



# 50 years of history Australian Society for Limnology



## ASL Past (and current) Presidents

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Dr Darren Ryder	2011-2012
Dr Darren Baldwin	2009-2010
Prof Stuart Bunn	2007-2008
Dr Sabine Schreiber	2005-2006
Prof Andrew Boulton	2003-2004
Dr Jane Chambers	2002-2003
A/Prof Pierre Horwitz	2000-2001
Prof Max Finlayson	1998-1999
Prof Paul Boon	1996-1997
Dr Marg Brock	1994-1995
A/Prof Leon Barmuta	1992-1993
Prof Stuart Bunn	1990-1991
Dr Rod Oliver	1989
Prof Jenny Davis	1988
Dr Terry Hilman	1987
Dr Ian Campbell	1985-1986
Dr John Kirk	1984
Prof Barry Hart	1983
Dr David Mitchell	1982
Frank Burns	1981
Prof Sam Lake	1980
Dr Peter Tyler	1979
Dr Ian Bayly	1978
Don Buckmaster	1977
Dr David Pollard	1976
Dr Keith Walker	1975
Joan Powling	1974
Dr D.F.McMichael	1973
Prof Bill Williams	1972
Dr Don Francois	1971
Dr Ian Hiscock	1970
D.D.Lynch	1969
Dr Hilary Jolly	1967-1968
Ron Strahan	1966
Dr Alan Weatherley	1965
John Lake	1963-1964
Dr A.Nicholls	1962

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**To celebrate 50 years of ASL – Past Presidents were asked to submit their memories of ASL issues and events during their time as president. To compliment this we also include two longer additions from early members and presidents of ASL Ian Bayly and Alan Weatherley.**

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## **Notes from Ian Bayly (ASL President 1978)**

*It is impossible but that offences will come: but woe unto him through whom they come!*

### The first ten years – 1961-70

In September 1961, V.H. (Hilary) Jolly, J.S. (John) Lake, and J.C.F. (Jim) Wharton sent out a circular to as many people as they could think of who might be interested in the formation of an Australian “freshwater” [read inland-water] biological association. Those interested were invited to attend a meeting to be held on 21 October 1961 at the Australian National University under the chairmanship of Professor J.D. Smyth (a helpful but “neutral” person not especially interested in freshwater biology). Those who attended this meeting in addition to the three convenors included Ian Bayly, Edgar Riek, Alan Weatherley and Bill Williams.

This meeting proved to be far more contentious and controversial than any of the “freshwater people” had imagined in advance. A contingent of five people with marine interests quite unexpectedly (just how did they hear about the meeting?!) arrived from the CSIRO Division of Fisheries and Oceanography then located at Cronulla. They included the Deputy Chief of Division, Dr G.L. Kesteven, and Dr J.M. Thomson. For reasons that were difficult to understand, but probably relating to a perceived intrusion of “foreigners” into their territory, empire and interests, this marine contingent did their best to prevent the formation of an exclusively freshwater association. They wanted instead to form, there and then, at “our” meeting, a marine and freshwater association. It was pointed out to them that it was hardly reasonable to form a broad aquatic science association at a meeting that had been specially convened to consider the formation of a quite different sort of organization.

After some rather bitter wrangling, the freshwater people insisted that the following motion be put to the vote: “An association of persons interested in freshwater biology should be formed and that consideration **might** (sic) later be given to the incorporation of marine interests.” The latter part of the motion was inserted in a concessional effort to ease the tension, but was destined to be stillborn. The motion was carried by only two votes with the Cronulla “mob” voting as a block against it.

It may be noted in passing that the Australian Marine Sciences was founded in May 1963, and it is of interest that Geoff Kesteven and Jim Thomson were elected President and Secretary respectively!

Following our rather difficult birth in Canberra, a meeting of a rather informal steering committee took place at Hilary Jolly’s residence at Warragamba Dam on 20 January 1962. The inaugural meeting of the “Australian Society of Limnology” [later the “of” became “for”], as formally constituted, took place at Monash University on 26 May 1962. We were very lucky that Bernie O’Laughlin turned up at this meeting. Not only was he a keen fly-fisherman and a prominent member of the Victorian Anglers’ Club, but he was also a lawyer. Under his invaluable (and free!) guidance a roughly drafted constitution prepared by the steering committee was quickly and efficiently knocked into good shape at this first meeting before the election of office bearers took place. The officers elected were: A.G. Nicholls (President), J.S. Lake (Vice-president), W.D. Williams (Secretary-Treasurer), I.A.E. Bayly, V.H. Jolly, E.F. Riek, A.H. Weatherley and J.C.F. Wharton (Committee members). Alan Weatherley was also elected Editor of the Newsletter.

It is convenient to now consider the eight people who either turned up at the Canberra meeting or were elected to office at the Monash meeting, or did both, and explore their background and interests. With one notable exception they could be characterized as being either “fish people” or “invertebrate people”. It is appropriate to discuss the one exception first because this distinguished biologist – the late Dr A.G. (Aubrey) Nicholls – was our first President.

Aubrey Nicholls was the son of the late Professor George E. Nicholls (University of WA 1921-48) who is himself well known to a handful of Australian limnologists for his taxonomic work on that distinctively southern hemisphere group of isopods, the Phreatoicidea. In 1928, after graduating B.Sc. (Hons), Aubrey joined the Great Barrier Reef Expedition led by C.M. Yonge, and lived for a year on Low Island whilst working on corals. In 1929, he

travelled to England to do a Ph.D. at University College, London, while working at Plymouth Marine Laboratory on a marine littoral isopod. After obtaining his Ph.D. in 1932, Aubrey joined the staff of the Marine Station at Millport, Scotland. Here he joined forces with S. M. Marshall and A. P. Orr and commenced work on the ecology of a marine calanoid copepod. He authored the first of a series of 13 papers "On the biology of *Calanus finmarchicus*---" published in the Journal of the Marine Biological Association. Sheina Marshall was one of very few women to be honoured with an FRS. The Marshall and Orr book "The Biology of a Marine Copepod, *Calanus finmarchicus* (Gunnerus)" (1955) incorporated a large amount of Nicholls' work.

Another major research theme initiated by Nicholls during his seven-year stay at Millport was the taxonomy of psammophilous harpacticoid copepods. This work, which was later continued in Australia, is well cited in texts on the fauna and ecology of marine sandy beaches. He was a noted pioneer worker on marine interstitial fauna.

In 1939, Nicholls returned to Australia and consolidated his world reputation as a copepod taxonomist, paying particular, but not exclusive, attention to the Harpacticoida. Publication of much of his work during the early 1940s was held up by WWII, with a consequent flurry of papers from 1944-6. It was during the war years that he also served as President of the Royal Society of WA.

In 1947, Aubrey commenced what was to become a 22-year association with the CSIRO Division of Fisheries and Oceanography. In response to a request from Tasmanian authorities that CSIRO mount a study of trout populations in that State, he moved from Cronulla in May 1949 to establish a laboratory in Hobart. Despite the drastic taxonomic and size change from interstitial harpacticoid copepods, which are amongst the minutest (length less than 1mm!) of invertebrates, to a relatively huge vertebrate, and a leap from marine to fresh waters, the versatile Aubrey was more than equal to the task. It was during his 12-year stay in Tasmania that he initiated and completed a monumental study on the Tasmanian trout fishery. This work was published in a series of six papers in the Australian Journal of Marine and Freshwater Research (hereafter AJMFR) over the period 1957-61. Amongst other things, this study made a clear case for discontinuing the century-old practice of trying to boost wild populations through the release of hatchery-reared fish; despite the substantial release of marked hatchery fish, they comprised only 2% of the total catch!

In 1961, the Hobart laboratory was closed down, and in 1962 Aubrey and his small group of associates opened a new laboratory in Camberwell, Melbourne. Here, the work, named the "Southern Pelagic Project", was focussed purely on the Australian "Salmon", *Arripis trutta*. The Camberwell laboratory was closed down at the end of 1969 when officially Aubrey retired. However, he continued to work up the "salmon" data until it was published (AJMFR) in 1973.

Aubrey Nicholls died on 14 July 1986 aged 81. A full obituary and eulogy written by Ian Bayly was published in the ASL Newsletter [25(1), 8-14] in February 1987, and to this was added a brief tribute written by P.S. (Sam) Lake. Alan Weatherley noted that: "Aubrey became [the first] President of the ASL not because he had been especially active in its formation, but because he was so well liked and respected as a biologist working on freshwater (and marine) organisms, and was considered easily the most scientifically accomplished person able and willing to represent the new Society."

The "fish stream" part of the early history of the ASL flows easily on to a consideration of Alan Weatherley (the third President) and the very substantial and highly enthusiastic contribution that he made towards the ASL during the 1960s. In 1951, two years after Aubrey Nicholls moved to Hobart, Alan joined him as a junior colleague in the CSIRO Division of Fisheries. Alan said of Aubrey: "He never patronized me from his position of maturity and established reputation, but was unfailingly helpful courteous and interested in my problems."

In the early 1950s Nicholls and Weatherley worked on the effects of the artificial fertilization of Lake Dobson, a glacial lake in the Tasmanian highlands. Alan did his best to understand the basic limnology of this lake by studying the plankton blooms, benthic fauna, water chemistry and the huge growths of milfoil (with its epifauna of gastropods and stone flies) that the deliberate enrichment had produced. Nicholls and Weatherley published this work (AJMFR) in 1955. Alan then turned his attention to the stocking of farm dams with trout and tench.

At the end of 1957, Alan Weatherley left Tasmania for Britain to pursue a Ph.D. at the University of Glasgow. This involved a study of the thermal tolerance of the perch, *Perca fluviatilis*, with special reference to the role of interrenal tissue and cortisone.

Alan returned to Australia in 1961, shortly before the formation of ASL, to take up a lectureship at the Australian National University. Almost immediately he received a request to study the biological effects of the drainage from the site of the recently closed zinc mine at Captain's Flat that was entering the Molonglo River that

flowed through Canberra. This became a research focus not only for Alan, but also Roy Beavers (Bureau of Mineral Resources) and his star Honours student Sam Lake (of whom we will hear much more shortly).

In 1965, the year in which he was elected President, Alan conceived the idea of soliciting a series of essays or reviews from selected colleagues and putting them together in a book under his editorship. This book, "Australian Inland Waters and their Fauna: Eleven Studies" was published by ANU Press in 1967. More will be said about this book and its non-editorial contributors shortly. Apart from the fact of its founding, the Weatherley book was probably the most important single development during the first ten years of ASL history. It would not have happened if the ASL had not been established, and if it had not been for Alan's vision, enthusiasm and encouragement of authors.

In the mid-1960s, Alan collaborated with John Lake in a study of the distribution of exotic species of freshwater fish in relation to thermal tolerances, reproductive sites and other environmental factors. In the late 1960s, Alan combined with Tim Berra (Tulane University) to study the taxonomic relationship between Murray Cod and Trout Cod using recently developed techniques. At the same time he worked on his solo book "Growth and Ecology of Fish Populations". This was published in 1972, and received the Publication Award of the Wildlife Society (of America) in the same year.

At the end of 1973, Alan Weatherley left Australia, unfortunately for Australian limnology, never to return. He accepted the position of Professor of Fisheries Biology at the University of Tromsø, Norway, to coordinate studies on fjord-inhabiting fish species. In mid-1975 he accepted a professorship in vertebrate biology at the University of Toronto where he worked on experimental studies of fish growth and applications of telemetry in determining the metabolic cost of activity in free-swimming fish. He retired in 1993 and now lives in New Brunswick.

From Alan Weatherley the "fish stream" flows happily on to John Lake (the second President of ASL who thus served for two consecutive years – 1963 & 64). After obtaining an M.Sc. from the University of Sydney, he joined the NSW State Fisheries Department. Here he worked away quietly by himself before writing up a notable study on the trout populations in NSW. Alan Weatherley has revealed that this paper was sent to Aubrey Nicholls in Hobart for refereeing. Aubrey who had been working for many years on the Tasmanian trout fishery, but was quite unaware of John Lake's work, received quite a jolt! Aubrey, a very fair and generous man, praised John's work and urged its publication by the AJMFR (1957). John Lake and Alan Weatherley did not meet up personally until 1961 (they were exact undergraduate contemporaries in biology at the University of Sydney, but somehow managed to pass like ships in the night!) but this meeting initiated a very warm and enduring friendship.

In 1960, John Lake moved to the newly-built Inland Fisheries Research at Narrandera as its first biologist and director. Almost at once he set about designing and arranging the construction of a series of large experimental ponds adjacent to the station. They were designed so that they could, on demand, be filled with Murray River water. Using these ponds, he successfully induced the spawning of Murray cod, golden perch and other species and accurately determined the factors that induced spawning. John extended his pioneering studies on spawning by describing their pre- and post-hatching development.

In 1966, John left Narrandera and the State Fisheries, and took up an Associate Professorship in the Zoology Department of the University of Sydney. This gave John new freedom and he used it to travel widely in Queensland and elsewhere. This geographic expansion provided a basis for John's book "Freshwater Fishes and Rivers of Australia" which was published in 1971. At about this time, John accepted the Northern Territory position of Director of Forestry, Fisheries and Wildlife, and was stationed in Darwin. In 1974 Cyclone Tracy destroyed Darwin and severely traumatized John and his family. John, his wife Nola, and four children barely hung on to life within a few tattered remnants of their house as their lifetime's possessions were scattered to the winds. As soon as the cyclone passed, the whole family got into their car – there was nothing to take other than themselves – and drove away, never to return!

The family re-grouped in NSW, and shortly afterwards John accepted a position at the University of Northern NSW in Lismore. John, a lifelong heavy smoker, died of lung cancer at the age of only 48 in 1978. Alan Weatherley said of John's death: "I lost one of the closest and very best friends I ever had."

The next "fish-in-the-stream", Jim Wharton, was there to support the ASL at the very beginning. His contribution to Australian limnology was more that of an administrator than a research scientist. He was Deputy Director and then Director of the Victorian Department of Fisheries and Wildlife. Later, he moved to Lennox Heads, New South Wales, and became a consultant for Australian-American Fisheries. Jim supported the ASL in a practical manner by serving as President (1967-8) and Secretary-Treasurer for three years (1969-71 and 1972-3) and remained a member until 2002. He died on 24 January 2007.

It's time to leave the last fish in the stream, and turn to the plankton in the lake. Hilary Jolly was a key player in the formation of the ASL and President in 1968-9. Hilary, a New Zealander, arrived in Australia in 1959 to take up the inaugural position of Biologist with the Sydney Metropolitan Water, Sewage and Drainage Board. She was stationed at Warragamba Dam, and her main duties were to monitor conditions in the various reservoirs servicing the Sydney area, with special reference to the early detection of any impending phytoplankton blooms.

Hilary's background in New Zealand was an unusual one; she did not embark on university studies until after WWII when she was more than 40 years old. She started at Auckland University and then went to Otago University to complete her B.Sc. with majors in botany and zoology. In 1955, she took out an M.Sc. with a thesis on Cladocera. In her decision to specialize in limnology, she was greatly influenced and inspired by some lectures given by the late Professor Edward Percival of Canterbury University who was an enthusiast for New Zealand lakes (he described the copepod *Boeckella delicata* Percival, 1937, from Lake Brunner). With the M.Sc. behind her, Hilary travelled to the UK where she worked at the Ferry House on Windermere and gained further valuable experience in planktonology.

Upon return to New Zealand, she commenced study for a Ph.D. This involved a comparative study of some 23 New Zealand lakes ranging from the Rotorua lakes in the north to Lake Manapouri in the south. Her Ph.D. was submitted in 1959, and there is a rather bizarre story to be told about this event. Apparently it was then the practice in New Zealand for PhD students to have an oral examination as a matter of course. In Hilary's case the oral examiner was to have been Professor Percival, the man who originally inspired her to become a limnologist. When the day arrived for the scheduled examination, Hilary turned up to be informed that Professor Percival had died that morning. Subsequently it was K. Radway Allen of Allen-curve and world-wide fish fame who carried out the examination (see, there's no getting away from those fish people!).

Hilary's two main interests were the taxonomy and ecology of planktonic crustaceans (especially *Boeckella* and *Calamoecia*), and the physics and chemistry of lakes. Her most valuable contributions were the physico-chemical features of New Zealand lakes and especially their thermal behaviour and patterns of mixing. Most important was her 1968 paper "The comparative limnology of some New Zealand lakes I. Physical and chemical" (NZJMFR). Additionally she was the senior editor (with John Brown) of the 1975 book "New Zealand Lakes".

Immediately after her stint as President of ASL, Hilary returned to New Zealand in 1969, but her intense interest in the ASL continued. In 1970, Hilary was made the first Honorary Life Member of ASL. In early 1971 she generously donated to the Society a considerable sum of money which, in 1973, was used to establish the (Hilary) Jolly Award which could be given to individuals deemed to have made a significant contribution to any aspect of limnology in Australia. Initially the Award was in the form of an inscribed book, but later the Jolly Award morphed into the ASL Medal. Hilary died from a carcinoma on 30 October 1975 at the age of 71. A full account of Hilary's life, work and publications was given in Ian Bayly's inaugural Hilary Jolly Memorial Lecture at Tanunda in 1976 (most of this address was published in ASL Newsletter 14(1), 7-12; Winter 1976). [Ian Bayly (the 1975 medallist) was not the inaugural recipient of the Jolly Award/ASL Medal as erroneously proclaimed on some previous ASL documents. The inaugural recipient of the Award/Medal was Alan Weatherly in 1974, but Alan had already "escaped" overseas before we could get a lecture out of him!]

Ian Bayly, another New Zealander, emulated Hilary by also arriving in Australia in 1959. Immediately after finishing his M.Sc. at Auckland University he took up a lectureship in the Department of Zoology, University of Queensland. The parallels with Hilary went much deeper: like her, he was interested in the taxonomy and ecology of calanoid copepods, and physico-chemical limnology. His M.Sc. thesis on the ecology of *Boeckella propinqua* was published in the AJMFR in 1962. Ian quickly set about revising the taxonomy of Australian inland-water copepods (9 papers during the 1960's) and initiated a series of chemical studies, first by himself and later with Bill Williams. Ian always did his own water chemistry. His paper on the chemistry and biology of the major lakes on Fraser Island (which he visited with Gordon Grigg in 1963) was published in the AJMFR in 1964. Ian completed his Ph.D.(Qld) on the zooplankton of Australasian inland waters and estuaries in 1965.

Bill Williams was appointed to the inaugural staff of the Department of Zoology and Comparative Physiology (as it was then), Monash University, in 1960, shortly before Monash commenced teaching undergraduates in 1961. He had recently completed his Ph.D. on the isopod *Asellus* at the University of Liverpool under the supervision of the noted stream ecologist, Noel Hynes. Naturally enough, the first thing he did was to see into print his thesis work on *Asellus* in a series of five papers in 1962-3. In 1962, he also published his first paper on the Australian amphipod *Austrochiltonia*. Bill then turned his attention to Tasmania, studying water chemistry and the famous syncarid crustacean, *Anaspides*.

Bill soon struck up a correspondence with Ian Bayly, and the two of them got on well together. Even before Ian had left the University of Queensland, he had travelled to Victoria in early 1964 to join forces with Bill in a combined study of saline lakes in the Western District of Victoria, and in the Beachport-Robe region of South Australia. This eventually (1966) resulted in the publication of a major joint paper in the AJMFR.

In January 1965, shortly before Ian left the University of Queensland, he and Bill went on a long field trip to study lakes in tropical Queensland. Ian resigned his position at Queensland at the end of March 1965, and took up a lectureship at Monash in the same Department as Bill at the beginning of April. This was the start of a decade during which Bayly and Williams worked in close collaboration. They both spent the whole of 1967 overseas. Bill worked in Noel Hynes' department in Waterloo, Ontario, and Ian worked as a Research Associate with Ed Deevey at Yale University where he had the privilege of attending Evelyn Hutchinson's graduate lectures. Their return to Monash saw the establishment in 1968 of a small field station at Alvie to the north-west of Colac. This was located near the heart of the Western District lakeland, close to the south-east shore of Lake Corangamite.

The *magnum opus* of Bayly and Williams as joint authors was the book "Inland Waters and their Ecology", but as this was not published until 1973, it is appropriate to defer an evaluation of the contribution this made to Australian limnology to the second decade of ASL history. Bill was awarded a D.Sc. (Liverpool) in 1974, and Ian received a D.Sc. (Monash) in 1975. There is much more to be said about Bill Williams in later decades of ASL history. However, it may be noted here that he died from myeloid leukaemia on Australia Day, 26 January 2002, at the age of 66. Obituaries written for him by Ian Bayly and Keith Walker were published in ASL Newsletter 40(1), 8-13 in March 2002.

Edgar Riek was present at that crucial meeting held in Canberra on 21 October 1961, and was active during the first two or three years of ASL's existence, being a member of the inaugural executive committee. He was born in New Zealand but moved to Queensland at an early age. Edgar obtained a B.Sc. (1944) and M.Sc. (1946 – freshwater invertebrates) from Queensland University. He obtained a D.Sc. (Qld) for his work on fossil insects in 1971. In Australian limnological circles he is remembered for his taxonomic work on mayflies, stoneflies and decapod crustaceans. Edgar was awarded an OAM in 1996 for his services to viticulture and to entomology (now there's a fine combination – were his aquatic insects preserved in fortified wine?!). Edgar, who lives in the ACT, turned 89 in 2009.

As mentioned above, the book "Australian Inland Waters and their Fauna" was published in 1967. Apart from the editor, Alan Weatherley, and contributions from John Lake, Ian Bayly and Bill Williams, all of whom have received mention above, there were six other contributors deserving of mention. Murray Littlejohn wrote a chapter on the patterns of zoogeography and speciation of frogs in south-eastern Australia, and in an allied contribution Angus Martin discussed the life histories of Australian frogs with special reference to evolutionary and ecological aspects. Don McMichael chipped in with a review of the Australian freshwater Mollusca and their evolutionary relationships. Sam (P.S.) Lake (together with Alan Weatherley and Roy Beevers) contributed a chapter on "The Ecology of a Zinc-polluted River". This refers, of course, to the Molonglo River project already mentioned above. Sam was destined for much greater things, and there is much more to be said about him below.

One contribution in the Weatherley book deserves special mention because, unlike the other players who were fortunate enough to be able to write many more papers, the author's life was cut tragically short. This is a reference to the then very young Jim (J.A.) Bishop who put together a fine contribution on the zoogeography of Australian freshwater decapod crustaceans. After completing a Bachelor degree at the University of Sydney, Jim proceeded on to a Ph.D. under the supervision of Drs A.A. Racek and K.P. Lamb. He was awarded this degree in 1965 with a thesis entitled "Adaptation of *Limnadia stanleyana* King (Crustacea: Branchiopoda: Conchostraca) to a temporary water environment." Much of this work got published in the Journal of Animal Ecology (1967) and Crustaceana (1968). Jim was a most enthusiastic member of ASL in its very early days. Ian Bayly has a colour slide taken during the 1961 Brisbane ANZAAS conference showing him standing on the shore of Lake Manchester alongside Bill Williams, Jon Martin (of chironomid note) and Dick Sacksmith. In 1966, Jim left Australia and went to Manchester University, UK. It was here that he died from cancer when only in his mid-30's.

One of Jim's close friends and mentor was Alan Dyce (of *Culicoides* fame) who for many years looked after the ASL Reprint Collection (whatever happened to this?) and, with little thanks, compiled extensive lists of limnological papers for the ASL Newsletter. In 1968, Bishop and Dyce jointly authored a note on rock-pools near Sydney for the ASL Newsletter [6(1), 5-6]. Jim presented Alan with a copy of his Ph.D. thesis, and in 2000 Alan very kindly passed this on to Ian Bayly. Alan Dyce, incidentally, should get a prize for the most original and intriguing title of a paper presented to an ASL conference (Jindabyne 1969: see 1970 ASL Bull. 2,20): "Rot pockets of Prickly Pear in Australia: an example of an introduced, regenerating habitat"! This was mentioned in a review of a book

on phytotelmata (see Aust. J. Ecol. 9, 164). Alan, aged 85 in 2008, lives in Sydney and is still working on biting midges.

Someone not thus far mentioned is Ron Strahan who in 1966-7 served as our fourth President. Ron's interest in limnology arose from his M.Sc. work on the freshwater phases of lampreys including the ammocoete larvae. During the 1960s he worked with Ian Potter on the lamprey genus *Mordacia*. He was an early enthusiastic member of ASL, and attended all of the first five conferences. However, his interest in the freshwater fauna was destined to wane as his attention turned to terrestrial animals. He became Director (1967-74) of Taronga Zoo, Sydney, and went on to author the enormously successful book "The Mammals of Australia" (3<sup>rd</sup> edn 2008).

The last President (1969-70) in the first decade of ASL's existence was D.D. (Dan) Lynch. He was appointed Commissioner of the Tasmanian Inland Fisheries Commission (established 1959) in 1964 following the death of Deresley Hobbs. Dan held this position until 1984. Like Jim Wharton, he was a strong supporter of ASL more in the capacity of an administrator than a research scientist.

Peter Tyler made his entry into ASL affairs at the 1966 Miena conference. He was destined to later become one of the major figures in the history of the ASL, and the foremost researcher into the taxonomy and ecology of phytoplankton, and the general limnology of Tasmanian lakes. More of Peter below.

The mid- to late-1960s saw several rising stars. Sam Lake did his Ph.D. at the University of Southampton (1964-67) and received the prestigious T.H. Huxley Award for his outstanding thesis. Sam returned to Australia at the end of 1967 to take up a lectureship at the University of Tasmania. By 1969, Geoffrey Brand, Brian Timms, Michael Geddes and Keith Walker had all commenced their Ph.D. studies in limnology at Monash University. All of these studies were dependent to at least some extent on lakes in Western District of Victoria. Most of these students were destined to later play a major role in the development of Australian limnology.

This account would be incomplete without a brief reference to the early ASL conferences and associated excursions. As part of the 1962 Melbourne (Monash) meeting we paid a visit to the Shobs Creek Research Station and Fish Hatchery where L. Ashburner demonstrated the gentle art of trout stripping. Included amongst those gathered around the inevitable BBQ were: Ian Bayly, Don Francois, Paul Genery, Alistair Gilmour, Fred Hall, Deresley Hobbs, Hilary Jolly, John Lake, Ron Strahan, Bill Williams and Neville Williams. In 1963 we moved on to Narrandera, and amongst those that milled around the experimental ponds were: Dick Barwick, Ian Bayly, Jim Bishop, Tony Evans, Don Francois, Fred Hall, Deresley Hobbs, Hilary Jolly, John Lake, Sam Lake (at that time an Honours student), Aubrey and "Mabs" Nicholls, Bernie O'Laughlin, Alan Weatherley, Bill Williams and Jim Wilson. At Canberra in 1964 we went out to Captains Flat and those who stood around the Molonglo River in near-freezing conditions included: Ian Bayly, Don Buckmaster, Jim Bishop, Derek Cannon, Don Edward, Tony Evans, Don Francois, Ian Hiscock, John Lake, Sam Lake, Leighton Uwellyn, Don McMichael, Norm Milward, Bernie O'Laughlin, Dave Pollard, Ron Strahan, Alan Weatherley, Jim Wharton, Bill Williams, Neville Williams and Jim Wilson.

The Brisbane (May 1965) meeting produced an excursion with a difference – the "stuck-bus excursion". Although Ian Bayly had left Brisbane "permanently" two months previously, he tried to contribute towards the conference organization from afar, but it was not easy. Gordon Grigg, who had just completed his Honours year working on the Queensland lung-fish, had been mentored by Ian Bayly both as an undergraduate and Honours student, and thought he would like to help out. His contribution was to hire a bus for the excursion, and to cut down on costs he offered to drive it himself. Before departing from Brisbane the bus had to collect people from a couple of motels. There was a considerable delay at one of these as a prominent member of the Society was discovered still in his pyjamas and still drunk from the previous night. Mercifully he had at least put on his pyjamas! After this we thought it would be plain sailing, but at about lunch time Gordon got the bus rather firmly stuck between two trees – that's right there was something wrong with Gordon's whiskers that day, and the distance between the trees was somewhat less than he had bargained for! It took about two hours of hard work to extricate the bus using person-power only. Here is Alan Weatherley's account of this episode: - "The bus was jammed between two trees at lunch time and we had to push the bloody thing free! It had been a well lubricated lunch and I vividly recall pushing near the front left wheel with several companions and, seeing one of them almost under the wheel, exhorted him to be careful. He, the most pleasant, polite, easygoing and good-natured man imaginable under normal circumstances, now, having well-assuaged his thirst, rose with ruddy and furious face and told me to mind my own bloody business!" Yes, the bodywork of the bus was quite badly damaged, and poor Gordon was left to return it to its owner all by himself!

Despite his singularly undistinguished and unusually brief career as a bus driver, Gordon later became a very accomplished pilot, which skill he put to good use in extensive and repeated aerial surveys of kangaroos in South Australia and elsewhere, and surveys for crocodile nests in Australia's northern coastal river systems. From

Brisbane he went to the University of Oregon to study for a Ph.D. before returning to a Queen Elizabeth Fellowship at the University of Sydney, during which time he attended the 1969 Jindabyne Congress to present a paper on seasonal changes in the oxygen affinity of fish blood. He became an outstanding vertebrate eco-physiologist, and after a stint on the staff at Sydney University, took up the Chair of Zoology at the University of Queensland, which position he held for many years until his retirement in 2007. Much of the work that Gordon did on the eco-physiology of crocodiles in NT estuaries was just as much limnology as it was oceanography.

Space does not permit us to visit all conferences and excursions, but the 1969 Jindabyne conference deserves special mention. On the day preceding this conference several ASL members including Ian Bayly, Derek Cannon, Jan Powling, and Brian Timms, converged on Lake Jindabyne and, under the direction of the then President, Hilary Jolly, tried to mount a one-day mini-study of its plankton and benthos. A boat with outboard motor, plus plankton nets and an Ekman-Birge grab, were deployed for this purpose. Some of this work got published as brief papers by Bayly and Powling in ASL Bulletin 3, 25-32 (1970).

Ian Bayly

Killiecrankie

3<sup>rd</sup> and final revision, 6 May 2011

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## Notes on the early history of The Australian Society for Limnology

By Alan Weatherley

### ASL's First Presidents

#### A.G. Nicholls (ASL President 1962)

Dr A.G. (Aubrey) Nicholls was the first President of The Australian Society for Limnology. He was also the first – and an outstanding – freshwater fish biologist I ever knew. I met him in Hobart when I became his very much junior colleague in The Fisheries Division of CSIRO in 1953. Aubrey was at that time 47, and had earned his Ph.D. at the University of London in the 1930s, where he had worked extensively as part of the team of Marshall, Nicholls and Orr, studying the ecology and population dynamics of the marine copepod *Calanus finmarchicus*. By 1938, these three had attained a major reputation for their outstanding work on this organism. Before this, Aubrey had been a member of the Low Isles (Great Barrier Reef) expedition under the leadership of C.M. Yonge (later Sr Maurice Yonge, FRS) to whom he was research assistant. Yonge and Nicholls were both young men in their 20s, with Yonge the senior by about 4 years. This was a very important British-sponsored expedition and it spent a year on The Reef. Its deep and pioneering studies on the biology of the reef organisms included an investigation of the physiological role of zooxanthellae in the tissues of giant clams by Yonge and Nicholls – work that brought them considerable notice when published by The Royal Society.

Just before WW II, Aubrey moved back to Perth with his wife Mabel Borden, a gifted Canadian whom he had met when doing her own Ph.D. in London. Aubrey became a Senior Research Fellow at The University of Western Australia where his father, Professor G.E. Nicholls had been head of the zoology department. During the war years, Aubrey turned his research to copepod taxonomy and systematics in which he became a world authority. He also became President of the Royal Society of Western Australia. In the post-war years it appeared for a time that he would become Chief of the CSIRO Division of Fisheries, a position that eventually went to a Scot, Harold Thompson, who had become a leading authority on the development and use of scale-reading techniques and their early applications in fishery science. Aubrey nevertheless joined the Division at its Sydney headquarters and had been expected to play a major part in its research programs. Finding the ambiance at the Cronulla laboratory unappealing, he volunteered to carry out an evaluation of the trout fishery of Tasmania, which had been urgently requested, and began a decade-long study of the trout populations' age structures, growths and fecundities. By means of these arduous investigations he was able to address rationally for the first time a number of puzzling questions posed by anglers. In the end he made an indisputable case for discontinuing



the century-old practice of attempts to boost the wild populations through release of hatchery-reared fish, thereby effecting major economies in the trout management program for the state of Tasmania.

Aubrey was an accomplished and highly organized biologist, with the ability to work tirelessly at problems and solve them. It was my great good fortune to have an office beside his and be able to consult him at any time. He never patronized me from his position of maturity and established reputation, but was unfailingly helpful, courteous and interested in my problems. Aubrey Nicholls was quiet-spoken, extremely modest and a complete gentleman, though he was aware of his abilities and was justifiably self-confident. As for hobbies, his had been woodworking, at which he was expert. As a driver he was also very expert – as he needed to be, because he was the fastest driver I can remember as a sometimes terrified passenger. I think of Aubrey Nicholls only with pleasure and gratitude, and as a very dear friend.

Aubrey became President of the ASL not because he had been especially active in its formation, but because he was so well liked and respected as a biologist working on freshwater organisms and was considered easily the most scientifically accomplished person able and willing to represent the new Society. To have a scientist of the quality of Aubrey Nicholls as our first President seemed like an excellent idea to everybody who knew him.

### **J S. Lake (ASL President 1963-1964)**

John Lake was the second President of the ASL. Working for the NSW State Fisheries, he published the first noteworthy study of the biology of trout populations in Australia (i.e. NSW) in 1957. I was in Tasmania at the time and Aubrey Nicholls (first President of ASL and my senior colleague and friend in CSIRO) had already been working for many years on a population analysis of the Tasmanian trout fishery. I think Aubrey was understandably a bit shaken when he received John Lake's large paper to referee. I recall him saying wryly something about being scooped. The scope and approach adopted by John was actually very different from Aubrey's, but Aubrey – always eminently fair and generous – praised John's work, and urged the AJMFR to publish it as quickly as possible. I, who had not then met John, found it fascinating that he had been able to identify three major orders of growth rates of trout in the three types of streams he had identified. And, of course, the fastest trout growth rates in New South Wales were sensationally more rapid than those in Tasmania or Great Britain. It was immediately obvious that John had worked unbelievably hard and with inspired insight as a young and isolated biologist to get this work done.

John Lake and I had been contemporaries as undergraduates at Sydney University but had not known each other, though we experienced a slight sense of mutual recognition when we met in 1961. It was odd that we had failed to meet at university, because we apparently both did the same course in invertebrate zoology in our second years. But there were many in that year and John was doing Chemistry as his other major subject, whereas I was following the usual combination of zoology and human physiology. It seemed doubly ironic to me, though, when we did get to know each other in the flesh, because we got on wonderfully together from the first, and I sensed immediately that we would be friends for life.

My first contact with John Lake was through correspondence. I was doing my PhD at the University of Glasgow and needed information on the distribution and ranges of the redfin perch *Perca fluviatilis* in NSW. John had recently compiled a brochure that contained some of the material I needed, but in insufficient detail for my use. I wrote to him where he was in Narrandera asking for more details from his experience and he responded at once. We met in Canberra soon after I arrived at ANU in 1961, when we were both consulted by the National Capital Development Commission about the future of fish in the planned artificial Lake Burly Griffin, cited for completion about 1964. By then, I was thinking about extending my work to take in the zoogeographic distribution of all exotic species of freshwater fish in the major river systems of NSW and Victoria and began to pick John's brains. He became interested at once at what I was trying to do and we wrote together our evaluation. Our aim was to pose a simple question: knowing the life cycle characteristics and requirements of the introduced fish species in the places they had come from, just how had they "ended up" after living for up to a hundred years in Australia? We found we could "explain" the locations and ranges of nearly all the species examples as inevitable products of their life cycle responses to the Australian environmental conditions (temperature, stream bottom topography, suitable spawning substrates and so on), exemplified in those places where they now occurred in self-maintaining populations. Our conclusion was that, if one had enough prior knowledge of the natural history and life cycle of a species, it was possible to predict with reasonable accuracy its eventual range and distribution when introduced to an area or region new to it. We felt elated that these animals had not spread at all haphazardly but in a manner that could have been readily anticipated if the original introducers had given

deep and proper thought to their attempts. It also gave us a conceptual tool to warn us of cases when conditions might overly favour an introduced species to the detriment of native species.

When I first actually met John Lake he was already in the late stages of his work on the spawning of the Murray cod, golden and silver perch. His large-scale experiments on these species were performed in big experimental ponds he had constructed in Narrandera at the NSW Fisheries Station he had established. It had long been claimed that the reproductions of these species were adapted to the particular conditions of the Murray-Darling system with its unreliable spring or early summer temperatures and floods as the triggers for spawning. John wanted to put this on a scientific basis. He designed the station so that his ponds could be filled with Murray River water as required. The ponds were of two types: simple excavations and others in which there was a deep water-filled trough along one side and a large area that could be kept dry except when water was allowed in to simulate a flood. Working with these ponds in a series of experiments, John Lake was able to determine that, for sure spawning to occur, the females of the species had to be ready to release eggs and that this would occur only when water at certain temperatures was released into the test ponds. Both conditions – release of water and the right temperature – were needed. John extended his pioneering studies of the early life of these fish by describing their pre- and post-hatching development. John also had a hunch that what might be called an "essence of freshly flooded, previously dry ground" was also somehow involved in this process – a geochemical trigger, as it were. So far as I am aware, he was unsuccessful.

John became disenchanted with some aspects of the NSW Department of Fisheries in the late 1960s and became a member of the Zoology staff of the University of Sydney as an Associate Professor and began a series of expeditions throughout Australia's main freshwater systems that resulted in his book on the natural history of freshwater fish. Late in the 1990s or early 1970s (I am not sure which) he accepted a position as Director of Forestry, Fisheries and Wildlife of the Northern Territory, stationed in Darwin. However, in 1974, a hurricane destroyed Darwin and with it, John's position there. I vividly remember his describing to me how he saw objects like refrigerators flung haphazardly around the sky, how he and his family (of wife Nola and their four children) hid helplessly in corners as their home and lifetime's possessions blew away, and how immediately afterwards they got in the family car and drove away forever. Soon after, John obtained a senior position at the University of Northern New South Wales in Lismore, and he and his family settled once again. I was in Norway in 1974 when a mutual friend informed me that John was in an advanced stage of cancer. I telephoned him at once, to be informed by John himself, who, in his usual direct way said, "Yes, the cigarettes have got to me" – he was a lifelong heavy smoker – and simply and unhesitatingly told me what might happen.

As far as I (a third generation Australian) am concerned, John Lake was an Australian of the very best type: open, fair-minded, speaking his mind but choosing his words, sympathetic, generous, very intelligent, independent. He had a powerful and ironic sense of humor that was expressed in unexpected remarks rather than recounted jokes. John was very popular. I do not recall anyone who knew John who did not like him, though that was nothing to him. The ASL was enormously lucky to have him as its President. When John Lake died at 48 I lost one of the closest and very best friends I ever had.

#### **A.H. Weatherley (ASL President 1965)**

I had the honour to succeed John Lake as ASL's third president. My work in freshwater biology began in Tasmania in 1951, following two post-graduate years in human physiology at Sydney University. I moved to Hobart as a CSIRO Research Officer without the slightest knowledge or preparation for the task of becoming a fishery biologist whose major responsibility it would be to examine the possibilities of fish culture in farm ponds; a project that seems very strange to me in retrospect. It grew out of two things: there had been much interest in some attempts in wartime Britain, when ocean fisheries were severely restricted, to stimulate fish production in semi-enclosed Scottish sea lochs by addition of chemical fertilizers. A trial project of this kind had been initiated in a small highland lake – Lake Dobson – in Tasmania, a glacial formation in dolerite country. It was also planned to see whether the ordinary farm dams that sprinkled the Australian inland could be made into the sort of farm ponds that were yielding fish harvests for domestic consumption in the southern United States – an enterprise that had emanated from field trials of H.S. Swingle in Alabama. When I arrived in Hobart, the work on the small lake had stalled for lack of labour to carry it beyond an initial stage in which, without much knowledge of its environmental characteristics, two seasons of chemical enrichment had been carried out. My first years in Tasmania were spent educating myself in the problems and techniques required to understand the basic limnology of Lake Dobson which, at 1000 m altitude, was often snowbound in winter. As I studied the plankton, benthic fauna and water chemistry of the lake, the plankton blooms and huge growths of milfoil (together with their epifauna of gastropods and stone flies), plus the benthic fauna that chemical enrichment had produced and

looked forward to evaluating the growth performance of trout that had been released in the lake, two things emerged. First I became a limnological ecologist as I began to understand the life processes in the lake and second, I began to become a conservationist as I started to resent that people had used a small and perfect pristine lake as an experimental site for chemical enrichment. Well, it turned out to be a great education for me.

The subsequent work on fish in farm dams was divided into a study of the growth and survival of trout fingerlings stocked in a 4 ha farm dam which – unusually – was partly stream-fed, and in finding another available local fish species that had the hardiness and growth rate potential to meet the requirements for stocking the more usual kind of farm dams. I carefully selected a number of dams that were unlikely to dry out while I worked on them and were close enough to Hobart for me to be able to reach them on a regular basis. As no one had reported on the chemistry, plankton and benthic faunas of farm dams I studied these features. I also did a considerable investigation of the tench, a cyprinid species brought to Tasmania during the 19th Century. As side issues I did some experimental work on tench schooling and colour variation on different backgrounds, and their temperature tolerance. I also got some tench sent to me from the FBA in the UK to compare with Tasmanian tench; I thought there might have been some measurable changes in meristic features due to local selection pressures. I did find some suggestive differences, but it would have needed great numbers of tench from both the UK and Europe to get far with this.

I collected all the tench of small size I needed for dam-stocking from Lake Tiberias in south central Tasmania, using electrofishing gear that we had built locally according to specifications in a British angling magazine. As far as I am aware there was nobody else using such equipment in Australia. The tench were eventually stocked in farm dams and grew remarkably quickly – far more quickly than my estimates of the growth of tench in wild environments as determined from scale reading.

At the end of 1957 I left Tasmania for Britain to do a PhD at the University of Glasgow, something I had to do in order to become an academic biologist – which I desperately needed to do, having become disenchanted with the "top down" way CSIRO Fisheries Division was being run.

In Glasgow I did a lot of teaching in freshwater biology and investigated thermal tolerance in the perch *Perca fluviatilis*, with special reference to the role of interrenal tissue, and cortisone. As another part of this work, I tried to identify all the places around the world where this European perch and its very close relative, the American yellow perch *P. flavescens* were range-limited by high summer temperatures. Out of this work grew the more extended study of the zoogeography of introduced freshwater fish in Australia that was done by John Lake and me.

Back in Australia, at the ANU, I was requested to study the biological effects of the drainage from the site of the recently closed zinc mine at Captain's Flat entering the Molonglo River that flowed through Canberra. The reason for this stemmed from the plan that would dam the Molonglo and Queanbeyan Rivers. The National Capital Development Commission (NCDC) feared that Lake Burly Griffin, the artificial lake that would result, would be permanently polluted by zinc – which would be inimical to aquatic life. For several years I, and colleagues who included Sam Lake who was my Honours student, studied the biogeochemistry of zinc generation from mine wastes, the mortality rates of fish exposed in situ to the Molonglo River, and the quantity and diversity of freshwater invertebrates found along the course of the Molonglo from just below the origin of pollution to the point of repurification. Our study was followed by some recommendations for alleviation and control of pollution. Unfortunately, the NCDC declined to respond to our advice, citing shortage of funds. Several years later, Peta Dawson, another student of mine, and I published an article that further reviewed the problem and its possible solution. About this time a change of government at the Federal level brought renewed interest to this problem and some of our suggestions saw the light of day.

About 1964, with several years of meeting and getting to know most of the serious limnologists and freshwater biologists then at work in Australia, I conceived the notion of putting together a series of essays by selected authors about their work. I floated the idea among the membership of the ASL and beyond and received over twenty enthusiastic responses. At last, 18 people agreed to contribute essays. Most of the essays I received were very good, but a few were either "off topic" or written for an altogether too specialised readership. A couple were essentially broad "popular" articles without useful scientific content. A couple more authors who had originally promised to contribute found they hadn't time and dropped out. I finished with a book which I edited called "Australian Inland Waters and their Fauna – Eleven Studies." It was published in 1967 by the ANU Press. It got pretty good reviews and though it was not as comprehensive as the work I had envisaged, did, I think, help to fill a gap and to make Australian freshwater science better known overseas. But, of course, it could never have been done without the work and support of friends and colleagues. It was something for all of us.

In 1966 I published a paper in Nature on the biology of fish growth. Academic Press asked me to write a book on the subject which, following the labours of several years, I produced as "Growth and Ecology of Fish Populations." It was favourably reviewed and to my surprise sold very well – for a monograph! – and received the 1972 publication award of The Wildlife Society (North America).

Two other main lines of work involved me in Canberra: further studies on thermal tolerance, this time using goldfish to study effectiveness of enhanced levels of oxygen in increasing fish survival time at high temperatures, and studying the problem of separating Murray cod and trout cod (an interest the John Lake had aroused in me). I investigated this problem with Tim Berra, who had come Tulane University as a Fullbright Fellow to work on it with me. Its solution was important both for both basic scientific reasons and for conservation.

After this, I left Australia to pursue opportunities to work on fish growth biology, and went to the University of Tromso in north Norway (in the Arctic Circle) as Professor of Fisheries Biology. There I steered a group of biologists into the beginning of a project to examine the opportunities and challenges of developing fisheries based on fiord-inhabiting species – to replace the formerly lucrative herring fishery that had been ruined by many years of overfishing against the strong advice of Norwegian fishery biologists. While there I became involved in helping to plan a new fishery research vessel, in raising \$150,000 for the research we were planning and in being turned on by the possibilities of biotelemetry in fish research. It was a stimulating and challenging move that lasted for a year and a half. After that I accepted an offer of full professorship at the University of Toronto where I worked continuously on experimental studies of fish growth and applications of telemetry in determining the metabolic cost of activity in free-living fish, and associated problems, until retirement in 1993. Since then, my wife and I have lived in her family's farmhouse (built in 1803) on the shore of Washademoak Lake where we have been very active in watershed conservation problems for the past decade.

### **Other early ASL members**

I will end here my detailed notes on persons associated with the origins of ASL. Of the several others who played the most significant roles I can list Hilary Jolly (of course!) who was doing limnological work on Warragamba (I don't think Anne Chapman was with her at that time), Bill Williams (who had recently joined the Zoology Department at Murdoch U when Jock Marshall was Head), Ian Bayly (who was still at U. Queensland when Bill Stephenson was Head; Stephenson had actually done a little limnological work himself), JmWharton (Deputy Director of Victorian Dep. of Fisheries and Wildlife), Don Francois (Director of NSW Fisheries) and Ron Straughan (Curator at the Australian Museum). I am not quite sure whether Edgar Riek (CSIRO Division of Entomology) was one of the original founding group, though he was certainly an early member. But I am not as familiar with the biographical details of most of them. I am sure Ian could help you here. With Bill Williams there is, of course, a lot of material already available in the record. I should mention that though they were not founding members of the ASL, Peter Tyler and Ian Potter were both already members in the early years and both went on to major academic positions. In fact there was plenty of academic and administrative distinction among the ASL membership in its earliest period, which no doubt contributed to its vigour and success. At this distance in space and time (of 44 years) since the origin I may have left out someone. I will, however, add a brief note on Sam Lake, not because he was a co-founder of ASL, but because he became so prominent in Australian limnology and conservation at many levels and because I knew him as an undergraduate and he was an Honours student of mine.

P.S (Sam) Lake was an absolutely outstanding student. It was thought he could do anything! He topped almost every subject he was involved in and the high regard I had for his ability was shared by everyone who had anything to do with his student work and activities. He was also a "child of the 60s", affecting the dress, appearance and general demeanour associated of those most representative of it. Sam was a hard worker, but he also had imagination and originality and was a self-starter. He was different from other students I taught in special ways. I have always been interested in the origins of science and scientific discoveries and I recall once talking about what it means to be alive and conscious and mentioning "the philosophy of organism" as advanced by Whitehead and others. Next day Sam lurched into my office and slapped down a sheaf of scrawled notes on my desk. He had literally been reading all night and now wanted to talk about these topics, which is what we did for a couple of hours. This sort of thing was typical of him and – as far as I was concerned – was as endearing as it was unique – indeed endearing because of its uniqueness. I am sure Sam's unbridled enthusiasm is still with him as it was on the several occasions I saw him in Canada when he visited U of T to interact with Dudley Williams. As I'm sure others are aware, he won the T.H. Huxley award for his PhD thesis done in England.

## **The activities of and in the ASL in the formative years of the early 1960s**

Our first meetings confirmed that everything I had felt about the desperate need to form an association during my seven years in Tasmania, which had become intensified during the three years when I was doing my PhD in Scotland, was common to other Australian freshwater scientists. And there was no lack of enthusiasm among us. The time was ripe – overripe – and we just wanted to get on with it. We met in Sydney and I think in Melbourne and discussed ways and means. The tedious business of a constitution came up and someone brought along a lawyer friend and he read us the riot act – I mean told us how absolutely necessary it was to have a constitution if we were to function effectively. I can't remember who he was or who brought him, but he was absolutely right and we all knew this and buckled down to getting that job done. We decided to have AGMs in various venues notable for freshwater interest and we elected office bearers and set about making lists of everyone we could think of who might share our interests.

It should be noted that The Australian Marine Sciences Association was also planning its existence about the same time and we were approached with a strong offer to join forces with them. But our group had – for reasons that may or may not have been wholly justified at the time (I personally believe they were!) – a rather strong reluctance to make this link. First of all, I think many of us feared that the CSIRO Division of Fisheries & Oceanography, which had power, money and influence that we lacked, would inevitably gain control over any programs and perspectives that we were trying to articulate. Secondly, they already seemed to us to be pretty aggressive about their urgings and assertions. Anyway, we met and discussed matters with them at open sessions and decided to remain independent. I am sure it was the right decision.

Our AGMs were supposed to get this far-flung brother- and sister- hood of freshwater scientists to know of each other and each others' work and to discuss matters of regional and national interest however remote from, or however immediate to, everyday experience. We wanted to promote our part of science, and to that end we set up a Newsletter to serve our interests between AGMs or other organized meetings. I was its first editor.

Our AGMS were a roaring success from the jump. And I mean a "roaring" success. A great time was had. We felt we had started something really worthwhile and everyone contributed. Suddenly everyone knew what was happening in freshwater science in Australia. We went on field trips that were both interesting and entertaining. Small but hilarious things, like the time near Brisbane when we got our rented bus – with one of our members driving! – jammed between two trees at lunchtime and had to push the bloody thing free! It had been a well-lubricated lunch and I vividly recall pushing near the front left wheel with several companions and, seeing one of them almost under the wheel, exhorting him to be careful. He, the most pleasant, polite, easygoing and good-natured man imaginable under normal circumstances, now, having well-assuaged his thirst, arose with ruddy and furious face and told me to mind my own bloody business! Yes, fun time! I can recall at another meeting – I think it was one organized by Bill and Ian – the heated and noisy, though friendly and funny, exchanges at the end of the day's business. John Lake, who had been unusually silent throughout was suddenly shouted at by someone to offer his opinion. John Looked somewhat remotely at his loud crowd of friends and said, in a tone and style all his own, "Yer all mad!" Maybe it seems only slightly funny now, but at the time it broke us up. It was so typically John.

Among all the founding members of the ASL, I think, as they rapidly became known through the meetings and their publications, it became rapidly understood that Bill Williams and Ian Bayly would very strongly influence the progress and development of the Society and of limnology in Australia.– as proved to be the case.

Then there was Hamar Midgley (I may have misspelled his first name), the privately employed fish culturist from Queensland, who always greeted people with a great jovial shout, was hugely enthusiastic, and in the evenings carried a bottle of white rum (Bundaberg, I think) under his arm from which he poured glasses to refresh himself – frequently, and others too, I seem to remember.

I learned a lot of things through the ASL. By the time I became President we were looking both for projects we could get into as a society and even discussing the possibility of founding an ASL lab somewhere. Neither of these ideas bore fruit, but as President I did have one valuable experience that was new to me at the time. Like most Australian university biologists, the research money I had came mostly from the department I was a member of. A project some of us thought of was looking at the future of Lake Jindabyne, with many of us taking part. I was urged to get a grant for this and indeed tried to. I even went to senior Fellows of the Academy of Science and was, essentially, scoffed at for thinking they could help. It was a sobering feeling to think even though I was representing a number of fairly senior freshwater scientists under the banner of a properly constituted professional society, I was not being taken seriously. The problem seemed to be: "This is not sheep or wheat or insects – and why aren't you putting yourselves forwards under the auspices of CSIRO Fisheries &

Oceanography?" It was not a pleasant experience. However, it was something I became more used to after I went to Norway and, for a time, moved on to marine fisheries and their environment, and later to Canada. In both these places, 30 years ago, everyone doing research in Universities had to get the grants to be able to do almost anything at all in science. That was only barely beginning to become the practice in Australia at the time I left.

The founding groups and all the early membership of the ASL profited enormously from its existence. I wish I had not lost track of its – and their – exploits as it and they had constituted a tremendously important part of my scientific, and even social, life in Australia. When I left Australia for professional reasons I had no clear idea of when I would be back, but if anyone had asked me I suppose I would have answered, "One Day." Well, as things turned out that was not to be, but it was a great time and one I would not have missed for worlds.

Alan Weatherly  
2005

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### **Jan Powling (ASL President 1974)**

The years between 1969 and 1979 were notable in the ASL for an active exchange of information between engineers in the water industry and limnologists. Lake Pedder was about to be flooded, Dartmouth Dam had been designed and was about to be built. Several members of ASL played significant roles in both events, engineers began to attend ASL meetings and, in 1976, a design engineer joined the Society and was elected President in 1982. During this period there was much, often unresolved, discussion about whether more active involvement in controversial issues was required from ASL members.

ASL had a small but broad membership and, in the early days, senior heads of government agencies in several states took a genuine and active part in the Society and attended most conferences which gave all members an opportunity for discussion in an informal, friendly atmosphere. Conferences were mostly gentle affairs, organised on the smell of an oily rag, consisting of one or two half days of papers and discussion followed by field trips conducted either on foot or by car pool to local study sites, followed by an Annual dinner at the local pub. Accommodation was either under canvas or a bed in the local hostelry. In 1978 the Congress was held in a woolshed. The ASL experience was always informative, entertaining and much anticipated.

Our first ASL logo, a simple representation of *Neoceratodus forsteri*, was created in 1975.

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### **Keith Walker (ASL President 1975)**

I searched for some old newsletters that I might use to paint a picture of events in 1975, when I ascended to the presidency after apprenticeships as committee member and newsletter editor. I haven't many records (I must have been too occupied by affairs of state), but I do have a clear recollection of how honoured I felt to be captain for a while.

ASL was a gateway to a world that became my career-long focus, and I am so grateful for all the fun, encouragement and inspiration that those early meetings engendered. It will be a nostalgic time for some at the conference in Brisbane, and if you do see a group of old-timers huddled in story-telling and laughter, raise your glass.

The year 1975 saw the passing of one of the Society's founders, Hilary Jolly, leading to the first Memorial Lecture, presented at the annual conference (Tanunda, South Australia) by Dr Ian Bayly. From the minutes of the AGM that followed, I see that it was me that ventured the idea that the Memorial Lecture should become an annual event.

There is my pretext to resurrect Ian's address as it appeared in the ASL Newsletter at the time. [It is reprinted at the end of this section with his kind permission.](#)

Warmest congratulations to all on the Society's Jubilee. Let us reflect on old times, but perhaps also wonder at how limnology might change over the next 50 years!

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### **Sam Lake (ASL President 1980)**

I have vivid memories of early ASL conferences—at Narranderra in 1963 and Canberra in 1964 and both were in the depths of winter. At the Narranderra conference apart from giving a talk, I remember standing around in the rain the ponds used for Golden Perch breeding, and on the way home being in a car crash outside Wagga. At the Canberra conference I remember running an excursion along the zinc-polluted Molonglo River from Captains Flat to Canberra in a deep frost, it was freezing, but on the good side there was a fine display of long gabardine overcoats (remember them?). For the Queenstown conference on the wild west coast of Tasmania, I organized a charter of a DC-3 to fly delegates from Melbourne to the venue. The excursion on the Sunday was a trip up the Gordon River with Reg Morrison---the Gordon Dam battle was beginning. Rushing back to the strip as dusk set in, the plane managed to take off in time with all delegates except one. In retrospect the early ASL conferences (1963---80's) tended to be rather rambunctious, eventful affairs held in most cases at interesting, sometimes challenging sites (e.g., Miena, Kinchega, Tewantin, Tallangatta)—often with hot debates (e.g., introduction of Nile perch, multi-level off-takes). It is gratifying to now see that ASL has matured into a solid and very professional organization, with well-organized conferences in high-grade and intact premises.

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### **Frank Burns (ASL President 1981)**

In 1981 we paid \$10 p.a. subscription, \$45 full congress registration and received 3 newsletters per year. Beside authorising Margaret Hart, our busy Secretary/Treasurer to spend \$130 on a calculator with printout, my year as President involved me in two particularly pleasing events. First was the setting up of the \$50 book prize for best student's paper presented at our annual congresses and assisting in the judging - Rod Oliver received the first award. The second was representing ASL in the Australian Academy of Science successful discussions with the Federal Government on the establishment of "Centres of Excellence".

At this time John Blyth was organising bi-monthly ASL Victorian Chapter meetings at the Gresham Hotel involving a meal and presentation of talks on Limnological matters. As a dam design Engineer working with Jan Powling in the Victorian State Rivers and Water Supply Commission these meetings helped to convert me into an Engineer/Limnologist with a better understanding of the influence of thermal stratification on the water quality behaviour of lakes and reservoirs. This is still my main field of interest having established my own Consulting Engineering Practice in 1981 and become involved in further developing my lake and reservoir mixing techniques throughout Australia and overseas.

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### **Ian Campbell (ASL President 1985-1986)**

I don't remember any outstanding events from my period as president. However I do have recollections of my first ASL congress which was at the fisheries research station in Narranderra in May 1972. To save money grad students slept on the floor of the laboratory at the research station, a practice which would be unlikely to be accepted these days. In 1972 the campaign to preserve Lake Pedder was in full swing and Peter Ebsworth and I moved a motion at the AGM "That the Australian Society for Limnology recognises the scientific and limnological importance of Lake Pedder and, in view of this, urges the Tasmanian Government to prevent the impending flooding of the Lake and implement one of the proposed alternative schemes which would preserve it. To our surprise the motion triggered extended and intense debate, and was finally carried by the deciding vote of the chair - the outgoing president Don Francois who was then the head of NSW Fisheries. The society was quite small then - only 170 members and there were probably only about twenty or so at the meeting. A number of members

were actively involved in the campaign for Lake Pedder, including Peter Tyler and Sam Lake who were both with the University of Tasmania (and appeared in a very unique video about the lake prepared by the Lake Pedder Action Committee), and Ian Bayly at Monash. Bill Williams later served on a Commonwealth Government Committee of Inquiry into the Lake Pedder flooding.

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### **Terry Hillman (ASL President 1987)**

I got into limnology quite by accident. Family health problems meant that I couldn't follow my PhD research project of choice and was 'stuck' with some fairly uninspiring research on Lake Burley Griffin. Knowing nothing of the subject I was overwhelmed by the generosity of Bill Williams and Ian Bayley (enormous reprint collection and extensive help with zooplankton identification) and later of Keith Walker and Peter Tyler. First ASL conference was Narrandera (1972?) the great Pedder debate and the beer truck.

I eventually joined the ASL executive and took my turn in the chair (carried along by Margaret Hart and Richard Marchant). I was keen to continue ASL's strong commitment to students and the hot topic at the time was the growing lag between paper submission and publication leading to presidential exchanges with CSIRO Publishing (no doubt ineffectual).

Being a member of ASL is being part of a family. I think the warmth and generosity of its founders still pervades its gatherings and the quality of young people it welcomes in continues to expand its intellectual capacity and the value of its science to the wider community. At this time in our history it is sorely needed.

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### **Jennifer Davis (ASL President 1988)**

Jenny was the third female president of ASL – after Hilary Jolly (1967-1968) and Joan Powling in 1974.

The two main things I think my presidency may have been memorable for were:

- 1) it was the first time a President was located away from SE Australia ; and
- 2) to accommodate this we started running the Exec meetings as teleconferences - which still continues today.

I felt that this was a great step forward in making ASL a truly national scientific organisation. Richard Marchant, as Secretary, and Margaret Hart, as Treasurer, were fantastic, and provided the continuity that ASL needed to have more widely located Presidents and VPs. The other memorable event from that year, and a much more personal one, was that it was also the year that my son was born ! This was purely a correlative relationship, somehow the two coincided. I do remember that ASL (read Margaret H) sent me some beautiful flowers and that at the following AGM Terry Hillman announced that it was a form of presidential productivity that might be hard to emulate.

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## Stuart Bunn (ASL President 1991-92; 2007-08)

My first ASL meeting was hosted at Griffith University in 1983 – Griffith was a bushland outpost south of Brisbane, which at that time was a large country town (some will no doubt argue both still are true). Several ASL members had been helping me identify my WA stream bugs, for which there were few keys, and I got to meet them in person for the first time. As a lowly student from across the continent, I was deeply impressed by how friendly and supportive people were, and immediately convinced I had made the right career choice. At that time, a small group of us in WA had been organising local limnology meetings and Marg Brock and I edited the first inventory of inland aquatic research in 1984. We also volunteered to host the first ever ASL meeting in Western Australia in 1985 – at Jarrahdale, a small logging town south of Perth. I recall the Minister of Water trying to make himself heard above the torrential rain and convince attendees that this was indeed ‘the driest State in the world’s driest continent’; and the local dog howling throughout Bill Williams’ talk. We also raised enough sponsorship to fund Noel Hynes over from Canada to give the Hillary Jolly address. The growing WA contingent turned up in force for the 25th ASL meeting in 1986, and many of us camped overnight on Ian Campbell’s floor before heading off to Lorne in the Chisholm Institute troop carrier. This was a memorable celebration of the first 25 years of the Society and included the launch of the book “Limnology in Australia”, edited by Patrick De Deckker and Bill Williams.

I first became President a few years after moving to Brisbane (and Griffith University) in 1988. These were exciting times for freshwater science – the LWRRDC was formed and immediately polarised the ASL community into those who pronounced the acronym with the ‘W’ and those who didn’t (Fortunately, they soon changed their name to Land and Water Australia). Several CRCs began, which transformed the way much of the freshwater research was funded and conducted – with a move to larger and more collaborative studies. We hosted the ASL conference in 1993 in the lone hotel resort at Marcoola before the area was completely swallowed up in the Sunshine Coast development. This saw the introduction of Society’s first iron-person event, which included plankton-net towing races in the surf and the eel relay-race along the beach in chest waders.

Over the next decade, I felt the Society lost its way a little – experimenting with a stronger advocacy role on freshwater environmental issues and a greater engagement with managers (a spin-off I suspect of the changed nature of our funding, through CRCs, LWA and NHT). I stopped going to conferences each year, opting to go to overseas meetings like NABS instead. Having missed the 2004 meeting in Adelaide, however, I found myself nominated and elected as V-P *in absentia* and this led to a second term as president in 2007-08. I have enjoyed the annual conferences over the past few years and continue to be impressed by the high standard of presentations (and research), from our student members in particular. I hope the next 25 years sees the Society remain a vibrant professional network that focuses on supporting and mentoring student and early-career members, and continues to host annual meetings that are informative and fun.

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## Leon Barmuta (ASL President 1992-1993)

The cover of the *ASL Newsletter* 31(1) March 1993 says it all (well not quite): ‘the editors have got to go. New editors wanted’. My presidency coincided with the last couple of years of my co-editorialship, with Tim Doeg, of this esteemed journal (impact factor: 15 kN which is a force able to irritate a large director of a CRC), and I’d like to think that was our lasting legacy to the Society. It remains light-hearted enough to encourage members to at least open it when they get it, and there’s usually something meatier to engage our concerns as passionate, non-marine aquatic ecologists, be we professional or amateur (in the best sense of that term). My term as President was unexpected. He Who Was Anointed decided at the last moment to renege, and so Greatness was thrust upon me. The words of John Kirk at my first executive meeting some years earlier rang in my ears: “You don’t get elected to President in this Society as much as get lumbered with it”.

However, I fib about the Newsletter's irritation factor on Peter Cullen. He was actually irritated by the groundswell of opinion against ASL remaining in FASTS, and yours truly had the task of bringing the issue to a head at the AGM. In the end we stayed in, but I wonder if I might not have had a smoother career path had I been on the side of the Canberrans rather than attempting to convey what I thought were the wishes of the (largely silent) membership. FASTS, how do we better communicate with managers, how do we do better research, why isn't the media interested in us, should we get rid of 'limnology' from our name, should we advocate on big freshwater conservation issues: all these are still with us, but at least we got our new logo, and we still have that as well.

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## **Margaret Brock (ASL President 1994-1995)**

### **Have things changed much in 15 years?**

**1994-95** was a vibrant time for ASL and water issues in Australia with lots going on in academia, research and management. ASL was evolving from its traditional focus on "fish" "bugs" and "nutrients" and sometimes "plants" to more focus on ecosystem functions and water issues.

Some issues do not go away: issues actively debated at ASL in 1994-5 and again in Thredbo in 2010 included:

- Should ASL be a place for science alone, for science for management or indeed for management issues (without much science)?
- What role should ASL take in advocacy and influencing policy?
- To be or not to be a member of FASTS? At the 1995 AGM we debated whether ASL membership of FASTS was good value and should remain a member. Peter Cullen, a strong advocate of FASTS for the greater good for all science suggested we to think of broader perspectives than concrete gains for ASL. Similar arguments were aired last year in Thredbo (15 years later)!

Some pressing water issues for Australia in 1994-5 remain in focus in 2011 in spite of advances in understanding and broader communication into the public and political domains. In 1994-5 issues included:

- water management in the Murray Darling Basin
- the first environmental flow allocations and caps on diversions
- the acceptance of drought and variability as normal forces in shaping aquatic ecosystems

Personal issues discussed over drinks at ASL in 94-95 haven't changed much in 2010-11:

- who will employ us, promote us value us?
  - why are there so few post docs opportunities in Australia?
  - are there enough aquatic scientists in academic positions across Australia ?
  - how do we tap into adequate money for research?
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## **Paul Boon (ASL President 1996-1997)**

### **ASL during my Presidency**

I was originally elected Vice President in 1992, then as I was about to become President at the end of 1993 I was also about to leave CSIRO Land & Water to take up a new lecturing position in microbial ecology at Victoria University. Because of the move to Melbourne and the phenomenal teaching loads I had to take up immediately upon starting, Marg Brock kindly agreed (was convinced) to become President for my 1994-1995 term (without ever being Bice President) meaning I was VP for 4 years before becoming President in 1996. The two events that stand out in my recollections of the time of my presidency are the conference the Society organised on biomanipulation, and the vigorous debate as to whether we should become more vocal in our advocacy for freshwater ecosystems.

The biomanipulation conference was sponsored by Land & Water Australia in response to the controversy then raging about whether algal blooms could be deliberately controlled by top-down, rather than bottom-up, factors. We had enough funds to hold a 2-day workshop at Berri (South Australia) on the whole topic after the annual conference and invite three international speakers (Brian Moss from the UK, Caroline Burns from NZ and Don McQueen from Canada) to address the audience. What a loss has been the disbanding of Land & Water Australia!

The matter of advocacy was even more controversial. A part of the Society wanted it to adopt a greater public profile in pointing out the chronic degradation of Australia's freshwater ecosystems. Older – and cooler – head urged caution. In the end, the Young Turks prevailed and the Society issued a number of fact sheets and other publicity articles on diverse aspects of inland waters and their conservation. The debate fizzled out over subsequent years, and most of those responsible for the advocacy push since seem to have had little involvement with the Society. My view, now tempered with the advantage of hindsight, is that the Society should focus on what it has traditionally done best: be a learned society that fosters young researchers by providing a critical, but supportive, avenue for them to air their findings at annual conferences and at smaller, State-level, events such as monthly meetings at a congenial pub.

Paul Boon  
3 June 2011

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## **Max Finlayson (ASL president 1998 – 1999)**

### ***Notes on becoming ASL President***

ASL approaching the (false) millennium

In 1994 I was skilfully manoeuvred by several women members of ASL into a no-escape position on the stairs of a hotel at Jenolan Caves. The intent was sinister and I succumbed and became (through due process) the vice-president and then president of ASL. But my destiny did not prepare me for my fate – there was an agenda behind the stairwell manoeuvres, and it would challenge the processes of tradition. I was implored to get out and work with others and make ASL into a policy lobby for aquatic science. Manna from heaven, but, you may recall, or imagine, not a shared direction. We were a science group and largely met over weekends and discussed all sorts of interesting scientific things (whether hairy, buggy or watery). It was enjoyable, but some wanted something different. So, we set about changing things: moved the newsletter from paper to e-format (whew, that was popular), changed the name of the ASL medal (overwhelmingly supported, but a mistake) and endeavoured to influence governmental policy, lobbied bureaucrats, and brought different people into our meetings – farmers, educators, artists, indigenous people (this was popular!), and proposed we had a shared meeting with the Kiwis (was that ever popular!). Were we successful? Well, not everyone was on board. And in 2005 a global assessment reported that freshwater ecosystems were in faster decline than other ecosystems.

### ***Notes on Max's First Conference: first talk and much ado about beer***

With Richard Pearson from James Cook University we drove from Brisbane to Lismore to attend the ASL Congress in Lismore in 1977. The weather was miserable. The Congress was held in an old school and the heating was ineffective, if even present. But it was my first ASL Congress and I had a talk to give on the hitherto poorly known limnological environment of Mt Isa. That nervous experience was over and done with early on the first day, and it was time to meet and greet new people. We had a BBQ and drums of cold beer atop a hillock at John Lake's property, and it was so cold it was called to a close much earlier than planned, judging by the number of untouched beer cans in those drums. As the participants piled back into the bus Richard induced me to shed my Adidas bright orange tracksuit top and secure the neck and sleeves while he crammed it full with cans of beer. We were last on the bus and greeted with rude comments about North Queenslanders and beer. The comments came to a stop when the hissing ting of a can being opened made the assembled mass realise that we had beer and they did not. We shared the beer, as every North Queenslanders would do, even though neither of us were North Queenslanders. Oh, and what did I talk about.....

## **Andrew Boulton (ASL President 2003-2004)**

### **Presidential reminiscences**

Subjected to the usual grueling and highly competitive process that characterises high office at ASL, I served as Vice-President in 2001 and 2002 and as President in 2003 and 2004, taking over from Jane Chambers. Several changes during that time stand out. One was the introduction of the Early Career Excellence Award (now aptly renamed to honour Christy Fellows) and I recall the challenges of defining 'early career' as well as selecting from the strong field of potential winners. Another was the cementing of the Student Mixer as an integral part of ASL conferences. From an idea by Sandra Grinter, this grew into an opportunity (often on a boat cruise) for students to mingle informally with members of the Executive while sharing beverages and eating foods rich in saturated fat. In 2003, we had a very successful joint meeting with the New Zealanders at Warrnambool, marred only by a broken leg at a friendly soccer match. Tim Doeg managed to arrange for the two presidents (Neil Deans and me) to try and define 'limnology' to Ian 'Macca' McNamara on a popular national radio show 'Australia All Over' – it is difficult to judge whether our efforts were successful but this publicity supplemented the more formal efforts by ASL to promote aquatic science in the annual "Science Meets Parliament". The 2004 meeting in Adelaide was also a vibrant one although the plenary speaker, Prof. Geoff Petts from the UK, set a disturbing but luckily short-lived precedent by wearing a tie for his presentation. Although I am aware that ASL is sometimes criticised for its informality, to me this is a unique asset that helps ensure the provision of a society where new researchers can feel comfortable about presenting their work for constructive criticism, water resource managers can showcase problems, solutions and needs for research, and old researchers can maintain friendly networks and their eclectic obsessions with oddities like the hyporheic zone. Finally, I express my lasting gratitude for the consistent and patient work by Marg Hart (Membership and Treasurer) and Richard Marchant (Secretary) while I was president; at many times during AGMs in 2003 and 2004 it was clear where the wisdom and power really lay.

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## **Margaret Hart (Iconic ASL Treasurer – forever – 25 years)**

From green cards to the web

The first ASL conference I attended was at Kinchega National Park (1978) and after that I vowed and declared I would never attend another ASL conference – I was sure that ASL stood for 'Australian Society for Loud and unruly scientists'

But, that vow was shorted lived, as I soon found myself Treasurer/Secretary of the Society, and remained in the position of Treasurer/Membership Officer for 25 years.

When I started, the society membership records were kept on green cards housed in a shoebox, and the financial records were recorded in a cash book.

However, over my 25 years of involvement with ASL, many, many major changes took place, so that now we have most administrative matters handled via the ASL web site - membership can be paid on-line, as also access to the ASL Newsletter. The Society has indeed kept up with the times.

The Society has also become much more multi-disciplinary over the years. At the Kinchega Conference, the presentations were dominated by papers on fish and macroinvertebrates, with one paper on environmental chemistry. Then a few engineers became involved, and increasingly policy and management became an integral part of the Society.

An activity of ASL that I am particularly proud of is the focus on its student members. Many of these were provided with the opportunity to present their first paper at an ASL conference, and many retain their association with the Society.

I have valued my association with ASL and am thankful for all the friendship I have made over the years - in fact I have changed my earlier opinion of what ASL means – I now believe it stands for 'Australian Society for Lovely' scientists.

Congratulations ASL on celebrating 50 year of promoting limnology in Australia.

# HILARY JOLLY: AN APPRAISAL OF THE WOMAN AND OF HER CONTRIBUTION TO AUSTRALASIAN LIMNOLOGY\*

by Ian A.E. Bayly

(Department of Zoology, Monash University)

Violet Hilary Jolly, "Vi" or more usually "Hilary" as she was known to her friends and colleagues, was born in New Zealand in 1906.

Not only did she have a very colourful personality, as all of us who knew her are well aware, but she also had an extremely colourful and varied life—far more so, I might add, than most conventionally trained limnologists whether academic or applied.

Hilary Jolly was born in Hamilton to a well-known pioneering family. The Hamilton suburb and railway junction known as Frankton was named for Frank Jolly, Hilary's father. It is interesting that the place name was derived from his first name rather than his surname. This suggests to me (but I admit to not having researched the matter) that he was not only a widely known identity but also a much liked, informal, and friendly person. Certainly, if Hilary's personality had been largely shaped by paternal genes, he must have been a very warm-hearted man indeed.

I have been unable to obtain information on Hilary's childhood or on her mother. However, she attended Hamilton Girls' High School and after leaving she trained as a "dental nurse". By this I do not mean a male dentist's assistant but an actively practising female dentist tending mainly to dental caries in school children—a real live female dentist, if you like. Such a profession is well known and highly valued in New Zealand but is scarcely heard of in more socially backward (and male chauvinist?) countries like Australia.

Some of Hilary's exploits in the long pre-limnology phase of her life are almost legendary. They include her riding a horse, as white as her own hair was in later life, through the Ureweras—that thickly bushed country surrounding Lake Waikaremoana (a lake which Hilary later studied limnologically). This is wild country into which the famous Maori chief Te Kooti retreated after clashes with the infamous pakeha. [Actually, at school (Ornata Primary School) I believe it was taught to me the other way round!] In preparing this talk I decided to look up Te Kooti in a recent reference book and I was astonished to read "his name lives on—and in the thick forest of the Urewera, his haunt and refuge, he is STILL [my emphasis] a brooding presence". Clearly, then, Hilary rode her white horse through this country in the presence of Te Kooti. Perhaps, if time heals all, he even watched over her. During the 1930's she rode a motor bike around the countryside—hardly a common sight in those days! [She did not, as far as I can discover, ride a motor bike around the shores of lakes like my friend Tyler!] Also in the 1930's she went to China and, in fact, was there at the outbreak of the Sino-Japanese war in 1937 when she had some narrow escapes from arrest if not death for suspected spying! However, she managed to leave China and was in Australia at the outbreak of the Second World War.

† Scanned and reformatted from the *Australian Society for Limnology Newsletter*, volume 14(1), 1976. Although this was the first memorial lecture (1975), the inaugural award went to Alan Weatherley in 1973-74.

\* Paper presented at the XV Congress of the Australian Society for Limnology, Tanunda, S.A.

## **Scientific Career**

Hilary Jolly did not embark upon university studies until after the Second World War when she was more than 40 years old. She did her first year studies at Auckland University College (as it was then) and then went to Otago University where she continued in science majoring in botany and zoology. She took out an M.Sc. in 1955 with a thesis on Cladocera.

With respect to her decision to specialize in limnology, Hilary was greatly influenced and inspired by a talk she heard given by the late Professor Edward Percival of Canterbury University. Percival, it may be noted, was very interested in New Zealand lakes, more especially those in the South Island, and published a number of papers on lacustrine biology including planktonic Crustacea.

After completing her M.Sc., Hilary travelled to the U.K. where she worked for a time at the Ferry House on Windermere and gained considerable experience in planktonology.

Upon return to New Zealand she commenced study for a Ph.D. This involved a comparative study of the limnology of some 23 New Zealand lakes ranging from the Rotorua lakes in the north to Lake Manapouri in the south. Apart from travel assistance from the Internal Affairs Department, Hilary financed this extensive work herself.

Her Ph.D. was submitted in 1959, and there is a rather bizarre story to be told about this event. Apparently it was then the practice in New Zealand for Ph.D. candidates to have an oral examination as a matter of course. In Hilary's case the examiner was to have been Professor Percival, the man who originally inspired her to become a limnologist. When the day arrived for the scheduled examination Hilary was informed that Professor Percival had died that morning. Subsequently it was K. Radway Allen who carried out the examination.

There were, I think, three main themes in Hilary's limnological research: the taxonomy of planktonic crustaceans, the vertical migratory behaviour of zooplankton, and the physics and chemistry of lakes. There are only two papers that come to mind as lying outside these areas; these were her 1967 paper on the smelt *Retropinna lacustris* in Lakes Rotorua and Taupo, and her 1966 joint paper with Ann Chapman on river pollution in New South Wales. It should be noted that, despite the abundance of organically polluted rivers in Australia, the latter paper still represents one of a very few published studies of them.

Hilary's first limnological paper was published in 1952. It dealt mainly with the plankton and physico-chemical features of a New Zealand lake, Lake Hayes, yet was published in the *Australian Journal of Marine and Freshwater Research*. With respect to her last paper, I suspect that we are still to see it as Ann Chapman mentioned in a letter that I received early this year that she (Ann) had helped Hilary finish two papers in hospital shortly before her death.

What was Hilary's most valuable contribution to Australasian limnological literature? In my view it was her studies on the physico-chemical features of New Zealand lakes and especially their thermal behaviour and patterns of mixing. Leaving aside her book, which I shall refer to later, I think that Hilary Jolly's *maxim opus* was her 1968 paper entitled "The Comparative Limnology of some New Zealand Lakes. I. Physical and Chemical." In this area she was not merely duplicating earlier northern hemisphere work, for the lakes she studied differed considerably in behaviour from those associated with large land masses in Europe and North America. Thus several of her lakes that underwent stratification had much deeper thermoclines than those of comparable area and latitude in the northern hemisphere. In Lake Wakatipu, for example, the thermocline varied in depth from 55 to 150 metre. Likewise her finding that Lake Rotorua (lat. 38°S, altitude 278 m,  $z = 11$  m,  $z_m = 36$  m) was polymictic clearly demonstrated that, in the southern hemisphere at least, such lakes, even if relatively deep, may occur well outside the altitudinal and latitudinal ranges indicated by Hutchinson and Löffler in their 1956 paper. The latter authors implied that polymictic lakes occur only in the tropics and especially in shallow lakes or those at high altitudes.

Still other New Zealand lakes (but not ones that Hilary studied at all intensively) showed an annual cycle of mixing that was not accommodated by any existing classification. The latter were formally designated by Bill Williams and me in our book as warm thermimictic lakes. Such lakes freeze over in winter and circulate completely in summer at a temperature considerably above 4°C. Although Hilary did not assign such lakes a formal category she was aware of their existence.

#### *Role in the Formation and Nurture of the Australian Society for Limnology*

In 1959 Hilary left New Zealand to take up the position of biologist with the Sydney Metropolitan Water, Sewage and Drainage Board. She was, in fact, the first biologist employed by that Board. Her main duties were to monitor conditions in the various reservoirs servicing the Sydney area.

Hilary played a major role in the establishment of the *Australian Society for Limnology*. In 1961 she suggested to John Lake and Jim Wharton that the time had come for some such society to be formed.

Shortly after my offering to speak on Hilary Jolly I consulted an old file labelled "Australian Society for Limnology". In it I found a hand-written letter dated 28 September 1961 on paper headed "[Sydney] Metropolitan Water Sewage & Drainage Board, Warragamba Dam, Biological Laboratory". At that time I was on the staff of the Zoology Department, University of Queensland. The letter read, in part, as follows:

"Dear Mr. Bayly,

I enclose 2 drafts of the letter being sent out to anybody who might be interested in [the] proposed freshwater association ....

Hoping to see you on the 21st [of October 1961].

Sincerely,

(signed) Hilary Jolly"

It may be noted that the first of the two mimeographed circulars enclosed with Hilary's personal letter was signed by V.H. Jolly and J.S. Lake as convenors for New South Wales and the second was signed by J.C.F. Wharton as convenor for Tasmania, Victoria, South Australia and Western Australia. Both of these circulars summoned people interested in the formation of an Australian freshwater association to attend a meeting to be held at the Australian National University, Canberra, on 21 October 1961. It was as a result of this meeting, which was chaired by Professor J.D. Smyth, that the Australian Society for Limnology ultimately came into existence.

After this initial Canberra gathering a further meeting of a sort of steering committee took place at Hilary's home territory, i.e. Warragamba Dam, on 20 January 1962. The inaugural meeting of the Australian Society for Limnology, as formally constituted, took place at Monash University in May 1962. Hilary Jolly was a member of the first Executive Committee. Subsequently she held the offices of Vice-President (1964-1965) and President (1968-1969). In 1970 Hilary was made the first Honorary Life Member of the A.S.L.

Although Hilary Jolly returned to New Zealand in 1969 her intense interest in the A.S.L. continued. In early 1971 she generously donated to the Society a considerable sum of money. It was ultimately resolved in 1973 that this fund should be used for an award (in the form of an inscribed book), to be known as the Hilary Jolly Award, which may be given to individuals who have made a significant contribution to any aspect of Limnology in Australia. The first recipient of this award (for 1973/1974) was Professor Allan Weatherley. I am very proud indeed to have been chosen as the second recipient (for 1974/1975).

#### *Hilary's Last Years—Home again in New Zealand*

Although Hilary's return to New Zealand in 1969 was supposed to signal her retirement, in fact she launched herself into an active phase of research. Using Auckland University as a base she joined a team from the Freshwater Section of D.S.I.R. (when are we going to get a freshwater sections in C.S.I.R.O.?) in an intensive study of some of the Rotorua lakes. Hilary took charge of the zooplankton while Dr. Flint worked the phytoplankton and Bob McColl and Don Forsyth studied the chemistry and benthos respectively. Hilary also continued to work on cladocerans at the university.

Hilary's last major work was the book on New Zealand lakes which she edited jointly with Dr. John Brown. Although the editorial work had been completed for some long time when she died, Hilary did not live to see it in print. I have yet to see a copy (publication was scheduled for December 1975), but I have no doubt that this work will be one of her more lasting monuments.

Hilary died on 30 October 1975 at the age of 71 after a fairly brief illness (carcinoma of the liver). You will remember that earlier I alluded to the fact that she was still writing limnology papers on her death-bed.

A tribute to her in a recent newsletter of the New Zealand Ecological Society read, in part " .... this suspected 70-year-old kept herself and her younger associates in the field in all weathers. Her good humour, good company and vigorous personality will be missed by all who knew her." I, personally, will miss her greatly and her death makes the Australian Society for Limnology much the poorer.

#### *Acknowledgement*

I am indebted to Dr. Ann Chapman, University of Waikato, for supplying me with information about the early stages of Hilary's career.

#### **Epilogue**

*I have tended to speak above about Hilary Jolly's career and entry into the ranks of professional limnology as if it were a curious oddity. But is it? Perhaps, instead, she has shown us the best way of doing things.*

*As a university teacher of some 16 years' standing, it has been my experience that the small minority of students who are well above the class mean in age are usually outstandingly good students.*

*It seems to me that with respect to learning, society is presently organized in such a way that we make the most intensive demands upon people when biologically they are least capable of withstanding it. A study of more than 2,000 students at Monash University by the Department of Social and Preventive Medicine showed that 38 per cent of first year and 49 per cent of second year students suffered mental illness of varying degrees.*

*I believe that there should be a radical reorganization of tertiary education so that in an individual's life there would normally (not exceptionally) be an hiatus of at least eight to ten years between the completion of "secondary" (or first phase) education at an age of say 16 or 17 and the commencement of "tertiary" (or second phase) education. There should be accompanying economic and fiscal reforms so that appropriate people are easily able to start a university career at an age of 25 or more. The recent practice of universities allowing students who have been offered places to postpone their actual entrance by a year or two, is a move in the right direction, but in my view does not go nearly far enough.*

*It may be true that at the age of 30 or 40 one is well over the hill with respect to I.Q. but it is fairly clear that increased experience, motivation and especially emotional maturity more than compensate for this in the mastery of knowledge.*

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## 50 Years (not quite) of the Door Prize

No.	Year	Location	Winner
1	1984	Mt. Gambier (SA)	Patrick DeDekker
2	1985	Jarradale (WA)	Every-one in a Fun Run
3	1986	Lorne (Vic)	<i>A Daphnia</i>
4	1987	Lake Hume (NSW)	Mark Harvey and Nick O'Connor
5	1988	Magnetic Island (Qld)	Ian Campbell and Richard Pearson
6	1989	Canberra (ACT)	Jenny Chaplin
7	1990	Jabiru (NT)	John Bywater
8	1991	Lorne (Vic)	Nick Drayson
9	1992	Bronte Park (Tas)	Not awarded - no suitable contenders
10	1993	Marcoola (Qld)	Every-one in an Iron-person Race
11	1994	Rottneest Island (WA)	Rob Doupe
12	1995	Jenolan Caves (NSW)	The Line Dancers
13	1996	Berri (SA)	Not awarded - no suitable contenders
14	1997	Albury (NSW)	Anonymous pool player
15	1998	Brisbane (Qld)	Bill Dennison
16	1999	Lake Taupo (NZ)	Michelle Bald
17	2000	Darwin (NT)	Ben Gawne
18	2001	Moama (NSW)	John Howard impersonator
19	2002	Margaret River (WA)	Jane Chambers
20	2003	Warrnambool (Vic)	Jacqueline Giles
21	2004	Adelaide (SA)	Ben Smith
22	2005	Hobart (Tas)	Organisers for bowls club
23	2006	Albury (NSW)	MLLE
24	2007	Queenstown (NZ)	???
25	2008	Mandurah (WA)	???
26	2009	Alice Springs (NT)	Adam Kereszy
27	2010	Thredbo (NSW)	Not awarded - no suitable contenders