

Professor Brendan McAndrew recounts the many sides of Niall - as a colleague and personal friend



Professor Niall R. Bromage
1942 - 2003

Niall Bromage died suddenly from liver cancer on the 7th May 2003.

Niall was awarded his Personal Chair in Reproductive Physiology and Endocrinology in January 1994 and was Assistant Director of the Institute of Aquaculture with special responsibilities for Research.

Niall was a world authority in fish endocrinology and used his skills and those of his research group to show how daily and annual rhythms are generated and modified by environmental factors such as light and temperature in fish. Light plays a major role in these processes and he showed the importance of melatonin and the pineal gland in enabling fish to perceive and measure day-length so that the fishes life-cycle is closely linked to its natural environment. He showed that light was the main cue in the timing of sexual maturation and other important life-history events such as smoltification in Atlantic salmon as well as on growth rate and immune response. The deeper scientific understanding of these processes enabled him and his group to solve many of the problems that had been hindering the development of successful fish hatcheries, which lie at the core of farming any species. This work was initially focused on trout but he had soon applied the knowledge to hatchery production of salmon, halibut and turbot, seabass and more recently several important tropical fish species. Some of the subsequent development work using

this information has had a profound effect on the industry, enabling them to modify the spawning time of their broodstock so they can provide eggs all-year-round.

The importance of his work to the UK fish farming industry, in particular, cannot be overestimated. He had obtained significant research funding to work on major problems in the farming of fish from a wide variety of national and international sources. His particular passion for trout as a model species meant he had maintained very close links with many of the trout farms he had worked with in his time at Aston University. As the technical advisor to the British Trout Association for over 10 years his success in obtaining research funding significantly helped the development of the industry. Niall was influential as he was a member of several industry and government advisory bodies and working groups that co-ordinated research objectives and funding to Universities and industry. He was awarded the prestigious Peter Jones Memorial Award for outstanding contributions to the British fish farming industry in 1997.

Niall also made a very significant contribution to academic life both at Aston under Prof Alan Matty and since 1988 when he moved to the Institute of Aquaculture sponsored by the Universities Grant Commission. We both realised soon after his arrival in Stirling that the disciplines of genetics and endocrinology should be integrated so we formed the Reproduction and Genetics Research Group. This resulted in important developments and collaborations as we sought to combine reproductive and genetic management techniques into our research on commercial finfish. Work that has increased our understanding of the effects of chromosome set manipulations on reproductive traits and more recently sex-determination systems and their manipulation in finfish.

Niall was a very active research scientist one of the most telling figures that shows the level of his commitment and the breadth of his research is that he has successfully supervised over 55 Ph.D. and M.Phil. students plus many more MSc students in his career. At the time of his death he still had 5 Ph.D. students actively pursuing their studies. Some of his past students are now at the highest levels in

British and Commonwealth Universities and in top management in the aquaculture industry world-wide. He was an excellent supervisor and lecturer and always had a very good rapport with his students at all levels because of his amazing knowledge of his subject based on personal experience.

He was very keen on developing collaborations between leading research groups within the UK, Europe, Canada and the USA to enhance the depth and impact of his research. He had organised many different international conferences and symposia in fish reproduction in the UK and Europe. Niall was an excellent communicator and net-worker and loved working in a group environment with a free exchange of ideas. He was an editor for the journal *Aquaculture* and was on the editorial board of several other international journals. During his time at Stirling he was responsible for obtaining in excess of £3.5 million to fund his own research. But in his role as Assistant Director he advised and helped many colleagues prepare grant proposals that attracted over £1 million for other activities within the Institute. His publication record is exceptional with over 200 articles in international peer reviewed journals and many contributions to books and conferences.

Despite having just had his 60th birthday, research, teaching and committee work was still increasing as he kept up with the latest developments in technology and with ensuring that his research group and the Institute stayed at the forefront of the science he so clearly loved. He will be missed by his many colleagues world-wide. He is survived by his loving wife Anne and their two children Iain and Sarah.

We had been in adjacent offices for over 12 years and every morning I still expect to see him sitting at his desk. Niall became a part of my life, both as a respected colleague but also as a close personal friend. I will miss him complaining about his knees as he chewed on a banana before he went off to play squash, comparing notes on the antics of our respective children and dogs, trying to get him to throw away obsolete equipment/books/anything that was cluttering up the laboratory. But most of all his dry laconic humour.

Professor Niall Bromage 1942-2003

Mr Mark Davies of the British Trout Association highlights Niall's active role with commercial producers.

(Adapted from Trout News July 2003)

Members of the aquaculture industry and the trout industry in particular are mourning the passing of great friend and colleague. Niall held the trout industry close to his heart and had a great fondness for it. It was where he began his work on fish endocrinology and one only has to look at the number of PhD's on the shelves of his office to see how many names are still active in the industry having passed through Niall's expert hands and to see the influence he has had and the people upon whom he has conferred his enthusiasm.

There is no doubt that Niall was very serious and passionate about his science and his work. As the British Trout Association's Technical Advisor for the past twelve years he worked tirelessly on the Association's behalf unlocking substantial funding for research projects, developing our Code of Practice and bringing his enormous expertise and experience to bear on our relatively small industry.

He was held in high esteem by all colleagues at DEFRA both past and present and his contributions to meetings were always well thought out, reasoned and purposeful; the driest of debates being frequently peppered with Niall's pithy and caustic humour and his point of view argued enthusiastically, driven by his commitment to the cause.

Occasionally his passion would be mistaken for bad temper and grumpiness by those who did not know him well; being a perfectionist, he took no prisoners when he saw poor or sloppy thinking. Nevertheless he was

deeply loyal to his colleagues, students, friends and to those whose opinion he respected.

His academic achievements are many, with a list of publications to his name running to many dozens of pages and his expertise in reproductive physiology has been applied in many species and locations. He took great pleasure in seeing his students develop, especially when they stayed within aquaculture as Niall was a great believer in collaborative research and in the practical application of science. The knowledge and expertise which he and his team developed over the years has been instrumental in allowing spawning times to be modified and he was a passionate advocate of the industry having access to all year round supplies of home-produced ova. The successful management of broodstock and improvement in production methods of ova and fry were common themes throughout much of his research.

He had been almost ever present at the Sparsholt Conference and it's predecessor at Two Lakes and he was very proud to have received the Peter Jones Award in 1997 for his outstanding contribution to fish farming – the only time he was ever at a loss for words! Niall is remembered fondly by a huge number of people from both his social and working life. His sense of humour never deserted him, counterbalancing the seriousness with which he undertook his work and play, where his deeply competitive nature still came through loud and clear – as anyone who ever played squash against him will testify.

He was a man who held traditional values very dear and to whom his family was everything. Greatly esteemed by his peers, he will be missed very much by us all. Our thoughts and deepest sympathies go out to his wife Anne and children Sarah and Iain.

Kevin Coward and Charles Tyler recount experiences with Niall as their supervisor, both at Stirling and earlier at Aston

I first came across Niall Bromage in 1990 when he gave a rather entertaining lecture on fish reproduction for the BSc Biological Science final year elective in Aquaculture.

His enthusiasm for his subject was only too evident in his teaching and a few months later, I was starting out as the latest in a long line of Bromage PhD students. Thirteen years on, an awful lot has changed. Since leaving the IOA in December 1994, I had maintained regular contact with Niall, initially via a rather lengthy and tense PhD thesis write-up, then via preparation of various manuscripts, and for the last two years via collaboration on a research project. In May 2003 of course, everything changed. Despite many hours of deliberation, I am still unable to describe in this article just how much Niall has influenced my life. Put simply, and I think all of Niall's students would agree, Niall was much more than a supervisor or mentor. Aside from being incredibly rigorous with his science, Niall was enthusiastic, honest, supportive and loyal to his students, and of course, fiercely competitive. His record speaks for itself; Niall let slip during a conversation in April of this year his 55th student had just successfully obtained the degree of PhD. Phenomenal to say the least. Colleagues here at Oxford have never heard of such an achievement.

After I left Stirling in 1994, I went to work as a Post-Doc in Charlie Tyler's laboratory at Brunel University. Charlie, for those that do not know, is one of Niall's ex-students from the University of Aston. All those who knew Niall were more than aware of his fierce and combative nature, particularly when it came to the game of squash. Charlie Tyler became one of Niall's most infamous adversaries on the squash courts of Aston. A recent conversation with Charlie (now Professor of Biological Science at the University of Exeter) revealed a little more of this side of Niall...

"Niall was at his most competitive on the squash court even to the point that there were some who would refuse to



Kevin Coward, Department of Pharmacology, University of Oxford.
(PhD student in the Institute of Aquaculture, 1991 – 1994) -
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him. He was the wily old wizard, who would stand right on the 'T' on the court and defy anyone who tried to move him off that dominant position. He was a good player, but he knew all the tricks of the trade. He won many of his matches not only through skill, but through unsettling his opponent. He knew his ability in this regard and a wry smile would appear on his face when he knew that he was really pushing the bounds of the 'game'. Niall was a competitor on the squash court, as he was in life. He had to win. In my first few games of squash with Niall, I hardly hit the ball. Three years later, it was always close, and a battle in every respect. Niall was always complaining about his joints and how they ached, then he would be on the squash court again at lunchtime!"

(Charles Tyler)

Of course Niall's competitive nature didn't just remain in board rooms, conference halls, and squash courts....

"Niall had a good appetite and when we went out for group meal could eat more than most. That was until Alison Brook [another of Niall's students, and Charlie's future wife] arrived on the scene. Alison can eat for England. As such, there was now serious competition around the 'shared' table on these outings. Niall took these challenges as serious as any squash court challenge!"

(Charles Tyler)

Some of my own fondest memories of Niall arose at a conference in Texas in 1995. For example, Niall chastising myself and Mark Porter out on the roadside for bunking a Plenary Session, whilst obviously out on the roadside himself... and clearly wearing his jogging outfit! And of course, the look of complete horror on Niall's face as Dr Penny Swanson (a collaborator from Seattle) dragged him onto a totally deserted dance floor in front of hundreds of watching delegates. Despite animated protests from Niall regarding his "bad knees", it was one fight that Niall was to lose. One final story from Niall's Aston days;

although incredibly comical (and we suspect, rather hushed-up on Niall's part), this to me, typifies the very nature of Niall Bromage's attitude to his students and collaborators. During a field trip to a collaborating fish farm, Niall, whilst giving an authoritative speech, slipped and slid gracefully into one of the trout ponds. Apparently he managed to scramble out and continued to talk as if nothing had ever happened; this was despite the rather large piece of weed still stuck to his head! Of course, this was all too much for his posse of students on the opposite bank, who roared with laughter. Niall eventually caught the eye of his students, and realised he had been spotted. Initially angry at the situation he now found himself in, Niall eventually couldn't help but laugh himself.

That many of Niall's previous students have now established themselves as respected and influential scientists in their own right, is testament to Niall's passion, conviction, and enthusiasm for science. Niall has had a huge influence on my life and career thus far, and will continue to do so for many years to come. Without his support and encouragement, I simply wouldn't be where I am today. I miss him.

Mark Porter

Looking back thirteen years ago when I first arrived at the Institute of Aquaculture to begin my PhD under Niall's supervision I don't think I could have ever foreseen what a huge part Niall would play in shaping my future career and direction in life.

From my early tentative steps in research to collaborating on international projects Niall was someone you could always rely on for sound advice and encouragement. He always seemed to have an answer to questions or problems and even now I find myself wishing I could pick up the phone and call for a chat.

To some people who didn't know Niall well, he may have seemed almost official in his manner, however those who spent any time with him knew he had a brilliant sense of humour and genuinely cared about the people he worked with. Trips abroad, conferences or even just visiting

fish farms in Scotland was always a fun experience when Niall was there. Whether because he was crawling along an icy pavement in Bergen, sitting on a longhorn steer in Texas or stealing olives from your plate in France, he always found the funny side of a situation and was not afraid to put himself in the firing line for a laugh.

Throughout my time working with Niall he went from being a supervisor to colleague and mentor but was above all a good friend and it is Niall's friendship that most people will miss. I for one consider myself incredibly lucky to have had the chance to work and learn with him but also to have known the lighter side of Niall Bromage. He was definitely one of life's great characters.

Nicola Hastings recounts the fact that Niall was not just competitive in work and sport ...

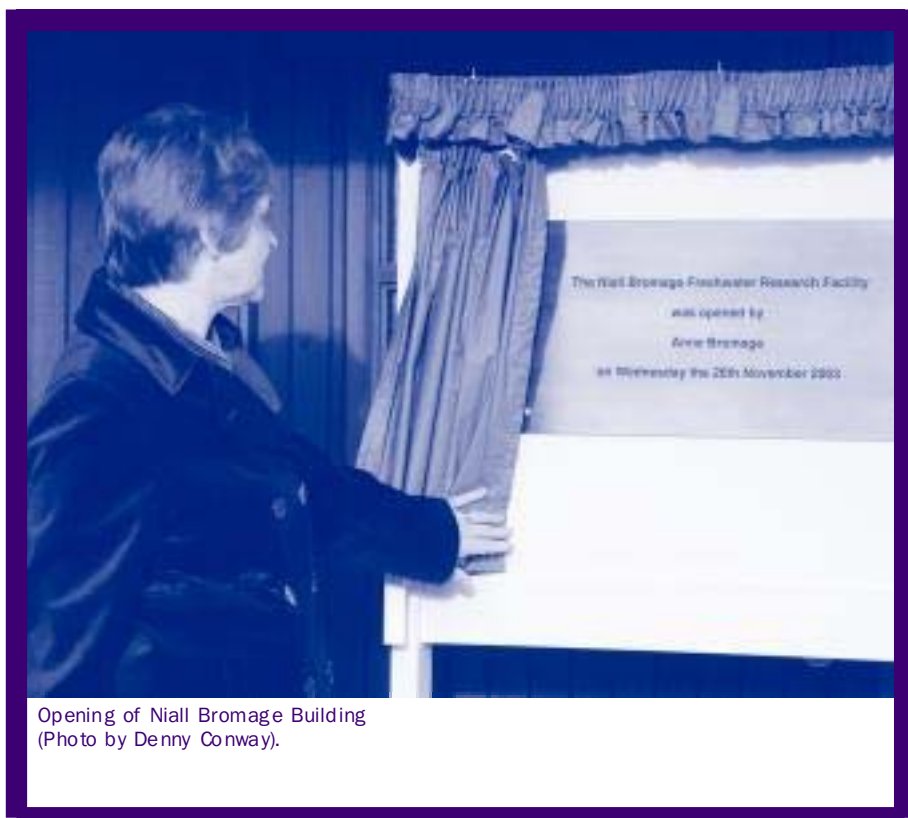
My few words in memory of Niall Bromage aren't going to be gentle, oh no, I want to show just what a cheating little prankster Niall was. Picture this if you will. The Institute's famous Christmas party, usually held in a suitable large room cleared of all sharp implements and containing only chairs, a large table and a selection of drinks; a safe combination you might think especially since the people at the party have had the best education money can buy. But you'd be wrong. The 2001 party started quietly enough, until the games began. Now these games were not what you'd expect from a group of intellectuals, there were no cryptic word games or strategic board games, in fact the final game of the night is musical chairs!

The chairs were lined up in the centre of the room in the normal fashion and as usual it was a knock out game, however the phrase knock out had more than one meaning on this occasion. The game started off sedately but after a few chairs

were removed it soon took on a more competitive feel. It all started with a few subtle elbows in the ribs and maybe a few misplaced feet but it wasn't to continue like this. It soon became more like a rugby match, an Aussie rules rugby match. But strategy was involved. The name of the game was to keep one hand on a chair and one hand outstretched in front of you. The hand on the chair would only be lifted for a split second, in that time you'd push the person in front hard so you could then put your hand down on the next and know that you were safe. I got quite into this, and despite only being a 5'6" lass, was having great success. However, I soon noticed that I wasn't the only one making the grade, a certain Niall Bromage was also managing to win his seat at every break but with more force and a great big grin. In some instances he'd body-push the person out of the way, which was a very effective manoeuvre given his height and build but other times he'd simply tip the chair with the person sitting in it, they'd fall out and he'd win his seat. I was impressed with this especially when, on occasion, he'd help me out.

However, it was soon down to two, there was just Niall and I left and the chivalry was not to last. The music began and we started walking round the chairs but it was more like stalking prey, glaring at each other with one hand on the chair one hand outstretched to push the other away if they got too close. The music kept playing and we walked faster and faster round the chair until we were running, pushing and shoving each other at every opportunity showing no mercy, this was war! The music stopped and I had the upper hand, I was on the side of the seat so I tried to sit but Niall grabbed the chair and pulled it out from under me. I grabbed the legs of the chair and started pulling. I wasn't about to give up, I had won that chair. We pulled back and forward trying to twist it out of each other's hands. Eventually I pulled it from him, put it back onto the floor and was about to sit down triumphantly when, as I aimed my behind for the chair, a certain hand was placed there instead. I squealed and jumped up and he pulled the chair away from me, sat down and "won" the game! I couldn't shift him he was steadfast with the smuggest grin on his face, proud as punch. This is how I remember him, full of mischief and fun!

Opening of Niall Bromage Building



Opening of Niall Bromage Building
(Photo by Denny Conway).

Niall Bromage was instrumental in the development of the Institute's freshwater facility at Buckieburn and his research group are the major users of the facilities.

Niall was particularly keen to develop improved laboratory and office facilities at Buckieburn to provide good working conditions for staff and students and to realise the full potential of the site. It was therefore entirely fitting that the new building that Niall had worked so hard to bring to fruition should be named the "Niall Bromage Freshwater Research Facility" and formally opened by Niall's wife

Anne and her children Sarah and Iain at a ceremony on 26 November. The occasion was attended by senior officers of the University, including the Acting Principal, Professor Christine Hallet, as well as staff from the Institute and External Facilities and visitors associated with Niall's research.

The opening ceremony was followed by a tour of the Buckieburn site where Niall's research group were able to explain their current work programmes. The morning finished with an excellent lunch at the Howietoun Fishery.

The Institute and University was pleased to be able to remember Niall and his achievements and to establish a fitting memorial to a fondly-remembered friend and colleague.