



John Sydney Adcock Green died in hospital in Norwich on 17 March. John was born in 1931 in Gainsborough (Lincolnshire), and from an early age relished the outdoor life. As 'a lad' he particularly enjoyed cycling in the Peak District; his consuming interest in meteorology was a natural development of his liking for outdoor pursuits, but his route to eminence in the subject was indirect.

John left school at 16, four years after the death of his father (a cabinet-maker), and began work in a factory. Hearing a lecture by a professional scientist aroused his inquisitive intellect, and his attention was drawn to employment opportunities within the Royal Observatory, Herstmonceux (Sussex), where he started work as an assistant in the Nautical Almanac Office in 1950.

Having cleared the hurdle of the University entrance requirements, John studied mathematics at Imperial College, London, and graduated with First Class Honours in 1955. Supervised by Eric Eady in the College's Department of Meteorology, he undertook research on baroclinic instability, obtaining his PhD in 1961. Within the Department he was appointed lecturer, and subsequently rose to become Reader. From the 1960s until the mid-1980s John shouldered a heavy teaching load, at both MSc and undergraduate level. His dynamics lectures appealed to students because of his lively presentation style and the accompanying clear and concise sets of notes. He supervised a long succession of PhD students, and exerted a critical influence across a broad research range. He was a Vice-President of the Royal Meteorological Society in 1981.

In 1986 John moved to the University of East Anglia, at Norwich. Here he worked in the School of Environmental Sciences, and

was particularly involved with the School's MSc courses, influencing a large number of students and colleagues. He retired (as Reader) in 1996, but subsequently maintained close links with the School and was an active presence at seminars. His *Atmospheric Dynamics* was published by CUP in 1999.

Though John did not publish prolifically, much of his output became influential, and he was often a co-author. His much-cited 1960 paper on baroclinic stability reconciled the pioneering studies by Jules Charney (in 1947) and Eric Eady (in 1949) that had independently explained the occurrence and structure of large-scale weather systems in the Earth's troposphere but with significant differences in their assumptions and conclusions.

In the research arena, John's 1970 paper was his *magnum opus*. Using his deep knowledge of baroclinic instability, he constructed a theory of global atmospheric circulation based on the postulate that large-scale weather systems act as diffusers of heat and potential vorticity. The predicted pattern of flow agreed qualitatively with the observed geographical pattern of trade winds that had fascinated and puzzled scientists since the seventeenth century. Later work showed that *quantitative* agreement requires a specification of the diffusion process that is not easy to justify, but John's courageous attempt to combine mathematical stability analyses and weather systems insight prompted much discussion over subsequent decades, and furthered the scientific quest for compact theoretical explanation of the global atmospheric circulation.

A paper with Mitch Moncrieff in 1972 showed John's skills and insight contributing in the context of cumulonimbus modelling. An integral equation was derived by considering certain cumulonimbus circulations as steady transformers of in-flows into out-flows, and propagation speeds were then determined. This work opened up many productive avenues, especially when used in conjunction with detailed numerical simulations.

These publications all appeared in the Society's *Quarterly Journal*, and those of 1970 and 1972 were cited when the Society awarded John the Buchan Prize in 1975. In 2005, John received the Society's biennial Symons Gold Medal; the photograph shown here was taken shortly after the presentation at Imperial College at a meeting held in recognition of his many contributions to meteorology. John's legacy is indeed enormous – not just because of the key work he did as a scientist himself, but through his role as research supervisor, mentor and

inspiration for a generation of UK meteorologists.

During his time at Imperial College, John was much influenced by Frank Ludlam as well as by Eric Eady, and he carried on their tradition of celebrating clouds and cyclones and the associated airflows from an artistic viewpoint, in addition to the obligatory scientific perspective. He also believed that science should not be communicated only at a research level, and from 1967 to 2005 often contributed articles and notes to *Weather*.

As supervisor and teacher, John gave little outward indication of the mathematical ability and skills that he exercised to great advantage in his own research. Almost to a fault, he would emphasise physical insight rather than mathematical technique. He was perhaps one of those rarely gifted classical scientists for whom the relevant mathematics is merely a matter of systematised common sense. Or perhaps he regarded mathematical technique as something that all competent scientists would sort out individually for themselves. Either way, he presented a refreshingly unconventional persona to students and co-workers accustomed to more sedate, more systematic approaches to meteorology.

Stories abound of John's incisive contributions to scientific debate. When a climatologist referred to large-scale weather systems as 'the noise in the climate system', John remarked *They're not the noise, they're the music*. After a talk on positive feedback mechanisms in the climate system, he commented *Positive feedbacks are two a penny – what you'll win prizes for is working out the negative feedbacks*. John's capacity for quick-fire comment could be unsettling to students, but his candour heightened praise when it came. If he said 'Good lad!' (or the female equivalent) in response to your scientific argument, or wrote 'Fantastic!' in the margin of your scientific report, you felt that you had achieved something.

John was married twice: to Evelyn Grove (who died in 2008 – they met at Herstmonceux) and to Jill Austin (Dr J F Austin – they met at Imperial College). Both marriages ended in divorce. John is survived by Ellen, Jessica and Peter, the children (now adult) of his marriage to Jill.

The meteorological community will greatly miss John's scientific and rhetorical acuity, and his unfailingly buoyant personality. Still more will Ellen, Jessica and Peter miss their father, and to them we offer our sincere condolences.

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and Andy White**

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