

Memories of John L. Harper

A remembrance by his friends, students, and colleagues

(Second Edition)

Edited by Glenn R. Matlack

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Preface

This volume arises out of a need to collectively grieve John Harper's passing despite the obvious logistical difficulties involved in assembling members of a truly global community. It was suggested that each person could write a short reminiscence on John Harper, which would be assembled into an electronically distributed volume. We asked the Harper family how they felt about the idea, and they graciously gave it their blessing. Thus, we have contacted as many "Harperians" as we could think of (and for whom we could find contact information; Peter Brindley's long list was very helpful). Scores of people have replied and thirty-nine have contributed their own memories of the man. Doubtless we have overlooked many people who had strong connections with John Harper. If this includes the reader, we sincerely apologize for the omission. Feel free to send your contribution to Glenn Matlack (matlack@ohio.edu), however late. As this is an electronic document, your contribution can easily be slotted in when it arrives. Sadly, many Harperians have already died, and cannot contribute. Tony Bradshaw, Geoff Sagar, and Fakhri Bazzaz come to mind.

People were simply asked to contribute their own personal memories of John Harper, an intentionally vague assignment. I volunteered to make the actual contacts and collate the contributions when they arrived. All contributions have been subjected to a light editing (i.e. removing obvious grammatical and typographic errors and converting the document to British spellings). Aside from this, all contributors speak with their own voices and choose their own emphasis. Contributions are organized chronologically with the (perhaps mistaken) notion that personalities and communities evolve through time. This system works well for students, who had a relatively brief and clearly defined exposure to John's attention, but obviously breaks down for long-term colleagues and coworkers.

Contributors responded quickly and generously, providing a rich, insightful, and often comical portrait of the man. The emphasis varies within the collection; some focus on his intellectual contribution, some on his mentoring style, some on his impish wit. His personal quirks are fondly remembered; there are many references to his habit of sliding down the wall as he talked, to his trademark bow tie, and his foul Balkan pipe tobacco. As such, this effort should probably be regarded as an anti-obituary; there are few references to his publications or his many honours.

Inevitably one writes about the community from the period of one's own experience as if people and places never changed, and I have fallen into this trap in my Introduction. Paul Caver's description of the Department of Agricultural Botany, the forerunner of the School of Plant Biology, provides a healthy corrective. Morrin Acheson's account of life at Oxford rounds out an earlier period in John's life which was always a mystery to us students. Richard Mack, Miguel Franco, David Gibson, and John Porter reviewed the manuscript. They caught many errors and filled in many of the blanks in my own memory. Thanks to you all.

Glenn Matlack
Athens, Ohio
July 2009

Introduction

John Harper was a great evolutionary biologist. Despite (or perhaps because of) an agricultural education, a focus on weedy plants, and posting in an obscure provincial university in Wales, John Harper fashioned a broad vision of the interaction of life history, environmental heterogeneity, and evolutionary process that has informed all branches of organismal and population biology. With the advent of searchable databases on the internet, greatness is easy to quantify. His ca. 140 published works have earned close to 10,000 citations in the professional literature placing him easily in the same class as Sewall Wright, Richard Lewontin, GE Hutchinson, Fakhri Bazzaz, Ernst Mayr, AS Watt, John Maynard Smith, EO Wilson, and Charles Elton. His work continues to guide all of us studying the population biology, ecology, and evolutionary biology of plants, although we are often unaware of an idea's paternity when it pops into our heads.

In his lifetime, John achieved scientific celebrity – he was worshipped by graduate students around the world (a status he was not comfortable with and did nothing to encourage). Without question he was a very clever man, able to see easily through knotty problems and recognize simple concepts in complex phenomena, but descriptive statistics and uninformed reputation only tell part of the story. Our universities are filled with exceptionally clever men and women, but few rise to his level of influence. There must be more required in a great scientist than mere cleverness! The impressive citation rate hints that he also had considerable powers of communication and an ability to inspire enthusiasm in his colleagues. The sheer number of publications indicates prodigious industry, if nothing else.

We who had the privilege of knowing John personally know that he was a complex personality and better understand the individual strengths that allowed him to be so productive. We also appreciated his ability to teach, encourage, and inspire - contributions to science that are less easily quantified. The purpose of this volume is to share our memories of John Harper as a person, not as a collector of citations or a scientific celebrity. The contributions published here lean more heavily to his service as a teacher than as a writer of science, although the two are difficult to separate.

The focus of the contributions ranges widely across Magdalen College, Oxford, the School of Plant Biology, the University of Wales, and the town and surroundings of Bangor. Clearly the influence of John Harper was inseparable from the total experience of those times and places. It is important to remember that we interacted with him in the context of strong communities including (at the time of my studies) faculty such as Chris Happey-Wood, Adrian Bell, Dafydd Wynn Parry, Geoff Sagar, Chris Marshall, Chris Gliddon, Bob Whitbread, Peter Greig-Smith, Dave Shaw, Richard Shattock, Tony Smith, and Ralph Oxley. One benefit of fame is that inspired scholars from all over the world joined our department as postdoctoral fellows and visiting scientists. An incomplete list includes Bev Rathcke, Maxine Watson, Promila Kapoor, John Zasada, Janis Antonovics, Fakhri Bazzaz, Yan

Linhart, 'Henry' Ford, Norma Fowler, Deborah Rabinowitz, Jake Weiner, John Connolly, Peter Wayne, Louis Assemat, Robert Norris, Bernhard Schmid, Jeremy Flowers, and Dick Mack. As graduate students we often interacted with (read "depended upon") the staff as much as faculty. These included Peter Brindley, Maureen Williams, Garedd Williams and his father Eric, Geraint Hughes, Allen Savage, Hilary Wallace, Lindsey Thompson, Katie Sellek, Nigel Brown, Ron Tocker, Allan Morgan, Ros Preston, Maria Andreou, Lynn Jones, Linda Williams, Nerys Hughes and several others who were very helpful, but whose names I'm ashamed to admit I can't remember.

The School of Plant Biology was housed in a boxy postwar-modern building shared with the Forestry Department on Deiniol Road at the bottom of Glanrafon Hill. The building was poorly lit, perishingly cold (single-pane windows throughout) and did not appear to have been painted since it was built. The layout reflected an earlier era of educational formality, with tight wooden benches for students and private bathrooms and robing rooms for faculty. PhD students and post-docs were crammed six-at-a-time into smallish rooms that would not meet health and safety standards today. All unused space was occupied by dusty equipment too old to use, but apparently not quite old enough to throw away. The whole facility (indeed the whole university) had an air of penury. Although I was not privy to faculty salaries, the shabby gentility of professors was suggestive. In contrast, the poverty of junior faculty was self-evident and at times embarrassing. The whole setting had a Dickensian air of institutional pigeonholing. The community of Plant Biology was held together by the good humour, industry, and resourcefulness of its members rather than by the splendour of its facilities.

Experimental work was done at the Pen Y Ffridd Research Station, a rambling collection of large greenhouses nestled among modest duplex houses off Penrhos Road. Considering the small size of the School of Plant Biology, PYF was a wonderfully large and accommodating facility. Charles Ellis and his staff managed to provide potting materials, environmental control, and personal attention to our experiments despite very tight budgets. Pen Y Ffridd was also the location of social events, at times doubling as a disco or a picnic site (Dick Mack and Fakhri Bazzaz organized a very successful American-style barbecue there in 1974). Complementing PYF was Treborth, a spacious botanical garden on the bluff above the Menai Straits run almost single-handedly by Nigel Brown. Surrounded by scrubby regrowth forest, Treborth was as close as SPB came to any sort of natural vegetation. Both facilities were severely pressed during the Thatcher years – it is a tribute to their respective administrators that they both survived that period.

As the contributions show, life in the School of Plant Biology was inseparable from life in the small town of Bangor, Wales. Indeed, acquaintance with John Harper was, for many students, wrapped up in the total experience of leaving home and establishing our separate identities. Bangor comprised ca. 14,000 people in the 1970s, not including 8,000 students, and the daytime population was boosted by a large influx of people coming in from the countryside to shop. To my American eye, it had a quaint old-world look in its core area, surrounded by grim neighbourhoods of small, closely packed utilitarian homes. Culturally the city was schizophrenic, with a clearly defined student zone along the Holyhead Road and working-class Welsh zones in the suburbs. Undergraduates (largely from England but including a vocal Welsh

minority) seemed like an introverted lot, largely focused on life within the University. The larger Bangor community were reserved, but friendly if you made an effort to know them. The 2000 census found 46.6% claiming Welsh as a native tongue, and one often heard it spoken on the streets. Unemployment was a staggering 12% in the late 1970s. All of us knew at least a few people on the dole.

The School of Plant Biology created an identity independent of these groups, with its own active social life. The junior faculty genuinely seemed to enjoy the company of graduate students; I drank many pints with Richard Shattock, Adrian Bell, Ralph Oxley, and Chris Gliddon. Foreign graduate students, especially, formed a tight, mutually supportive community. In the late 1970s, Plant Biology was a wonderful mix of students and postdocs from Malaysia, Switzerland, Lebanon, Canada, India, Chile, the Netherlands, Spain, Pakistan, Australia, the United States, France, Mexico, Uganda, Ireland, Iceland, Sri Lanka, and Sweden (and I've surely forgotten a few) throwing themselves completely into the life of SPB. English students participated vigorously (we played endless games of pick-up football followed by endless pints in the pub), although many continued to regard their home towns as the centre of the universe, and Bangor as merely a part-time engagement. SPB had its own cricket team that included members from the whole department and won the UCNW inter-departmental competition on several occasions.

As might be expected in a small university town, there was a prodigious number of pubs – thirty-seven in the late 1970s. Because most homes in Bangor lacked central heating, the pub was a welcome opportunity to relax in both thermal and alcoholic warmth. Cultural groups assorted among the available pubs: The Bellevue Hotel was frequented largely by English undergraduates, The Skerries was a local Welsh pub, etc. The Union Garth near the pier was a solid establishment with a comfortable mix of graduate students and older local residents. We favoured it for our regular Thursday-night drinking sessions. Irish and other country music was played in the King's Arms and there were Thursday evening discussion sessions in the lounge bar, which John Harper frequently joined.

The city was largely contained between two NE – SW running hills, so one could easily walk into the surrounding countryside. The landscape was breathtakingly beautiful. A quaint patchwork of small fields delineated by stone walls and blackthorn hedges rolled eastward into Snowdonia and west onto Anglesey. Wooded valleys followed small streams above Aber, Port Penrhyn, and Tal Y Bont. Snowdonia offered rugged hill-walking and true alpine habitat. Anglesey was surrounded by isolated beaches and puffin-filled sea cliffs, and dotted with ancient monuments. Archetypal mediaeval castles were as close as Beaumaris, Caernarfon, and Conwy (and a grand Victorian folly was just around the corner at Penrhyn). Surprisingly, Plant Biologists rarely seemed to get out of the town, excepting the few who worked at Henfaes or Newborough Warren or found cheap lodging in the countryside.

It rained a lot. The summit of Mount Snowdon receives close to 4,000 mm of rain per year, making it one of the wettest places in the temperate world, and rainfall seemed only slightly less in Bangor. Although not particularly cold by continental standards, the never-ending rain and lack of central heating created a pervasive chill. Mould seemed to grow everywhere, indoors and out. A student's perspective on

Bangor generally reflected his/her ability to tolerate damp and the attendant chill. Some pitiable students from tropical countries wore their winter coats all year long. Those of us with field projects spent many months working in the rain. Rain was only considered an impediment to field work if it poured heavily. Moderate rain was a normal working condition (and no excuse to stay inside), and a drizzle was not worth mentioning. Rodolfo Dirzo spent countless hours in the rain at Henfaes, and snuffled with a chronic cold through most of the year. Students from the wet regions of Scotland, Ireland, and Scandinavia seemed to bear up the best.

“Summer” was restricted to a two-week period in June when the sun came out. Sunlight was disorienting in Bangor. Beaming directly onto the white walls and casting stark shadows, sunlight made the town look entirely different – perhaps this was some village displaced from Spain or Greece? A festive air accompanied the sunlight into the School of Plant Biology. Sunglasses, flowered shirts, and sun dresses mysteriously emerged, and were worn with a foreign flair. In the long evenings, the SPB group often took informal walks in the countryside, winding up in a convenient pub when the light finally faded. Evening parties were common. We played cricket at Treborth. In a relatively dry year, this spirit could linger into August, and it provided some of my fondest memories of Bangor.

Somehow, this unpromising combination of cultures, facilities, environment, and personalities provided a rich seed bed for the minds of John Harper and his group. Would he/we have done as well elsewhere? I once overheard him confide to a senior colleague that he was not interested in a job offer from Harvard, but that he was considering an offer from the University of London (one overheard a lot – personal discretion was an essential trait in SPB). I was shocked - the idea of a School of Plant Biology anywhere else but Bangor was inconceivable. As it happened, John did not move to London. The flowering of Harperian thought happened in the rain in a quirky little town in remote Wales. The intellectual antecedents of his work are relatively clear (after all, every paper has a bibliography), and his childhood and education are well documented in the many obituaries. But the effect of the social, institutional, and physical environment is less obvious. The contributions included here go a long way to placing John’s thinking in the practical day-to-day context of the School of Plant Biology and in the personal lives of its members.

The Department of Agricultural Botany 1960 - 1963

Paul Cavers

For many people, experiences with John Harper took place in a setting very different from the School of Plant Biology described above. In 1960, the Department of Agricultural Botany shared the first (second, to me) floor of the red-brick Agriculture Building with the Department of Agricultural Zoology. The ground floor was inhabited by the Department of Agriculture in the front and the Department of Agricultural Chemistry (Professor Charles Evans) at the back. Many of our social activities were shared with faculty and students of these departments, whereas many of the denizens of the large “new” yellow building to the north (Forestry and Botany) formed an almost separate community. Indeed, one of my good friends from Botany at that time has told me that she knew very little about John Harper and the other Agri-Bot faculty during her career as a postgraduate student.

The Department in 1960 was very small; Professor Harper, Tony Bradshaw, Dafydd Wynn Parry, Geoff Sagar, and Margaret Mence (a plant pathologist) were the faculty; Frank Hughes was the Head Technician, Glenys Parry, Gareth Williams and Menna Pritchard were young technicians, Nora Jagger was the gardener and Jill Morris soon was appointed as the Professor’s secretary. There were 6 PhD students; Jack Aston, Glenys Crossley and Peter Gregory were with Tony, Trevor Williams and I were with JLH and Jim Quinlan was with Geoff Sagar. John Dobinson (with Dafydd) was the lone Masters student. Plants were grown in a group of glasshouses on the roof of Agriculture and in field plots in Victoria Park Garden in Upper Bangor. This garden was located right behind Principal Charles Evans’ home and in front of the house now owned by Peter Brindley. Peter has spent many years preserving this garden and in 2008 I could still identify where my large “replacement-series” experiment had been located. There was no department vehicle so each faculty member used his/her own car for field work. There were four Honours students that year. Our interactions with the faculty were quite informal; Tony, Geoff and Dafydd were usually addressed by their first names, John Harper was always “Prof” (or, if he was not within hearing distance, the “Oppressor”) but Margaret Mence was always “Miss Mence” (or “Maggie” when no faculty were nearby). I didn’t realize how unusual this was for a British Department of that era until I heard students in other departments address their faculty in very formal terms by their last names.

Since the Department was small, we usually joined with people from other departments to field teams for sporting events. For example, I joined the AgriChem team for football (soccer). Our cricket team included people from several departments but I do remember the laughter as I attempted to bowl for the first time but only succeeded in falling to the ground with the ball still in my hand. When I finally did launch my first ball, I took a wicket (everyone including the batsman was laughing so hard that the ball simply hit his bat and ricocheted for an easy catch). However, within 3 years the Department had grown considerably and even generated two teams for its own field hockey match. There were many more postgraduate students and overseas visitors who arrived from 1961 to 1963.

Bangor, the “Athens” of Wales was noteworthy for its numbers of churches and chapels, shoe shops and pubs. The pubs were closed on Sundays and even the children’s swings were locked up on that day of the week. The retiring Professor of Agricultural Botany, Dr. Alun Roberts, gave his final lecture in the hall in Top College in September and within a month or two the faculty spent a busy Saturday clearing out old records, examinations and other material carefully collected and preserved by Frank Hughes over many years. Frank was otherwise occupied on a Saturday, watching his beloved Bangor City Football Club. Within two years Bangor City won the Welsh Cup and then made it to the second round of the European Cup-Winners Cup. They then took on the very powerful Italian club, Napoli, lost 3 – 1 in Italy but defeated Napoli 3 – 1 in Bangor, on a pitch that sloped to one side. Several of us watched the game from the roof of the Agriculture Building since the space in the grounds of the stadium was sold out. A deciding game was played in London (White Hart Lane) and Bangor City lost in extra time.

The Department was a busy place most evenings and some of us actually worked on our research in that time period. However, other activities occurred as well. My first evening was a personal shock when I arrived to find that my desk had been transformed into a central part of a sophisticated “sloe-gin-making” operation. Another clandestine project was the production of the racy and irreverent “North Wales Spy Magazine”. This proved to be a major irritant to the Prof since it usually contained information of a supposedly private nature. Another irritant was the appearance on the front lawn of the Agriculture Building on Guy Fawke’s Day of a brand new cemetery with 4 “graves”, one for each Department Head. Naturally the one for Prof Harper was short, thin and curved. It was decorated with appropriate weeds and a well-used pipe.

Morrin Acheson

Friend 1943 – 2009

John arrived at Magdalen College (Oxford) with a Demyship (College Entrance Scholarship) at the beginning of Michaelmas Term 1943 to study Botany, which deeply interested him. He had been brought up on his father's farm and knew everything conceivable about farming. I "came up" just a year before, with a few others, to read chemistry and soon met John at the mostly uninteresting but filling war-time meals provided in Hall by the College. He started to develop many characteristics which came out strongly in his later life. He smoked the occasional cigarette (I don't recall a pipe) and he had a delightful collection of bow ties, always tied by himself and always at a slight tilt. He could tie a tie in a few seconds! He poured scorn on those who wore pre-tied clip on ties – including the obligatory white ones required for all University Examinations. He was a very interesting, lively, erudite and sometimes critical neighbour at dinner in Hall. He had wide interests and an excellent understanding of basic science which occasionally gave some of the chemists a really hard time.

Listening to good music, classical mostly but also dance music, on records borrowed from the University Gramophone Society or at local concerts gave him great pleasure as did concerts in Exeter after his retirement. He did not take much, if any, interest in sports, except the occasional game of bowls on the far from perfect lawn, and as a post-grad tennis. We, Harry Beevers, and a few others, used to play tennis regularly during the summers on the then-vacant College courts. John and I also had an interest in common – giving parties with dancing. We did this after we had graduated, in the College Sports Pavilion, inviting 40-50 friends and Dick Martin, physicist also from Magdalen, provided the music on his wonderful self-made tape recorder on which he pre-recorded music from our records.

John was clearly very interested in (as I was), and interesting to, young ladies, and had from my point of view an enormous turnover rate with his always beautiful and highly desirable female acquaintances! I asked him about this one day, for I never had such a choice, and he replied that if one lasted 6 weeks then it would be serious – as it did when he met Borgny who had come from Norway to learn English and earn her keep as a waitress in Halifax House, the Graduate Centre where we often had lunch. Most of the Norwegian girls who came were snapped up very quickly.

John married Borgny about a year after I married my Swiss lady. We started our families about the same time and kept up our friendship until today. The two foreigners clearly liked each other! Before John moved to Wales children were quite often dumped in one home or the other, so one set of parents could get away for a bit, and the kids seemed to enjoy the change of scene. Afterwards we occasionally exchanged houses for holiday purposes, a great children's adventure! John was still in Oxford when I went off for my first sabbatical. Our house was rented out, but by arrangement John bought about 20 rose plants and put them in for us. The renters said he dug huge holes, put tons of manure in followed by soil, and then the roses. The result was magnificent, a flower show for many years.

The Oxford Department of Agriculture was not a very happy place for John for he neither had enough space for his work, nor could the field facilities he needed be

acquired nearby. When he was appointed to his Lectureship much of the research space had earlier been grabbed by others who were doing new, but routine investigations. I always thought they were very jealous of John with his original ideas. He was extremely pleased to move to Wales where he told me he had the potential to do his experiments from sea level to winter arctic conditions at 3,000 ft, but he was greatly missed by those he left behind!

We did very little science together. In the early 50's, after my return from the US with a fairly good camera, he got me to photograph fields with different *Ranunculus* species blooming on the top of dry ridges, and in the damper valleys in between, for his lectures. We also did some work with I.H. McNaughton on anthocyanins in poppies, which was published in the 50's and early 60's, but were unsuccessful in isolating ranunculin (it was done many years later), a very unstable antibacterial from some *Ranunculus* spp. roots. He was very interested in the four year Oxford Chemistry course. Finals were at the end of the third year, resulting in unclassified Honours, and the fourth year consisted of pure research, submission of a thesis and a subsequent viva after which the classification was awarded. Results were excellent, Oxford Chemists were and are still in high demand for no other University has such a course. This may have been the background to why John introduced his students to research in their student years.

John was a great scientist, a self-described humanist, and a wonderful friend for 66 years. He was very cheery, though in poor shape from his several health problems, when I last saw him a few years ago, and was very strongly supported by Borgny and his children who could not have done more for him. During my last telephone conversation with him shortly before he died, we even discussed the role of molybdenum in biological systems and how much more there was to be found out about it. His passing causes much sorrow, but we can only be grateful for his life, that of a wonderful scientist, teacher, father and friend.

Robert Norris

Student assistant 1957-1958, Visiting Scientist 1980-1981

I first encountered John Harper, which is an appropriate word choice, when I was an undergraduate summer student employee in 1957 and 1958 working for Professor Blackman's group based at the College of Agriculture at Oxford University. I was assigned to work with the weed science faculty, mainly on herbicide projects. When the herbicide work was slow I was asked to help the plant ecologist. The plant ecologist was, of course, John Harper. I recall very little about John at that time, but he gave me my introduction to counting plants in 1 m² quadrats; at that time it was *Plantago major* if I recall correctly.

In 1980/1981 I spent a one year sabbatical leave at Bangor. John Harper was the reason for the choice. One of my first impressions of John occurred the day that my family and I arrived in Bangor. We had just completed introductions when one of my two teenage children asked John where they could find the water fountain. 'There', he replied, with a twinkle in his eye and wagging a finger at them, 'are two traumatized American teenagers. We do not have water fountains'.

If I had to sum up my picture of John it would be dapper. In nearly twelve months in Bangor I never recall seeing him without a bow tie, even in the greenhouses at Penyfryth in a gale! I must admit that I did not recall him from my earlier encounter, and he certainly did not remember an undergraduate helper from back in the late 50s.

The picture of John that will always remain with me occurred at the tea breaks, and is alluded to by Roy Turkington in the obituary that he wrote in the *Journal of Ecology*. John would be leaning against the wall, with a semi-circle of people around him, as he expounded on whatever was the hot topic that day. Imperceptibly he would slide down the wall. Eventually he would be sitting on the floor, still expounding, with a ring of faculty, visitors and students peering down at him. This was not a single happening, but occurred on an almost daily basis.

A very different impression occurred in 1988 when John came to UC Davis to present a series of invited lectures. My wife and I served as the local host for supper one evening. I am an avid gardener, and what impressed me as we wandered around my garden was that John could name essentially every plant, even though many of them do not grow in England (especially north Wales).

Finally, as a tribute to one of the great thinkers in plant ecology, I note that my copy of John Harper's 1977 book on plant population biology is probably the single most tattered book in my personal library collection, attesting to the many times that I used it or loaned it to students.

Paul Cavers

JLH student, 1960 – 1963

I arrived in Bangor a few days before John's family moved to North Wales in 1960. I had completed an undergraduate degree at the Ontario Agricultural College in Guelph that year and had been awarded a scholarship to study overseas for a PhD. My aim was to work on the ecology of weeds and you can imagine how delighted I was to find that several new recruits to the Department of Agricultural Botany, as well as a few continuing people, shared my interests. Fortunately, John was willing to accept me as a postgraduate student and I was soon immersed in the study of the comparative biology of *Rumex crispus* (curled dock) and *Rumex obtusifolius* (broad-leaved dock). I was even able to study the maritime variety of *Rumex crispus*, which grows on shingle beaches along the sea coasts of Britain. This was a particular delight for someone who had grown up in central Canada, a long way from salt water.

The Department of Agricultural Botany was a wonderful place to study in the early 1960s. There were many stimulating discussions, both formal, in seminars and lectures, and informal, in the regular morning and afternoon tea and coffee breaks. John often introduced the topic for discussion at tea and then all of us had the opportunity to participate. Occasionally, there was an unexpected development. One day a salesman from England was setting up a new dishwasher, which was intended to clean laboratory glassware but also to wash the cups and pots used for tea making. Our Department tea lady watched this development with trepidation, fearing that she might soon be out of a job. After the dishwasher had been filled completely, the machine was turned on. Immediately there was a very loud noise of breaking glass and before the machine could be turned off virtually every piece of glassware had been shattered. The faculty were downcast, the students roared with laughter, the salesman soon departed with his machine and the tea lady still had her job when I left the Department many months later.

Another feature of the Department was the regular appearance of well-known visiting scientists from around the world. These people might come to work in Bangor for a few months (e.g. Siny ter Borg from the Netherlands) or might simply stay for a few days to present a seminar. One of the latter was Dr. Sweeney from California, a fire ecologist who studied the stimulating effects of fire in the chaparral on the germination of buried seeds. Even Dr. Sweeney was amazed when a fire suddenly engulfed large parts of Bangor Mountain shortly after his arrival! The cause of that fire was not known but Dr. Sweeney was not responsible.

John's direction, advice and practical assistance was of great value to me throughout my three years in Bangor. Shortly after my arrival, he spent several days driving me through the Bangor area in a search for sites for my field experiments. This was the first occasion when I was driven through the countryside in a handsome Jaguar (even one with a few "dimples" from unintended contact with Welsh stone fences on narrow roads). On one occasion, I was surprised to find that we were entering a side gate to the Penrhyn Estate and meeting the tenant farmer whose name, surprisingly, was Harper. This explains the names of two field sites listed in my thesis, "Harper's field" and "Harper's woods". Several people who read the thesis asked me if the Harper

family really lived on the Penrhyn Estate! I'm sure that the people working inside the Estate often found it odd to meet a Canadian on an old motorcycle passing down the farm lanes. John also arranged for me to meet several of his former colleagues from the Weed Research Organisation near Oxford, including Patricia Chancellor who had worked on *Rumex* species before me.

John also spent many hours teaching me how to improve my writing. I soon learned to use a word of Anglo-Saxon origin (e.g. "site") in preference to a word of Latin origin (e.g. "location"). My first attempts at writing thesis chapters were returned with many suggestions for improvement. I was delighted when later chapters elicited many fewer corrections and some firm praise.

My wife, Joan, became John's technician for a period of time. She enjoyed the work and certainly it helped my thesis work since I no longer had to spend long hours at night driving her to attend sick sheep on the mountainsides (in her capacity as a veterinarian). John was particularly kind in continuing to employ Joan after she suffered serious injuries and a slow recuperation after she was run down by a van in Bangor.

In a memorial volume, some of his early papers should be noted:

1. Harper and Sagar 1953. Some aspects of the ecology of buttercups in permanent grassland [started the whole study of plant population dynamics]
2. Harper 1957. The ecological significance of dormancy and its importance in weed control. [Set the stage for a huge number of papers on weed seed dormancy and germination. Still quoted extensively today in papers in weed science around the world]
3. Harper and I.H. McNaughton 1962. The comparative biology of closely related species living in the same area. VII. Interference between individuals in pure and mixed populations of *Papaver* species. [The first of many weed papers utilizing the De Wit replacement series]
4. Harper, Clatworthy, McNaughton and Sagar 1961. The evolution and ecology of closely related species living in the same area. Published in *Evolution*. [This was the most exciting Harperian paper published while I was in Bangor. It summarized the ideas generated in many of the PhD theses completed before and during that era in the Harper lab. It also caught the attention of animal ecologists around the world. When I talked with Dr Andrewartha at the NATO meeting in the Netherlands in 1970, he told me that this was the plant ecology paper that he esteemed most highly. He and Charles Birch were the leading animal ecologists of their generation]
5. Harper 1964. The nature and consequence of interference amongst plants. Invited paper for the XI International Congress of Genetics.

6. Harper, 1965. Establishment, Aggression, and Cohabitation in Weedy Species. In "The Genetics of Colonizing Species" [This paper caught the attention of famous American ecologists and geneticists; E.O. Wilson, G.L. Stebbins, E. Mayr, and H. Baker; all of whom asked questions afterwards. This meeting led to Harper being invited back to the USA on many subsequent occasions]

His PhD Thesis.

My notes confirm that G. Blackman, Professor of Botany at Oxford was one of the supervisors of Harper's PhD, and possibly the sole supervisor. Several of the papers published in the mid 1950s with Phyllis Landragin, J.W. Ludwig and others under the general title "The influence of the Environment on Seed and Seedling Mortality" apparently contained some material from the JLH PhD. The numbering of this series was peculiar. I was published in 1955, II in 1955, III in 1957, IV in 1955, VI in 1955, VII in 1958.

Other Scientists who worked with JLH

From Oxford

In addition to Sagar, McNaughton and Clatworthy, there was A. Patricia Chancellor, MSc student, English, wife of Dick Chancellor who was then or later became the head of the WRO (Weed Research Organisation) in Oxford. I don't know whether Pat Chancellor ever completed her degree but I was sent to meet her in Oxford in 1960 (by JLH) because she had done experiments on 5 *Rumex* species (see paper by Harper & Chancellor (1959) in *J. Ecol* 47: 679-695).

From Bangor

1. J.Trevor Williams, PhD 1962. Welsh. Did many experiments on his own before JLH arrived in Bangor in 1960. Co-author of "The behaviour of seeds in soil. I." along with Geoff Sagar.
2. Robin Govier, PhD student (I think) in the 1960s. See paper in *Nature* with JLH on angiospermous hemiparasites in 1965
3. Siny ter Borg. Visiting scientist in Bangor from about 1961-1963. Perhaps the world authority on hemiparasitic weeds.
4. Mohammed Obeid. PhD about 1967. Sudanese. See *Crop Science* 7: 527-532.
5. M.Khan, PhD 1964. John Foster (PhD with Sagar 1964) or Peter Brindley may remember more about this Pakistani man. His thesis was distinctive in that JLH, Tony Bradshaw and Geoff Sagar each supervised a third of it and each portion reflects the writing style of the supervisor!

Anecdotes

1. When John started his career in Bangor, one of his first purchases was a very large Jaguar. Unfortunately, the route from his home to the Agricultural Botany Department included a considerable distance along narrow roads bordered by stone “fences” and the walls of buildings in villages. John’s nickname soon became “The Oppressor” and Geoff Sagar began a routine of sitting on a window ledge above the parking space for the Jaguar. From this vantage point he provided a daily count of all the new “dimples” on the “Oppressorial Chariot”. It was not long before John traded in the Jaguar for a smaller vehicle with better sight lines for a rather height-challenged driver.
2. The weekly Departmental seminars were always entertaining. Virtually every one included an animated discussion between John and Tony Bradshaw. Postgraduate students soon learned that they would have a comparatively easy passage if they could provoke one of these interchanges at the beginning of the question period. We can never forget the sudden exclamation when John or Tony suddenly thought of a brilliant response to the other person’s argument, followed by leaps from desk top to desk top (over our heads) as they rushed to the blackboard to make their case.
3. Department tea/coffee breaks also provided an opportunity for discussion, learned and otherwise. One of the most interesting ones occurred when a dishwasher salesman from central England arrived with a new dishwasher, which was supposed to be used to clean dirty glassware but also to wash all the dishes associated with the tea break. The whole Department stood in the lab to watch the salesman fill the machine to full capacity, spend a few minutes extolling its virtues and then switch it on. There was a sudden smash of breaking glass as the machine chomped up every piece of glass inside it. The jaws of the faculty dropped, the students laughed uproariously, the dishwasher salesman realized that the bumpy ride to Bangor on the A5 had apparently disturbed the mechanisms of his machine and the tea lady had a smile on her face as she realized that her job was safe for the time being. In fact, she was still there many months later when I left Bangor.
4. Seminars and small classes were usually held in the Professor’s office. If the numbers were small, it was not unusual to find all of us squatting on the floor around the electric “fire” while John lit his pipe as he continued the discussion. If the discussion was lively, John occasionally forgot that his pipe was still lit and set fire to himself when he put it in his coat pocket.
5. Many people could join together to go over the plans for a new experiment. On one occasion, we were invited to inspect the new microtopography experiment that Trevor Williams and JLH had set up in a roof-top glasshouse. It included a truly phenomenal number of different treatments but had one fatal flaw. No replicates!

6. Another Trevor Williams experiment was a real blast. Trevor was studying seed germination in *Chenopodium album*. One night he put a solution in the refrigerator in the laboratory. The solution contained ether (in an imperfectly stoppered bottle) and when we arrived in the Department the next morning there was a layer of soot over everything in every room. When we entered the lab we found that the refrigerator had been blown several feet from the wall and was simply a burned out hulk. The clean up took several days, longer in the lab.

Post Retirement

Joan and I had a most pleasant visit with John and Borgny in East Devon in 2001. We did discuss the usual plant population topics but I also discovered that John had taken an interest in the eccentric clergyman, Sabine Baring Gould, the author of the words for "Onward Christian Soldiers". Rev. Gould had lived near the Harper residence and we were taken on a route along which he had taken bands of children in a march to Exeter Cathedral.

Richard Abbott

Undergraduate in Agricultural Botany, 1964 - 1967

I started as an undergraduate at Bangor in October 1964. After arriving at the railway station I took a taxi to the digs arranged for me by the university's accommodation service. They turned out to be no more than 250 m away! Bangor was a very small place and seemingly a million miles from London where I was from. It took me 18 months to adjust to living in this small, quirky town, and I very nearly didn't return after my first Christmas back in London. I can thank John Harper for making the difference and providing an attraction, which for me was equal to the joy and vibrancy of 'swinging' London in the mid-1960s.

My first encounter with John was at an interview held earlier that year for a place in his Department of Agricultural Botany. At school I had become interested in botany and thought a degree in Agri Bot might get me a job on leaving university. So I targeted the few universities that ran a degree in the subject. I had been to interview at some of these before coming to Bangor and before being interviewed by John. My overwhelming impression had been one of dullness and old-fashioness at these other places, and I did not expect much different from an interview at Bangor. But very different it was! As I remember it, John was sitting on the floor when I entered his office and remained in that position throughout most, if not all, of the next 20 minutes or so. I don't remember the details of our exchanges, but on leaving his room I felt transformed and excited about the possibility of studying in a university department run by this charismatic and inspirational figure. You didn't need much time in his presence to be switched on in this way.

The first lecture given to Agri Bot students at Bangor was delivered by John as part of his introductory course in plant population biology. The lecture was held at 5 pm - not the best time of day for an audience wanting to eat rather than be intellectually stimulated. But my memory of his first lecture has not faded over the past 45 years. He maintained an air of intensity and excitement throughout with an intention clearly to dazzle. His was no 'softly, softly' approach, but rather to deliver it right from the cutting edge. It was an electrifying performance by an academic at the top of his game. I was hooked and never missed one of his undergraduate lectures throughout the rest of my time at Bangor. At the end of the lecture he emphasised that he had provided only an outline of the topic in question. It was essential for us to read so as to fill in the gaps and keep up with the latest advances. If in the end of term exam we only gave back the content of his lectures, then we could not hope for more than a 50% pass mark. So, he set the bar high from day one and expected undergraduates to meet the intellectual challenge head on without spoon-feeding. It was brilliant, refreshing, and a wonderful way to start a course.

One of John's greatest innovations and challenges for Agri Bot undergraduates at Bangor was to make them undertake a research project in each of the first two years of the degree course, and two research projects in their final honours' year. These projects were run over the entire teaching year and were done instead of formal practical classes. No other department at Bangor (or possibly at any other British university at the time) adopted this approach to train undergraduates. From the outset,

therefore, we were encouraged to think and act like research students, and by the time that we graduated we were exceptionally well prepared for PhD research, if that is what we planned to do next. It was a privilege to be part of this setup - the only downside was that I always found the formal practical classes run by other departments to be excruciatingly boring compared with designing and running my own research project in Agri Bot. I have to admit that I skipped quite a few of those practicals.

By mid-1967, my final year as an undergrad at Bangor, John had been elected President of the British Ecological Society and was about to publish his highly influential and inspiring presidential address - 'A Darwinian approach to plant ecology'. A copy of the proofs of the paper was left in the Department library and undergraduates could read it in preparation for final examinations. It was a brilliant farewell to the group of Agri Bot students that were graduating that year. John had delivered his final contribution to our undergraduate education, and what a contribution it was!

In the years after graduating from Bangor, I did not see much of John. We met at a couple of conferences, and I attended one or two of his seminars at other universities. The last occasion I saw him in action was at the inaugural meeting of the European Society of Evolutionary Biology, held in Basle, Switzerland, in 1989, where he was the invited 'after conference dinner' speaker. I guess the organisers of the meeting and other invitees expected a quiet and relaxing end to a pleasant evening. But John, in rather mischievous fashion, took it on himself to stir things up a bit. He criticized many evolutionary biologists for being far too focused on gradual changes in allele frequencies within populations caused by slight changes in the environment. He argued that they should be more concerned with sudden and major changes in environment causing extinctions, large-scale genetic changes and speciation events. It seemed that he was promoting the punctuated equilibrium theory of macroevolution from the standpoint of an ecologist and this was not to the liking of many eminent population geneticists who attended the dinner. However, I knew from my time as an undergraduate, some 22 years before, that John never shrank from the opportunity of presenting an intellectual challenge and stirring things up in the process. It was great to see him at it again, and that he had lost none of his edge in doing it.

Richard Staniforth

Undergraduate in Botany, 1965 - 1968

John L. Harper was one of my undergraduate professors during my undergraduate years, 1965-1968. I had come from Hele's Grammar School, Exeter to do a BSc in Botany. The Department of Botany at UCNW joined with the Department of Agricultural Botany; if I remember correctly, this happened at the end of my first year when Prof. Harper assumed the Head of Department from Professor Paul Richards. The Department later changed its name and became the School of Plant Biology in my third year.

I grew up in the beautiful countryside of east Devon and was profoundly interested in plants and animals. I had received an excellent education as a former A-level GCE Botany student at Hele's School, but I had no idea how my good fortune of selecting Bangor for my undergraduate program would land me amongst so many talented and famous plant scientists who have shaped the rest of my life. Prof. Harper was the primary person to define what it is to use science and scientific knowledge to understand the natural history of plant life. He was the first pure scientist that I had encountered.

What do I remember about him? Well, the mental image is of a slightly built, energetic, smart, dapper gentleman with a receding hairline and a sparkle of mischievousness in his eyes. His pin-stripe suits, flower in the lapel and bow ties. I never saw him dressed or looking otherwise!

There were nine of us "Hons. Botany" students (Jerry Smith, Lynn Davis, Meryl Evans, Gill Branson, Alan Wood, John Williams, Reg Miller, Anne Bowerman and myself). In those days, we all attended the same Botany lectures; they were in units of several lectures per topic - each topic was presented by a different professor (Profs: JLH, Peter Greig-Smith, Bill Lacey, Paul Richards, Betsy Evans, Tony Bradshaw, Tony Smith, Geoff Sagar, Charles Dobbs, Norman Woodhouse are the names that I remember) - the system worked very well. Prof Harper's lectures were always fresh and stimulating, even so, I don't remember him ever using notes but my memory is not absolute on this. I do remember that on one occasion he did a double lecture on the spur of the moment when the next lecturer failed to appear due to a sudden illness. We were all impressed because he definitely did not have notes for this second lecture and it was just as full of details and even reference sources as a normal "prepared lecture". He would frequently have "Guest lectures", especially on Friday afternoons - I remember specifically Chris Marshall, Ralph Oxley, Barry Goldsmith and a visitor from Australia. Prof Harper promoted the introduction of new speakers and ideas and had a theme of trying to stimulate discussion and debate in all of these lectures. He encouraged us humble undergraduates to challenge even these eminent visitors with our thoughts.

We would not get away with much in Prof Harper's lectures! He knew who was attending and who wasn't! There was no roll call, yet if we missed one of his classes it would be "mentioned" that he had not seen us for a while during the next class!

Eventually, each of us were requested to have an audience with JLH regarding our future careers. "What do you plan to do now that you have finished at Bangor?" When it was my turn to answer his question, the answer was probably not what he was after. It was not career related - I wanted to fulfil a life-long dream of going to Canada. His answer, "That is very exciting - but what do you want to do in Botany?" The discussion led to possibilities of graduate studies in Canada. A contact was made with Paul Cavers at University of Western Ontario and I can say sincerely that I have not looked back a day since then. Between them, John and Paul have helped me shape my future in a way beyond my imagination. I have been very fortunate to have known Prof. Harper; and more recently, Paul Cavers. I am now a recently retired professor of Botany and Ecology after 33 years of teaching and research at the University of Winnipeg, Manitoba, Canada.

Sheila Cook Jones

Undergraduate in Agricultural Botany/Plant Biology, 1966–69

In 1968 JLH encouraged second-year undergraduates to get vacation employment relevant to plant biology. He put Ralph Oxley in charge of the project and made use of his contacts worldwide. Thus I spent my summer vacation working as a technician for Professor Paul Cavers at the University of Western Ontario, followed by extensive travel in the USA by Greyhound bus. Before I left on my travels, JLH summoned me to his study and gave me a list of colleagues throughout North America who could be called upon in an emergency. This thoughtful action was typical of his caring attitude towards his students. He was always interested in the progress of his students and in their subsequent careers.

'Throcking Night' was an end-of-term bash held at Pen-y-ffridd field station on 14 June 1969. The dress code was 'country yokel'. Everyone wondered whether JLH would attend and if so what he would wear. He arrived by car - the door opened and a sandaled foot and bare ankle appeared ... His costume was a sheet worn like a toga and he carried a sickle and a clog.

Janis Antonovics

Bradshaw student, 1963 – 1966

Visiting Scientist, 1979 – 1980

As an undergraduate at Cambridge University, I remember only two seminars in the School of Botany. One was by Cyril Darlington, the brilliant, temperamental, yet often misguided cytogeneticist, then the Professor of Botany at the University of Oxford. The other was by John Harper, Professor of Agricultural Botany at the University College of North Wales in Bangor. I had not heard of John Harper before, but I went to hear the talk because I had applied to do post-graduate work in his department, with Tony Bradshaw who was one of the few people in Britain studying natural selection and evolution in plant populations.

Cyril Darlington is known for many things, not least for the many controversies (both scientific and social) that he generated during his lifetime. Among his aphorisms perhaps the best known and most acerbic was his definition of ecology as “the pursuit of the incomprehensible by the incompetent”. After the tedious lectures on ecology given in the Botany School, I had rather come to share Darlington’s views on ecology (although I don’t think I was aware of them at the time) and it was this that led me to choose to specialize in Genetics and not Botany as I had originally planned for my final year at Cambridge.

It was in this final year that I heard John Harper’s lecture, and I still remember his description of those elegant experiments where seed germination could be correlated with soil heterogeneity, measured simply and elegantly by the variance in the height of a grid of needles dropped onto the soil surface. Here was a science that could be quantifiable, experimental, and where real generalizations (rather than habitat specific descriptions) were possible; it was almost like genetics!! Finally ecology was highly comprehensible, and John Harper was not just competent but inspirational.

In the autumn of 1963, I arrived in Bangor for post-graduate studies. Although John Harper was not my thesis adviser, several circumstances led me to interact with him much more than might have been the case otherwise. First, my adviser Tony Bradshaw was away on sabbatical leave in California that year. Second, I had been appointed as a Demonstrator, receiving both a higher stipend but also having to do undergraduate teaching, especially running practicals. Unlike the current situation with graduate teaching assistants in the United States, demonstrators were considered to be full members of staff (or faculty), and John Harper always treated me this way even though I was fresh out of undergraduate school and very naïve. I still remember being somewhat taken aback whenever he came to ask my opinion about something in the department!!

Professors were also heads of department, and could be highly autocratic, but John Harper was impressive in that before coming to any decisions, he would do “the rounds” and get as many opinions as he could about a situation before coming to any decisions, whether they were about the competency (or incompetency!) of a member

of the technical staff, or about whether to merge Agricultural Botany with the Botany Department (as eventually happened, with John Harper becoming the head of the School of Plant Biology). He had an unusual way of capturing one's attention. He would casually lean against a wall, whether in a hallway or office, and slowly, often while lighting or puffing on his pipe, slip down to crouch on his haunches, looking up inquisitively and piercingly from this humble position. With him in this position, it was impossible to escape the conversation, and while none of us ever dared ever to crouch down with him, we were always delighted to caricature this trait at the annual Christmas Party. "The Prof" always took it in very good spirits.

From my very first days at Bangor, I had a strong sense that "we" (the Agricultural Botany department and the people in it) were the best, the most original, and had the most fun. I am not sure how John Harper inspired this, but in some ways it was a simple reflection of who he was. His sprightly step and mischievous grin were always energizing. And he was brimming with ideas, enjoyed challenging us, teasing us, cajoling us to think and do better. He always had an enthusiasm for plants. It was not of the obsessive kind often demonstrated by systematists and ardent field ecologists, but more of a sense of wonder at what really was going on out there, and how we could find out, and what experiments could we bring to bear on the natural history that we observed so obviously. It was a small department, with only eight staff members (including two demonstrators), but it was a heady exciting time, with new approaches not just to research but also to teaching. In the practicals we used the research project approach entirely, abandoning formal exercises or descriptive microscopy. We saw this as innovative, ground breaking, and the students responded. John Harper also encouraged the post-graduate students to attend his advanced lectures and didn't see why formal education should end at the post-graduate level. I attended his lectures, and they were an eye-opener, with plant population biology coming to life as a dynamic and wide-open field of enquiry, especially so for me following the desultory plant ecology offerings I had received at Cambridge. And although he rarely joined us in the evenings and at the pub, John Harper's leadership had led us to know almost instinctively that we were doing original, exciting and ground breaking research.

He was mischievous, and liked to tease people. I was once very proud of being organized enough to put a list of things to do on the blackboard in my office. His response was typical: "Janis, that list is really impressive and I have been admiring it for a while, but I think it is perhaps more impressive how slowly it seems to be getting shorter". Later, in the late seventies, I was in Bangor as a visiting professor, and had just given a series of lectures on "Ecological Genetics", essentially plugging the importance of genetic variation in ecological processes. At the same time, together with Norma Fowler, I was setting up an experiment illustrating the use of "hexagonal fan designs" to study species interactions. In strolls John Harper, unannounced, into the greenhouse and asks us how things are going. I dutifully explain that we had deliberately chosen inbred horticultural varieties, and not natural populations, to set up our experiments so they could be done within one season and to minimize the error variation. John Harper then sets me up. "Do you mean that you are trying to keep these species as uniform as possible". I, of course, reaffirmed this enthusiastically, not seeing the trap; upon which not missing a beat, he continues: "You know Janis, I have just had a brilliant idea. We could start a new field of research where we actually keep the genotype completely constant, and only vary the

environment to see what happens. Maybe we should call it...hmmm... “Ecology?”. The greenhouses were several miles from the department, and I swear to this day that he had made the visit up there just to throw that line at me.

John Harper’s major research contribution was to bring population and experimental approaches to plant ecology, and for me this translated immediately into using plants as highly tractable organisms for experimental studies of evolution.

As a post-graduate student, I was studying genetic differentiation in metal tolerance of plants across a mine boundary. The fact that genetic differentiation was happening over such short distances was considered remarkable given that sympatric divergence and speciation had long been pooh-pooed by the influential evolutionary biologist Ernst Mayr (who perhaps had a point in birds, his special group). At several conferences, in typical academic fashion, cold water was thrown onto the idea; after all, if the plants were very long lived, selection for metal tolerance might be intermittent. The results could be explained by a simple accretion of long-lived tolerant genotypes. I had seen chlorotic and dying plants on the mine soil, so I set out to start to map individuals and record their life-spans. I remember being a bit discouraged by the prospect of getting anything at all out of this (especially in a three year Ph.D.), and it was John Harper’s enthusiasm about how rare but interesting such data really are, that made me continue. For me it opened up a whole window on the relationship between demography and selection, ecology and evolution, as well as leading me into further studies on plant demography (that continue to this day!).

John Harper championed the work of De Wit as a powerful way to experimentally dissect the complexity of plant competition. This complexity was intriguing, and it led me to encourage an undergraduate, Tony Seaton, to carry out experimental evolution with mixtures of *Drosophila* strains. The resulting paper (in *Heredity*) bears the stamp, and perhaps regrettably not the co-authorship, of John Harper. He absolutely detested the word “competition”, or at least the sloppy way in which the term had been used by ecologists; he much preferred the more neutral word “interference”. So he cajoled me into writing up the *Drosophila* study on the evolution of competitive ability without once using the word competition! It was a great lesson for me in how to avoid or by-pass controversial terminology. “Stress” was one of his other phobia-words, and like “competition” it continues to be used in horribly non-operational and imprecise ways by ecologists.

It is a wet day in North Wales, and we trek from the car into the middle of a flat cow pasture, riddled with dung patties (careful!) and thistles. It is hard to imagine a habitat that is less glamorous. John Harper gives nothing away to the weather. As usual he wears a bow tie, a tweed jacket, woollen trousers, smart brown shoes. This is anything but your muddy boot ecologist reciting the local species list, or worrying about podsolization. Yet as the rain pours down, he becomes animated when he notices that many of the thistles have a rust infection. What could this mean? How could this be investigated? What is the first experiment one would do? How might the information be useful? There is curiosity and enthusiasm, possibility and promise. And then tea.

John Ogden

Undergraduate in Agricultural Botany, 1960 – 1963

Masters student, 1963 – 1966

JLH student, 1966 – 1968

As far as I can work out, I went to Bangor as an undergraduate in 1960 and graduated BSc Hons in 1963. In that year I went to Guyana to do field work on ordination in the tropical forest areas first described by Paul Richards (near Moraballi Creek). Ordination was then a new technique, not yet applied in tropical rain forest. I returned to analyse and write up the data as an MSc thesis supervised by Peter Greig-Smith and Paul Richards in Botany - which was completed in 1966. I had done undergraduate courses in Agricultural Botany as part of the BSc, so John Harper must have recognised me hitching a lift (back to Yorkshire!) in front of the Botany Building in 1965 or 66. He stopped his Jaguar (probably the only one in Bangor at the time) and I hopped in. On the way to Penmaenmawr we chatted about my MSc project, and he said "when you've finished, why not come over to Agri Bot and do a PhD with me". It was as easy as that! So, I did my PhD work between 1966 and 1968, after which I came out to New Zealand (Massey University).

When John Harper supervised my PhD back in the 60's, it was perhaps the heyday of his work in population biology. I remember one particular PhD seminar session with a crowd including Phil Putwain, Janis Antonovics, Tony Bradshaw, Geoff Sagar and "JLH" all arguing about the role of selection vs gene-flow in ecotypic differentiation. That day largely determined my current attitude to the politically correct dogma of "eco-sourcing" plants for restoration projects: gene-flow and selection will soon sort out what genotypes survive in any location no-matter whence they come! In this, as in many other aspects of ecology, my approach was strongly influenced by John Harper and his team at Bangor. Field observation, backed by "agricultural" style experiments and Analysis of Variance, was then the way forwards. Once the approach and outline were determined, you let the student get on with it!

Although the Department of Agricultural Botany at Bangor was in those days a very "academic" group, it never-the-less maintained strong practical links with agriculture and horticulture. For example, John ran a course on agricultural plants and another on dealing with pasture maintenance. Always he stressed the fundamental concepts underpinning agricultural activities, and pointed out flaws in reasoning or gaps in understanding. He never presented science as a set of facts, rather as a series of questions.

There are many who will say, correctly I think, that John Harper was one of the leading ecologists of the twentieth century. He influenced many of us by his writings, which are models of clarity, perception and enthusiasm for his subject. I was fortunate to be also influenced by the person - John was a quietly supportive supervisor. He made sure I was properly supported with the technical staff and

equipment needed, then left me to get on with it for a couple of years. Whenever I saw him he flashed a big grin and asked about the work, quickly absorbing how it was going . I recall once, in the corridor, he became so engrossed in discussing my results that he gradually slid down the wall until he was sitting on the floor. I sat on the opposite window-sill, and the discussion continued for 20 minutes while people passed to-and-fro between us!

He liked and respected his students and the feeling was mutual. Although he frequently asked difficult questions, I never heard him 'put down' a student or embarrass one in public. He was clearly a great intellect, but also I think, a gentleman in the true sense. Years later he told me that, as he got older, he was really more interested in people than in plants! This, and his bow ties, set him apart from the general run of departmental heads, then and now.

Robert Naylor

JLH student, 1967 – 1970

“To begin at the beginning” (Dylan Thomas, Under Milk Wood), or, “how I came to know JLH”

In my final year at Cardiff University in 1966/67, I was entranced by reading some early JLH papers. We had an ‘exchange’ with the Department from Bangor at the University of Wales house in mid-Wales, Gregynog, where we had their lecturers for a week and they had ours. JLH gave what I came to regard later as a typical ‘performance’. I had already applied to do the MSc Ecology in Bangor, but this, my first exposure to ‘JLH-live’, confirmed my desire. This was the sort of ecology – ‘Harperian Ecology’ – that I wanted to do. Towards the end of that summer vacation, I arrived home late on a Friday from doing a double shift on my holiday job and my mother told me I had a call from Bangor, would I phone Prof Harper back! Panic – were there no places left on the course! But here was JLH phoning to ask whether I would be prepared to change to doing a PhD under his supervision – but I had to decide quickly because we needed to start early – like next week! Not a difficult decision.

Harper the character

JLH was a physically slight man, but with a large presence; a combination of twinkly eyes, a sleeveless pullover (we hadn’t invented the name ‘tank top’ yet), a pipe (in the early days) and of course the trademark bow tie. Always talking to someone. Always generous of his own time. If he thought you might benefit from talking to another member of staff or postgrad with different skills, he wouldn’t just tell you to see them – he would walk you along and introduce you and explain the scientific challenge.

Harper the scientist

JLH’s scientific legacy is immense. I would pick out the insistence on ditching the word ‘competition’ and replacing it with ‘interference’ to give a more neutral flavour to the interaction between organisms. However for me, the most significant is his desire to change the word ‘adaptation’ (with its use of the latin prefix *ad-*, meaning to or for and so implying purpose) to abaptation (with the latin prefix *ab-*, meaning by, with or from and so implying a result of). This predates Dawkins by some decades in challenging the common view that species and individuals ‘adapt **to** achieve something’ rather than realising that the species and the individual phenotype reflect the history of previous environmental exposure.

Harper the communicator

What grabbed my attention in both his lectures and papers was the prose, so different and clear from many of the lectures I endured and the turgid references I followed in the library. The perambulations across the podium, during which he appeared to be thinking aloud for our benefit, was entrancing. Many said they left the lecture having

learned a lot but not having taken any notes. But that is the point. The lecture was a performance which led you along a set of paths to the ‘eureka’ moment when it all made sense. I recognized that often what he observed was the importance of what did NOT happen. Now I realise this is like the artist – who draws the negative space around an object, or the musician who has to form the sounds in between the black dots on the staff. This clarity was something I tried to emulate.

Harper the egalitarian

The School of Plant Biology at Bangor was unlike any University Department I had experienced before. Far less hierarchical, much more sociable, especially in staff-student relations. The very idea of staff and students having coffee together in the public foyer was extremely novel in the 1960’s.

But these communal coffee times sometimes generated unusual situations. There would be a group of people in a scientific conversation with JLH, when he would lean against the wall, cross his ankles and then slide down the wall to sit cross-legged on the floor. So, what is the etiquette? Does one stay standing, so one literally looks down on this great scientist, or is one expected to join him in sitting on the floor like a pixies’ convention?

With JLH, this combination of intellect and egalitarianism sometimes led to other quandaries. The student men’s toilet in the basement had been turned into a lab and so all men used the old ‘staff toilet’ along the rear corridor on the ground floor. After coffee, just as one was having a nice quiet pee, in would walk JLH, join you at the urinal and start a conversation about the latest work Paul Cavers had been doing on weed populations in Canada. How does one carry on an intellectual conversation while doing up one’s fly? What is the protocol? Does one stay till JLH finishes or dash embarrassed back to the lab? Of course, one just kept the conversation going as long as one could.

Harper the legacy

What is left behind? Of course we have the scientific papers and ‘the book’. Of course the fond memories as exemplified in this volume. But there is more. Undoubtedly he did change the way people thought about plants, especially plant populations. He dared to ask questions of plant populations that a zoologist would ask of animal populations. He found ways of answering them. He presented the answers in a way that changed our views and made plants worthy of study, and indeed easier to study than animal populations because they didn’t move (at least not in the same way). Seed production and clutch size, seed dispersal, mark and recapture, seed dormancy, seed-soil interactions, seedling recruitment, predicting weed populations, space occupation, effects of neighbours, interference, self-thinning in populations, effects of predators, dynamics of plant populations, perturbation, population evolution; all these (and many others) were in the ambit of Harperian ecology. His work opened up a new field. After ‘The Population Biology of Plants’ was published in 1977, the area received increasing attention.

This attention came not just from UK. One of the exciting things about the School of Plant Biology at Bangor was its international dimension. Young scientists

from around the world came to work with JLH and now form a global diaspora. It is telling that the British Ecological Society annual prize for the best paper by a young author is the John L Harper prize. JLH developed the international reputation of Bangor and he was supported enthusiastically by all the other members of staff in their various disciplines who similarly fostered the ideal of knowledge and excellence in research for all who could take advantage of it, from wherever in the world they came. Many friendships forged at Bangor have survived. This is a worthy legacy of John Lander Harper, and I think he would have valued that.

John Sheldon

JLH student, 1968 – 1971

On completing my PhD under JLH I soon left academic life. While this did not totally divorce me from his pioneering approach to aspects of ecology, I did not retain the same post-Bangor awe that many of his students had for him. In fact it was Tony Bradshaw who was to feature more in my developing career than John. In that regard I regretted missing Tony's recent death, again because I had little contact with the academic world and have been out of touch with it for many years.

As a consequence my memories of JLH are slight and are more of his mildly eccentric character than anything else. For example, his habit, at that time, of tucking his pullover inside his trousers- something that a student coming from London in the late 60's thought was most odd but I'm afraid very memorable as a consequence! He also wore a dickie bow. Well, that was real professor attire.

Then there was his foul pipe of Balkan tobacco. Very incorrect now but something of a habit that some of us learnt to imitate. However, it was an expensive tobacco. I still recall him on all fours scrabbling to gather up the contents of a dropped tin of the stuff from the floor of the mess room at Pen Y Ffridd. He was human after all.

Then there were those anxious sessions in his office discussing the progress of the research programme. His sitting on the floor with his back resting against the wall and my sitting in a chair looking down at him. Something I accepted as being Professorial behaviour.

There were other things of course. For example, his diplomatic handling of a spite between an Indian and a Pakistani student. I also recall him moving through the morning tea break that was held in the entrance hall of the School of Plant Biology, talking to all, students and staff alike, with equal ease. Although some of us were more interested in the second year girl undergraduates than having any extension of intellectual discussions. But where did the lady with the tea trolley come from? She was always there handing out cups but there was no kitchen in the building! Never thought about that before, although as a very fresh young Englishman experiencing Wales for the first time I remember her for being very 'Welsh'.

I only recall one of his lectures and that was more for the circumstances than the content. It was at a conference. He was surprised to see me there. But I remember it because someone had stolen or cleared away his script. It did not throw him one bit - he gave a flawless lecture which ended on the minute. It began with a quote from his favourite Greek poet, or so he said, something I learnt we all needed if we were to make our name through public lectures, and ended with a flourish of Harperian theory to great acclaim. And, my claim to fame at that conference was that I was one of his PhD students!

What was so interesting at Bangor was the gravitation of students from all over the world to work with JLH. My contact with foreign students before this had

been negligible- remember it was the late 60's. I became friendly with many of them, some of whom I have remained in touch with. They came from all over, Kenya, Mexico, Israel, India, Pakistan etc. It was my first cultural exchange period and I loved it. There were also the Brits. Those who never finished their PhD's because graduate life in Bangor was so really good - those mountains and those girls!

My time at Bangor was quite wonderful. JLH got me an external examiner who didn't really seem to know much about half of my thesis which made life easier at the time. I left more mature, with a PhD, a wife-to-be and memories that have helped mould my life. JLH was the reason why I went to Bangor, not that I knew of him before I went, and was the foundation of my future career in ecology and then the wider issues of the environment but out with academia. As I said my memories of JLH are scant but in many ways he taught me what I needed. I will always be grateful for that.

Carol Turley

Undergraduate in Marine Botany & Botany, early 1970s

I was a student at UCNW, Bangor studying Marine Biology/Botany General Honours in the early 1970's so wasn't a full time student in Plant Biology. But I do remember that he ran an exciting department. As a student one had the impression that there was a collection of innovative and internationally renown scientists under the Plant Biology umbrella, inspired by John's exacting leadership. It is only after one has been through the system and experienced academic life in the 21st Century that one realises what a privilege it was to be educated during that period, where student numbers were sufficiently low that every student was known by the great, the good and the Gods and mattered. In John's department all the students mattered.

Anthony “Henry” Ford

Undergraduate in Plant Biology 1969-1972, JLH student 1973-79

When I look back over the notes from those years it is striking how much of my conscious time was spent in the foyer having tea. Everything happened at tea time. No matter who you were all status was forgotten at tea, everything was discussed at tea. As an undergraduate it was impressive to see the Profs, naturally elevated in our minds above the normal run of mortals, passing the time of day with tea ladies, cleaners, visiting profs, and postgraduates. You didn't have to talk to them, but just to see them on a regular basis, having tea and biscuits and talking with everyone else made them approachable, even if as an undergraduate, I was far too impressed to have anything to say to them. The foyer, lined with squares of veneers of exotic woods, was large and without chairs, which meant there was no favourite seat, no professorial corner, no obvious hierarchy, and you could be discussing the availability of Millipore filters with Ieuean, a character in charge of the stores, and turn round and catch comments on thinning laws or the weather, both subjects of equal impenetrability for us beginners in North Wales.

I had applied to Bangor for Marine Biology, but quickly applied to change courses after a particularly unnecessary lecture by a renowned endocrinologist who, proud of his ability to produce any organ from a live quail in 15 seconds, proceeded to demonstrate his talent on an unsuspecting bird at the instigation of his undergraduate audience. In contrast, Geoff Sagar presented his first year lectures and practicals like a lawyer, giving us facts and letting us draw our conclusions. The experiments were the simplest, e.g. an afternoon extracting embryos from *Capsella bursa-pastoris*, but the questions on the control of development, unnervingly profound. His presentations were typical of John Harper's Department: I couldn't have made a more exciting change.

At the end of my second year Professor Harper (“Prof”) made an unusual suggestion: that we should all take a year off and go and work somewhere else. We thought he was trying to get rid of the final year and have a sabbatical as there were only 12 of us. Three of us got jobs, one in Tromso, Norway, one in Stuttgart, Germany, and I went to Dehra Dun in India. When I returned, as a final year student, I began to appreciate just how special the department was.

After a summer spent repairing war-damaged herbarium specimens in the Natural History Museum, I thought that a PhD in the taxonomy of Iridaceae based on epidermal characteristics was possibly not for me, and, like so many other students, a casual phone call to the department landed me a PhD with John on the population biology of Dandelions. Things were more informal in those days. There was no structure, and Prof let me read for 5 months before suggesting over tea that I selected my field sites. I then spent 4 happy years amongst the sheep and cows of the North Welsh mountains and roadsides counting dandelions. Interactions were informal, and usually conducted at tea, preferably, if it was sunny, on the little wall outside the entrance overlooking the A5 to Holyhead.

He was away much of the time, and perhaps for some supervisors this would be a disadvantage, but with Prof it made little difference because he had gathered together a department of such inquisitive minds and such a group of PhD students, postdocs and visiting lecturers that there was no disadvantage in his absence. One visiting professor on sabbatical had come from the Leningrad Botanical congress and said that he was a little taken aback to find that the Russians had heard of three Botanists outside of Russia, Harper, Richards and Greig-Smith, and that all three were in Bangor. There were two other professors as well, and a collection of remarkable lecturers.

Prof was very indulgent. He was whisking a newly arrived PhD student around the labs and, coming across my piano for the first time, he told the student, barely losing his flow but with that characteristic impish grin, that I was experimenting with new electrophoretic equipment. He was perfectly happy to show visiting professors round on Sundays, when I and several other members of Plant Biology rehearsed the Mediaeval and Renaissance Wind Band in the foyer. He encouraged our ecological discussion groups in the upstairs room in the Kings Arms in the High Street. I wrapped my yellow post office Morris Minor van in blue ribbon for a Christmas present for a friend to pick up before I went on expedition, and Prof never complained that it sat in the car park over the holidays. I remember it was suggested that year that the finals paper should have a compulsory question on Land Rover Maintenance as so many plant biologists spent time under the expedition vehicle.

Prof almost became friends with my Shetland sheep dog, Spacedog. He didn't mind when I came on as the Caped Supervisor at one of the Plant Biology Christmas Pantos where we also did a dance of the clonal plants, branching here and there. When as part of a university-wide strategy, the department was instructed to hold staff student committees to air grievances and to discuss the way forward, we gathered in the lecture room with Prof, and after a brief inconsequential discussion, went off to tea. After all, we had had staff-student meetings every day in the foyer: we had no need to formalise.

My only regret: that Prof did not have as much influence on ecology in Britain as he did world wide. And my final memory? Prof, in the lecture theatre in Plant Biology, at the start of a discussion, climbing on to a stool, and squatting against the wall, hands round his knees, bow tie, tweed jacket, exchanging crisp comments with Greig Smith and Richards to a laughing and eager group of friends who were the members of Plant Biology.

Ad Huiskes

JLH student, 1974 – 1977

'It's always windy, and you get sand in your shoes'

My coming to Bangor stemmed from the wish to escape national service, rather than from a wish to work in the Mecca of plant population biology. The late Professor Dingeman Bakker, founder and first Head of the Plant Ecology Department in the University of Groningen, where I did one of my M.Sc. projects and worked as a demonstrator, knew of my reluctance to spend 18 months in the army. As one was exempt from national service when living abroad, he promised to try and get me out of the country in time, and 'would I like to go to Wales for a while?' as he knew somebody there. Lo and behold, after a few months I got a Ph.D. position in Bangor with a grant from the Council of Europe. Unfortunately this came too late to escape the draft, but the Ph.D. position as well as the grant could be reserved. One and a half years later, I handed in my uniform, ballistics tables, and slide rules (computers were unknown in the Dutch field artillery in those days). Four days thereafter we spent our first night in a cottage ('Ty Gwyn') in Menai Bridge.

Two months earlier I had been granted a fortnight's leave and my wife Loekie and I spent that period in Wales, visiting Bangor, searching for accommodation, trying to pronounce place names comprising mainly consonants, such as Amlwch, and gazing at the rugged beauty of Snowdonia, quite alien to people from the Low Countries who never went any further abroad than Luxemburg. We visited the School and had tea with John and Borgny in Dwygyfylchi. John gave me some homework for the next two months: (1) thinking about what I wanted to do for my Ph.D. and (2) reading 'Evolution in Changing Environments' by Richard Levins and 'The Theory of Island Biogeography' by McArthur and Wilson.

The contents of these books were completely new to me. Population studies on plants were rare in the Netherlands in those days (early 1970's). I was educated in, what John used to call, the '-etums' and '-alia' (taxonomical entities ('syntaxa') in the hierarchical classification of plant communities). As John explained to me shortly after my arrival, 'Between eastern and western Europe there is an iron curtain and between Britain and the Continent a brown blanket' (Braun - Blanquet, the father of plant sociology).

Although John was right about the prominent role of vegetation science in Dutch plant ecology, it was not the main line of research in the Plant Ecology Department of the University of Groningen. Dingeman Bakker came to Groningen from the Biology Department of the 'Rijksdienst voor de Yselmeerpolders', the government agency that reclaimed the polders in the former Zuiderzee in the centre of the country. This Biology Department did mainly applied science. Bakker himself was especially known for developing a method to quickly dehydrate the waterlogged soils of the newly reclaimed polders by sowing reed (*Phragmites australis*) to increase evapotranspiration. For sowing the vast areas of newly reclaimed land he used a helicopter, in the 1950's a rare bird in our country. Because of Bakker's background, the research of the Plant Ecology Department had also a rather pragmatic

character with a strong experimental approach. Thus, although I had basic knowledge about the ‘-etums’ and ‘-alia’, I never specialized in plant sociology.

As I had promised John to read the two books he suggested, I made a serious effort to understand their contents, and failed miserably. Firstly I lacked the necessary mathematical and statistical background as mathematics and statistics were optional undergraduate courses and I had chosen palaeontology instead. Moreover Darwin and his evolution theory were taught in an optional philosophy course on late Friday afternoons, not the best time to attract an audience and certainly not me, having a girlfriend living 200 kilometres away from Groningen. And finally in Groningen populations were studied by the geneticists, not populations of plants but of fruit flies; these people were based on the other side of the botanical garden and hence seldom encountered by us plant ecologists.

Much later I understood that my education in ecology was rather classical and based on the work of Schimper and Warming, whose work was dismissed in John’s ‘Darwinian approach to Plant Ecology’ as a changeling child. Schimper published on physiological ecology, identifying connections between temperature and moisture on the one hand, and plant growth on the other. Warming, known for his publications on ecological phytogeography, published also an introduction on the study of plant communities. Precisely the two lines of research of the Plant Ecology Department in Groningen: experimental autecology, the main topic, studying individuals of single species (Schimper), and synecology, studying communities (Warming).

So, with experience in experimental ecology and a reasonable knowledge about the coastal environment, I settled in one of the labs in the downstairs corridor of the School, sharing with Andrew Watkinson and Jim Noble. I had no plan for my research project, I had not understood the contents of the two books, and I did not know how to tell John about this. Andrew and Jim told me about their research in the dunes of Newborough Warren on Anglesey. I had read about this place in Derek Ranwell’s book ‘Ecology of Salt Marshes and Sand Dunes’, published shortly before my M.Sc. exam. If John would allow me to work there too, I might be able to do research on the deterioration of Marram Grass (*Ammophila arenaria*) stands in older dune areas: A considerable problem in The Netherlands, as dunes are the main sea defence along large parts of the Dutch coast and erosion is a main headache for the Public Works Department.

Meanwhile John supplied me with some reprints on his work and that of his students, one of which was a reprint of his paper on ‘A Darwinian approach to Plant Ecology’ and by reading this I found out that plant population biology was not as alien as I thought it to be in the first place. It had a descriptive side (plant demography) and John gave examples of this from the work of Carl Olaf Tamm and Janis Antonovics. The paper also mentioned the work of Yoda on the relationship between plant density and individual plant size and the behaviour of two plant species in competition with each other: the famous work of C.T. De Wit described in his publication ‘On Competition’. This was familiar stuff! Plant population biology was apparently not a science solely based on matrix algebra but comprised also the description of fluxes in plant numbers, and experiments on competitive and density dependent processes.

By reading 'A Darwinian Approach' I came to understand that plant ecology was pivoting upon populations. Plant communities consisted of species populations and the rate of success of these populations determined the relative abundance of the various species in a community and hence determined the aspect of the vegetation. And size and reproductive success of individuals were related to plant density and competitive processes, in other words to the numbers in and the size of the population. 'A Darwinian Approach to Plant Ecology' provided me with a new insight in plant ecology, which I cherish ever since.

In my discussions with Andrew and Jim I quickly noted that Jim's Sand Sedge (*Carex arenaria*) showed a phasic development similar to what I suspected to be present in Marram Grass. In the case of Marram Grass these phases ran parallel with the maturation of the dune system from the mobile 'yellow' dune ridges near the sea, to the stabilized 'grey' dune ridges further inland. This phasic development was first described by A.S. Watt on Bracken (*Pteridium aquilinum*) apparently Jim's pet publication.

I quickly put my work plan together: Demographic studies on Marram Grass in the various stages of the dune system, in order to describe the decrease in vigour along the successional gradient and experiments in the field and in the greenhouse to explore the possible causes. Were these edaphic causes such as the diminishing sand accretion inland, or a combination of edaphic and biotic causes, such as changes in soil properties, or just biotic causes such as competition with other species that became established in the more mature dune area, or the occurrence of pests and plagues, absent in the outer dunes?

With this plan I went upstairs to John. He listened to me, gave me some more reprints and told me that we should go to Aber farm, to see the field where a number of his Ph.D.'s worked or had been working. Thereafter we would finalize our discussion. Ten days and a visit to Aber later I told him that I still wanted to work on Marram Grass in Newborough Warren. John grumbled a bit, and wondered why three of his Ph.D. students in a row decided to work in the dunes and not in the field at Aber, as the dunes were not a pleasant place to work: 'It was always windy there, and you got sand in your shoes.' He stuck to this creed and never came out with me to the dunes.

Once we agreed on my research plan, albeit reluctantly on John's part, I received full support from him. We had weekly discussions on my project, e.g. on how to do demographic studies, and José Sarukhan's work was frequently referred to. Although I admired José's 'Italian motorbikes' (John's description), presenting the life cycles of Buttercup (*Ranunculus*) species, I did not see how these diagrams could be used for Marram Grass and I stuck to the presentation used by Carl Olof Tamm. But I did construct a pantograph, using a photograph in one of José's papers for a blueprint, in order to produce maps of the Marram tillers in the permanent plots I had marked out. By the time I came to John with my first field results, he told me to carry on, but to write to him frequently about the progress of my work as he was leaving for the south of France, to write The Book.

Eventually my Ph.D. research went well, although I did not find the cause for the decrease in vitality of Marram Grass. Years later Wim Van der Putten, continuing the work on Marram, where I left off, discovered that the cause was the maturation of the soil, especially the development of populations of soil pathogens.

The importance of my stay in Bangor was not just the production of a thesis and five publications in scientific journals. It was the growing feeling that I was part of a worldwide network. Scientists from everywhere in the world were visiting the School, or rather John, and, as a Ph.D. student, one had every opportunity to talk to them. Many of these visitors were former students of John and authors of papers John had given me to read. The Plant Ecology Department in Groningen was, as I understood by now, very parochial. We had seldom a visitor from abroad and if there was one it was often somebody from a neighbouring country such as Germany. Not only John's guidance showed me that plant ecology comprised more than what I was taught during my M.Sc. period, but also the visits from scientists from e.g. the US provided vistas on the wide landscape of plant ecology, not just the 'Ökosystemforschung' (Ecosystem research) the way it was presented in the book of Ellenberg, which as late as 1973 mentioned only autecology and synecology, with descriptive studies on the composition of ecosystems and experimental studies on the functioning of individual components as prime objectives. I became, as one of the lecturers in my former university once said, a 'Harperian'.

In my last year in Bangor a group of Dutch plant ecologists came to learn more about the study of plant populations. I never found out whether this visit was because of or despite my presence in Bangor, but the start of plant population ecology in The Netherlands coincided with my return from Bangor. I was approached with awe, because I knew the Master personally. Needless to say I subsequently spent many years studying population dynamics of plants, in this particular case, salt marsh plants.

John was the teacher, the professor. A friendly professor, no doubt about that, but those two qualifications should not be mixed up, as I came to understand the hard way. In the egalitarian environment of the Dutch universities hierarchy was a thing of the past and student participation in management teams of University Departments and Faculty Boards was ubiquitous. In my last year in Bangor there were three Dutchmen in the School: Madeleine van Mansfeld, Jan van Groenendael and myself. We came to the conclusion that the 1960's movement for a more democratic management in universities in Europe had somehow bypassed the School. We thought it high time to introduce student participation. So, we mustered the other Ph.D. students and requested a discussion with John. It never came to that: John held a monologue pointing out that we were his students, not his equals, and he was holding the reins. I never saw John this way: he was adamant as well as furious, although the latter was not so obvious, being English. But it re-established the hierarchy that existed before the attempt to establish participation.

A few weeks after my viva, John ended a letter to me with the sentence: 'by the way, you should stop 'Prof'-ing me.' To me, this was the best proof that I now belonged to that league of extraordinary gentlemen and -women: the plant population ecologists.

Richard Mack

Visiting Scientist, 1973 – 1974, 1983

I arrived in Bangor in September 1973. I had known about John's research since my graduate school days (which had ended only two years earlier) and was fascinated by the elegant simplicity of his experiments and the powerful lessons they so often delivered.

I was not prepared, however, for JLH's extraordinary ability to hatch ideas – the ease with which he could generate research questions, which were like so many sparks off a grindstone for me or as he once said in his whimsical manner “Good ideas are two for a penny”. For him, good (often great) ideas came effortlessly – any one of which could often form the basis for a career's worth of productive research.

Some of his ideas were generated at tea time (morning and afternoon) when most everyone in Plant Biology gathered in the building's foyer. Unless on a train to or from London (a train compartment was one of his favourite places for thinking and writing), JLH was in attendance and by no means did he gravitate to a favourite clutch of members of staff or people in his own lab group. He freely circulated and seemed to engage each group in the foyer with a few minutes of lively banter that had the effect of directing the conversation before he was off to another group he spied in the room.

Other ideas were produced one-on-one in those wonderful meetings we had in his office that were for me a tutorial that I simultaneously relished and dreaded; relished because they always produced clear ideas and directions for my research and dreaded because I was certain I would illustrate with another blatant example what I didn't know about ecology. No matter – JLH never acted as if someone would know some topic beforehand; he was far too enraptured in providing a discourse on the subject at hand in amazing detail, such as the standard pounds per acre at which rape seed was sown in English fields.

I am sure for many of us, though, the most remarkable interactions with John and the ones I would have least expected before arriving at UCNW were the conversations that developed ad hoc in the hallway outside his office. The conversation would begin with an unexpected encounter, my brief statement on some result I had from my experiments or his comment on a paper that had just crossed his desk. That encounter could develop into a 30-45 minute conversation. It would start with our standing and talking to each other, but John would inevitably move so that his back was against wall and then in due course he would slide down to a squatting position with his back still against the wall. Of course, his new stance meant that very quickly I had to assume the same position on the opposite hallway wall; I was not about to stand and talk down to JLH! I imagine no one else did either in these hallway encounters. I think that anyone coming up the stairs towards John's office, who saw someone squatting against a wall, would automatically know whom he or she was talking to, even if they saw or heard nothing else. John punctuated his conversations by repeatedly re-lighting his pipe. The moment he spent lighting his

pipe was your best opportunity to insert your comments, and you could often see from his expression as he puffed and puffed to get his pipe ignited that he was absorbing your comments and preparing his response.

John loved to exchange ideas, even better if you had initially a different point of view. He would mischievously quiz your rationale, provide his own counterpoint and having effectively destroyed your argument, playfully move on to the next point with a twinkle in his eye. All this exchange was without the faintest sign of one-upsmanship or superiority. These conversations were obviously fun for John and better yet if he could generate a real debate.

All these interactions were marvellous forms of instruction and wise counsel. In the final analysis, John was our extraordinary teacher, and we were his incredibly fortunate pupils.

Andrew Watkinson

JLH student, 1972 – 1975

I was first introduced to the work of John Harper in 1971 by Mike Chadwick in my second year as an undergraduate at the University of York. The work in question was John's *A Darwinian Approach to Plant Ecology*, published just a few years earlier. Enthused, I went on to read more of John's papers on resource partitioning and life cycle strategies. It was his paper with John Ogden on the reproductive strategy of *Senecio vulgaris* that was the source of inspiration for my third year project on the effect of competition on resource partitioning in mixtures of *Aegopodium podagraria*, *Agropyron repens* and *Rumex crispus*, three plants that were weeds in my parent's garden.

John's work at that time opened up a rich vein of potential opportunities for those interested in applying population principles to plants. There was only one place to which I applied for a PhD place and that was to work with John at Bangor. He had suggested that I work on the population dynamics of perennial weeds in pastures, but I was keen to explore how population size was determined in plants and eventually settled on a study of the population dynamics of *Vulpia fasciculata* in sand dunes. I can remember him strongly discouraging me from this (the dunes were Greig-Smith territory) but he let me follow my interests. How much easier that was for supervisors in those days. I did, however, work in my spare time with Ian Soane on clonal variation in *Ranunculus repens*, a plant much closer to John's heart.

John was a constant source of intellectual stimulation, but I can only recollect him visiting my field site on the one occasion. The infectious enthusiasm and penetrating intellect that he displayed in long discussions in the corridor, where he would crouch on the floor, or in his gloomy office were a source of constant inspiration. There were also the seminars with the regular battles between John and Peter Greig-Smith, amidst clouds of tobacco pipe smoke. What a contrast the atmosphere in seminars was in those days, in more ways than one.

John always regarded *Vulpia* as a very odd plant. He found it perplexing that it had no seed bank; he regarded the presence of a seed bank and high fecundity to be among the distinguishing features of annual plants. In contrast, *Vulpia* had no long-lived seed bank and produced an average of only two seeds per plant; he considered it more like an animal. During much of the time when I wrote up my thesis John was on sabbatical in Montpellier to write his book on the *Population Biology of Plants* and he was essentially out of contact. This was long before the days of email; Geoff Sagar was ably deputised and helped me with the writing up of my thesis until John returned. Being able to read draft chapters of John's book long before they were published more than compensated for his absence, as they provided an encyclopaedic knowledge of plant population biology. I remember how delighted he was with the life cycle diagrams and the use of colour at the beginning of each chapter.

John provided a hugely stimulating environment in which to work, with numerous visitors passing through the department or indeed staying there. It was early

in my career at the University of East Anglia that I arranged seminar trips to Mexico and the United States, making use of the international contacts to whom I had been introduced by John – Jose Sarukhan, Dick Mack and Fakhri Bazzaz to name but three. John’s enthusiasm for debate, whether internally with Peter Greig-Smith or externally with Phil Grime, also had an enormous influence on me, as did his incisive use of language – “abaptation” comes to mind.

John’s influence was not restricted to academic matters. I remember him introducing me to Poulenc’s organ concerto and discussing poetry with him. He introduced me to the joy of growing eucalypts and to Kerner von Marilaun’s *Natural History of Plants* (1890-91) in six volumes, a hugely stimulating treatise on plants. And his introduction to the Russian botanist Tikhon Rabotnov led me to taking my first flight in a Comet 4 and a holiday in Moscow, partly supported by NERC, with of course a visit to Rabotnov at Moscow State University. Russia was seldom visited at that time and a £79 package holiday allowed me to stay in the Hotel Metropol in Moscow and the Grand Europe Hotel in Leningrad, two hotels that would now be far too expensive for a student.

I have often thought about John’s influence on my life and career. His Presidential Address to the British Ecological Society was pivotal in drawing me into the field of plant population biology. I always recognised though that John’s interest in plant population biology was somewhat different to my own and I found it difficult to follow his encouragements to take a neighbourhood approach to plant populations. I briefly flirted with one or two experiments but found the insight they provided limited and not worth the huge practical effort. I think this was because my primary interest in plant population biology stemmed from animal population ecologists (as an undergraduate I was taught by Mark Williamson, John Lawton and John Beddington) and how the interaction of density-independent and density-dependent factors determined population size. John’s interest, in contrast, was primarily Darwinian. It was the fate of individuals in a population that interested him most. That was why a neighbourhood approach to plant populations was the logical path for him to follow and where we parted company.

John’s influence was apparent again at the BES symposium on Plant Population Biology that I organised with Tony Davy and Mike Hutchings in Sussex in 1988. He gave the summing-up talk and made a spirited attack on the approach that a number of us were taking. I think he saw us getting lost in the detail of species interactions (I spoke on hemiparasitism at the meeting) and losing sight of the bigger picture. I thought this somewhat ironical at the time as taking the neighbourhood approach was partly responsible. Although I did not realise it at the time, this was the start of a long journey away from plant population ecology. It was shortly afterwards that I started working on increasingly interdisciplinary projects, first with geese and their use of a range of coastal habitats, followed by the influence of farmer behaviour and agricultural land use on farmland birds and the impacts of climate change on the coast. This eventually led to me becoming Director of the Tyndall Centre for Climate Change Research and recently Director of Living With Environmental Change (LWEC).

This might appear at first sight to be a long way from John's influence but you would be mistaken. The chairman of LWEC is the Earl of Selborne who worked with John on committees that helped shape the agricultural research landscape. I remember as a PhD student that John was frequently away from Bangor at meetings in London, which is exactly what I do now. I remember also that he used to stay at the Farmer's Club, where I have just become a member; his influence continues.

It is difficult to know how to close a short memoir like this. In writing chapters or papers I always remember that John would always replace my last sentence with something much more thoughtful or insightful. He is fondly remembered and I owe him a huge debt of gratitude.

Katie Sellek

Undergraduate in Plant Biology, 1973-1976

Research Assistant, 1976-1979

I first knew John Harper when I was an undergraduate at Bangor and took 'Prof Harper's' module in my final year. I remember that it wasn't that easy just to take notes, as John Harper's lectures were almost a performance – engaging, thought provoking and sometimes funny. I would come out of the lecture room thinking – 'now that's what attending lectures should be all about'. Later, after I became his research assistant, we had a chat about his lecture style. He admitted that he became so engrossed in his subject that he wasn't always aware of what he was actually doing. He had been highly amused when, after a series of lectures in the States, one of the students had given a 'thank you' speech in the Harper style. When, during the speech the student climbed onto a stool and perched there – rather like a gnome, Prof said – he realised that that was what he had been doing during his series of lectures, blissfully unaware of his unusual perch on the stool.

My first year as John Harper's research assistant was taken up with the publication of his book 'The Population Dynamics of Plants'. It was the culmination of a long-term ambition and even in my naivety and youth I realised the importance of this project to John. He was immensely tolerant of my early, rather clumsy attempts at checking the proofs (I apologise now for all those mistakes I let slip through in the first edition!). During my three years as his research assistant I never knew quite what my next job would be as Prof was constantly coming up with new ideas that he would want to test. The leaf demography of flax, the sexual dimorphism of seaweed or the growth pattern of corals - John would enthusiastically explain his latest idea and then let me loose on the practicalities. Despite my inexperience, he always had confidence that I would come up with the goods, and was always tolerant when I was unsure of how to carry out his plans, or when an experiment came to an untimely end (the corals were a bit of a nightmare). All this thinking was done whilst producing a fog of pipe smoke in his room and drinking copious amounts of liquid in his oversize mug. I was never quite sure when I went into his room whether he was actually there or not!

The other main memory I have of those years was John's immense pleasure and pride he got from his students, past and present. He had an enormous network of people he had worked with and with whom he had produced papers. He enjoyed news of success from his old students and he loved to interact with his current students. He sometimes found it hard to fit in all he wanted to do – when he became a Fellow of the Royal Society, he claimed it meant Fees Raised Substantially. I think it was one of his students who said (to his amusement) it also meant Fortunately Rarely Seen. One of the main opportunities for getting some time with him was to interrupt his progress from the car park to his room. This often meant that a group of postgraduate students could be found crouching in the corridor causing an obstacle to undergraduate students rushing to lectures. We would always start by standing in a group around Prof and then slowly, Prof would lean against the wall, pipe in hand and

go into a thoughtful crouch. Slowly we would all follow him until there was a group of us perched around him, in earnest discussion.

John Harper had a profound influence on my life – he inspired in me a love of plants and ecology, he gave me my first job and, when in my late twenties I was stuck in a dead-end job, it was John who recommended that I take a masters at Wye College. This was the start of a career in landscape ecology and management in which, nearly 25 years later, I am still involved. I consider myself extraordinarily lucky to have come within the orbit of John Harper, no ordinary man.

Jan van Groenendael

Masters Student, 1976 – 1978

It is late November 1976, Bangor, North Wales. The students of the MSc course in Ecology are waiting in a stone cold lecture theatre, many of them from tropical countries with their coats still on and wearing gloves. Autumn cold came early and for the school of Plant Biology heating was costly. Then Harper came in and started to lecture. His famous “Population Biology of Plants” is about to be published and his lectures gave us students a much appreciated preview of what was to become a landmark in Ecology. Harper, tweed jacket, beau tie, delivers his lectures with his usual speed and energy inspiring his audience with his new ideas.

Among the students Madeleine and myself, from the Catholic University of Nijmegen, The Netherlands, both of us students of Westhoff, then the leading vegetation scientist in The Netherlands, an outspoken representative of the traditional continental school of vegetation science based on the ideas of Braun-Blanquet: Plants can be ordered in a hierarchical system of vegetation units recognisable through a more or less fixed species composition.

Suddenly in the middle of a lecture on plant competition detailing how neighbours interact and compete for above- and below-ground resources he suddenly exclaimed looking straight at us, the only continentals in his audience, “plants couldn’t care less whether they are standing in a meter squared or a hectare squared” referring to the Braun-Blanquet method of recording species composition from relevés of one or a few metres squared.

Later on in the hall, leaning with his back against the radiator to sooth his backache, drinking as usual a very large mug of tea, he made sure that he had hit the mark, showing his amused contempt about so much ignorance among traditional continental botanists.

And again a few days later, same lecture theatre, talking about the role of dispersal, he described the continental preference of description, spitting out the terms then en vogue ornithochory, zoochory, anemochory, aquachory etc to describe transport of seeds by birds, by animals, by wind, by water. Then adding with a sardonic grin: “once they have described it they think that they have understood it”. Again looking us straight in the eyes making sure that we got the message.

This all to illustrate his uncanny knack for revealing weaknesses in the paradigms of others scientists and his capacity to directly address the right persons even in a large audience, which I saw him do on several later occasions during meetings and conferences. He enjoyed debate and was a master of the art himself, challenging others whenever he could.

Many years later we found ourselves with our four young kids in his garden in the village with the unspeakable name of Dwygifylchi. While the two of us marvelled at his beautiful Victorian house covered under beautiful pink roses and his flower

garden with a lawn tennis court annex, a large splash made clear that meanwhile our youngest had landed himself in the pond. Trying to get out, he destroyed the carefully kept border lining the pond, much to our embarrassment. Harper without blinking an eye, after the rescue handed him to Borgny and continued his lecture on why agriculture was such an important inspiration for plant ecologists, while standing in the middle of the specialities he was cultivating with great success in his vegetable garden.

One of the issues that Harper raised and stayed with me till today were his ideas on clonal plants, first presented in 1978 at a conference at Wageningen University, The Netherlands. A whole research agenda then emerged large enough for a whole new generation of plant ecologists. Next month the ninth bi-annual clonal plant workshop will take place at the University of Leuven, Belgium. Every edition of this workshop, which started with a few researchers in 1990 in The Netherlands, has produced a book on a clonal plant topic and attracted an increasing number of participants. In 1997 when convening in Bangor Harper was handed a copy of the third book dedicated to the man who started it all. Now in 2009 his legacy still inspires us. That will keep his memory alive much in the sense that he would have wanted it: critical scientific debate spiced with sharp humour. However, a match to his debating skills will be hard to find, unless in our memories of him.

Christine M Happey - Wood

Lecturer in Limnology 1968–1998 and Phycology 1970-1998

I first encountered John Harper in May 1968 when I went for my first job interview for a lecturer in the newly formed School of Plant Biology. I was in the final stages of my Ph.D in Bristol. The informality and friendliness of the Department struck me immediately when I arrived. It was such a contrast from Bristol, when in those days I was referred to as Miss Happey by most of the staff when I was an undergraduate. As anyone can imagine, at the age of 23 I was in a rather anxious state and completely unpractised in the skill of interviews when I arrived in the School about 9:30 AM. I was rather taken aback when one of the first things that Prof Harper (as obviously he was to me then) stated 'he did not really believe in employing women'! The result of that comment was my heart sank and I thought 'well that's goodbye to my chance'. I must have relaxed and probably interviewed better.

He was charming but with the sharpest of brains and a tremendously diverse ecological knowledge, which probed deeply into one's own field of ecology, in my case Limnology. I can still remember some of his questions – 'who do you think has contributed most in the field of Limnology? My answers were honest – G. Evelyn Hutchinson, a population and evolutionary biology colleague of his at Yale, and John W. G. Lund, FRS at the Freshwater Biological Association Research Labs on Windemere. Again, this was someone JLH knew through the Royal Society.

In his reorganisation of the departments of Agricultural Botany and Botany to form the School of Plant Biology, JLH's aim was to create a Plant Biology department with the best and most diverse coverage in all aspects of Plant Ecology and Plant Population Dynamics in Universities within the U.K. Hence, he was looking for a Limnologist. As he put it - 'apart from the Freshwater Biological Association Research Labs at Windemere, where better in the U.K. to study Limnology than Bangor?' This is true as there is such a tremendous range of lake types in the vicinity, from Cwms (tarns in English) to Piedmont lakes (elongate deep glacial lakes) in Snowdonia to the very eutrophic small lakes of Anglesey, probably kettle lakes. He knew far more Limnology than I ever anticipated!

I spent the rest of the morning meeting most of the staff and then having lunch with several of them. The day was not yet over! The afternoon was filled with guided tours of the two field stations, Pen y Ffridd and Treborth Gardens. It was one of the most exhausting days of my life, but throughout he was bouncy and enthusiastic, continually oozing with information and ideas. I was absolutely exhausted at the end of the afternoon and to my amazement he offered me the job subject to a second formal interview with members of the University Council and Administration. He certainly had stamina and energy!

JLH seemed to have an endless web of contacts including the media. The ITV channel Granada got in touch with him as they were searching for a female biologist to feature in a programme that they used to run in the 1970s discussing and explaining

peculiar biological phenomena, such as 'how is it that penguins feet don't freeze as they inhabit the Antarctic?' They wanted a woman on the panel as the group involved was entirely male. So he approached me and I agreed to go to Granada TV in Manchester for a screen test. Needless to say I was not selected for the programme - Dr Miriam Stoppard was. But it does illustrate how widely he was known even outside the scientific world, and the surprising things that he might ask his academic staff to do.

John Harper was extremely helpful a few weeks later in June 1968, before the interview in the Council Chamber. The environs were awesome: both the sheer size of the Council Chamber and the length of the table. I felt I needed a pair of binoculars to see who was at the far end of it! He gave me an outline of who would be there such as the Principal, Sir Charles Evans – the doctor on the triumphant conquest of Everest in 1953 and other local dignitaries. Thoughtful as ever, he warned me that one aged, eccentric lady (Lady Artemis Jones) on the Interviewing Committee was extremely deaf and used an ear trumpet, so I would need to talk directly at her.

Once that ordeal was over, it was straight back to the department. John quizzed me on what specialist equipment I would require, introduced me to the Chief Technician to find out what was there already in the School, and then the same procedure for reference books for the Library. I had not prepared lists of either equipment or reference books----- so I had to do it on the spot and promised to let him have further details in the near future. He insisted that I should have my thesis submitted by October 1st 1968 when I was to start in Plant Biology. So it was nose to the grindstone, flat out, when I got back to Bristol as in those days one had to write the thesis in long hand and then allow time both for a typist to produce the manuscript, and then further time for any typing corrections. No PCs then, allowing one to write the text directly and correct it as you went along! All the diagrams and graphs had to be hand drawn and then reproduced photographically.

Once I started in the School of Plant Biology I never knew what would be round the next corner - JLH had the instinctive ability to ask the unexpected of one! The first surprise came when he said as the newest recruit to the department my first responsibility, apart from preparing a lecture course in Limnology, was to organise 'The Departmental Christmas Party'! This was egalitarian, including academic staff, postgraduates, research assistants, technicians and final year undergraduates. The party was amazingly informal and enjoyable – a function so unlike any function in the University I had recently left! Parties in later years included 'Throcking Night' in 1969 and the best dress I could muster was a yellow and black African shirt and matching shorts on loan from Tim Allen, a post-graduate Phycologist who had recently been to Africa. At a later fancy dress do my husband and I went as Cinderella and Prince Charming – me, as the prince and him in drag! That sort of frivolity would never have occurred in Bristol!

In summer 1968 JLH had visited Ireland – Eire, and was most impressed by the varied and contrasting ecology of sites there, such as the Burren on the West Coast and the raised peat bogs in the central regions on the country. Quite out of the blue and chatting at coffee time and he turned to me and said 'as you, Christine, are the youngest member of staff, organise the End of First Year Field Course in Ireland. It should include outstanding sites of ecological interest, some Agricultural Research

Stations and perhaps the Guinness Brewery in Dublin at the end of the trip before you get the Ferry back from Dun Laoghaire to Holyhead'. So, never having set foot in Eire, and after much homework, I organised the Tour for about 32 students and four members of staff. It was great fun, but try getting 32 students plus staff out of the tasting session at the Guinness Brewery to catch a ferry!

JLH ran a superb academic department with a very friendly atmosphere. Students, post graduates and academic staff all had coffee and tea together with no hierarchy – frequently he would be crouched on the floor with his pipe, chatting to any one of the cross section of Plant Biologists present. He had great respect for anyone's achievements, promotions and the like. The same applied on the social side too, such as weddings and births. To give an example: on my return to work, four weeks after the birth of Matthew my elder son and, eighteen months later, six weeks after my second son Robert arrived, the staff were assembled in the seminar room, he made a short speech and then there were glasses of sherry all round. This happened when there was anything he thought worthy of celebration.

Throughout my time under his leadership of Plant Biology, he was always encouraging one to apply for research money, and as he was on the NERC Council and Research Grants Committees. He knew what went on at meetings and in my case he felt that the outcome of one Committee was unjust so he told me about it. Evidently at one meeting someone had mentioned that I was pregnant at the time (Comments like that would not be tolerated now!). He told me about it and asked me what I was going to do. Inside, I was fuming, but I replied that I would reapply immediately for the next application deadline. He must have talked to the Chairman of the NERC Aquatic Sciences Research Committee – sticking up for his staff. A few months afterwards, following an Annual Scientific Meeting of Freshwater Biological Association, I travelled on a London-to-Scotland train as far as Yorkshire with the Chairman of this NERC Research Committee, who was going to Scotland. I was grilled intensely by the Chairman about my intentions for future work and aquatic research after I had had my family. Someone, JLH no less, had been working behind the scenes, convincing him to take an application from an expectant, potential Mum seriously. The outcome was that my next application was successful and I got a research grant. There's professorial back up for you!

At coffee time several years later, he enquired how my research was going, and complimented me on getting further research monies, so I reminded him of his comment at my interview in 1968 - that he did not believe in employing women! He replied that he could never have said that – and if he had said that - he must have been wrong and I had educated him! Although a brilliant man – he had the grace and humility to admit that some of his entrenched beliefs of the past had been proven incorrect.

Sabbatical leave was encouraged by JLH to give staff extended experience in other research labs, learn new techniques or just broaden one's scientific nous. One of his mature post-graduate students from CSIRO, Rangelands Research, Australia suggested that I might be interested in looking into the problems of algal blooms in irrigation water that were being experienced in rice agriculture in New South Wales. As a result of JLH's encouragement, the Wood Family spent the academic year 1980 – 1 in New South Wales. I was based in Griffith, the CSIRO Centre for Irrigation

Research for much of the time. I was studying the irrigation water and subsequent algal blooms in rice paddy fields grown under different regimes of water management and rice sowing techniques.

What an experience for all four of the family! We (my husband and the two boys, aged 6 – 8 years old) worked/were at school for 10 months of the year away from Bangor and then spent the last two months touring the eastern part of Australia and camping. We managed to include Adelaide to Ayers Rock and Alice Springs; Melbourne, right round the south eastern coast to Sydney via Canberra; then finally Sydney, Brisbane to Cairns, the Great Barrier Reef and Atherton Table Lands back through the centre of Queensland and finally finishing at the International Botanical Congress of 1982 in Sydney. What an experience for all four of us! This, all thanks to the backing and encouragement of a forward thinking John L Harper, who took a chance by appointing a woman to Plant Biology in 1968, completely contrary to his belief at that time. It was not just me who benefited from the sabbatical year but the whole family too. We were all able to experience the excitement of world wide travel to the Southern Hemisphere, learn about greatly contrasting cultures and environments, make many new friends and these all thanks to JLH through my sabbatical leave.

Whilst we were away in Australia, British Universities were undergoing great changes and early retirements were being encouraged for financial reasons. This was when JLH decided to take early retirement from the Headship of Plant Biology. However, he remained in the department in a research capacity. There was considerable 'house moving' within Plant Biology. JLH moved from his professorial offices and research accommodation on the first floor into my ground floor office, and his research team occupied my research lab and two adjacent rooms. I transferred to the first floor and into Prof Greig Smith's room (he had similarly retired) and the adjacent room for my research. The School of Plant Biology then had the late Prof Geoff Sagar at the helm and JLH continued to attract many and varied visiting research associates from all over the world. Thus the impact of his early retirement was minimal for the subsequent seven years.

However, finally in 1997, a sad day for Plant Science in Bangor, John Harper decided to move to Devon to be near his family. The *Harperian era* of Plant Biology came to an end. Coincidentally, the School of Plant Biology was no more as it merged with Biochemistry and Animal Biology to form the much larger School of Biological Sciences (SBS). The almost family atmosphere of Plant Biology evaporated! The whole aura of Biological Teaching and Research changed. Class sizes increased greatly and research areas were created, grouping together academic staff with similar broad interests. Gone were the days of informal gatherings integrating all academic, research, and final year students for coffee and tea. Staff and postgraduates now took coffee either in the Brambell Building or the Memorial Building, depending on where they were housed for offices and research or where they might be teaching at the time and, unlike previously, undergraduates were not included. Communication between individuals became more difficult – SBS was perhaps more efficient in some ways, but this was a case of 'large is not always better!'.

John Harper had a tremendous impact on Plant Biology and Ecology during his 37 years in Bangor. That applied right across the cross-section of students, and

academic, technical, secretarial and domestic staff. I think everyone missed him in some way when he departed from North Wales. He led such a dynamic existence, and had an expansive knowledge in a great range of ecological fields. He was frequently coming up with novel ideas and suggestions, always kept one on one's toes, yet retained an impish sense of humour – twisting one's tail whenever he could! I enjoyed and profited much from the 30 years of his presence during my 39 years on the academic staff at Bangor. I learnt extensively from his expertise as a great ecological and evolutionary Biologist. His ability to communicate either orally or in the written word was beyond my comprehension, particularly in my early days in Bangor. Even now, I still try to avoid using some his *bêtes noires* such as the words 'adapt' and 'adaptation' or any expression implying teleology!

How can one sum him up??? 'A one off' – or to quote, with modifications, from Robert Whittington in the late 19th Century of Sir Thomas Moore 'A man for all Plants' and Shakespeare, Richard II 'My plant, my plants, my kingdom for Plant Populations'.

Roy Turkington

JLH student, 1972– 1975

Visiting Scientist, 1985-1986

Initially I went to Bangor to do an MSc with Peter Greig-Smith. The MSc program was designed as 6 months of intensive lectures and the writing of eight major essays, followed by a 6-month project. By the middle of February, after only 4 –5 months, I was very unhappy in Bangor. The winter was long, wet, and cold, training facilities for track and field were awful, and I was away from home for the first time. So, looking ahead to the 6 month project, I went to chat with Prof. Greig-Smith. I told him about my proposed project and asked permission to do the work at the Loughgall Plant Breeding Station in Northern Ireland. This way I could get back home and still complete my Masters. He had no objection but said that the decision ultimately would not be his. *“If you want to do this project”* he said *“you would be supervised by John Harper, and he may not agree to long-distance supervision. Why don’t you pop down the hallway and speak with him”*? Dutifully I went down the hall to find his name on a door.

I didn’t know the man at all other than that he had taught a few lectures in a course I had taken. I was able to get in right away. This was to be a 5 min chat to give me permission to get out of Bangor, but it ended up being a 2 hr chat. At the end of 2 hrs I had agreed to stay in Bangor for another 2½ yrs and to transfer to a Ph.D. program! I left his office and burst into tears. What was I doing; what had just happened? I didn’t like this place so why was I agreeing to stay even longer? I will spare the details other than to say that I did stay, I did my PhD and had the privilege of working under a man with an incredible intellect, a great thinker and a truly great scholar. He and I got along very well; I always assumed we got along well because John’s version of the English language was very different from my pure Northern Irish version of the language – for about the first 6 months, I don’t think either of us understood a word that the other said!

I did my Ph.D. research in the old pasture at the University farm at Aber. One day John had arranged to come out to the field at Aber to see my plots. As usual, I was down on my knees in the field counting or monitoring clovers. The field was not always easily accessible. The short way was often muddy, and the long way involved climbing a few fences. As I was counting my clovers I still recall thinking about whether the Prof would come the short route or the long route, and if he would be wearing his bow tie. It wasn’t long until I spotted him coming over the first fence on the long route. I pretended not to see him approach and kept my head in the clover, but kept my sideward glances at his progress. That morning the farm manager had put 4 cows in the adjacent field that John was now crossing. I chuckled as the cows slowly galloped across the field to investigate this visitor to their pasture. With a wave of his hand he chased them off, and with quite some skill he negotiated the higher second fence into my field – bow tie and shiny leather shoes intact. We had a great chat in the field for about 20 mins, when he abruptly said *“I must race along now or I will be late for tea time.”*

In all my time in Bangor I can only recall two occasions when John was quite speechless. The first was in early January 1974. I had gone home to Northern Ireland for Christmas and stayed for perhaps a little longer than I should have. Nevertheless, while at home I had done quite a lot of work. Prof had asked Phyl Harris, his secretary, to write to me and ask me to get back to Bangor. When I returned, the Prof came down to the lab to see me. He was, as usual, very gracious, but certainly implied that I had been away too long and that I should begin on some preliminary analysis of the species distributions in the field. I said nothing, opened my filing cabinet drawer, and handed the Prof a stack of 14 maps that included a topographic map of the field at Aber, and distribution maps of all the major species. When I explained to him what they were, he said nothing, accepted the maps, and left the lab. About 2 mins later, Phyl came rushing into the lab and asked “*what have you done to my Prof?*” I was a little puzzled and explained to her what had just happened. She smiled with that incredible row of shiny white teeth and said “*Prof came through my office at the speed of sound, and muttered, “Roy has one up on me now” and disappeared into his office.*” About an hour later he came back to the lab, gave me a great pat on the back, and took me across to the Student Union Building for coffee!

The second time I left John speechless was in 1986. I was on sabbatical in Bangor for a year and there was an occasion when a number of us were standing in the lab chatting about all sorts of interests and adventures when John began to talk about Glyndbourne in the south of England. Glyndbourne is an annual opera, that is posh and poncy and very expensive. It is very difficult to obtain tickets but it helps if you have a cut glass accent. John was an ardent supporter of the Arts and he had tickets for Glyndbourne. He obviously noticed my glazed look because I hadn’t a clue what he was talking about – who was Glynn Burns? He sounded like a Welsh Scotsman to me. “*Really Roy*” John said, “*you have been in my lab for 4 yrs, and you really must broaden your horizons. You must get some art, literature and music into your soul.*”

I looked at him with an inner chuckle. I knew what I was going to say, and horrified that I was actually going to say it. After all, when I was a student, John was the boss; now that we were colleagues, I could say as I please – right? “*Listen Prof*” I said. “*Imagine yourself standing on an open hillside on the Isle of Man. It’s early June and it’s early in the morning. There is a light mist hovering around and it’s a little thicker towards the top of the hills. The sun is up and there is gorse and heather for as far as the eye can see. The tranquillity of the moment is broken by a low whine in the distance, which rapidly becomes louder as the trained ear, the trained musical ear, allows you to identify a Formula I, 750cc Honda. And behind it another, and another, and another. These musical masterpieces rip past your vantage point, changing gears as they scream to reach speeds approaching 180mph. In a moment these maestros are gone, and you settle back to your quietness until the music of a Yamaha or a Suzuki interrupts the silence. That, Professor Harper, is music!*” As I noted the look of absolute horror on his face, I couldn’t help continuing, “*these guys who sit on a platform plucking strings, tinkling cymbals, and beating drums only think they are playing music.*” This was one of the rare occasions I can recall where John was speechless. No doubt he was pondering how he could have produced such a cultural boor!

Allan Pentecost

Visiting Scientist, 1975 - 1978

John was head of department while I was a postdoctoral assistant to Dr. Wood, working on phytoplankton ecophysiology. He often attended the coffee breaks in the foyer and it was in these circumstances that I sometimes spoke to him as he was easily approachable. On one occasion he spoke to me, soon after I had given a departmental seminar on the CO₂ fluxes to algae living on surfaces. Instead of walking up to discuss the subject, he began to squat down near the foyer floor, and then proceeded, coffee in hand, to sit down directly on the floor with splayed legs and back against the wall. This in itself was quite disconcerting. 'You know' he said, 'I think you confused the large with the small, - diffusion processes operate over small distances, yet you were making large scale estimates of flux without taking this into consideration'.

He left me bewildered, since I had not taken John to be a man interested in such topics. I was not sure he was right, but on further reflection, he had picked up on the fact that I had not explained the process properly, and as a result, listeners had arrived at a different conclusion than that I had intended. It was a useful lesson, and it was gratifying to learn that at least one member of the audience had been paying careful attention! Stimulated by one of his own population dynamics lectures, I looked briefly at the growth and reproduction dynamics of lichens and gave a seminar on the topic. It was a nervous postdoc who gave that talk, but he made me feel at ease by laughing at the first slide showing a lichen taking off in a rocket! He gave me much encouragement afterwards, and a paper on the topic was published later in the *Lichenologist*. This article remains, I think the only one written upon the partition of resources in lichens to date and it was through his inspiration that it was written.

Charles Ellis

Manager of the Pen Y Ffridd field station, 1967 – 1997

My contacts with 'Prof' were obviously of a different nature from those of his research students and colleagues, and so I have contented myself with writing of an interview I had with him a month or so after arriving to take over at PyF

"When I applied for and was appointed to the job of running the Research Station at Pen y Ffridd I left a post with the Ministry of Agriculture's Advisory Service in which I had worked for some 15 years. During that time I had worked on MAFF's horticultural research stations; in its London HQ, and also done advisory work in different parts of the country. In each capacity I had worked as a member of a team, benefiting from the best of facilities and admin back up. The first few weeks at PyF were an eye opener. It all seemed shambolic by comparison.

About three weeks after my arrival, I had a phone call from Prof's secretary asking me to go to department for a 'chat' with him. After the usual pleasantries about how I and the family were settling down he suddenly asked me what I thought of Pen y Ffridd and its facilities. Compared to what I had been used to in MAFF I had to reply "Not much". He didn't seem too taken aback by my reply, and relighting his pipe for the umpteenth time he said "Go on". And as I outlined some of the problems which I thought came from working practices, poor facilities and even staff demarcation lines he sat, smoked and listened. When I finished he said "What can be done". I took my chance and suggested how I thought some of the things I had mentioned could be improved, and answered the questions he brought up.

After listening, there was a pause whilst he relight his pipe again, then he said "I think you should do what you think is necessary. All I ask is that there are no surprises. No embarrassments with any other department using Pen y Ffridd. I'll give you a free hand, just keep me aware of what you are doing"

And he was as good as his word. I was allowed to develop PyF as I thought fit, without let or hindrance, and spent 30 happy years doing so. When it was necessary to seek capital assistance for major works i.e. glasshouse replacement, an improved water supply or whatever, we would talk about it at length. Invariably he could point to improvements to my own plans, but always in a way that made it look as though he wasn't doing so. And then he would back my request. Some time later when we started the 'Horticultural Training Scheme' on the station he backed it enthusiastically.

Until he retired he supported me absolutely, always ready with advice if asked for. The freedom and encouragement he gave me was phenomenal. I can't believe that too many people in his position would have done likewise. That I think was the measure of the man. As a final note. After I moved from the house at PyF to our cottage in Llanfairpwll, I set about making a garden from the two acre bramble patch surrounding the cottage. Our meetings from then on invariably were about our respective plant collections, along with the exchange of much material from our gardens.

John R. Porter

Undergraduate in Plant Biology, 1973 - 1976

Sagar and Harper student, 1977 – 1980

I first saw John Harper in the autumn of 1973 when he turned up in a first year biology class at UCNW Bangor with a box of Cornflakes and read out from the side of the box the energy content of the crispy breakfast cereal therein. He then rambled on about the energy needed to produce a portion of breakfast and thus introduced the idea of life-cycle energy analysis to students who had never heard of this topic. It was the power of the man and his ability to strike an intellectual match in the brain of young biologists that was one of his very great skills. Thirty years later I used the idea in a textbook on crop physiology. That first year biology class at Bangor was a turning point in my life. I had gone there after a highly non-descript attempt at becoming a medical doctor to study psychology. However, listening to the lectures of John Harper, Geoff Sagar and others made me take the brave step of standing nervously outside Geoff Sagar's office in the summer of 1974 asking whether I could change to study agricultural botany. He said 'sure' in that nut-brown voice that he had and so I was allowed to move to the School of Plant Biology for my undergraduate (BSc) studies.

We had John Harper (Professor Harper in those days!) for an introductory series of lectures in population biology. This was before he wrote 'The Gospel According to St John' (aka 'The Population Biology of Plants') but it is easy to see that his ideas for such a book were already forming in his head. He started his undergraduate lecture series in a very personal way by talking about his wife Borgny – such an exotic Scandinavian name – and how her family had been more successful in an evolutionary sense than the Harpers had been. This was because they had transmitted more genetic material into the succeeding generations via being more fertile and surviving longer – perhaps because of the long, cold and dark Norwegian winters that encourage procreation and also impose a strong selection pressure. From this introduction it was a short path to 'The Origin of Species' and particularly Chapter 3. This, maintained Professor Harper, was the only ecological text that it was necessary to read because it is where Darwin writes about the survival and fecundity of numbers of organisms in a population sense. I dutifully went out and bought and *read* the whole of Darwin's rather long-winded and to be honest, slightly tedious, tome.

John Harper was impossible to take notes from because one was captivated by the delivery and performance of his lectures. I remember at a later BES meeting where he was both the session chair and first speaker and, so, had to introduce himself – he did this by introducing the first speaker 'who was instantly recognisable by virtue of his corolla' – i.e. the bowtie that he always wore. Later, when I got to know him better, I asked him about his undergraduate teaching style. He was quite deliberate in his view that you do not spoon-feed young undergraduates, as is the unfortunate tendency today, but to get the best out of them, you left them with more questions than answers. His mannerisms; the tapping of his pipe with a match, the quick twirl

when he was really ‘on fire’, the opening of his palms to make a point, his squatting down with his back against a wall at coffee time in Plant Biology – all these were loved and imitated by us undergraduates and meant that you could not take your eyes off him – he had that quality that in the realm of films and moving pictures they refer to as ‘star’.

John Harper was also a wonderful botanist of the old-school; I remember him drawing the seed structure of a shepherds-purse (the latter day *Arabidopsis*) and being surrounded by students who were held captivated by showing them that the placental habit was a brilliant example of parallel evolution between higher plants and animals and that one of the functions of sex was to clean the genome of viruses. As undergraduates, such lateral, curve-ball, thinking about evolutionary processes was stimulating. John Harper was not really a theoretician in the line of the mathematical ecologists of the 1970s and 80s but he had a fantastic eye and talent for well designed experimental studies. His office door was adorned with a banner ‘The Empiricist’ and he was most proud of what he referred to as ‘The Cemetery Experiment’. This was later published in the Journal of Ecology with Williams and Sagar and concerned soil micro-topology and seed germination. In the experiment they measured soil surface micro-topology by an ingenious quantitative method involving thin vertical rods and then looked at the correlation between soil surface roughness and seedling establishment. He co-wrote a brilliant review of the shapes and sizes of seeds and also described Jose Sarukhan’s model of the life-cycle of *Ranunculus* species as resembling a motor-cycle with the small wheel describing sexual reproduction and the large wheel describing vegetative repro... whoops – vegetative propagation. Such vivid images were how John Harper told his memorable evolutionary stories.

I will not write so much on being a PhD or post-doc with John Harper, as I am sure others will so do. But, the School of Plant Biology at UCNW in the mid-to-late 1970s was the Mecca for plant ecology *par excellence* in the world. The professors’ corridor on the first floor housed Paul Richards whose volume on the ‘Tropical Rain Forest’ was a classic, then Peter Greig-Smith, the inventor of pattern analysis and great contributor to the development of plant sociology and, of course, John Harper. The intellectual buzz in the place was electric and people visited from all over the world. John Harper’s view was that if you had the funds, you were welcome. This meant that often six, sometimes eight, MSc and PhD students and post-docs were crammed into rooms, designed for two or three inhabitants, but it really was the place to be.

My final meeting with John was just before I moved to Copenhagen in the early 1990s, when John and I served on the Board of Silwood Park’s Population Biology Unit. He said to me that he was glad to have another plant population biologist on the Board that he chaired and of which I was a very junior member. During these meetings with the *glitterati* of UK population biology, I was often reminded of a comment that both Jim White and Fhakri Bazzaz made to me at different times (Fhakri made the comment at a small dinner in Madrid and Jim, who was a great observer of academic ‘form’ remarked in his rich Dublin brogue), ‘Of all the ecologists around, John Harper is the cleverest’ and I am sure that all who remember and treasure his influence will agree with their perception. He was the cleverest person I have ever met, perhaps slightly one-eyed in his view of ecology but enormously courteous and kind to students and PhDs alike. I am sure he was a

fearsome opponent both scientifically and politically and there were 'schisms' in British plant ecology in those years that may still remain to this day. However, we who met him and learned 'Harperian' ecology from him (the ramets of his genet!) were greatly privileged.

Ros Preston

Departmental secretary, 1977-1980

I would like to say what a wonderful man JLH was to work for. He gave me a free rein which gave me a lot of confidence. I did seem to spend a lot of time 'hunting him down' usually after tea. Needless to say I would find him crouched in a corridor talking to one of his students and would have to gently extricate him for an urgent phone call. He also turned a blind eye to my extra-curricular activity of typing theses for students. I don't think I have ever met a more dapper person. I felt I had the best job in the world; meeting visiting lecturers and graduates from all over the world, interacting with students, and working for such an eminent professor.

Someone mentioned him drinking red Campari. He made me try it once and I thought it tasted like medicine; I haven't met anyone since who drinks it (maybe I've led a sheltered life).

Jonathan Silvertown

Maynard Smith student, 1977 – 1979

I was neither a student of JLH's nor an official visitor of any kind, but I rode the train to Bangor like every other aspiring plant population ecologist in the 1970s and would like to offer a couple of memories.

My first encounter with JLH was as an undergraduate at Sussex when we were set to read the paper 'The behaviour of seeds in soil' by Harper, Williams & Sagar (one that John later nominated his favourite). I recall that it puzzled me as I couldn't see what the point of the very eccentric treatments was. They seemed so arbitrary. Pressing things into soil, placing glass on the soil surface and so on. Later as a postgraduate, when I got down on my stomach to take a 'Plant's eye view' (another Harperism) of chalk grassland, I finally understood the point of the paper. I understood why the very arbitrariness of the treatments only stood to make the point more strongly that seeds are very sensitive to their microenvironment. Anything you do to them will affect germination.

Later, I defended my thesis in a viva with JLH and JMS (John Maynard Smith). It should have been an intimidating experience and I entered JMS' office wearing my new Harris Tweed jacket and corduroy trousers (this was 1979) with some trepidation. Thankfully, John & John had made up their minds already and they told me immediately that I had passed, "so now we will just talk about the science." They seated me in the most comfortable chair in the room from which low vantage point I witnessed the two old friends spar with each other, with occasional asides for my benefit. I must have said something myself, but I cannot recall what.

A little later I was again the beneficiary of JLH's generosity when I sent him the manuscript of my book "Introduction to Plant Population Ecology". Despite the fact that, as he put it, 'you are competing with my big book' (The 1977 magnum opus), he sent me comments on the manuscript. He explained his own generosity as being an example of "selection on memes", because of course my book was infused with the Harperian perspective, although I was careful not to plagiarize! (In those days it was frowned upon).

Yan Linhart

Visiting scientist 1978-1979

I first met John in 1965, when he came to the University of California, Berkeley to give a public lecture. His presentation was one of several within the framework of a seminal conference on the Genetics of Colonizing Species. This conference was organized by HG Baker and GL Stebbins, and led to the publication of a book by the same title.

At the time, I had completed a Masters degree and was working as a forester. I was considering returning to school to obtain a PhD. I wanted to study genetics and evolution, but I also wanted to incorporate some ecology into my work, though I was unsure about whether this was possible. In those days, it seemed to me that plant ecology was a pretty dull subject with its focus on cartography and static descriptions of plant assemblages.

Along came John, and his lecture was a wonderful eye-opener: it turned out that plant ecology *could* be experimental, and that if one formulated the right sorts of questions, one could get glimpses of the interplay between ecology and evolution. Later that evening, I fell into the star-struck fan mode and had a few words with John and with Herbert Baker. Those interactions were my first steps towards a career as an evolutionary biologist. After this meeting, it is no wonder that some years later, when my first opportunity for a sabbatical came along, I headed for Bangor to spend a year at the School of Plant Biology.

For a visitor accustomed to large American universities that harbor departments whose members are interested in very diverse fields (such as my own Department of Environmental, Population and Organismic Biology), the focus of the school on plants made for a pleasantly intense environment. One could spend a whole year thinking and talking about plant biology from morning tea to evening pints at the King's Arms. The ambiance was scholarly but leavened by clever repartee and word play described nicely by other contributors. The whole enterprise was looked after by John and other members of the staff in a thoroughly hospitable and interactive way. No wonder so many visitors came from far and wide to take part in the development and evolution of plant population biology.

Other members of the School whom I met thanks to John were Adrian Bell, Chris Gliddon and Elwyn Hughes, who was especially appreciated by this first-time visitor to Wales. Professor Hughes decided that all these foreigners from the USA, Australia, Mexico and elsewhere needed to know about both the ecology and history of Wales, and so he took us on weekly expeditions to ecological and historical hotspots. That is how I learned that those wonderful castles that tourists are so fond of are in fact rather disliked by many Welsh, who view them as overtly grandiose manifestations of the regal powers of their oppressors, the English. As he was warming up to the subject, and without missing a beat, Prof Hughes would then wink at us Americans, and segue with the notion that submarine bases built by the U.S. to house Polaris missile-carrying subs were viewed similarly today.

John was also fond of international travel and set an excellent example by traveling widely and in the process making the point that in science as in other endeavors, it pays to be a citizen of the world. France was one of his favorite countries despite the fact that on one of his trips his car and the belongings within had been stolen, and the unhappy event was compounded by the need to deal with the bureaucracy of the French constabulary. To his credit, he held no grudge against the French, a fact that was appreciated by my French wife. John was especially fond of Montpellier and the exciting work going on with the evolutionary ecology of thyme chemical polymorphisms... a perspective that I duly noted and followed up on by going to Montpellier myself.

In closing I am most indebted to John for many ideas that I tried to pass on to my students. These include his strong advocacy of the need for experimentation in modern plant ecology, his reminders that agronomy and the literature it produces are important sources of insights into the plant world, his repeated efforts to inject Darwinian perspectives into ecology, and his constant reminder that, in many ways, "plants are what animals made them". My own students have provided another type of testimonial to John's intellectual influence. The course in plant population biology, which I taught for some years using his book as the text was in many ways the most popular course I taught in my 40 years in academia.

Promila Kapoor-Vijay

Visiting Scientist, 1979-1980

Professor Harper stands out as a unique person in my professional life both in scientific and developmental work in a period spanning well over thirty years. In 1976 I wrote a long letter to Professor Harper with my questions in population variability of *Chenopodium* and *Viola* species in Northern India and expressed my need to seek answers to them, not just using morphological traits used in taxonomy, but also using integrating principles of population biology. Due to constraints in a developing country thirty years ago, and the remoteness of Simla, North West Himalaya, India where I taught, I did not have many papers Professor Harper had written or co-authored. I requested him to send me at least five of his papers which were integral to my understanding of plant population dynamics. One can imagine my delight when he sent me a big parcel with 40 Papers. I read them all avidly again and again, enjoying every one of them¹.

In 1978 I planned a visit to see Professor Harper in Bangor for a day to clarify some doubts I had on the species and population variability issues in *Chenopodium album* Linn. I had meticulously arranged this visit from Vienna where I had gone to speak on “Non-traditional food plants for saving fossil fuels” at the First International Congress on Human Ecology held in Technical university of Vienna, Austria in October 1978. Reaching Bangor by train took five-and-a-half hours from Euston London. The train got delayed and I could not reach the Plant Biology department in time to give my seminar on *Chenopodium album* biology. I arrived after everyone had left except Professor Harper who very kindly waited to receive me. It was a great day to have finally met the scientist who seemed to know the background worries I had in explaining diversity in *Chenopodium album*. I just described my concerns with lots of excitement while I displaying pictures of plant samples, graphs, and diagrams I had brought with me in a bag. I had some data on *Viola* species too. He listened to all the details I had covered in collecting my field data, and showed amazing understanding of the basic questions which needed to be clarified. Having lost 5-and-a-half hours in the journey, I could ill afford to waste even a minute in case I never come back to talk to him.

He quietly listened to the issues of plant population variability which were so visible to me in the life cycle, in morphology, in floral dynamics, in phenology, in chromosome number, in seed traits, and in the natural habitats where the plants grew. With my agreement he invited Professor Geoff Sagar who joined us. He asked me several questions just to understand the data and papers. Conversation with him was an intellectual feast I will never forget. This was first time in my life that I had someone sitting and asking me about the work I loved so much. Time flew past without notice and soon it was time to return. Professor Harper suggested I stay another day. I was reluctant as I had a return day ticket and buying another would severely strain my meagre foreign exchange allowance available from Government of India to scientists travelling abroad in those days. The attraction was great so eventually I agreed. That evening he gave me his now famous book “Population Biology of Plants”. I kept awake most of the night and gave him my honest summing up of the book and the impact it would have on all those trying to understand

principles of population biology. We talked again on the subject and I had an intense exchange of views with him. As before the whole day passed without notice. Professor Harper drove me to his house with beautiful mountain background and where Mrs Harper gave such a wonderful and warm welcome and rich English lunch. They were both so kind, rich in affection.

At one point Professor Harper asked if I would return to the UK or go to the USA to pursue postdoctoral work on the subject. I declined as finding funds for a researcher like me from the remote mountains of India without access to the corridors of power in New Delhi was unthinkable. He then very tactfully asked me if I had a choice of where would I go for such work. Having followed his work for some time and having interacted with him directly now I was already, like so many others under the spell of this "Pied Piper of Population Biology". My answer was instant "Whenever in life I get leave from my University and funds I would go to work with only one person and that would be John Harper". He very kindly invited me to join his lab in Bangor and arranged for funds from the Royal Society. Thus began a thirty one year association that ended with his death in 2009.

I returned to Bangor in 1979 and designed a unique experiment along with Prof Harper to grow all the possible combinations of *Chenopodium album* populations. This is when I experienced his great enthusiasm for new ideas in research, his humanism, gentle encouragement, and commitment to population dynamics. I stayed in Bangor for 15 months and had the chance to follow my dream of studying *Chenopodium album* with a great scientist. He had all the characteristics of a "Guru" that the ancient Indian culture asks every person to seek out and learn from. I had fully realized the Upanishadic advice of "Utishthat, Jagrat, Parpt Varan Nobodhayat"¹ and had the chance, exactly as enjoined in the Upanishads "to sit down near the teacher to discuss, learn, practice and experience".

I also had the unforgettable experience of attending, incognito of course, Prof Harper's lectures to first year undergraduates as well as his laboratory sessions for them. One could sense immediately that it was an inspiring experience for them too. His interaction with field station staff was also an experience; he treated them with great respect and sensitivity. During this period I met a large number of scientists who visited "The Church of Bangor" for short periods, and others who started research with Professor Harper and were inducted to codes of population biology as a discipline in ecology. Professor was the force which encouraged dialogues among scientists, infused confidence in one to follow one's own intuition and seek answers to questions if one believed in them deeply. All visitors were keen to interact not only with him but also with one another.

My second interaction was in the period 1985 to 1996 when I joined the Commonwealth Science Council (CSC) in London as a Scientist entrusted with the task of working on Biological Diversity and genetic resources with a focus on underexploited plants to help developing countries as per Sir John Kendrew's report "Science for Technology for Development". During various formative stages of two unique innovative programmes at CSC that sought to study, understand, and conserve the invaluable plant germplasm of plants of developing countries Professor Harper,

¹ Arise, seek great teachers and learn from them.

along with Sir John Kendrew became the think tank for bouncing ideas that underpinned these two programmes.

The first was the Commonwealth Biodiversity and Genetic Resources (BDGR) Programme, the second was Tropical Forest Ecology programme. Their inputs built the content of scientific and development dimensions of these programmes. It contributed to enriching the global debate on Conservation and Sustainable Development issues. This work was the forerunner of several books and concepts that are now well established as the foundation for numerous programmes and projects that seek to use such species and for building Training programmes in the study, use and conservation of biodiversity.

During one of the International Conferences organised by CSC, Professor Harper wrote a resource paper which laid foundation for the identification of Species for Conservation and socioeconomic development. On 22nd June 1992 Prof Harper came to London at the First meeting of International Advisory Meeting of the Biological Diversity and Genetic Resources (BDGR), of which he was a member, to highlight the contribution population biology made to the organising concepts in (a) identification of Species for conservation and socioeconomic development, (b) Life support Species. At this meeting he gave his undiluted support to in situ conservation of genetic variability, studies on Ethnobotany and Conservation Biology.

My third period of association spanned the period 1996 to 2002 when at his instance I joined The Natural History Museum (NHM) in London as a Science Associate. During this period I did further analysis of research work based on the experiment I conducted in Bangor in 1979-1980 and consolidated my ideas on the application of BDGR concepts for conservation projects. I visited him in Exeter with my family in this period. As ever both Professor and Mrs Harper gave us all a very warm and affectionate welcome. He was full of wit and good cheer and spent time to discuss some surprising revelations of data analysis at NHM.

My final period of interaction lasted from 2003 till a few months before his death. Our discussions were less frequent after I had moved to Geneva in 2001. Whenever I was in London for personal work or while visiting NHM, I would speak to him and Mrs Harper over the phone, he was ever so kind and always keen to know how my research progressed. We could visit Exeter once for a short period and had the great pleasure of meeting once again both Mrs Harper and Professor. Notwithstanding our infrequent conversations, I could not but be touched by the humanistic side of his nature and his desire to always contribute to thinking on the subject of Biological diversity, Plant genetic resources, and climate change whenever I got in touch with him. His interest in building local communities was inspiring. He narrated to us his experience about local farmers markets and their traditions.

John Harper's thinking helped to create the concepts that underpin concepts and lay a path for implementing numerous projects that seek to conserve the rapidly vanishing biodiversity of this world. He, thus played a key role not only in the furthering scientific knowledge for understanding the population biology of plants but also in applying it for conserving our gravely endangered planet's *life giving vital plant wealth* - a legacy to future generations from a great scientist and humanist who inspired and fired myriads of young minds particularly those from developing

countries that are so rich in biodiversity indeed the repositories of our plant genetic resources. Whenever I see Darwin's name in news clippings appearing in the scientific world and media, I feel that Professor Harper's contribution too, in population biology, will shape scientific thinking, and help in the conservation of biodiversity. He was one of the 20th Century's most important ecologist who expressed himself with clarity and style, his contributions to ecology were decades ahead of their time. Future generations of scientists will keep acknowledging his contributions in a Darwinian fashion.

Rob Whelan

Visiting scientist and MSc Ecology teacher, 1978-1980

As a final-year undergraduate student at Flinders University, in Adelaide, I was challenged by the following 2,000 word assignment, which has set the direction of my whole research career: “*Select a researcher in your field of study and read at least three papers they have published on a particular theme. Your report should (i) concisely describe the overarching question being addressed, (ii) critically assess some the experiments designed to test specific parts of the question, (iii) explain the contribution each paper made to the overall research project, and (iv) identify the new questions that emerged as a result of the research.*”

I settled on one who seemed to me to be the perfect researcher, one J.L. Harper, because he had already done much of the work for me – with an apparent propensity for numbering publications in a series. I chose “Studies in the dynamics of plant populations” – instalments I to V.ⁱⁱ My unsuccessful attempts to find number IV in the series led me to a much more extensive literature review than I had intended and seduced me into plant population biology! It also led me to apply to Professor Harper for admission to a PhD under his supervision – an aspiration thwarted by the lack of a scholarship from the Australian Government.

I proceeded instead to a PhD at the University of Western Australia and was thrilled, towards the end of my studies there, when I learned of a visit to Perth by John Harper, on his way to a conference in Queensland. I joined a field trip organised by the Western Australian Chapter of the Australian Ecological Society to see the majestic Jarrah forests near Perth. On being told we were in a ‘virgin jarrah forest’, I witnessed John’s mischievous delight, as he leapt impishly on to a cut stump and said: “A virgin stump?”

I finally made it to Bangor for my pilgrimage, tempted by John’s promise (which was realised) of some teaching in the Ecology Masters course. I arrived at the train station, ignored the scowling platform guard, and started searching for what, in my mind’s eye, should have been an imposing, spacious, well-resourced, prominently branded research institute. Such an impression was based on the quality and quantity of the body of work published by John Harper and his students and colleagues. The reality was a good lesson for me; namely that intellect, enthusiasm, collegiality, collaboration and innovation (perhaps catalysed by shared hardship) can be far more important than palatial physical facilities in producing good science and breeding good scientists.

Like many others, I will always carry fond memories of the Brownian movement through the foyer at tea time, when one tried to decide whether to follow John as he backed away in conversation, or to risk waiting, stationary, in case he oscillated back. I’ll also always recall the incredibly large and difficult experiments that seemed to follow each seemingly simply comment or suggestion he made, while perched on his heater or sliding down the wall!

Incidentally, though it happened before I arrived in Bangor, I believe that it was John's initiative to abandon the sit-down tearoom, which both encouraged cliques and inhibited cross-group conversation (and perhaps fostered long tea breaks!), and give it a new home in the foyer. Whatever the motivation for the change (perhaps it was solely to find room for another dozen postgrads and postdocs), it had a highly beneficial outcome, because the creative buzz in the foyer at teatime was palpable – and convinced even the American visitors that taking a tea break might improve productivity!

Above all, I will always value the support John provided (often behind the scenes, via letter of reference or suggestions for contacts) and the advice he gave me (often it seemed like a discussion or conversation at the time, and it became advice in retrospect). Here's an example. Sometime after I had left Bangor, John contacted me to ask if I would write a book on fire ecology for the Cambridge Studies in Ecology series, for which he was on the Advisory Editorial Board. Apart from being daunted by the challenge and pleased by the faith he was showing, my question was: "The field is moving so rapidly – how could one possibly write a book that would be current for any length of time, even by the time it is printed?" His response was: "Focus on processes and on hypotheses – not the current state of detailed knowledge. So don't attempt a definitive literature review, but use results from published work as case studies to clarify, enthuse, illustrate and give directions for future research. You should also think of a person – a real person – who represents the audience for the book, and write it for them."

My favourite quotation, passed on via my father from AJ Scott (the Principal of Owens College, Manchester, in the mid-1800s), epitomises for me the invigorating and creative experience of working with John and especially with the broader group for which he was the catalyst in Bangor:

He who learns from one occupied in learning, drinks from a running stream. He who learns from one who has learned all he is to teach, drinks 'the green mantle of the stagnant pool'.

Glenn Matlack

JLH student 1978-1983

I first met John Harper when I burst into afternoon tea with a suitcase and an enormous backpack, just arrived from the train station and America. He inspected me with a bemused smile and made polite inquiries about my trip. I puzzled at his bow tie, tweed jacket, and baggy trousers. He had a narrow nose, eyes which seemed slightly out of place, and tufts of hair coming from behind his ears. I remember thinking he looked like a rabbit.

I was given a desk. Aside from this, my postgraduate program had no solid structure or obligation other than a deadline, seven years hence, by which time a dissertation must be submitted. Over the next three months I read widely and met with John ("Prof", at the time) regularly to discuss possible topics for a thesis. He was always open to long, rambling discussion, maintaining a good humour and an unflagging enthusiasm. At his suggestion I read John Maynard Smith's (1978) *The Evolution of Sex*, which had just come out, and we finally settled on a project involving a dioecious perennial herb, *Silene dioica*. I expected to reveal grand truths about the evolution of reproductive systems. John allowed me to flail around unproductively for two years (electrophoresis, floral allocation, pollination success, etc.), before gently steering me into mapping populations.

At the time, fresh from an American undergraduate degree, I had no clear expectation of what was supposed to happen in graduate school. In retrospect, and with the experience of mentoring my own graduate students, I realize John showed me enormous patience and forbearance. I also realize that he was giving me an extraordinary level of freedom, and that I could easily have failed (I'm sure he intended this phase as a form of natural selection). Eventually, after wasting considerable time and departmental resources, I discovered some fairly minor truths about the nature of competition in wild populations and got my degree. The most important lessons of graduate school were not insights into competition, however, but the Harperian viewpoint of plants and populations, of how science is done, how it is taught, and how scientists should behave – lessons that have stood me in good stead ever since.

In discussions with him, I learned that plant populations are dynamic, eventful units, and that plants are just as lively and diverse in their behaviour as animals (and considerably easier to study). John took a particular relish in introducing me to the tricks of plants, and seemed to enjoy the American examples which my (admittedly shallow) experience allowed me to offer him. The underlying message was plain: plants are not merely interesting, but potentially a great source of fun. Studying them is a form of entertainment, not work. I came away from these discussions with a driving enthusiasm, like a football player who has just received a pep talk from the coach before a match.

Numerical analysis was never the subject of our discussions at all, a difficult feat in serious population and evolutionary biology. Numerical treatments (survivorship curves, frequency distributions, transition matrices, etc.) were merely

human conventions allowing us to come to grips with inherently qualitative biological phenomena. Yes, ANOVA was useful, but it was a blunt tool ill-suited for precise science. If you could define the question clearly enough, it was really only necessary to make one good qualitative observation to provide an answer. He once said to me,

“The art in this business <population biology> is to answer the question with the fewest possible data.”

Although I didn't entirely understand his meaning at the time, experience has shown the value of carefully framing my questions. Conversely, I am now deeply sceptical of data-intensive exercises such as GIS, data mining, and meta-analysis.

As I mentor my own graduate students, memory John's treatment of me is a constant source of guidance (and occasionally reproach). John was invariably patient, willing to give substantial amounts of time to my naïve ideas, which must have been painful to listen to. But patience had limits. I once heard him remark, only half in jest, “Collaborating with a graduate student is the most difficult possible way to do research.” At one level a student could take offence at this observation. At another level, it was a complement and a mark of his generosity – he accepted us as colleagues in science, not merely as the receivers of learning. Considering the large number of students he had, his patience was all the more remarkable.

John was a kind man, willing to overlook all sorts of silliness and irresponsibility (he was surely aware of my excessive use of the department van, although he never mentioned it). More seriously, I once backed the van into another car on a street in Bangor and failed to report it properly. In an uncharacteristic fit of temper, he told me exactly what I had done wrong and what he thought of me. And then it was over - after sixty seconds his anger evaporated. He smiled sheepishly, happy to get on with the proper business of teaching and learning. I hope I can do as well by my own students.

Another important lesson involved professional etiquette. At the time (the late 1970s/early 1980s) a group of American ecologists styled as “the Florida Mafia” published a series of papers each structured around debunking a previous theory, and discrediting the people who propounded it. American ecology was (and remains) competitive and personally aggressive, according celebrity status to a few individuals, usually at prominent research institutions, and disdainning those from “lesser” backgrounds.

Although John achieved celebrity in the American system, he never seemed comfortable with superstar status – I never saw him do anything to cultivate this image. He was irritated that his book (THE book, which has received more than 5,000 citations) was often cited carelessly, merely to buttress poorly formed ideas. John's concept of professional etiquette was strongly egalitarian – people were respected according to their open-mindedness and their personal humility, regardless of their background. He was happy to extend his attention to anyone, however ill-equipped, who took a sincere interest in plant populations. Once a particularly inarticulate visitor concluded a particularly weak seminar by saying that he hoped one day to found his own school of population biology on the Harperian model. It was terribly embarrassing. John beamed, and asked several gentle but ultimately

instructive questions. The speaker never seemed humiliated. I know I benefited from such kindness many times myself. Indeed, the only sin (aside from denting departmental vans) was self pity - he would not admit weakness as an excuse for poor performance in anyone. Once I was the one who gave the miserable seminar. I whimpered about it to him afterward, and he responded very sharply.

There were, of course, a few papers and scientists whom John disapproved of (on the grounds of lack of humility, I suspect). He rarely spoke ill of anyone individually, but if he thought a particular person was taking the wrong approach (and that graduate students needed to be informed) he might joke that they seemed a little confused (for example, he remarked to me once in private that Barro Colorado Island needed to think a little harder about degrees of freedom). More serious disapproval was applied indirectly - those who deserved it were simply never mentioned. Silence was his worst condemnation. Although he was always outspoken, I never heard him attack anyone personally or set them up as a straw man, as the Americans did. This graciousness I try to convey to my own students.

John Harper was a gentleman and an example to us who follow him, but his kind interest did not necessarily indicate intellectual engagement. John thrived on intellectual stimulation, and clearly pined when he was not able to find it. At times (in the periods between visiting scientists) I had the impression that the musings of graduate students did not entirely satisfy him. He relished discussions with visitors, listening with a rapt attention that seemed almost like hunger. I remember one BES meeting after which he and John Maynard Smith casually strolled around the gardens at Bodnant, examining plants and exchanging ideas with conspicuous pleasure. A similar excursion with Fakhri Bazzaz resulted in a paper in *Nature* a few years later. John was always very pleased to tell us about his visit to Henfaes with G Evelyn Hutchinson. Hutchinson captured a leaf hopper in the Sarukhan & Harper field and added it to his collection.

John was certainly an odd bird (or rabbit, as the case may be). He pursued his interests with a personal passion, indeed with glee when he discovered a particularly intriguing example, and he was happy to share this pleasure with others if they were receptive. It's worth considering how other people responded to this enthusiasm. I had only a very narrow view of a very full life, but I could see that not everyone appreciated his personal style nor respected his energy. While some students found him inspiring, and were happy to joust with him at tea time, others merely found him odd, and were driven more by the goal of finishing their degree than by sharing his enthusiasm.

Senior scientists were often the least appreciative of John's idiosyncratic approach to science, perhaps because his facile mind made them appear pompous and conventional by comparison. Shortly after I arrived, a senior lecturer warned me that John was subject to "enthusiasms" similar to a character in one of Evelyn Waugh's comic novels. In fairness to the senior colleagues, John was sometimes not as kind to them as he was to students. He occasionally seemed to take an impish pleasure in putting self-important people on the spot. A famous dialogue occurred at a meeting in Australia. In the Question & Answer session after a presentation, it ran something like this:

- JLH: “What do you mean by ‘stress’?”
- Presenter: “What?”
- JLH: “You said the plants were ‘stressed’. What do you mean by ‘stress’?”
- Presenter: “The plants were clearly stressed. I think we all know what we mean by ‘stress’.”
- JLH: “No, we don’t know. Please tell us.” And so on.

When Lucy Maillette defended her dissertation, she was faced by a very severe external examiner with a long list of specific queries, which he diligently pursued for several hours. Toward the end, John leaned back, out of sight of the examiner, and made funny faces at Lucy. It was all she could do not to laugh.

Finally, I should list a few of John’s eccentricities. In the whole scope of his life they mean little but they evoke an enormous fondness for him, so I’ll indulge my fondness and mention a few. Most notable was the bow tie. John always wore a tie, and it was invariably a bow. Only once did I see him in a necktie, and I remember feeling all day that he looked very strange. I once saw a picture of him in an open-necked shirt and remember feeling scandalized at his exposure. He smoked a pipe or, at least, he carried a pipe and fussed with it a good deal. It was usually lit in seminars, and I remember seeing enormous clouds of blue smoke drifting out of his corner of the room. Why did I see the smoke rather than the man himself? Because he sat in a sagging old armchair which put him below my sight line. One day I tried the chair, and couldn’t see the blackboard at all. As I was taller than John, I can only assume he couldn’t see anything either.

John often carried his tea back to his office, creating the problem of what to do with the sopping tea bag. His solution was to drop it into a large (ca. two gallon) glass jar on his desk. Eventually quite a mass of old tea bags accumulated, covered with a disgusting green fungus. A sign appeared on the notice board in the foyer: “News flash: School of Plant Biology wiped out by epidemic of the mouldy tea-bag disease.”

Furniture was never John’s specialty. He often sat on the floor. This increased the intimacy and intensity of our discussions, although I’m convinced he sometimes did it just to confound the person he was speaking with. During the winter, his corner office with its large single-pane windows was especially cold. As he talked to you, he sat on a portable radiator, shifting often from one cheek to the other apparently because the one had gotten too hot. Summers, he slouched terribly in a low, faux-leather arm chair. God knows what it did to his back.

May he rest in peace, in whatever furniture suits him, and may the rest of us measure up to his example!

Paul Zedler

Visiting Scientist, 1980

The intersection of my career with John Harper was brief, but memorable. I was a visitor in Plant Biology in the spring of 1980 (or thereabouts) for 5 months. I wish I could say that Prof. Harper and I worked closely on an important question in plant demography, but, alas, that would not be accurate, and when writing of one of the sharpest scientific minds of our era, it seems more than usually important to be accurate. In fact, I more or less “hung out” in Plant Biology working on my own things and, with apologies to Jan Linhart, failing to pick up on a Welsh field project (but getting very wet in the process). The level of my seriousness may be gauged by the fact that the only person to express any sorrow (even if simulated) at my ultimate departure was the bar lady at the Theatre Gwynedd, where I was well known because of my daily half pint and plowman’s lunch. Nonetheless, I have a vivid picture of John Harper, as I did sit in on his lectures and was the beneficiary of more than a few brief tea-time conversations.

Though I came to Bangor because of my respect for his professional work, the vivid picture comes from his remarkable personality, and his sharp and often acerbic British wit. Of tea-time, he said to me “As an American you must think this is a terrible waste of time. But it isn’t. I use it as an opportunity to talk to people that I need to see ... “ (I paraphrase, of course, here and elsewhere. He was certainly more eloquent.) And indeed, I was amazed at how many conversations he managed to squeeze in the half hour (if I recall correctly) of tea-time in the foyer of the Plant Biology building, flitting from person to person seemingly always with a specific objective in mind. I took his point. Tea-time, Harper style, was not a waste of time. Being privy, however, to tea time in other situations (my wife, Joy Zedler, was in residence at Menai Bridge) I knew that the institution was not universally a testimony to British efficiency.

Harper also delighted in “taking the Mickey” (a phrase I think I learned in that paradise for Mickey-takers, Australia). In lecture he once declared (obviously well aware that there were North Americans in the audience) “It is a peculiarly American conceit that it is necessary to travel to distant places to test ecological theory. In fact, there is no important idea in ecology that cannot be evaluated within 5 km of where I stand.”. Now those of us peculiarly American know that this was too extreme a statement. Lush and varied though the landscape of North Wales is, there are some other places in which it is easier, if not better, to evaluate some ideas. Not to mention that some looking-about can stimulate new ways of thinking. Darwin, a person to get more than a tip of the hat from Prof. Harper, comes to mind. Had I leapt to my feet and made that declaration, I am sure that he would have had a sharp and amusing retort, perhaps working on the theme that he had said ‘important’ idea, not “any idea”.

Another point, not exactly Mickey-related, but similar, was his expressing to me his pride in his Mexican students and their accomplishments (considerably enhanced since 1980, I should say). “The best students I have had are Mexican”, he

told me. That he understood that this message needed to be delivered to an Anglo, and one who at the time lived near the border, at that, is another example of how his sharp observation was used to good purposes. His credentials for moralizing were impeccable, I learned. In another conversation P. B. Medawar came up. “Oh, yes”, Harper said, “he was my moral tutor at university.” After a brief explanation to the ignorant American about what a moral tutor was (I have since forgotten the details), I couldn’t fail to be impressed.

As we know, memory is fallible, and there is a good chance that some of my facts are incorrect. I assert, however, that unedited recollection is the best measure of the influence that one person has on another. If some of the recollection pass over into myth, that is within the rules. I don’t want to hear that Medawar was not his moral tutor, for example. Prof. John Harper was an outstanding scientist and a remarkable personality. I learned much from him in our few encounters. He deserves some mythologizing.

Jacob Weiner

Visiting Scientist, 1981 – 1982

John Harper was the hero of my generation of plant ecologists. I was a graduate student in Botany at University of Michigan in the early 1970s, trying to decide what to research. Harper's papers were a revelation for me, and I knew immediately that I wanted to work in this direction. There was no one at Michigan at that point who had this approach and I could not find an advisor for my proposal to investigate competition in annual plants, so I went on to complete my Ph.D. at the University of Oregon with Stan Cook, one of the few Americans who had worked with Harper in Wales in the 1960s. It was the days before post-docs in ecology, so I went directly from my Ph.D. defence to a job as assistant professor. At the first opportunity, I took a leave to work in Wales. I wrote a very short letter to Prof. Harper asking if I could visit, and he answered positively. I arrived in Bangor in late August 1981. I called it the "pilgrimage to Wales", and there were many pilgrims.

I have to admit, that I was initially put off by Harper's "Oxford Professor" style, but it was clear after just a few days that this was just a style. Beneath it was a man whose kindness and generosity, were as great as his scientific abilities. I was nobody when I wrote to him in 1980 to ask if I could visit Bangor - I had not even published a paper yet. Everyone was welcome in Bangor, I learned. I remember the respect with which he treated the visitors from developing countries whose scientific backgrounds were limited. He was very well liked by the secretaries who worked for him.

Harper probably changed plant ecology more than any other ecologist in the 20th century, by changing the way we think about vegetation: as a dynamic of plant populations. His ideas are now so central to plant ecology that it is difficult to remember what it was like before him. In a way, his work is not clearly divisible any longer, because it has become a basic part of our thinking. During one of my last years at Swarthmore College in the 1990's I had my plant ecology students read one of Harper's most important papers "A Darwinian approach to plant ecology". Their reaction was "It was interesting, Jake, but we know this already".

The idealism of Harper's group in Bangor is light years away from the power politics and what I call the "science business" of today. Science was about ideas and the search for knowledge. Harper would brag about the experiment he performed on a window sill because the budget for it was under a few pounds. Instead of complaining about academic salaries, as so many scientists do today, he would lean over towards me after an interesting discussion and whisper "Can you believe we get paid to do this?" Something has been lost since those days.

I remember John Harper as a true intellectual, who could talk about the work of Aubrey Beardsley with as much insight as he talked about plant ecology. I still refer to many of the conversations I had with him. My year in Wales was one of the best of my entire life. I feel so lucky to have worked with him and to have been a part

of Harper's lab: Bangor 1963 -1986. In my life as a scientist, there is no one else who can be compared to him.

John Harper was one of the greatest scientists and one of the greatest human beings whom I have had the honour of knowing.

Ruaraidh Sackville Hamilton

Postdoc 1980-1983; Senior Research Fellow 1986-1990

Prof, who profoundly changed the lives of many people, first began to influence my life three years before we met, when I attended an undergraduate course on plant population biology in 1975 given by a one-time student of his, John Harvey, in the Department of Applied Biology at the University of Cambridge. The course was heavily based on the JLH's work, and I was immediately hooked on this new approach to experimental analysis of ecological interactions.

We first met in 1978 when he came to give a seminar. I was then a PhD student studying genetic variation within and between wild populations of white clover, had amassed a huge amount of data, and was wondering what it all meant. There was a great sense of anticipation and excitement because "the book" was just out. He did not disappoint. I was spellbound by his seminar, and immediately wrote to ask if I could come to Bangor as a post-doc; he got a grant from SRC (as it was then), and soon all was arranged for a 1980 start.

Everyone who has worked with Prof must share many of the same impressions: a wonderfully acute and agile mind, always a mine of ideas and questions, always stimulating, always enthusiastic, always with time to spare for the young and inquisitive, always precise and concise with his use of English, always with an innovative positive perspective.

One particular incident highlights his attitude. I arrived at Henfaes ready for a day's data collection, only to find that the farm manager had unexpectedly let cows in. Hoof marks dug deep into the damp soft soil in my plots, some of them slicing right through the plagiotropic stems (not stolons!) of my carefully marked clover plants. Prof's reaction? The cows had not destroyed my experiment – they had given me an opportunity to study another essential factor in the life of white clover.

A near-repetition of José Sarukhan's famous train incident made me feel I'd truly joined the Harperian family. In my case, while I was lying in "the field" recording the growth of marked clover plants, a policeman, an ambulance man and a railway official came walking along the railway line and, seeing me, climbed over the fence into the field and enquired what I was doing and how long I had been lying there. Apparently the train driver had reported seeing a dead body in the field. When I told them I was studying the growth of the clover, they looked very suspicious, and I think the ambulance man wondered if I should be locked up in an asylum.

Prof's sometimes bizarre foibles added further fun and interest. His habit of squatting down, pipe in hand, to discuss interesting questions, was a persistent source of wry amusement, as one watched bemused visitors change between standing, bending, half-crouching and squatting right down beside him, as they wondered how to react to the great man.

Shortly before my postdoc position finished, when I was offered a fellowship in CIAT (an international agricultural research institute in Colombia), Prof told me if I

accepted the job I would never return to the UK. However, two years later, he wrote inviting me to come back to the newly-formed Unit of Plant Population Biology, set up on his retirement from the School of Plant Biology, as an autonomous research unit based within the School. He told me the setting up of the Unit and his invitation to me had been enabled by the generosity of a mysterious anonymous private benefactor, whose true name I was never allowed to know. Operationally, we were funded by the “Barbinder Trust”. I felt enormously honoured by this invitation, and immediately accepted; thus began my second period of research in Bangor.

The ambience was entirely different, but more exciting than ever with the scientific freedom, independence from the rest of the School, numerous visitors, and JLH’s focus was entirely on us when he came. There were wonderful synergies with John Andrews (USA), Bernhard Schmid (Switzerland), Alexis Ducouso (France), who as visiting scientists and postdocs all brought new dimensions to the Unit. The “three degrees” (Anne, Sue, Michelle) did some wonderful research, as did our foreign students (Jay, Mangalika, Sophia).

It was during this period that JLH revealed a surprising fact about the origins of his experimental approach to ecology – he attributed it largely to the experiments on grass and clover undertaken at the Welsh Plant Breeding Station in Aberystwyth (as it was then). I could easily understand: an abiding memory of my first visit to the WPBS was of Dr Les Breese studying genetic variation in the morphology of individual plants of white clover and using it to explain variation in compatibility and competitive ability of clover with grass – truly reductionist, truly Harperian.

In 2003, years after the final closure of the Unit, JLH (or “Prof John” as I had then started to address him – he had asked me to call him John but I was never able to get beyond Prof John) wrote to me saying he had been allowed finally to disclose details of the Barbinder Trust. For the record I want to repeat his letter verbatim here (box below), so that due acknowledgement is made of Mrs Snow. It doesn’t explain the name “Barbinder”. The background may explain JLH’s interest in phyllotaxis and correlative inhibition and his speculations on wound responses.

J.L. Harper, 24 Dec 2003

I now have trustees' agreement to reveal the source of the monies that supported your research activities and that of the various others who formed the 'Unit'. The Barbinder Fund was just one of the legacies left by Christine Mary Snow. She was a Pilkington (of Pilkington glass) and extremely wealthy. She was married to Robin Snow F.R.S. a Fellow of Magdalen. They followed their research life and published together on plant growth, correlative inhibition and phyllotaxis, doing all the work in their own lab and greenhouse at their house in Old Headington outside Oxford. She was an honorary fellow of Somerville (it had to be honorary because fellows could not be married) and she taught a long list of lady botanists one of whom you met at W.P.B.S.).

Her philanthropy was concentrated in Oxford and included major support to new residences for students at Somerville and Magdalen, to Oxford Botanic Garden and the purchase of the site at Nuneham Courtenay for the O.U. arboretum. All of these

gifts were made in great secrecy and it is only now, when a plaque has been unveiled in Somerville, that the extent of the philanthropy is becoming public.

I lived for about six years as a 'paying guest' in the Snow's household until my marriage. It was an extraordinary and very civilised household - we talked science at breakfast and lunch but never at dinner. I played a part helping to entertain undergraduates at afternoon tea! It was a very simple but gracious household (no wine, but Mary smoked one cigarette after dinner) with a lot of interest in the arts. It was the greatest part of my education.

The Snows left Oxford for Devon (Buddleigh Salterton) for a few years and then to the Pyrenees (Vernet les Bains) where they both died. I was Mary's executor but this was a tiny job as she had brilliantly organised her estate and her gifts with the absolute minimum going to the Treasury! and completely disposed of everything to her charities. The trustees of the Barbinder Fund had apparently been told to be generous to my research group and this is where you and others came into the picture. You will perhaps read a much fuller account of all of this in my memoirs if the Royal ever gets round to editing and publishing them.

The last time I heard from JLH was in November 2008, when he invited us to visit him again in Exeter despite his poor health. Sadly, we were unable to get there in time.

Bernhard Schmid

Visiting scientist, 1981-1983

I studied behind the seven mountains in Switzerland, where you could complete a PhD without reading or speaking English. My father told me to learn French and Italian as foreign languages, because I would have to learn English anyway later on. Thus, after completing the PhD, I wanted to take my wife Hanni and young Rachel and Roland to a nice foreign place in the countryside before starting a high-school teaching job in Switzerland. After some thinking my PhD supervisor, C.D.K. Cook, pointed to Bangor on the map, a really remote place in the British Isles where John Harper worked, the expert of plant population biology. Completely innocently I had done some demographic studies on the *Carex flava* group, and thus it seemed appropriate to apply for a postdoc grant to go to Harper.

Once the decision was taken, I started to read the most expensive book I ever bought (because it had not yet appeared in paper back); and with that “Plant Population Biology” became my English teacher. We arrived at Vaynol Hall as the first inhabitants after Sir Michael’s death. He was the richest bachelor in the United Kingdom when it was at its height in the 1920ies. Vaynol Hall was the best place I ever inhabited, situated in a 4-square kilometre park with the closest gate at the end of an 800-metre drive through a valley covered with daffodils and rhododendrons. Later on, Harper, who we found out was simply called “Prof” (maybe also “John” by some North Americans who did not care), told us that we would have to wait for 6 months to know if we would hate or love North Wales. For us the latter was the case.

When I went to the School of Plant Biology the first day, I found out the Prof would not be around for the next 3 weeks. Instead, Hilary showed me around and very kindly explained everything to me in an English dialect that was probably even hard for the Welsh to understand. I thought maybe it was a scheme of Prof to confront the foreigners with full immersion right away. Later on I met Prof himself, who spoke very understandable English. In fact, I learned all my English from him and his book and papers. I must have become quite good at imitating him, so good that one reviewer (who I believe appears also in this volume) pointed out I should add him as a co-author to the first paper from the postdoc work, because obviously “many of the ideas are his as are many of the sentences.” I can assure this reviewer here that at least the latter was not the case, but anyway I am very thankful that I added Prof as co-author to that paper (*Journal of Ecology* 1985). Prof was very careful to only appear on an author list when he had been involved in a depth that seems to be quite rare for supervisors nowadays. He told me explicitly that this was his strategy. He was very pleased when I mentioned to him later on that he was not cloning students, but rather producing intellectual offspring with a great variety of thought. That may have been at the cost that we now do not have a “Harper school”.

Prof was sitting on his little portable heater, constantly moving forth and back and turning on the control knob as we discussed experiments and species. I told him that I did not like trees, because even though they stand still they are too big for measurement and harvesting. To my surprise he was not happy about that at all and corrected me that I was wrong. It took me until a few years ago that I started to appreciate his point. At the time, however, Prof suggested that in this case *Bellis*

perennis and *Prunella vulgaris* might be a good model system for me, because they differed in their clonal growth form in an interesting way. This choice was made very quickly, but later on turned out to be excellent for the questions we wanted to answer.

Some days later, Prof paid one of his rare visits to the glasshouses at Pen Y Ffrydd. Such a visit was experienced by some as a general inspecting his troops. I was making cuttings of *Bellis* and *Prunella* when he came to me with the words “ah, so you are spreading mycorrhiza among your plants.” Thus, I stopped that and made leaf cuttings instead, which surprisingly produced very nice roots in the mist chambers. Looking back, with this comment Prof was far ahead of many of us who seem to become aware only now of the importance of these microscopic fungi and other soil feedbacks on plant growth. Later on I heard rumours that Prof had done his PhD with a fungal model system, but that at Oxford it was possible to keep a PhD under seal for 50 years (I have no idea if this was true – hard to believe though).

Thanks to Prof, remote North Wales was one of the most international places I have ever visited. Meeting other non-native English speakers and their cultures was an unforgettable experience. We understood each other’s English better than that of the native speakers and better than they understood ours. As foreigners we had the advantage that we did not see each discussion with Prof as a sort of exam, which was the case for some native speakers. These discussions were usually focused on science, and they were very efficient. They also included cultural topics and culture of science. Mediterranean friends and I had the theory that the British were so successful in science because they mostly have to stay inside due to the bad weather, a theory Prof found “intriguing” (I am still not sure if I understand this word correctly). However, in the meantime, I think it is rather the British love for playing and betting that makes them so successful in biology, where chance is so important. The strength of the Bangor approach was this creative playing of “games;” and if you had understood the game, it could become quite serious.

We remember the warm welcome at a visit to Prof and Borgny in Penmaenmawr, where we were treated with an excellent dinner. The cat was choosing Hanni who most disliked these animals at that time. On the return invitation to our Vaynol home, which we arranged with our best friend, Jake, from the neighbour flat, we prepared some sort of meat and “Vermicelles”. For the latter we had to buy all the chestnuts available in the different stores in Bangor (we usually bought all the vegetables of one kind that were available; at that time a typical Bangor family must have eaten less than half a cucumber per month). I remember that for the meat Prof had to put on his glasses; and regarding the Vermicelles he remarked that it was the food of the poor in his country in the old days. But clearly he did not want to be negative; in this case it was just his innocence for once.

When we went back to Switzerland after two years, it was clear that I would no longer become a high-school teacher. Prof ignited my interest in research. I knew that I had to continue the study of clonal organisms and to bring population biology to the German-speaking countries (where until recently an odd, secret science of plant sociology had dominated the scientific landscape and blocked progress). Now, at a time when the Anglo-Saxons have long left it behind, population biology is finally replacing this plant sociology behind the seven mountains, in Switzerland, Germany and Austria.

David Gibson

Peter Greig-Smith student, 1981-1984

I have to confess that the first time I was asked about John Harper as a student I didn't recognize his name. My then Master's adviser at the University of Oklahoma asked me, as a new British student in a lab meeting with all of his students, what people in the UK thought about John Harper. Stunned silence. But, learning quickly from my embarrassment, and after having read some of John's papers, I later wrote asking if I could do a PhD under his supervision. He answered with a characteristically nice letter saying that he was not taking any new UK students as he was retiring soon, but would pass my letter on to Peter Greig-Smith. And so, I became a 'PG-S' student. Although I was quite proud of myself having a decent enough Bachelor's degree, a Master's degree from the US, and an *in press* publication under my belt, I was immediately intimidated by the seriousness and scholarly nature of the ecology post-grads I encountered when I arrived in Bangor. Evenings in the pub quelled those fears quickly enough.

Bangor in the early 1980s was an inspiring place to be. JLH, as we referred to him ('Prof' when addressing him), had no direct influence on my doctoral research. His influence was indirect through the activities of his students and visitors. We were all privileged to meet in person the many well-known ecologists that came through Bangor, sometimes for just a couple of days, sometimes for several months. Despite being a PG-S student I never missed the weekly JLH-group seminars in which we heard endlessly about survivorship curves and the $3/2$ thinning law. I gained a unique perspective on the varied ecological viewpoints of JLH and PG-S. As JLH wrote, "Within this School there is continued argument between holists and reductionists, between the describers of vegetation and the population analysts, between those sold on ecosystems and those who concentrate on the individual organisms." (JLH letter to Lloyd Hulbert, 1985). JLH and PG-S were seemingly poles apart in their view of ecology, but many students took somewhat of a middle road. The two of them were famous for their pipe-pointing, smoke-billowing arguments in seminars, although I witnessed the real, full blown debate just once. Afterwards it was all politeness at tea in the foyer.

Prof was an inspirational lecturer. I attended his Master's ecology lectures, not because I had to, but because after listening to one, I didn't want to miss any others. I vividly recall the lecture he gave on David Tilman's R^* model. He presented it without notes, with infectious enthusiasm as though he had just learned about it that morning – this was 1982, the year that Tilman's first Princeton monograph came out, so perhaps he had just been reading about it. I can still see him scribbling resource ratio diagrams on the board and looking right at us with a real gleam in his eye. To this day I'm unsure if he believed it was as important as he portrayed, but to us he presented it as revolutionary stuff. Later Tilman came through Bangor and I was allowed the opportunity to bore him with graphs of my own data that, I said, didn't fit his theory.

JLH was almost always in a good mood. I saw him angry just once as he admonished a visitor for acknowledging him on a manuscript that he had not seen. “I know why you are doing this - because putting my name in the acknowledgements means that the editor won’t send it to me for review. I’ve not read the paper, take my name off.” I was sitting with just the two of them eating lunch upstairs in the Student Union and wanted to crawl under the table at that point.

One evening JLH spotted me at a classical concert. He came rushing up to me at tea time next morning and wanted to discuss the performance and the acoustics of the brass instruments in particular. Needless to say, I was surprised to get so much attention, and could do little more than agree with him about how good everything sounded. But then that was typical of ‘Prof’, he was always excited to talk with even the most junior post-graduates as a friend and colleague.

JLH’s influence on my ecological outlook has been profound. I’ve not left my PG-S community ecology roots, but I now teach a plant population ecology course, and have even published an accompanying textbook on the subject. If asked I refer to myself as a population and community ecologist.

My most poignant memory of JLH is of him squatting on the floor in the hallway outside his office one day after tea. “If you go to the US for a post-doc, you won’t come back to the UK.” How true.

Miguel Franco

JLH student, 1982 – 1985

I must have first written to Professor John L. Harper (I had to address him in the most formal possible manner) in late 1980. At the time, I was José Sarukhán's masters student and research assistant, having already conducted my undergraduate dissertation under his supervision. José suggested I write to JLH to gather his opinion regarding suitable supervisors for a PhD programme. I told JLH I was interested in the population dynamics of trees, particularly in the idea of incorporating aspects of their modular construction in models of individual and population growth. I suggested a couple of US theoreticians whom I thought would be not only academically suitable, but sympathetic to this, then crazy, Harperian idea. In what I would later learn was a typical cheeky response from him (others would misinterpret it as arrogance), he replied that the best, the only place to do that would be under his supervision in Bangor. He emphasised that, in a Malthusian fashion, the problem with theoretical ecology was that models grew faster than the evidence to support them – the *American Naturalist* had created a reputation as a maths, if not entirely a fiction, journal. Rather than fanciful, untestable models, what was required was hypotheses that could be experimentally tested.

José, who was building an ecology research group in Mexico, feared the risk of academic inbreeding. He had been Harper's first Mexican student. In turn, his first research assistant in Mexico, Rodolfo Dirzo, also went to write a PhD under JLH's supervision. Despite José's misgivings, it did not take long for Harper to convince him that I should also go to Bangor. The seeds for a Harperian Mexican ecology were being sown.

I arrived in Bangor in early January 1982 and the following day Prof (as other JLH's students told me I should call him) took me to the experimental greenhouse facilities at Penn-y-Ffridd. There he showed me some dead, but still standing specimens of *Kochia scoparia* (Chenopodiaceae) that Michelle Jones had grown the previous summer. He described this annual plant as an "annual tree" and said the plant would be ideal as an experimental model tree. When grown under benign conditions, it maintains a main stem with lateral branches spreading to form an oval, well-formed crown. The stem and branches become lignified as the plant ages. It produces secondary thickening of the kind known as "anomalous", with vascular bundles embedded in parenchymatous tissue. In cross section, the stem has clear concentric rings, similar to those seen in a beetroot slice, whose number increase with plant size. Although I conducted most of my PhD research employing this plant, a series of circumstances leading to the development of the ecology group in Mexico, not to mention the lack of adequate greenhouse facilities, meant that I did not pursue this line of research any further. Despite this, I have tried to maintain the rigorous, methodical approach that I employed during my PhD studies. Perhaps, now that allometry (rebranded as scaling relationships) is back in fashion, this plant may become the ideal model tree in studies of plant form and population dynamics that Harper envisaged all those years ago.

After moving to Plymouth, I had the opportunity to often visit John (as he asked his students to call him after graduating). In addition to conversations over all kinds of non-scientific issues, gardening, arts, current affairs and even the occasional gossip about fellow scientists, we continued to debate the theoretical basis of the self-thinning slope. His critical intellect, mischievous wit and youthful enthusiasm accompanied him until the very end. I will miss him dearly.

José Sarukhán and The Irish Mail.

The anecdote of José Sarukhán and the Irish Mail was well known when John Harper was Head of the School of Plant Biology because he used to recount it often, during his lectures around the world. Between 1969 and 1972 José was a PhD student of Harper's working on the demography of British buttercups in Henfaes, the experimental agricultural station in Abergwynnregyn, near Llanfairfechan, North Wales. José has since received many accolades in Mexico and abroad, but that is another story. While in Bangor, in order to monitor the fate of thousands of individual plants employing a pantograph, he had to lie down on his stomach for hours on end. The field where the study was being conducted was next to the railway line connecting London to Holyhead, where the mail destined for the Irish Republic was transferred to the ferry bound for the port of Dún Laoghaire. The train was therefore known as the Irish Mail (the Royal Mail no longer uses the railways and the name has now been discontinued).

On one occasion, on his way to Holyhead, the conductor of the train was puzzled by the sight of an apparently motionless man lying face down in the middle of a field. Several hours later, on his return to London, he observed the man in the same position in what seemed the exact same place. He was so concerned he stopped the train and ran into the field to investigate. One must bear in mind that those were the days when trains in the UK ran on time, and only a superior motive would justify this decision. He was stunned when a bearded young man got to his feet to explain what he was doing. Such was the intensity of fieldwork and the dedication shown by José and, by extension, all of Harper's students.

History repeated itself about 15 years later, when Ruaraidh Sackville-Hamilton was working in a similar fashion in exactly the same field. This time, however, the driver did not stop the train but informed the police when he reached the station at Llanfairfechan. Two uniformed policemen turned up to discover Ruaraidh collecting data on white clover.

Thangamuthu Jayasingam

JLH student, 1982 – 1985

Profa model

It was nearly three years ago. I had wanted to visit him. I arranged with Miguel who was at Plymouth and we drove to his home in Essex. I did not know what I felt, I hugged him as I saw him, never done before. It was the same old Prof - slightly older. The three of us chatted for a long time, I had little to contribute except to state the 'personal survival' in the Sri Lankan fields. But I followed the conversations of Miguel and Prof. on latest developments. I was intrigued by the sharpness of Prof even at this stage and his interest and the analysis of events around him. His words were sharp and also his wit remained as usual. I had always admired him from my first day, and I will always to my last day. I share a few of my memories with you below....

I wrote to Prof when I heard I was granted admission at University College of North Wales, Bangor and asked how to prepare myself. He wrote that if I had a glance of the 'Population Biology' book, that would be more than enough. I had Prof Pemadasa with me who had been Prof Greig Smith's student, who said 'I was lucky to have had admission to be with him'. I nodded and went to Wales but had millions of queries inside. The first thing I heard in Bangor was that he had retired with a 'golden hand shake'. I shook. In our departments if a person retires, all the powers go with him and the students would be in limbo. I heard from others that he would have an office and continue with Bangor, but I was not convinced. I didn't know what to do. I was glad that there were many more students already (Ruaraidh, Miguel were among them) and that was comforting. There was another Sri Lankan (Nimal) working with Prof Sagar and he was also helpful. I had been frantically looking for projects and ideas for my Ph D, and was in a state of confusion. I saw Prof the first time with all these feelings as he entered the prestigious Harperians room in a brown coat, a golf cap, scarf, gloves, and bow tie which were his symbols. Later I met him in his office. He was very warm and assured me that his work at Bangor would continue (there were many after me joining the club when I felt better).

Then we began on the selection of a projectthat is when I saw his 'passionate description' of the dynamics of plants and populations. In fact he was 'acting' with his fists and fingers and undulating tones with endless facial expressions and explaining to me about the importance of the dynamics of roots, which was little studied. He also went on to talk about Henfaes, 'THE FARM', and the wealth of understanding we have had from there with a 'glow' in his face. I chose the 'Henfaes' project as I liked field work. But he warned me of the weather and also described the famous episode of the 'train stopping to find a dead body at Henfaes before' <see Miguel Franco's piece, below> and took me to see the field. It looked so dull away from all the glories, with a parked caravan, but I opted for it, never to regret. I learnt more in that field than anywhere else and all the discussion I had with Prof are 'live to date' and are still relevant. It is what I cherish the most, the way he looked at the populations and dynamics making every event as important as any other, big or small.

I ran after sheep, marking their urine patches as he had suggested, although with doubts in my mind. But I was thrilled to see them in lush green patches next year creating the 'natural variation' we often ignore. I thought that over the year the nutrients would be washed or lost and the impacts would be lost. There were many more of this type of observe and analyze critically events...

I read most of his work when in Bangor and was really fascinated, not that I may accept all, but the logic in it was astonishing. The use and non use of 'stress', 'strain', 'strategy', 'adaptation', or 'vegetative reproduction' in terms of arguments speaks for the depth of his understanding of the dynamics and the interpretation of words. I faced this twice, once during my early period in discussions when he said 'there is nothing right and wrong in interpreting the dynamics but you will have to convince me as I will be arguing against you'; the next was during my write up, after four cycles of correction and re-correction he said 'this will have a retrogressive effect' as we will be revising what we had done before... and I never gave that to him again. What was simple and plain was that he corrected/ questioned views and interpretations and was not finalizing anything. It was left to us to decide to take it or leave it. I tell this to my students even today, as I still have the corrected first chapter, that you are on your own and we are here to share viewpoints. Meeting the supervisor daily was not relevant but the sharing of the programme was the most important.

We had a label wherever we travelled. The first time I went to present a paper on 'seed dynamics at Henfaes', probably at Monkswood, when my name was called the Chair announced 'We have one from Bangor, the Harper school'. 'Bangor' was a synonym for 'Harper' wherever we went, at BES meetings, Symposia at Calais etc. We accepted the label with pride but also with a heavy shoulder to bear the responsibility of safeguarding an established 'brand'. The number of visitors we were exposed to during our stay demonstrated the status of the person we were working with, another aspect to cherish.

I followed his lectures in the first year at Bangor and I could understand why he rose to the heights he had. I saw the passion he had expressed when explaining my research options repeated in discussions in the hall, where he was practically living with it explaining how the mistletoe suited the environment, how the dynamics of the grasses changed at one centimetre square scale etc.

The Thursday lunch of the group was a key event, where he was usually present. Meeting for lunch was a relation-building mechanism where we would engage in topics beyond population studies and share personal events. I liked it a lot. These were the days where specially me from Asia, got a chance to taste the various 'pub lunches', on a weekly basis. I forget the names but the memories linger. We had fewer British in our team at that time and it was Prof and Ruaraidh who had to teach us cultures and traditions about meals and drinks, which they did well. We were at Bethesda on invitation from Ruaraidh close to Christmas and here came Prof with a big piece of log for the fire, a tradition he said. That was the occasion when I saw an orange being peeled with fork and knife, although not by Prof.

I couldn't return home immediately after completion owing to the troubles in my country and I was continuing in Bangor. Prof called me one day and offered me a

job to facilitate statistical analysis in his group. I knew that this was a help he was extending and I deeply appreciated it. That was my first job after getting my Ph D and the only job in Britain. I visited him years later at his residence in Penmenmawr, near Llandudno, where he picked me and dropped me at the railway station. I stayed overnight. He introduced me to 'CAMPARI' and soda, a strange flavour with a strange colour. I have had it many times later on airplane flights. Those were the days when Prof was explaining about his entry into personal computing and the plans to move to Exeter. He was an ordinary person. Prof's wife was always a graceful lady, then and now when I last saw her. Prof took me around the garden which was elegant. He also had specific exotics and I remember the *Eucalyptus* spp. This was another side of his passions...He was a simple man in many aspects, I could recall when he bought the new Citroen how he came to the lab and told us about the air brakes as a young kid...

I often think how lucky I have been to be trained by him, and to have walked with those who walked with him and to share the common 'Harper' label from many countries around the globe. I recognize him not only as a legend in Plant Population Dynamics, a great thinker, my supervisor, etc. but as a person who was a model for university dons to 'walk with kings nor lose the common touch' and walk all the way...beyond retirement.....with pride and dedication.

Céline Boutin

JLH student, 1983-1987

I was one of the last students with Prof. Harper. When I arrived in Bangor in October 1983, he had already retired but his lab was nevertheless full of students from all over the world including Mexico, Chile, Sri Lanka, the U.S. and of course a few from Britain. Most students like me were on a scholarship. My first encounter with Prof. Harper left me with quite an impression. I sat with him for approximately half an hour to discuss my project and the functioning of the Unit. Coming from French Canada and not used to British accents (as well as being a little nervous) I admit I did not understand much of what he was saying. Prof Harper was very much aware of that but he continued unperturbed, smiling slightly at the situation. At some point he said “I’ll see you in a couple of weeks (or maybe it was a couple of months) to discuss your project further. In the meantime you should discuss with others in the lab and read papers.” No more guidance was provided then. I soon learned that it was his style and that I was fully in charge but that he was always available to answer questions and discuss specific aspects of my project when needed. I was told once “You whistle and I will come”.

I had discovered the work of John Harper at the end of my BSc when I was searching the literature for a topic to present at a seminar series. I soon became fascinated by his work and that of his students and collaborators. His approach to plant life history and strategy (although he hated this use of the word) was very creative and refreshing. I felt very fortunate that after my MSc I was accepted as a PhD student under his supervision. Although I had never visited Britain, I never regretted the decision to study there. I liked the country and its people. It was an eye opener to discover the world in a small lab in far-away Wales, and to be part of a very dynamic scientific community.

My first autumn was difficult. It was cold and damp and people could not understand why I complained, coming from cold Canada. But there was heating in houses and buildings in my part of the world and it was not so incredibly humid. Therefore to keep warm I started running. I would go at about 4 pm when I could no longer tolerate the cold and would run for about an hour to warm up before coming back to work. I was sometimes accompanied by other more experienced runners so that I discovered the beautiful countryside around Bangor. One Sunday quite at the beginning of my stay I participated at a fun run for charity. To my astonishment I was the woman winner of the 10 km race and consequently my name appeared in the local newspaper which I realised by the following Monday morning everybody read. Prof. Harper thought it was very amusing and never quite got over it. He used to introduce me to any new visitors as the athlete of the unit, even four years after the fact, and even though other people were much more athletic than I was.

At the time of my study, Prof. Harper did not come to the School of Plant Biology on a daily basis but only once or twice a week. It was then a period of meetings and discussions at the Unit. It was always a bit of a struggle to follow him during a discussion since he was either walking up and down the corridor or sitting on his heels on the floor. He also had the habit of lowering his voice at the end of each

sentence and that made it hard to my unused ears to follow what he was saying, especially at the beginning of my stay in Wales.

There were always lots of prestigious visitors coming to the Unit, expressly to visit Prof. Harper. It was fascinating to be able to meet these people, to be able to participate in discussions during seminars and later at the local pub, but often we students would simply listen to lively exchanges amongst the more experienced scientists. Prof. Harper was on all occasions very generous of his time with visitors, very enthusiastic, extremely attentive and always with gentlemanly manners.

He also always encouraged us to go to tea/coffee time in the lobby every day. For him it was not a waste of time but rather a good opportunity to exchange with fellow students and other scientists. He considered it essential to our apprenticeship and training as scientists. It was a time to approach others for advice or questions or sometimes requests, etc. The hall of the School of Plant Biology was however not very convivial. It was large with a very high ceiling and consequently a noticeable echo. Being rather short, it was difficult for me to understand what these very tall English men and women were saying, with the notable exception of Prof. Harper who was not tall. I really had the impression that words were travelling above my head and that I could not intercept them. Prof. Harper quite enjoyed this description of our tea/coffee time! Nonetheless, I am grateful for the advice to always favour interactions with other scientists. It is also the advice I now give to my students.

Towards the end of my study when my field work was completed and I was writing up my thesis, I had the opportunity to go to Poland for one year. Prof. Harper was very worried that I would never complete my PhD. I bought one of the first personal computers available at the time, a desk-top Epson with no hard disk and, together with a heavy dot matrix printer, I set off for Lublin, Poland. I managed to run all the statistics and write up my thesis one chapter at a time. It was quite difficult since I had to send each chapter via ordinary mail (that was before the age of email). Prof. Harper would add corrections and send it back but the whole process took a good two months. Poland was still under the communist regime at the time (1986-87) and each and every letter was scrutinised by censors prior to delivery to its destination (both ways). They apparently did not find anything reprehensible because nothing was ever lost. Nevertheless, it was quite a risk since I could not make any copies (not allowed), hardly a back up but somehow we managed. I do thank Prof. Harper for his patience during this process. I came back at the end of June and had my viva in September. Prof. Harper had decided then that he was not needed and that I could defend my thesis on my own. It was a frightening thought at first but I took it as a mark of confidence and that there was no unforeseen problem with my thesis. The defence went very well indeed.

John (as I could call him after my viva) was a great mentor with few words of advice but words that meant a lot. He was a small and unassuming man but solid and huge in his field. He was much respected as seen by the countless visitors who passed through the Unit in Bangor. During my time at the University of Wales he was no longer travelling much except for the odd conferences and meetings where he was invited. During one of these conferences I discovered that he was also a lover of arts. It was in the Netherlands and he decided that I and another PhD student together with one of his past students should visit one of the museums instead of going to the tour

arranged by the conference organisers. We had very little choice but it was actually very enriching to discuss with him different pieces of sculptures and paintings. We also enjoyed a long walk in the garden where he entertained us with the life histories of different plant species (as he did in his home garden in Penmaenmawr). He had discovered that we were very fond of art exhibitions and that I myself escaped for long weekends in London just to visit galleries or special exhibitions. It was very thoughtful of him although rather disconcerting at first to discover that we had to go to this museum with him. I confess I cannot quite remember what museum it was.

For the visit at the museum, he had decided not to drive or it may be that his former student had thought it better to do the driving. I can remember this enormous Citroën Prof. Harper drove to the University. Because he usually arrived quite late, in fact just in time for coffee, there was often not much room for parking. He was very imaginative in finding a parking spot, and at times it was very awkward to drive around his enormous car. However, since it was Prof. Harper, it was accepted by everybody.

I left Bangor in 1987 with a PhD, a strong background in science and particularly in plant biology, and much more assured in my ability to do science on my own. My work on the life history of *Veronica* species was very “Harperian”. It had and still has a profound impact on my research and to my approach to plant science today. The Unit in Bangor was also a fantastic place to discover the world through the international community of scientists coming and going. John Harper was central to my time in Bangor.

Michael Begon and Colin Townsend

Co-authors, 1984 – 2008

The big book collaboration - two perspectives about an inspirational co-author

Mike Begon

It is perhaps a measure of how lucky I was to be teamed with John Harper by our publishers that my earliest memory of him is when I was a research student, still wet behind the ears, and John came to Leeds to give a talk to the Biological Society, already one of the world's top ecologists. (And it's perhaps a measure of how long ago this was to note that there *was* a Biological Society, that it arranged talks by such eminent people, and that not only the students but the staff, too, were there in numbers.). I didn't altogether take to him at first. My vision of myself had me just coming back from occupying Senate House (or was it attacking Sir Alex Douglas Home for selling arms to South Africa?). John was urbane, dressed in tweeds, and with his bow tie flopping outside his crew-necked sweater – the epitome of the academic establishment, I thought. How wrong I was.

He was talking, I think, about his work with Jose Sarukhan on *Ranunculus*. What should have struck me at the time (though even looking back, I can't claim sufficient insight) was how this, like so much of his work, addressed the most fundamental questions by embracing a level of detailed and dedicated endeavour that would have daunted others. What did strike me was that he was as radical and iconoclastic as I supposed myself to be. ('As radical': a rare compliment from me at the time – no doubt, in truth, he was far more so.) He didn't just inform us, as co-authors: he provoked and challenged us. His default position seemed to be that 'what everybody knows' is almost certainly dogma: doubt it.

Our paths crossed next after I had come to Liverpool. Unable to get my research off the ground, and free from the pressures that assail today's young academics, I had taken to book writing. Martin Mortimer (who had known John at Bangor, as a student of Geoff Sagar's) and I had a manuscript on population ecology that Blackwells were having reviewed. They had sent it to John. He was not impressed. He was not polite. He was not far wrong. We knuckled down and tried to do more or less everything he suggested. Fortunately for us (no doubt publication deadlines were beckoning) Blackwells did not let John see the revision.

It must have come as a shock to John, though, when, soon afterwards, Bob Campbell at Blackwells contacted him to say that they felt, as major players by then in the ecology market, that they should produce a 'big' textbook, and that they had me (and him, and Colin) in mind as co-authors. But if he was shocked, he never showed it. We were taken for a fancy meal in the West End, and, perhaps because I was unphased when he insisted on knowing how my urine smelt after the asparagus starter we'd eaten, we all got on like old pals. Or perhaps it was because John already knew

what an ecology textbook should be, and Colin and I bought into his vision. We had responsibilities, he insisted, to our young (and not so young) readers: not to patronize them by pretending things were simpler or more certain than they really were; to make them think, make them question; and to make them feel that our subject was alive and waiting for them to make their own contribution. We had responsibilities, too, he persuaded us, and this was frightening, to ourselves. This was our chance to lay down markers, to be influential. And we couldn't be influential without having and expressing opinions, so we should be opinionated, not bland or safe. I'm not sure how often any of us lived up to those high demands, and it's certainly not for me to judge. But what's important is that we had an agenda, and that John set it.

It wouldn't be right to pretend that the years of co-authorship that followed were always easy. He and I often disagreed – and Colin therefore, equally often, had to ... well, I'd probably better let Colin say what he did. But if we disagreed, it was never with any rancour and we never once fell out. Having encouraged us to be opinionated, he was always perfectly happy for opinions to differ from his own – how else were the opinions to be road-tested before being let loose on the outside world? Indeed, I'm certain that for him, and I think for all of us, intellectual combat was one of the more enjoyable aspects of the creative process – better, certainly, than the times sat staring at an empty screen (or, for the first edition, blank sheet of paper).

In fact, with this, and with so many interactions with John, a defining characteristic was, to me, the fine line he always trod between combat, teasing, and paying us all the compliment of taking our arguments seriously enough to subject them to a Harperian critique. One moment the eyes were blazing or the eyebrows raised in disbelief – the next the tongue was firmly, and often literally, in the cheek. If only all arguments were like this.

Colin Townsend

Having persuaded the publishers that the day of the general ecology text was over, I was at my desk working on the first chapter of a small book about community ecology when Blackwell's Bob Campbell rang to invite me to join John and Mike on the big book. I recall a heady mix of fear and excitement but I quickly put away my pen and prepared for that fateful, urine-sniffing meeting in the West End. I knew John only through his work and by his reputation, quickly confirmed - erudite, warmly (sometimes cuttingly) witty, and with the most amazing ecological insights. Like Mike I was inspired by his exhortation not to patronize our readers by oversimplification (a message that has guided my career as a teacher as well as a writer). Our collaboration on the big book has undoubtedly been a highlight of my career.

None of our ideas ever escaped John's insightful challenge and the books are littered with his wonderful and thought-provoking contributions. I don't think I was confident enough to be considered as opinionated as John and Mike (times have changed). Maybe this was why I quite often had to adjudicate their differences of opinion. The greatest controversy, perhaps, involved a chapter about abundance. The two population biologists, John and Mike, had contrasting views, particularly about

the relative importance of providing a thorough history of the subject area. I was given the authority to decide the matter!

But John and I also clashed (gently) about the place of ecosystems in ecology and in a draft outline of a later edition there was mention of 'stress to ecosystem structure and function'. Referring to this, John emailed "I am very happy with the outline until I reach this point when my hackles rise, my blood curdles and stress overwhelms my functioning." Needless to say, the wording was modified.

The three of us were delighted to be honoured by a BES exceptional lifetime achievement award for the big book in 2007. Our enjoyment was marred when John's ill health prevented his attendance but he emailed to express his delight that the book has been so well received over the years and, with his customary wit, noted "I imagine the most appropriate treatment for such an award is to wear it and I suggest that at all subsequent printings a golden cardboard medal should hang on a golden string from the binding". His final anti-ecosystem barb also brought a big smile to my face - "I don't think you have done too much harm in the latest edition though I would still claim that ecosystem is not an operationally useful term but I suppose it was necessary to follow the tabloids! More a reward to Rupert Murdoch than a tribute to Tansley". John was a truly great ecologist and a great person and I miss him.

Miguel Franco, José Sarukhán, and Rodolfo Dirzo

A Darwinian Plant Ecologist

John Lander Harper CBE FRS (1925-2009)

On 22nd March Professor John Lander Harper died from complications related to leukaemia and emphysema. He is survived by his wife Borgny, his children Belinda, Claire and Jonathan, and seven grandchildren. His departure is grieved also by his numerous students, collaborators and colleagues, whom he so deeply influenced.

John Harper is credited with the establishment of the field of plant population ecology, which is rooted in Darwin's emphasis on the role that individual differences play on evolution by natural selection. Born on 27 May 1925, he was educated at Lawrence Sheriff School, Rugby. He obtained his degree in Botany in (1946) and both his MA and MPhil (1950) from Oxford. After a further 9 years conducting research at the Department of Agriculture, Oxford, and a sabbatical as Rockefeller Foundation Fellow at the University of California, Davis, he was appointed head of Agricultural Botany at the University College of North Wales, Bangor. In 1967 he founded and became head of the School of Plant Biology, a fusion of the Departments of Botany and Agricultural Botany. This became the Mecca of plant population biology, attracting students and visitors from all over the world. He was president of the British Ecological Society (BES) between 1966 and 1968. His presidential address entitled "A Darwinian Approach to Plant Ecology" became an instant classic in ecological literature. For his significant contribution to the development of the science of ecology, he was the recipient of the Marsh Award from the BES in 2000. The BES's "John L. Harper Young Investigator Award" is given for the best paper published over the course of each year by a young researcher in the Journal of Ecology.

His monumental work *Population Biology of Plants* was published in 1977 and a year later he was elected Fellow of the Royal Society. He was appointed to the Order of the British Empire (CBE) in 1989 and awarded the Darwin Medal by the Royal Society in 1990. This medal recognises "work of acknowledged distinction in the broad area of biology in which Charles Darwin worked". Specifically, John Harper received this medal "for his research on the population biology and evolution of plants which has greatly improved understanding of the adaptation of plants to their environment".

In 1982 he was appointed Emeritus Professor at the University of Wales. Two years later he was appointed Foreign Member of the National Academy of Sciences of the USA, nominated Eminent Ecologist by the Ecological Society of America and granted an honorary doctorate from the University of Sussex. He was president of the European Society for Evolutionary Biology during the period 1993-1995. In 1996 he received an honorary doctorate from the National University of Mexico. In order to be

closer to their family, he and his wife moved to Devon in 1997. He became a Visiting Professor at the University of Exeter in 1998.

John Harper was a keen gardener and together with his wife Borgny created a plantsman's garden and arboretum in N. Wales. Although more modest than their Wales garden, the Devon garden offered a tranquil welcome to those who continued to seek his advice and delight in their company.

Over the course of his successful career John Harper published more than 130 scientific papers and several books, including the highly successful textbooks *Ecology: from Individuals to Ecosystems* and *Essentials of Ecology* in collaboration with Michael Begon (Liverpool) and Colin Townsend (Otago, NZ). The first of these two books, now in its fourth edition, has been the standard higher-level ecology textbook for more than twenty years. Apart from high quality science and engaging writing, the book differentiates itself from other textbooks by the recognition that ecology is a constantly evolving subject with its own uncertainties and controversies. For this book, in 2007 the authors received a Lifetime Achievement Award from the BES, prompting Michael Begon to say that this award "had made one old man feel very proud and two proud men feel very old".

The influence of John Harper on scores of students and collaborators from all over the world was crucial to the further development of the field that he created. All three of us obtained our PhDs under John Harper's supervision at the School of Plant Biology. Most likely, the current state of development of the science of ecology in Mexico would not have occurred without his influence on us and on several other Bangor graduates. The memes of dedication implanted in us, the initial "propagules", have now spread into successive generations of (mostly, but not exclusively) Mexican students, contributing to the study and, significantly, the conservation of Mexico's rich biodiversity.

John Harper's long time colleague and friend, the evolutionary biologist John Maynard Smith, once said that biology is difficult because of the number of facts one has to retain in one's head to be able to make connections and generalisations. John Harper was among the few biologists with this capacity. His childhood acquaintance with farming, his perennially youthful zeal for natural history, his professional training in agriculture, and his ability to soak up and retain everything he read allowed him to see beyond the surface of ecological questions and make insightful, often unexpected connections. He had a sharp intellect and extraordinary memory, he was renowned for his flair as a lecturer and performer, he had a powerful charisma, and he was protective of his numerous students and collaborators.

As a passionate Darwinian with a contagious enthusiasm for science and an acute wit, we believe he would be pleased by the twist provided by the following dedication, taken from the tablet containing the epitaph of George Lavington LLD, Bishop of Exeter 1747-1762, held in Exeter Cathedral:

Endowed by nature with superior abilities,
Rich in a great variety of acquired knowledge,
In the study of the holy scriptures consummate,
He never ceased to improve his talents,

Nor to employ them to the noblest purposes,
An instructed, animated and convincing preacher,
A determined enemy to idolatry and persecution,
A successful expositor of pretence and enthusiasm

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ⁱⁱⁱ My favourites though continue to be following four papers:

(a) *Approaches to the study of plant competition (1961) in Mechanisms in Biological Competition* (F. L. Milthorpe ed.) pp1-39

(b) *Individuals in a population*

(c) *A Darwinian approach to plant ecology. Journal of ecology* 55(2):247-270

(d) *The demography of plants with James White Annual Review of Ecology and Systematics* 5, 419-463

(e)

ii Studies in the dynamics of plant populations...

Cavers & Harper (1967) Studies in the dynamics of plant populations: I. The fate of seed and transplants introduced into various habitats *Journal of Ecology* 55, 59-71.

Putwain, Machin & Harper (1968) Studies in the dynamics of plant populations: II. Components and regulation of a natural population of *Rumex acetosella* L. *Journal of Ecology* 56, 421-431.

Putwain & Harper (1970) Studies in the dynamics of plant populations: III. The influence of associated species on populations of *Rumex acetosa* L. and *R. acetosella* L. in grassland. *Journal of Ecology* 58, 251-264.

Where is "Studies in the dynamics of plant populations: IV"? Can someone help?
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Putwain & Harper (1972) Studies in the dynamics of plant populations: V. Mechanisms governing the sex ratio in *Rumex acetosa* and *R. acetosella*. *Journal of Ecology* 60, 113-129.