urging him to set aside some time for a personal meeting. ‘I have a great deal of very definite evidence to set before you’, Jones insisted, ‘and I am sure you will be quite ready to help me to my purpose when you have considered this’.¹⁸ Jones had, of course, made many such pleas to the Bureau of Meteorology, but Rivett lacked Hunt’s prickly defensive reflex, and was less beholden to the narrow conventions of bureaucracy. In Rivett’s recipe for scientific success, first you found the right man (and it was assumed to be a man), then you built a research program around him. Was Inigo Jones such a man?

‘I wanted to see the man himself and hear directly what he had to say’, Rivett explained to SG Tallents, the Secretary of the Empire Marketing Board. Rivett arranged to meet Jones in April 1931, but came away disappointed. ‘It is just another rather pathetic case’, he observed, ‘of a man without fundamental training and lacking any critical judgment getting hold of an idea which has perhaps some sound basis, but which he can never possibly exploit thoroughly’. Jones had been able ‘very greatly to impress laymen who know nothing about meteorology’, but on the question of funding Jones’s research, Rivett had no doubt: ‘He is not the type at all’.¹⁹



David Rivett, c. 1941
Australian War Memorial, Image Number: 007041.

Nonetheless, Rivett continued to reply politely to Jones's regular pleas for help, and tried to nudge him gently towards the realm of scientific respectability. 'Views such as you hold must simply stand on their merits and be judged like all others by the relation between prediction and fact', Rivett explained on one occasion, 'I ... wish that you were in closer touch with a skilled astronomer, for I think that the resulting guidance in certain directions which would then be available to you might lead to certain modifications in your theories'.²⁰

Jones, however, found it difficult to understand the mechanisms through which scientific authority was conferred. At their meeting, Rivett had suggested that Jones seek to support his case by obtaining the opinion of a competent scientist. Jones's response was to solicit a polite letter of encouragement from the state's former surveyor-general. 'As he remarked however he really does not fully understand the matter', Jones noted in forwarding the letter to Rivett, 'and in that respect who does, and all that is necessary is, I suggest with respect, that it may be realized that genuine work is being done in the solution of an all important problem which has not been approached from this exact angle before'.²¹ The originality of his approach and the sincerity of his labours, should have been enough, Jones believed, to win scientific approval.

Unable to accept the weather prophet's claims, but unwilling to ignore the well-meaning old man, Rivett sought to affect a tone which was 'polite but unenthusiastic'.²² In the scientist's civility, however, Jones saw a glimmer of support. Freed from the narrow-minded opinions of government officials, Jones imagined that Rivett might yet be willing to join him, working for the good, both of science and nation. 'I have always felt that you would help any real work that you could', he wrote to Rivett in 1938, 'and that the last thing you would do was to hamper anyone if it could be avoided'.²³ And so, despite Rivett's repeated assertions that CSIR was simply unable to offer assistance, Jones continued to push for some sign of recognition, some possibility of support. 'I have financed my work personally for nine years as you know', he pleaded in 1932, '[d]on't you think it is time, you sent out a boat to pick me off the reef'.²⁴

Given that the stringencies forced by the Great Depression threatened CSIR itself with extinction, Rivett remained remarkably patient in the face of Jones's persistent demands. Late in 1932, as Jones lobbied once again for a CSIR stamp of approval, Rivett suggested that the Institute of Physics might be asked to offer an independent opinion.²⁵ Jones enthusiastically agreed, but the verdict, prepared by AD Ross, professor of physics at the University of

Western Australia, was all too depressingly familiar: 'The papers forwarded by Mr Jones are, for the most part, a mixture of ideas culled from popular or semi-popular scientific works. He has produced no evidence of scientific value in support of his claims, nor has he produced evidence that he is qualified by knowledge or experience to undertake with advantage work on seasonal forecasting'.²⁶

'I have just received your letter of 6th', Jones wrote to Rivett on receipt of this report, 'and am in doubt whether to resent it or be amused, I [am] certainly surprised at it'.²⁷ Later he complained that he had not intended that his work should be submitted to 'the Perth man'.²⁸ 'What I expected', Jones explained, 'was a report from the Institute of Physics in London many of whom are more or less familiar with my work and whose opinion would have been of value'.²⁹ With repeated references to his scientific lineage and network of distinguished correspondents, Jones portrayed himself a visionary under attack due to petty local jealousies. This image of Jones as a neglected prophet was already a familiar part of the publicity push being organised by his Trust. 'You may or may not have heard of Inigo Jones', remarked a circular distributed to farmers, but '[h]e has brought the honour to Queensland of being the first man in the world to discover the mechanism of the sun'.³⁰ Despite his 'extremely high scientific attainments', another brochure pointedly remarked, Jones's work was receiving 'more encouragement and appreciation from the expert exponents of meteorology in other countries than in Australia'.³¹

Jones's list of international correspondents was certainly impressive, including many drawn from the scientific A-list of Britain and America. 'Although I have addressed some of the greatest men living and men of high critical ability', he boasted to Earle Page, 'they have none of them failed to respond and have evinced the keenest interest and appreciation of my work'. 'For this reason', Jones concluded, 'I contend that my ideas must be sound'.³² Just as he interpreted Rivett's polite concern as evidence of his unspoken support, so Jones found in every word of encouragement, or kind expression of interest, yet more evidence of his own achievements. 'Notwithstanding the revolutionary nature of my hypothesis', he informed his Trust, 'it can be seen that it is becoming more and more a matter of consideration among men of scientific standing and I have received many letters from important men who are showing great interest'. Sir Napier Shaw, for example, had read one of his papers 'with a great deal of

interest', while Ellsworth Huntington had encouraged him 'to go on with your plans for the investigation of the weather'.³³

A further sign that his work had 'been given approval overseas' was Jones's admission to the fellowship of both the Royal Astronomical and Royal Meteorological Societies.³⁴ The papers that had been so critically appraised by Ross, Jones claimed, had inspired one of his British correspondents to nominate him for the meteorological honour. Clearly Ross's opinion carried 'very little weight' against the acceptance of eminent bodies such as these. 'Surely they are not like sports clubs who nominate you to patronages because they want a guinea,' Jones remarked, 'no one will believe that'.³⁵

But as Rivett tried to explain to one of Jones's supporters, it was 'by no means difficult' to gain admission to such societies. In any case, Rivett continued, 'I think that the people in charge of them would rather hesitate to accept the view that election to membership means official recognition and approval of views entertained by candidates'.³⁶ When Rivett pressed Jones for some details of his nomination, the weather prophet admitted that his endorsement had been framed in rather general terms. According to Mr Baldwin Wiseman his work appeared 'to have great possibilities', while Professor Stratton believed 'that it should be worked out as far as possible'.³⁷

Nor, despite his many friendly exchanges with scientists around the world, could Jones claim that his contributions to knowledge were received everywhere with thanks. In 1940, he complained to Henry Helm Clayton that although he had been sending his publications to the US Weather Bureau for many years past, they had never listed his work in their regular bibliography.³⁸ Similarly, *Nature* declined on several occasions to publish notices of his research. A 'leading authority upon Solar Phenomena' apparently advised that Jones's publications were 'best left without comment' in the journal's august pages.³⁹ And so, when a brief summary of one of his pamphlets did finally appear in the July 1932 edition of *Nature*, Jones received it triumphantly as 'something in the nature of an imprimatur'.⁴⁰ The removal of a negative judgement against him was proclaimed as a positive endorsement. 'It apparently now alters the whole position', Jones insisted, 'it has now been admitted that I have a definite case for scientific consideration'.⁴¹

To be corresponding regularly with the world's scientific elite certainly represented a substantial achievement for a Queensland dairy farmer. However, Jones's claims of international support were grossly magnified through the lens of his obsession. Anyone who did not explicitly reject or ignore him was added to the list of his scientific confrères. Those, like Rivett, who understood the scientific community, and recognised the difference between civility and support, found little to impress them amongst Jones's grandiose claims. But Rivett could not condemn him merely because his ambitions outstripped his abilities. 'As a matter of fact, I find Mr Jones rather a problem', he confessed to Littleton Groom, 'One naturally feels, as I can see you do, a great amount of sympathy with and interest in him personally; he is so obviously sincere and so convinced of the usefulness of his ideas'.⁴² There was tragedy in the story of a man unable to accept his own shortcomings; but there was nobility, too, in his commitment to his dreams, in his refusal to be dissuaded.



*Inigo Jones in the Crohamhurst Observatory, surrounded by the symbols of his calling.
Photograph courtesy of the Peachester History Committee.*

In October 1934, Jones wrote to tell Rivett that he was going ahead with the construction of a 'research station' at Crohamhurst. Echoing Rivett's own words he commented: 'My work must just stand on its own merits if it has any and in the event of its success I know you personally will be one of the first to acknowledge it'.⁴³ Rivett's reply was full of friendly concern, with a hint of admiration:

...I find it difficult to know just what comment to make, if any; but I might perhaps venture to express the hope that you will not run the risk of serious financial difficulties. I cannot help feeling that there is a very great deal behind the criticism of your work which has been given

by the physicists. Their attitude is very far from mere antagonism and their skepticism about the fundamental basis of your forecasting cannot lightly be set aside.

You, on your part, obviously feel that you have, as you put it, “a message for the world” and sometimes I am almost inclined to think that this strong sense of duty has made you perhaps more of an advocate than a wholly unprejudiced critic of your own foundations.

However, I admit that I am not capable of any sweeping judgement in the matter and can but admire your determination.⁴⁴

Jones's sense of self-belief, his obsessive determination, were nourished by the image of himself as someone empowered by destiny to revolutionise our understanding of weather. His trials were those a forerunner, a ‘pioneer scientist’ whose achievements would only fully be understood with the passing of time. But while this idea might have sustained him through numerous setbacks and rejections, it left him unable to understand how someone like Rivett, whom he admired, could fail to understand the significance of his work. Jones’s letters are full of rather poignant pleas for Rivett to spend more time with him, discussing his system in detail. While Jones imagined himself a revolutionary, still he craved the legitimacy that might be bestowed through the support and friendship of an established scientist.

¹ Jones to ACD Rivett, 27 July 1938, NAA: A9778, G25/32 Part 2.

² Jones to ACD Rivett, 25 August 1938, NAA: A9778, G25/32 Part 2.

³ Jones, ‘Seventy-seven years in Queensland’, p. 698.

⁴ Jones to HC Richards, 15 September 1926, NAA: A9778, G25/32 Part 1.

⁵ HA Hunt to Acting Secretary, CSIR, 4 November 1926, NAA: A9778, G25/32 Part 1.

⁶ Rosaleen Love, ‘Science and government in Australia, 1905-1914: Geoffrey Duffield and the foundation of the Commonwealth Solar Observatory’, *Historical Records of Australian Science*, vol. 6, no. 2, 1985, pp. 171-88.

⁷ WG Duffield (Director, Commonwealth Solar Observatory) to Secretary, CSIR, 1 November 1926, NAA: A9778, G25/32 Part 1.

⁸ *ibid.*

⁹ Arrangements for the visiting scientific parties were handled by HA Hunt, see NAA: A1, 23/8360.

¹⁰ Notes of meeting between members of the NSW Solar Radiation Committee and the Minister for Education, 6 December 1923, NAA: A8510, 68/269A.

¹¹ HA Hunt to GH Knibbs, 22 May 1923, NAA: A431/1, 52/184.

¹² Press release, ‘Establishment of Solar Observatory at Federal Capital’, 17 April 1923, NAA: A431/1, 52/184.

¹³ SB Swiney (Honorary Secretary, Inigo Jones Seasonal Weather Forecasting Trust) to Littleton Groom, 12 March 1929, NAA: A1, 1938/3981.

¹⁴ *Brisbane Daily Mail*, 26 October 1928, p. 21.

¹⁵ Secretary, Council of Agriculture, to Secretary, CSIR, 20 February 1931, NAA: A9778, G25/32 Part 1.

¹⁶ *ibid.*

¹⁷ Edward Kidson to Secretary, CSIR, 3 March 1931, NAA: A9778, G25/32 Part 1.

¹⁸ Jones to ACD Rivett, 24 February 1931, NAA: A9778, G25/32 Part 1.

¹⁹ ACD Rivett to SG Tallents (Empire Marketing Board), 29 April 1931, NAA: A9778, G25/32 Part 1.

²⁰ ACD Rivett to Jones, 17 February 1932, NAA: A9778, G25/32 Part 1.

²¹ Jones to ACD Rivett, 14 May 1931, NAA: A9778, G25/32 Part 1.

²² ACD Rivett to JB Brigden, 12 September 1934, NAA: A9778, G25/32 Part 1.

²³ Jones to ACD Rivett, 18 May 1938, NAA: A9778, G25/32 Part 2.

²⁴ Jones to ACD Rivett, 23 September 1932, NAA: A9778, G25/32 Part 1.

²⁵ ACD Rivett to Jones, 10 October 1932, NAA: A9778, G25/32 Part 1.

²⁶ AD Ross to ACD Rivett, 2 May 1933, NAA: A9778, G25/32 Part 1.

²⁷ Jones to ACD Rivett, 12 May 1933, NAA: A9778, G25/32 Part 1.

- ²⁸ Emphasis added by Rivett.
- ²⁹ Jones to ACD Rivett, 12 June 1933, NAA: A9778, G25/32 Part 1.
- ³⁰ Circular, Inigo Jones Seasonal Weather Forecasting Trust, October 1932, NBAC: E256/300.
- ³¹ 'The vital necessity of the Long Range Forecasting Bureau', undated, NAA: B441, 7/140 part1.
- ³² Jones to Earle Page, 18 July 1927, NAA: A1, 1938/3981.
- ³³ Inigo Jones, 'Report to the Ways and Means Committee of the Inigo Jones Seasonal Weather Forecasting Trust, 26th February 1931', NAA: A1, 1938/3981.
- ³⁴ Jones to ACD Rivett, 18 May 1938, NAA: A9778, G25/32 Part 2.
- ³⁵ Jones to ACD Rivett, 7 June 1938, NAA: A9778, G25/32 Part 2.
- ³⁶ ACD Rivett to ED Ogilvie, 24 October 1938, NAA: A9778, G25/32 Part 2.
- ³⁷ Jones to ACD Rivett, 4 July 1938, NAA: A9778, G25/32 Part 2.
- ³⁸ Jones to HH Clayton, 4 January 1940, SIA: RU 7153, Henry Helm Clayton Papers, Box 5, Folder 5.
- ³⁹ Jones to ACD Rivett, 5 October 1932, NAA: A9778, G25/32 Part 1.
- ⁴⁰ Jones to ACD Rivett, 23 September 1932, NAA: A9778, G25/32 Part 1.
- ⁴¹ Jones to ACD Rivett, 23 September 1932, NAA: A9778, G25/32 Part 1; Jones to Capt Josiah Francis, 16 November 1932, NAA: A1/15, 1938/3981.
- ⁴² ACD Rivett to LE Groom, 7 August 1933, NAA: A9778, G25/32 Part 1.
- ⁴³ Jones to ACD Rivett, 12 October 1934, NAA: A9778, G25/32 Part 1.
- ⁴⁴ ACD Rivett to Jones, 17 October 1934, NAA: A9778, G25/32 Part 1.

Supporters

'In my opinion he is second only to the Lord our Saviour'

The residents of Peachester enjoyed an unofficial holiday as dignitaries gathered for the opening of the Crohamhurst Observatory on 13 August 1935. Children from the local school were drawn up into a guard of honour to greet the arrival of Sir Leslie Wilson, the Governor of Queensland. The observatory was a simple structure, with cement sheet walls and iron roof, but for Inigo Jones it represented his gift to posterity. Here in this valley, whose strange powers had helped steer the weather prophet towards his destiny, the work he had laboured over would finally have a home. Here his system would be set upon lasting foundations. The observatory, it was planned, would be given over to the state, allowing his research to be carried on for the benefit of generations yet to come. It was a day, the *Courier Mail* reported, of which Inigo Jones had dreamed 'for many years'.¹



Inigo Jones welcomes BH Corser, Federal Member for Wide Bay, to the opening of the Crohamhurst Observatory in 1935. John Oxley Library, Image Number: 107307.

After inspecting the ranks of local schoolchildren, the Governor was taken upon a tour of the new building. There were two main rooms — a computing room and library — with wide verandahs to protect researchers from 'adverse weather conditions'.² Sir Leslie Wilson was keenly interested in questions of rural development and water conservation, and recorded in his diary that the observatory was 'full of interest'. He was impressed with the 'splendid work' that was already being carried out, and predicted that long-range forecasting would 'be a big thing in time to come due to Inigo Jones'.³

In his public speech, the Governor was even more effusive, proclaiming that Jones's research was of 'vital importance' to Australia. 'It is a very true saying', he observed, in accordance with the already familiar script, 'that a prophet is not without honour, save in his own country, and in his own home'. '[B]ut we are not concerned with those who, from superficial knowledge, are inclined to minimise the work which Mr Inigo Jones has done', the Governor continued, 'and it is a fact that, while there has always been, through history, opposition and even ridicule in every new attempt to advance the cause of science, Mr Inigo Jones' work is receiving more encouragement and appreciation from the expert exponents of meteorology in other countries than is the case here among us'. The Governor was particularly impressed by Jones's admission to the fellowship of the Royal Astronomical and Royal Meteorological Societies. 'These honours are not lightly given', he noted, 'and only to those who have made a very definite contribution to the advance of knowledge and research'.⁴

To leave no doubt as to the context and significance of his work, Jones adorned the walls of his Observatory with portraits of some of the 'great men' of science, including Pythagoras, Galileo, Kepler and Bacon. Above the portraits were quotes from the well-known 'Let us now praise famous men' passage from the Apocrypha, while below were affixed his own graphs and tables.



*The interior of the Crohamhurst Observatory, showing the portraits of famous scientists.
Photograph courtesy of the Peachester History Committee.*

Jones's return to his property at Peachester was not merely a matter of comfort or convenience. His belief in the 'remarkable nature' of Crohamhurst imbued his research with a deeper meaning. A 'guiding hand' seemed to be at work.⁵ Accounts of the building and

opening of his observatory featured lengthy accounts of the 'extraordinary quality' of the location that made it 'outstanding in a meteorological sense'.⁶ To reinforce the point, Jones had organised a stump-capping ceremony to inaugurate the observatory site on 2 February 1935, the anniversary of the 'great record rainfall' he had recorded in 1893. This provided yet another occasion for supporters to reflect upon the official neglect that had hampered Jones's pioneering efforts. 'Some of my friends say that Inigo Jones is only a crank', remarked Senator JS Collings, 'my reply is that cranks move all machinery'.⁷ Against indifferent bureaucrats and jealous meteorologists, Inigo Jones continued the struggle to improve life on the land.

This theme was further elaborated within the observatory building. Over one doorway was a memorial plaque commemorating two pioneers of long range forecasting, Charles Egeson and Clement Wragge. While working at the Sydney Observatory in the 1880s, Egeson had developed a long-range forecast based on sunspot cycles.⁸ He was roundly ridiculed, and forced to leave his job. Jones's mentor Clement Wragge had also suffered unfairly at the hands of narrow-minded officialdom. The Queensland Weather Office was forced to close in 1903 due to lack of funds, and his application for the post of Commonwealth Meteorologist was overlooked in favour of HA Hunt. Jones regarded both men as 'martyrs' to the cause, and as his Trust proclaimed in one of their leaflets, it was of vital importance to gather practical support 'lest the valuable efforts and work of Mr Inigo Jones should meet the same fate as those of the late Charles Egeson'.⁹

The Inigo Jones Seasonal Weather Forecasting Trust was determined to protect its hero from the threat of martyrdom. In 1931 a branch of the Trust was established in Sydney, with the Lord-Mayor as chairman.¹⁰ An organiser was engaged to build a subscription scheme, and began cranking up the messianic fervour. Jones was introduced as the 'most important man in Australia today', acclaimed by the world 'as the foremost scientist in matters of long range forecasting'. 'From now on', prospective subscribers were assured, 'you are going to know definitely and accurately just what is in store for you regarding weather conditions'.¹¹

Jones's reputation was steadily growing south of the Queensland border. Edward Douglas Ogilvie, an influential New England grazier and member of CSIR's NSW State Committee, was converted to the weather prophet's cause and became one of his most steadfast supporters. In 1932, he convinced the Graziers' Association of New South Wales to pay Jones

for a monthly forecast, published in its official organ, *Country Life*.¹² This arrangement brought a forlorn complaint from Jones's own Trust, which insisted that it was 'now controlling statements to the press from Mr Jones'.¹³ But Jones simply ignored the fuss, just as he ignored the apparent contradiction between the Trust's subscription scheme and his own insistence that did not charge individuals for advice. He had no business plan or strategy, he simply wanted his forecasts used and promulgated as widely as possible.

However, Jones's well-meaning promiscuity was hardly appreciated by the editor of *Country Life*, who complained, in 1936, that the forecasts provided to his journal were also appearing in its rival, *The Land*.¹⁴ Replying to the Graziers' Association, Jones insisted that their arrangement had never been 'exclusive', in any case, he added, 'when one receives support from an association such as yours in a matter like this... it is expected that it can be relied upon'. It was not simply a commercial arrangement. 'I might also draw your attention to a series of articles in *Country Life* on Louis Pasteur', he continued, 'and while not aspiring to his fame or position in the learned world would like to draw your attention to the fact that he was harassed till he became the victim of a stroke and to ask that this treatment be not extended to me'.¹⁵ *Country Life* backed down, while Jones agreed to replace his long monthly articles with shorter weekly forecasts.

While the weather prophet began to win disciples across the country, the federal government continued to turn a deaf ear to his pleas. But was there a change on the wind? In a policy speech before the people of Deloraine in 1937, Prime Minister Joseph Lyons departed from the usual panoply of political pressure-points to share his thoughts on the weather. 'The Government has for some time been investigating the question of long-range forecasting of weather conditions', he claimed, noting that 'any forward indications of approaching dry conditions' would be of immense benefit to 'pastoral and agricultural activities'.¹⁶ But it was not Inigo Jones the Prime Minister had in mind, nor, indeed, the activities of his own Weather Bureau. Instead, minds were turning south, to the possibilities of Antarctica.

The southern oceans are full of weather, with winds that seem to draw their fury direct from the Antarctic's icy heart. With its underbelly exposed to this constant, chilling draft, it seemed reasonable to suspect that that Australia's climate might be influenced, if not controlled, by

meteorological forces that originated far to the south. Australians could not know their own weather, it was assumed, without confronting the giant iceblock in their cellar.

In the early decades of the twentieth century, politicians, press, and polar explorers, all insisted that a greater knowledge of Antarctic meteorology would lead to more accurate, and perhaps even longer-range forecasts. Addressing the Constitutional Club in Brisbane in 1927, esteemed geographer James Park Thomson argued that long-range forecasts would not be possible until scientists knew ‘something more about the Antarctic Circle’.¹⁷ The Queensland Branch of the Royal Geographical Society of Australasia, which Thomson had founded some forty years earlier, was inspired to submit a resolution to the Commonwealth government, calling for the immediate establishment of meteorological stations in Antarctica.¹⁸ ‘If the extension of the work of the Federal Weather Office to Antarctica even cost twice the amount of the appropriation for the whole of the Australian Meteorological service’, Thomson maintained, ‘it would be more than justified as compared to the enormous national losses occurring from time to time under present conditions of uncertainty’.¹⁹

Struggling to provide adequate services across mainland Australia, HA Hunt was unimpressed by the prospect of his limited budget being eaten up by ill-considered Antarctic adventurism. In reply to the RGSA’s resolution, Hunt pointed out that there was ‘no reason whatever for believing that the practical return would be in any way commensurate’ to the cost of establishing and maintaining such stations. ‘The Antarctic appeals to the imagination... largely because much in regard to its weather is unknown’, Hunt observed, ‘from this a leap is taken to the belief that were it known it would provide the key to all meteorological processes’.²⁰

Despite Hunt’s scepticism, the idea that Antarctic meteorology could liberate Australia from the tyranny of the 24 hour forecast continued to win adherents through the 1920s and 30s. The movement grabbed the public spotlight particularly through the efforts of its charismatic champion, Sir Hubert Wilkins — war hero, pioneer aviator, and polar explorer.²¹ Wilkins had experienced the cruelty of drought on his family’s property in South Australia. ‘I thought then, that some reliable forecast of long, dry spells would help producers to store up and prepare for droughts’, he explained to *Country Life* in 1938, ‘and I determined to travel the whole earth in search of knowledge and material for this end’.²² Sporting ample reserves of derring-do and a natty goatee to boot, Wilkins won not only public admiration, but the support of influential

friends. RG Casey, Treasurer in the Lyons government from 1935, knew Wilkins from the war, and was well-attuned to both the political and scientific challenges afforded by Antarctica.

23

At the Imperial Conference in London, in 1937, Casey chaired a meeting of the Polar Questions Committee which recommended in favour of establishing meteorological stations in Antarctica. In the background, Wilkins was setting out a strategy in which Casey could 'help tremendously' by pushing governments to agree in principle that 'the work is worth while'. 'If you could start the ball rolling in political circles', he wrote to Casey in 1937, 'I could, I think, find my way to New Zealand, Australia and probably Africa toward the end of the year'.²⁴ Wilkins' talent for public relations would help translate policy into reality. It was 1938 when he finally arrived back home, delivering well-received lectures on 'Long-range weather forecasting possibilities'.²⁵ Of course, Inigo Jones had also highlighted the value of Antarctic weather observations, and Wilkins was careful not to alienate a large group of potential supporters. 'I have been personally interested in the work of Inigo Jones for many years', he confessed in an interview with *Country Life*. Jones was 'a fine man and a good and great Australian', he added, who 'deserves recognition — and the scientific results he has relentlessly sought for many, many arduous years'.²⁶

As planned, Casey worked on the political front, bringing the question of long-range weather forecasting before Cabinet shortly after his return from London. Following on from this discussion, he drafted the paragraph on the topic that was included in Prime Minister Lyons' 1937 policy speech.²⁷ 'If it is found to be practicable to establish meteorological and wireless stations outside Australia which... can give warning of major changes in Australian seasonal conditions, some considerable time in advance', the paragraph concluded, 'the Government will take action to that end'.²⁸ But was it 'practicable'? Once the election was over, the Treasurer, who also happened to be Minister in Charge of CSIR, sought to add further scientific weight to the proposal by referring his pointed paragraph to David Rivett for investigation. Rivett duly forwarded the extract to a number of experts for comment, even though he detected a whiff of 'the propaganda of Sir Hubert Wilkins'.²⁹

Edward Kidson replied to Rivett in typically forthright terms. The subject of seasonal forecasting, he noted, was 'rather a morass in which genuine endeavour, misguided enthusiasm

and pure charlatanism are sadly mixed'. Kidson took the opportunity to aim yet another salvo at Inigo Jones, whose work, he argued, had 'no sound basis and should not be encouraged'. But he also counselled Rivett to ignore 'the pronouncements of polar explorers', whose claims of Antarctic influences were 'pure speculations'.³⁰ Unsurprisingly, one such polar explorer, Douglas Mawson, offered a rather different perspective. As well as the undoubted influence on the Australian climate of the 'vast outflow of cold air' from Antarctica, Mawson argued that the affects of the sunspot cycle needed to be taken more seriously.³¹

However, the most considered response to Rivett's inquiry came from Fritz Loewe, a German refugee who had recently taken up a post at the University of Melbourne. Loewe carried the scars to prove his credentials as a polar explorer, having lost his toes to frostbite on Alfred Wegener's ill-fated Greenland expedition. But he was also a highly-trained meteorologist with a detailed knowledge of international research into the possibilities of long-range forecasting. Loewe's comprehensive survey of the field concluded that 'there is no certainty of systematic research in long-range forecasting leading to results of great practical importance for Australia'.³² Nonetheless, some work on correlations seemed promising, and the establishment of Antarctic stations would eventually yield useful data. The research should not be undertaken, however, in the expectation of useful forecasts in the near future. 'The history of long-range forecasting is full of disappointments', Loewe noted in his covering letter, and the 'reluctance of Weather Bureaus to approach these problems can be easily understood'.³³

Satisfied that he had assembled a useful range of scientific opinions, Rivett forwarded the reports to Casey, from whence they bounced, via the Minister for the Interior, across to the Commonwealth Meteorologist, WS Watt.³⁴ Alarmed, perhaps, by CSIR's intervention into matters meteorological, Watt's response was rather defensive. He noted that the reports all agreed that while research into long-range forecasting had thus far been 'disappointing', economic need and public pressure made further work inevitable. 'People who know little about the difficulties or of the results to be anticipated have had their imaginations stirred', he maintained, 'largely by irresponsible claimants who have pictured the great relief to be anticipated by this means'. Some areas showed promise, Watt agreed, and these should be pursued, though without the expectation of immediate results. But the Bureau already had this in hand. 'Contrary to public opinion and the expressions of many interested faddists the Commonwealth Meteorological Bureau has really taken a more active part in such work than

Government Institutions in either Britain or America', Watt explained. Furthermore, the Bureau was already reorganising its research activities, with seasonal forecasting identified as subject for special attention.³⁵



*WS Watt.
Bureau of Meteorology.*

Sucked through the vortex of political spin, Watt's response emerged in June 1938 as the basis for a press release issued by his Minister, 'Black Jack' McEwen. Proposed changes to the Bureau's research structure were repackaged as a 'special research division' that the Minister had directed 'to deal with the development of seasonal forecasting'. While admitting that research into long-range forecasting had thus far proved 'disappointing', McEwen was apparently 'impressed by indications that there has been some real promise in certain lines of investigation'. 'In this country of variable rainfalls', he insisted, 'the economic benefit which would accrue from its success is so great that I regard it as a definite public duty to take steps for the testing of every rational theory'.³⁶

Squeezed between the unceasing demands of Inigo Jones and the growing clamour of the Antarctic lobby, this press release was presumably intended to reassert the autonomy and authority of the Weather Bureau against such ill-informed interlopers. Not only was the Bureau already on the job, it had the expertise to investigate long-range forecasting in a 'rational', scientific manner. 'The Government did not have any exclusive rights in this form of research', the Minister's statement admitted, 'but the Meteorological Bureau had on its staff men who were as well, if not better, informed on the subject than outside investigators'.³⁷

By showing that the Weather Bureau was serious about long-range forecasting, McEwen might have hoped to quell the bubbling discontent of Inigo Jones's supporters. But while the idea of Government action was positively received, the details of the press announcement wrought considerable dismay. Where was Inigo Jones? How could the Bureau of Meteorology undertake research into long-range forecasting without the participation of Australia's pre-eminent weather prophet? *Country Life* rather hopefully assumed that the government's initiative 'has in mind the pioneering work already done by Mr Inigo Jones', and suggested that the 'wisest course' would be for them to simply take over the Crohamhurst Observatory.³⁸ *The Land* was more suspicious, noting that the government had 'apparently ignored altogether the very valuable work' being carried out by Jones. Given the reliance of country people upon his forecasts, the paper noted, it seemed 'regrettable that the Commonwealth meteorological authorities' were uninterested in some form of cooperation.³⁹

This question was promptly raised in the Senate, where Allan MacDonald, representing the Minister for the Interior, explained that Jones's claims 'have been fully investigated by technical officers of the Commonwealth Weather Bureau, the Council for Scientific and Industrial Research and other scientific bodies, all of whom have been of the opinion that the work Mr Jones is doing is not of such a nature as to justify support from the Commonwealth Government'.⁴⁰ This was the stock reply that the department had been using for years, but in these circumstances it only served to foment the tide of outrage and indignation. Not only was Inigo Jones being ignored, but his work was being denigrated, his credibility questioned by faceless scientific functionaries. 'Present and past controllers of the Commonwealth Weather Bureau... have never taken the trouble to know anything about the long range forecasting hypothesis of Mr Jones', wrote JA Austin, honorary secretary of the Queensland Country Party, 'nor have they ever visited his Observatory to seek any information about it'. Instead, he added, 'they treat it with the disdain of high-salaried bureaucrats'.⁴¹

Jones's supporters responded to this snub with renewed energy and determination. *Country Life* declared that there would be 'No Surrender': 'We hope that the friends of Inigo Jones are now coming to the fight, and that their shouts will be heard even at Canberra'.⁴² A few weeks later, the newspaper published a profile of Jones under the heading, 'Is Inigo Jones a Man of Genius?'. 'Science institutes the world over have heaped honors on Inigo Jones', this hymn of praise concluded, 'let us hope the Federal Government will do something even more

practical'.⁴³ The Graziers' Association of NSW informed the Minister that it was 'exceedingly disappointed' in his decision, and 'most emphatically deprecates his attitude towards the research work conducted by Mr Inigo Jones'. The organisation noted that many of its members regarded Jones forecasts highly, and warned that 'the confidence expressed in them by many men on the land ought not be overlooked'.⁴⁴

Certain that the government's supposed 'scientific authorities' were 'dead wrong', the *Land* organised its own test of Jones's theories. 'We believe that the only real test of theories of any kind is whether they work out in practice', the newspaper asserted, inviting its readers to write in with their own opinions of Jones's forecasts. 'The more letters', it added, 'the greater chances of securing official recognition of the value of Mr Jones's work'.⁴⁵ Over the next few months, the *Land* published extracts from many of these letters, as well as updates on Jones's current forecasts, usually under the headline 'Right again!'.⁴⁶ Determined to present the views of country folk directly to those in power, the newspaper promised that all the letters received would be duly forwarded to the Minister himself.

Of the 102 letters received from all over NSW, only three opposed government assistance to Jones. Most writers, like CKR Kilby of Hall, claimed to place 'a great deal of faith' in Jones's 'very often accurate forecasts'.⁴⁷ Percy Byfield of Gundaroo wanted to see Jones 'at the head of the Commonwealth weather bureau', as he was 'the only one forecasting with any degree of accuracy'.⁴⁸ Many correspondents similarly sought to contrast the weather prophet's forecasts with those of conventional meteorologists. 'I can say he is miles ahead of other weather men', wrote David J Stanfield of Tumut, 'I reckon he has been 85% correct while our state day to day forecasters are nearly that percentage wrong'.⁴⁹ David Povey of Bredbo agreed. 'He is the only man that has went months ahead and on many occasions has been right to the day of rain', he explained, while forecasts from the weather bureau were 'very often wrong going only 24 hours' — 'If it is raining we usually get a forecast of rain, and a flood warning when the creeks have gone down again'.⁵⁰

But accuracy was only one factor in judging the usefulness of a forecast. 'In my opinion the 24 hour forecast is a farce for the land man', remarked D Sweetnam of Georges Plains, 'we all have an idea of what will happen 24 hours ahead'. Jones was 'out on his own' in providing landholders with a glimpse of what lay far beyond the horizon.⁵¹ 'A three or four day limit may

be very valuable to a seaman or a weekend tripper', explained HT Manning of Barellan, 'but to the man on the land, who has to commence operations sometimes 12 or even 18 months ahead of harvest, it is infinitesimal compared with the long range forecast'.⁵² Jones's forecasts provided a different type of knowledge altogether — 'useful' or 'practical' knowledge that allowed farmers to plan their activities and safeguard their holdings.

A number of the letter writers described how they had used Jones's forecasts in the management of their farms. On Jones's advice, George P Woodfield sold most of his stock, just avoiding the 'real slump' a few weeks later when 'sheep became absolutely unsaleable'.⁵³ Eli Smith of Whitton had not intended sowing a crop as 'the outlook was so black'. But he had been persuaded otherwise by Jones's predictions and now had '140 acres of a very promising wheat crop and 50 acres of oats'.⁵⁴ Mildred Cosier of Leadville observed that many local landholders spoke 'in the highest appreciation of Mr Jones's forecasts' and were 'guided by them in their plans of working their properties'. 'We women of the bush', she added, 'take interest in a reliable weather forecast not because of social events but because the result of the rainfall so often means our bread and butter'.⁵⁵

Despite his 'uncanny correctness', many correspondents admitted that their hero did sometimes make mistakes. But such errors were outweighed by the overall value of his labours. 'Alto [sic] Mr Inigo Jones is not infallable [sic] he is by far the best guide to weather form out here', commented HW Heckendorf of Mullengudgery, 'his forecasts... have an uncanny habit of picking times when rain is most likely'.⁵⁶ Precise dates were less important than a broad knowledge of coming trends. 'I tell my visitors here that we do not forecast for afternoon parties', Jones himself explained to HH Clayton, 'if a rain group is predicted it matters nothing whether it falls on any particular day as long as it comes in such a way as... to enable pastoral and farming properties to carry out their work without loss'.⁵⁷ This was not an abstract enterprise, Jones intended his research to be of direct, practical benefit to those whose livelihoods were so dependent upon the whims of the weather.

After all, as well as being a scientific institution, the Crohamhurst Observatory was itself a farm. Not satisfied with merely forecasting the weather many months ahead, Jones sought to demonstrate how his climatic insights could inform farm management practices. Certain vital questions, such as the avoidance of overstocking, involved a complex series of judgments

about weather, vegetation and finance. ‘This observatory concerns itself very gravely with this problem’, the weather prophet noted in one of his newspaper columns, ‘and it is for this reason among others that this site was decided upon, so that the effects and benefits of the system of forecasting could be assessed on the Observatory Farm itself.’⁵⁸ Crohamhurst, Jones insisted, was ‘eminently suitable for the conduct of experiments for the guidance and assistance of the farming community’.⁵⁹

Jones wanted to provide useful information to those who needed it most. His ultimate aim was not merely to tell farmers what the weather would be, rather to equip them with the knowledge to understand their own climate. ‘When... this system is worked out’, Jones claimed, ‘it will be so simple that every farmer and pastoralist can form a fairly reliable idea of what the coming seasons hold in store for him’.⁶⁰ The letter writers to the *Land* knew that Inigo Jones was not merely interested in the weather, he was interested in them — he was working on their behalf, offering hope, reassurance and confidence. ‘If he is not on the crown pay role [sic] well he should be’, wrote JK Nielsen of Little Plain, ‘for he has saved many of the men on the land’.⁶¹

The difference between Jones and the Meteorological Bureau could not simply be measured in the length of their forecasts. While Jones was deeply concerned about the risks endured by those on the land so that ‘the men of the city may enjoy their daily bread’, the Bureau appeared to be focused on the needs of the urban population.⁶² ‘Like the City Press and many other Sydney institutions’, observed A Heath of Curlewis, ‘their idea of NSW & Australia does not get past the Country of Cumberland’.⁶³ While Jones was a farmer, with a ‘deep love for the country’, the Bureau seemed to be a remote bureaucracy which ill-understood the vicissitudes of rural life.⁶⁴ While Jones laboured to find practical solutions to the problems that beleaguered farmers, the Bureau sought to stymie his efforts through the testimony of so-called ‘experts’, and the cold, dead hand of officialdom. ‘Who are these scientific Authorities’, asked JL Smith of Trundle, ‘that state his work is not of such a nature to justify support?’.⁶⁵

The competing claims of the ‘practical man’ and the ‘expert’ were rehearsed in many contexts and controversies through the early decades of the twentieth century. The efforts by scientists and other professionals to assert the authority of expert knowledge were resisted by those who pointed to experience as the foundation of real progress.⁶⁶ ‘I have very little faith in doctors

having known a good many pretty intimately’, Jones wrote to DA O’Brien in 1944. When, some forty years earlier, Jones had suffered from a mystery illness, nine doctors had been unable to throw any light on his condition. It was through his own research, that Jones finally unearthed a ‘rare drug’ that afforded him some relief. ‘I notice the same thing with all these alleged experts’, Jones remarked, ‘and so always object if any one calls me an expert’.⁶⁷ Inigo Jones was an outsider taking the lessons of a life on the land into battle against the ‘dogmatic attitude of the text-book scientist’. ‘We are not surprised at the scientists opinion of him... for what great man was ever recognised while he lived’, wrote T and EA Greene, ‘perhaps the scientists... may be jealous of him for he makes them look small’. The letter concluded with a request for ‘a full sized photograph’ of Jones to be published in the *Land*.⁶⁸



*Inigo and Marion Jones enjoying afternoon tea at Crohamburst.
John Oxley Library, Image Number: 130106.*

Jones described himself as both a ‘pioneer settler’ and a ‘pioneer scientist’. The experience of rural hardship had prompted him to challenge scientific orthodoxies, to chart a new course through our understanding of weather.’ There is a great tendency for people to deride things they cannot understand’, commented MG Wallace of Weja Siding, ‘but those whose minds are more receptive realise that our universe is crammed full of wonders and mysteries only awaiting scientific exploration, and I think Mr Jones is making that exploration’.⁶⁹ While scientific authorities deemed the problem of long-range forecasting too difficult, Jones was having a go. By far the most common comment amongst the letters written to the *Land* is that Inigo Jones was ‘on the right track’.⁷⁰ The Weather Bureau might have dismissed him, but he at least was making an effort in the right direction. And who was to say what was possible? The fellow who had the ‘crazy idea that man would make a machine to fly’ was considered ‘a

shingle short', noted Clive Webb of Carrathool, 'but now daily I see four flying machines pass over the place where I read Indigo [sic] Jones weather forecasts and I am a believer that the day will come when the long range forecast will be almost as accurate as our Railway timetable'.⁷¹

The letters to the *Land* were not merely statements of support or confidence in Jones's system. They expressed considerable admiration and affection for the Queensland farmer who had devoted his life to the struggle against the 'encrusted conservatism' of scientific authorities — to their own struggle. 'In my opinion he is second only to the Lord our Saviour', wrote JT Smith of Ardlethan, 'the Lord our Saviour forming the rain in the Sky + sending it to bless the earth + Indigo Jones tells us approximately the day we are to receive the rain'.⁷²

¹ *Courier Mail*, 14 August 1935.

² Inigo Jones, 'The Crohamhurst Observatory: Its location and functions and the inaugural ceremony', *Crohamhurst Observatory, Observatory Paper*, no. 1, 1935, p. 7.

³ Sir Leslie Orme Wilson, *Diary for 1935*, UQFL: MS 36, D36/32.

⁴ Quoted in Jones, 'The Crohamhurst Observatory', pp. 12-14.

⁵ Newspaper clipping dated 30 August 1934 on file NAA: B441/10, 70/140 part 1.

⁶ Jones, 'The Crohamhurst Observatory', p. 4.

⁷ *Courier Mail*, 4 February 1935.

⁸ Charles Egeson, *Egeson's weather system of sun-spot causality: being original researches in solar and terrestrial meteorology*, Turner & Henderson, Sydney, 1889.

⁹ Jones, *My 'Nephele-Coccygia'*, p. 12; 'The vital necessity of the Long Range Forecasting Bureau', undated, NAA: B441, 7/140 part 1.

¹⁰ HL Cross to Secretary, Graziers' Association of NSW, 9 March 1932, NBAC: E256/300.

¹¹ Circular sent to pastoralists by the Inigo Jones Seasonal Weather Forecasting Trust, October 1932, NBAC: E256/300.

¹² JW Allen (Secretary, Graziers' Association of NSW) to Jones, 5 October 1932, NBAC: E256/300.

¹³ Fred Watson (Organiser, Inigo Jones Seasonal Weather Forecasting Trust) to JW Allen (Secretary, Graziers' Association of NSW), 26 October 1932, NBAC: E256/300.

¹⁴ D'Arcy Gilligan (Editor, *Country Life*) to Secretary, Graziers' Association of NSW, 3 July 1936, NBAC: E256/409.

¹⁵ Jones to JW Allen, 22 July 1936, NBAC: E256/409.

¹⁶ Joseph Aloysius Lyons, *Successful government: the policy speech of the Rt. Hon. JA Lyons at Deloraine, Tasmania, September 28, 1937*, United Australia Party, Sydney, 1937, p. 22.

¹⁷ *Brisbane Courier*, 21 January 1927, p. 13.

¹⁸ See UQFL: MS 2, 2483-2489.

¹⁹ JP Thomson, 'Antarctic observations essential to success in long-range weather forecasting', UQFL: MS 2, 2475a-b.

²⁰ HA Hunt to Secretary, Department of Home and Territories, 15 February 1927, UQFL: MS 2, 2476.

²¹ Simon Nasht, *The last explorer: Hubert Wilkins, Australia's unknown hero*, Hodder, Sydney, 2005.

²² *Country Life and Stock and Station Journal*, 9 September 1938, p. 14.

²³ Nasht, *The last explorer*, p. 179.

²⁴ Hubert Wilkins to RG Casey, 15 June 1937, NAA: A9778, G25/31.

²⁵ *Country Life and Stock and Station Journal*, 9 September 1938, p. 14.

²⁶ *Country Life and Stock and Station Journal*, 9 September 1938, p. 1.

²⁷ RG Casey to J McEwen, 9 May 1938, NAA: A659, 1940/1/251.

²⁸ Lyons, *Successful government*, p. 22.

²⁹ ACD Rivett to Fritz Loewe, 27 January 1938, NAA: A9778, G25/31.

³⁰ Edward Kidson to ACD Rivett, 2 February 1938, NAA: A9778, G25/31.

- ³¹ Douglas Mawson to ACD Rivett, 27 January 1938, NAA: A9778, G25/31.
- ³² Fritz Loewe, 'Memorandum about long-range weather forecasting in Australia', February 1938, NAA: A9778, G25/31.
- ³³ Fritz Loewe to ACD Rivett, 22 February 1938, NAA: A9778, G25/31.
- ³⁴ ACD Rivett to RG Casey, 16 March 1938, NAA: A9778, G25/31; RG Casey to J McEwen, 9 May 1938, NAA: A659, 1940/1/251.
- ³⁵ WS Watt (Commonwealth Meteorologist) to Secretary, Department of the Interior, 20 May 1938, NAA: A659, 1940/1/251.
- ³⁶ 'Long range weather forecasts – New meteorological service', press release issued by J McEwen (Minister for the Interior), 5 June 1938, NAA: A1, 1938/3981.
- ³⁷ *ibid.*
- ³⁸ *Country Life and Stock and Station Journal*, 17 June 1938, p. 1.
- ³⁹ *Land*, 10 June 1938, p. 5.
- ⁴⁰ *Commonwealth Parliamentary Debates* (Hansard), 25 June 1938, vol. 156, p. 2660.
- ⁴¹ JA Austin (Honorary Secretary, Queensland Country Party) to J McEwen (Minister for the Interior), 9 July 1938, NAA: A1, 1938/24704.
- ⁴² *Country Life and Stock and Station Journal*, 1 July 1938, p. 12.
- ⁴³ *Country Life and Stock and Station Journal*, 29 July 1938, p.3.
- ⁴⁴ JW Allen (General Secretary, Graziers' Association of NSW) to J McEwen (Minister for the Interior), 25 July 1938, NAA: A1, 1938/24704.
- ⁴⁵ *Land*, 1 July 1938, p. 3.
- ⁴⁶ For example, see the *Land*: 22 July 1938, p. 3; 12 August 1938, p. 13; 26 August 1938, p. 4.
- ⁴⁷ CKR Kilby (Parkwood, Hall, FCT) to the *Land*, 20 July 1938, NAA: A1, 1938/24704.
- ⁴⁸ Percy C Byfield (Gundaroo) to the *Land*, 12 July 1938, NAA: A1, 1938/24704.
- ⁴⁹ David J Stanfield (Blowering West, Tumut) to the *Land*, 18 August 1938, NAA: A1, 1938/24704.
- ⁵⁰ David Povey ('Gurrabeal', Bredbo) to the *Land*, 18 July 1938, NAA: A1, 1938/24704.
- ⁵¹ D Sweetnam (Georges Plains, Bathurst district) to the *Land*, 8 August 1938, NAA: A1, 1938/24704.
- ⁵² HT Manning (Barellan) to the *Land*, 10 July 1938, NAA: A1, 1938/24704.
- ⁵³ George P Woodfield ('Bygalorie Park') to the *Land*, 8 July 1938, NAA: A1, 1938/24704.
- ⁵⁴ Eli E Smith ('La Motte', Whitton) to the *Land*, 11 August 1938, NAA: A1, 1938/24704.
- ⁵⁵ Mrs Mildred Cosier ('Warrawoona', Leadville) to the *Land*, 12 July 1938, NAA: A1, 1938/24704.
- ⁵⁶ HW Heckendorf (Mullengudgerly) to the *Land*, 14 July 1938, NAA: A1, 1938/24704.
- ⁵⁷ Jones to HH Clayton, 4 January 1940, SIA: RU 7153, Henry Helm Clayton Papers, Box 5, Folder 5.
- ⁵⁸ *Country Life and Stock and Station Journal*, 8 November 1935, p. 11.
- ⁵⁹ Jones, 'The Crohamhurst Observatory', p. 16.
- ⁶⁰ Inigo Jones, 'Why I built the Crohamhurst Observatory', NAA: A1, 1938/24704.
- ⁶¹ JK Nielsen (LittlePlain) to the *Land*, no date [July 1938], NAA: A1, 1938/24704.
- ⁶² Inigo Jones, 'Why I built the Crohamhurst Observatory', NAA: A1, 1938/24704.
- ⁶³ A Heath ('Pine Cliffs', Curlewis) to the *Land*, 11 July 1938, NAA: A1, 1938/24704.
- ⁶⁴ Arnold G Hudson, 'Inigo Jones attempts to solve the riddle of the seasons', *The Land Farm and Station Annual*, no. 1474, 23 August 1939, p. 30.
- ⁶⁵ JL Smith (Trundle) to the *Land*, 14 July 1938, NAA: A1, 1938/24704.
- ⁶⁶ Tim Sherratt, *Atomic Wonderland: science and progress in twentieth century Australia*, PhD thesis, Australian National University, 2003, chapter 5.
- ⁶⁷ Jones to DA O'Brien, 6 January 1944, UQFL: MS 2, 1366a-b.
- ⁶⁸ T & EA Greene (Gagelderne South) to the *Land*, 11 July 1938, NAA: A1, 1938/24704.
- ⁶⁹ MG Wallace ('Glenroy', Weja Siding) to the *Land*, 4 July 1938, NAA: A1, 1938/24704.
- ⁷⁰ See for example the following letters to the *Land*: HW Heckendorf, 14 July 1938; J McQueen, 23 July 1938; Douglas Cutler, 25 July 1938; AH Tom, 5 July 1938; NAA: A1, 1938/24704.
- ⁷¹ Clive C Webb (Carrathool) to the *Land*, 11 July 1938, NAA: A1, 1938/24704.
- ⁷² JT Smith (Ardlethan), to the *Land*, 10 July 1938, NAA: A1, 1938/24704.

Epilogue

Canberra 1939

At the 1939 ANZAAS congress in Canberra, Inigo Jones predicted an early end to the continuing heatwave. There were some signs he might be right - a brief shower, some clouds - and the temperature on Thursday 12 January only reached 103.4°. At least it was a *little* cooler. But on the following day, Friday 13 January, the temperature climbed again, up to 107.4°. The change didn't come until Sunday — like many of Jones's predictions it was close enough to please his supporters, but far enough to bolster his critics.

But we remember Friday 13 January for another reason. The heatwave across south-eastern Australia killed more than 400 people, and set bushfires raging across millions of hectares. The fires reached their terrifying peak on Friday 13 January 1939 — 'Black Friday' — a day, that Stephen Pyne suggests, 'sucked 150 years of settlement into a colossal maelstrom of fire'.¹

Fire, flood, and drought all remind us of our limitations. For all our scientific knowledge and technological sophistication, still we are subject to the arbitrary, and often violent, whims of nature. How do we reconcile our expectations of security and stability with an environment that steadfastly refuses to follow a timetable. The story of Inigo Jones is part of a larger story that sets our desire for control, our longing for certainty, against one of the most variable climates on earth.

¹ Stephen J Pyne, *Burning bush: a fire history of Australia*, Allen & Unwin, Sydney, 1992, p. 309.

Acknowledgements

This publication was prepared as part of ‘The Human Elements’, a project to document the weather in Australian culture and history. Support for ‘The Human Elements’ was provided by the Australian Research Council (LP0347378), the Australian National University, the Bureau of Meteorology, and the National Museum of Australia.

I would like to all the ‘Human Elements’ team, Tom Griffiths, Libby Robin, Kirsty Douglas, Emily O’Gorman, and Jessie Mitchell, for their advice and assistance. I’m also grateful to Neville Nicholls, Nick Lomb, and Anne-Marie Condé, for reading and commenting upon various drafts. Thanks also to Helen Page and the members of the Peacheater History Committee for their help and hospitality.

The National Archives of Australia gave me the chance to try out some of this material in a public lecture, delivered in June 2005. NAA staff also greatly assisted my research, as did staff at the Noel Butlin Archives Centre, the University of Melbourne Archives, the University of New England Heritage Centre, and the Smithsonian Institution Archives. At the Bureau of Meteorology, Jill Nicholls provided useful guidance, while Bill Downey was always supportive.

Sources

Archives

National Archives of Australia (NAA)

Department of Home and Territories / Department of Home Affairs; A1, Correspondence files, annual single number series, 1903-1938:

1938/3981, Jones, Indogi [sic] - Seasonal Weather Forecasting - File No.1, 1927-1940

1938/24704, I. Jones - Seasonal Weather Forecasting. File No.2, 1936-1938

Department of the Interior; A461, Correspondence files, annual single number series, 1946-:

1953/591, Inigo Jones - Investigation into Forecasting Works - Part 1, 1938-1953

Department of the Interior; A659, Correspondence files, class 1 (general, passports), 1939-1950:

1940/1/251, Long range weather forecasting (Dinnell, J B and others), 1938-1941

Commonwealth Council for Scientific and Industrial Research; A9778, Correspondence files, multiple number series with alphabetical prefix, 1927-1981:

G25/31, Meteorological research – Seasonal forecasting – Miscellaneous

G25/32 Part 1, Meteorology Seasonal Forecasting Inigo Jones, 1926-1934

G25/32 Part 2, Meteorology Seasonal Forecasting Inigo Jones, 1934-1938

G25/32 Part 3, Meteorology Seasonal Forecasting Inigo Jones, 1938-1968

Commonwealth Bureau of Meteorology; B441, Correspondence files, multiple number series, 1908-:

70/140 Part 1, Services - Inigo Jones, 1931-1946

Noel Butlin Archives, Australian National University (NBA)

Graziers' Association of NSW

E256/300, Correspondence files, 1932

E256/382, Correspondence files, 1935

E256/409, Correspondence files, 1936

E256/490, Correspondence files, 1939

University of Melbourne Archives (UMA)

Fritz Loewe papers, 1896-1975, accession number 88/160

UM 312, Registrar's Correspondence files

1940/457, Meteorology – Enquiry into methods of Inigo Jones – Queensland

1942/435, Meteorology – Lectureship – Dr Loewe

Fryer Library, University of Queensland (UQFL)

UQFL2, Hayes Collection

1366a-b, Letters from Inigo Jones to Mr O'Brien, 1943-44
2475a-b, Thomson, James Park
2476, Thomson, James Park
2483-2489, Thomson, James Park – Correspondence

UQFL36, Leslie Orme Wilson papers, 1900-1955

University of New England Heritage Centre (UNE)

A002, Ogilvie Papers, Ilparran, Glen Innes

Smithsonian Institution Archives (SIA)

Record Unit 7153, Henry Helm Clayton Papers, 1877-1949

Books and articles

Brodie, James W, 'Kidson, Edward 1882 - 1939', *Dictionary of New Zealand Biography*, updated 7 April 2006, online at <<http://www.dnzb.govt.nz/>>.

Brooks, Charles F, 'Performance in long-range weather forecasting', *Monthly Weather Review*, vol. 55, no. 9, September 1927, pp. 390-395.

Burroughs, William James, *Weather cycles: real of imaginary?*, second edition, Cambridge University Press, Cambridge, 2003.

Devorkin, David H, 'Charles Greeley Abbot, May 31 1872–December 17 1973', *National Academy of Sciences, Biographical Memoirs*, online at <<http://www.nap.edu/readingroom/books/biomems/cabbot.pdf>>.

Gardner, J, 'Stormy Weather: A History of Research in the Bureau of Meteorology', Bureau of Meteorology, *Metarch Papers*, no. 11, December 1997, online at <<http://www.austehc.unimelb.edu.au/fam/0735.html>>.

Gregory, Richard, 'Weather recurrences and weather cycles', *Monthly Weather Review*, vol. 58, no. 12, December 1930, pp. 483-490.

Hogan, John, 'Notes Prepared by John Hogan (1896-1970)', Bureau of Meteorology, *Metarch Papers*, no. 2, March 1986, online at <<http://www.austehc.unimelb.edu.au/fam/0085.html>>.

Home, RW and Livingston, KT, 'Science and Technology in the Story of Australian Federation: The Case of Meteorology, 1876-1908', *Historical Records of Australian Science*, vol. 10, no. 2, December 1994, pp. 109-27.

Hudson, Arnold G, 'Inigo Jones attempts to solve the riddle of the seasons', *The Land Farm and Station Annual*, no. 1474, 23 August 1939, p. 30.

Jones, Inigo, *Seasonal forecasting: Meteorology as a division of astronomy, Paper read before section P: Geography and Oceanography, Australasian Association for the Advancement of Science, Brisbane Meeting, 1930*, Brisbane, 1930.

— — —, *Seasonal forecasting: Meteorology as a branch of astronomy, Presidential Address to the Queensland Astronomical Society, 8th July 1931*, Brisbane 1931.

- — — , *Seasonal forecasting: Meteorology as a branch of astronomy, Papers read before the Australian and New Zealand Association for the Advancement of Science at the Sydney Meeting, August 1932*, Brisbane, c. 1932.
- — — , 'The Crohamhurst Observatory: Its location and functions and the inaugural ceremony', *Crohamburst Observatory, Observatory Paper*, no. 1, 1935.
- — — , 'On the methods adopted as a means of seasonal forecasting at Crohamhurst Observatory and the reasons therefor, Presented to the Jubilee Meeting of the Australian and New Zealand Association for the Advancement of Science at Canberra, January, 1939', *Crohamburst Observatory, Observatory Paper*, no. 10, 1939.
- — — , *Long range weather forecasting*, reprinted from the *Queensland Geographical Journal*, new series, vol. 48, Brisbane, c. 1944.
- — — , *The Milky Way and its functions in relation to the solar system*, reprinted from the *Queensland Geographical Journal*, new series, vol. 52, Brisbane, 1947.
- — — , 'The life and work of Clement Lindley Wragge', *Queensland Geographical Journal*; vol. 54, no. 40, 1952, pp. 43-52.
- — — , 'Seventy-seven years in Queensland', *Journal of the Historical Society of Queensland*, vol. 4, no. 5, December 1952, pp. 687-701.
- — — , *My "Nephelo-coocygia" : an account of the researches and reasons leading to the establishment of Crohamburst Observatory*, Brisbane, c. 1953.
- Kidson, Edward, 'Some periods in Australian weather', *Bureau of Meteorology, Bulletin*, no. 17, 1925.
- — — , 'Sun-spot numbers and annual rainfall in New Zealand', *New Zealand Journal of Science and Technology*, vol. 10, no. 2, July 1928, pp. 90-97.
- — — , *Meteorology: Reports on the scientific investigations, British Antarctic Expedition, 1907-1909*, Government Printer, Melbourne, 1930.
- Kidson, Isabel M, *Edward Kidson, O.B.E. (Mil.), M.A., D.Sc., F.Inst.P., F.R.S.N.Z.*, Whitcombe & Tombs, Christchurch, 1941.
- Love, Rosaleen, 'Science and government in Australia, 1905-1914: Geoffrey Duffield and the foundation of the Commonwealth Solar Observatory', *Historical Records of Australian Science*, vol. 6, no. 2, 1985, pp. 171-88.
- Lyons, Joseph Aloysius, *Successful government: the policy speech of the Rt. Hon. JA Lyons at Deloraine, Tasmania, September 28, 1937*, United Australia Party, Sydney, 1937.
- Nash, Heather, 'Watt, William Shand (1876 - 1958)', *Australian Dictionary of Biography*, vol. 12, Melbourne University Press, 1990, pp. 416-417.
- Nasht, Simon, *The last explorer: Hubert Wilkins, Australia's unknown hero*, Hodder, Sydney, 2005.
- Nicholls, Neville, 'Developments in Climatology in Australia: 1946-1996', *Australian Meteorological Magazine*, vol. 46, 1997, pp. 127-135.

- Nicholls, Neville, 'Climatic outlooks: from revolutionary science to orthodoxy', in Tim Sherratt, Tom Griffiths, and Libby Robin (eds), *A Change in the Weather: Climate and Culture in Australia*, National Museum of Australia Press, Canberra, 2005, pp. 18-29.
- Richmond, Mark, 'Loewe, Fritz Philipp (1895 - 1974)', *Australian Dictionary of Biography*, vol. 15, Melbourne University Press, 2000, pp 113-114.
- Rivett, Rohan, *David Rivett : fighter for Australian science*, RD Rivett, Melbourne, 1972.
- Schedvin, CB, 'Rivett, Sir Albert Cherbury David (1885 - 1961)', *Australian Dictionary of Biography*, Volume 11, Melbourne University Press, 1988, pp 398-401.
- Sherratt, Tim, 'The weather prophets', in *Federation and Meteorology*, Australian Science and Technology Heritage Centre, Melbourne, 2001, online at <<http://www.austehc.unimelb.edu.au/fam/0006.html>>.
- — —, 'Human elements', in Tim Sherratt, Tom Griffiths and Libby Robin (eds), *A change in the weather: climate and culture in Australia*, National Museum of Australia Press, Canberra, 2005, pp. 1-17.
- Steele, John, 'Jones, Inigo Owen (1872 - 1954)', *Australian Dictionary of Biography*, vol. 9, Melbourne University Press, 1983, p. 515.
- 'Sunspots, planets, and weather', *Nature*, vol. 130, no. 3270, 2 July 1932, pp. 31-32.
- Walker, Lennox, *Only an Australian*, Lennox Walker, Golden Beach (Queensland), 1996.
- Walsh, GP, 'Hunt, Henry Ambrose (1866 - 1946)', *Australian Dictionary of Biography*, vol. 9, Melbourne University Press, 1983, p. 405.
- Wilson, Paul D, 'Wragge, Clement Lindley (1852 - 1922)', *Australian Dictionary of Biography*, vol. 12, Melbourne University Press, 1990, pp. 576-577.