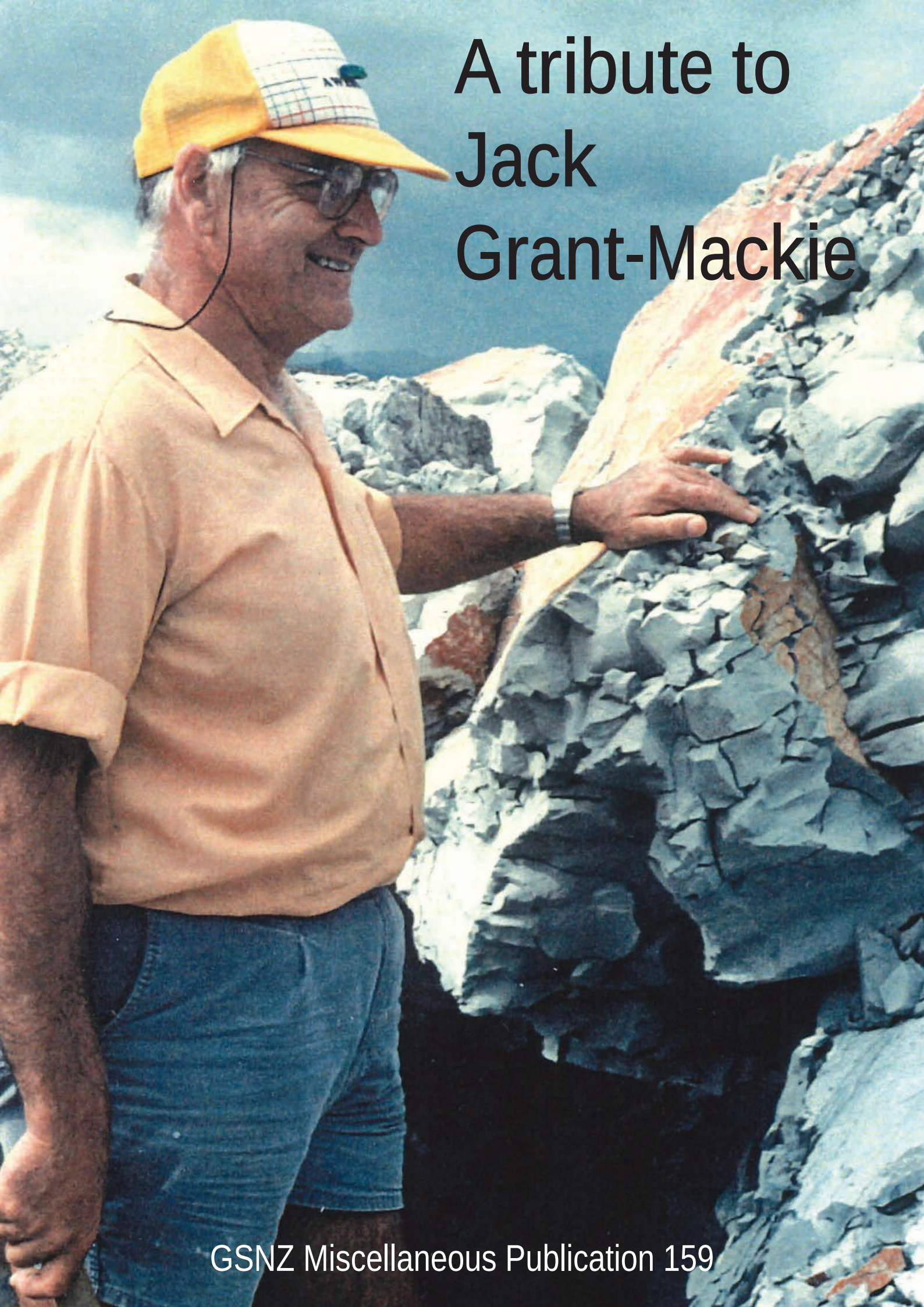

A tribute to Jack Grant-Mackie

GSNZ Miscellaneous Publication 159

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October 2022

Geoscience Society of New Zealand

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To Bruce Hayward and Hamish Campbell, for their support and advice throughout.

Much of this volume is built on the Geoscience Society of New Zealand newsletter articles written by Murray Gregory to celebrate Jack's retirement, and by Greg Browne, Hamish Campbell, Bruce Hayward and myself on Jack's election as a Life Member of the Geoscience Society of New Zealand.

Contents

Introduction

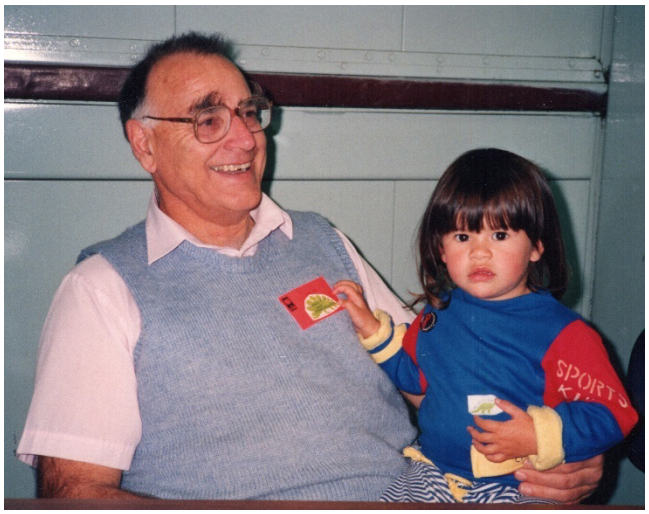
Jack was a larger-than-life figure who influenced many of us both personally and professionally throughout his long life. His own scientific career was long and distinguished, and he helped and supported many colleagues both in New Zealand and overseas. He was a central figure for Zealandian paleontology and stratigraphy, especially in research on the Mesozoic, and was one of the workers who firmly established the close faunal links between New Zealand and New Caledonia in the Triassic and Jurassic. He and Diana had strong social consciences and were staunch supporters of a wide variety of community groups.

In this volume we have compiled written contributions and photographs from Jack's colleagues, students and friends, commenting on many aspects of his life. We have also included obituaries from the Chinese scientific community, and the New Zealand China Friendship Society.

The lists of species named by Jack, and named by others in his honour, cover much of the animal kingdom and some of the plant kingdom.

For detailed accounts of Jack's scientific career and scientific honours, see two accounts in the GSNZ Newsletter: Gregory (1998), which was written when he retired, and Browne et al. (2016), when he was made a Life Member of the Geoscience Society of New Zealand.

Jack (centre, in new suit) staff and students, on his appointment as Head of the Geology Department, University of Auckland in 1981. He is flanked by former heads Nick Brothers and Ernie Searle (to Jack's right) and Arnold Lillie and his successor Philippa Black (left)



Jack and grand-daughter Huia

Jack and schoolchildren in the lab

Jack (seated) on a field trip to the Middle and Late Triassic on Highfield Station, Nelson. GSNZ Nelson Conference 2011.

Hamish Campbell, Lorna Strachan and Jack, at the launch of the Geomarine Deep Water Forams bulletin, 2011 (Photo, Bruce Hayward).

Biography

JOHN AUGUSTUS GRANT-MACKIE (JACK)

Jack was born in Auckland on 27th August 1932, at home in 30 Oxton Street, Mount Eden. His parents, Mollie and John Grant-Mackie published a birth notice describing him as 'a fine, bonny boy'. He was the oldest of five children. He had three sisters and one brother: Heather born in 1934, Jill in 1936, Karen in 1942 and Brian in 1948.

His mother Mollie was born in 1911 in a private maternity hospital in Gisborne. She was registered as Grace Miles but was later adopted by the owner of the hospital, Mary Augusta Cowper, an unmarried registered nurse. She changed the baby's name to Mollie Augusta Cowper. Nanna Cowper played a large role in the life of the Grant-Mackie family. Sadly, Mollie never learned of her biological heritage, which was of concern to her throughout her adult life. She attended Diocesan Secondary School in Epsom and then studied at Ilam School of Art (Auckland). She was working as a shorthand typist in Auckland when she met John. They courted on Mt Eden and married in 1931.

Jack's paternal grandfather, John Grant-Mackie, was Scottish. He was educated at a boarding school before training as a motor mechanic. He had a garage business and later a hotel in Glasgow in 1910. The story goes that it burnt down and all his money with it; he kept all his cash on the property. Reasonable grounds for turning his back on Scotland perhaps?! He came to New Zealand as a skilled craftsman of wooden aeroplane propellers but after WW1 established a garage business in Christchurch. The story goes that his name was John Mackie, but he changed it to 'Grant-Mackie' as a marketing ploy so as to attract a more discerning clientele!

Jack's father (1910-1975), another John, was born in Glasgow in but educated in Christchurch. He had various jobs during the depression years, including selling insurance. As for many families in these years, life wasn't easy for John and Mollie, and they moved the family around the North Island chasing work where they could, with longer term success in Hamilton and Hawera. John became involved in the union movement seeking better working conditions for workers, and ultimately becoming secretary for the Engineers Union based in Auckland. John and Mollie eventually retired to Port Waikato.

Given his father's working career, socialist political leanings, and influence, it is no great surprise that the son should inherit such a keen sense of social justice and fair play. Jack was a champion of the disadvantaged and disenfranchised throughout his life.

When Jack was 8 years old, due to Nanna Cowper knowing a member of the Trust Board, he was assessed and was accepted into Dilworth School, Epsom. Established as a private Anglican school for under-privileged boys in 1906, Dilworth College is still going strong and is the largest boarding school for boys in New Zealand with a roll of more than 500.

Jack attended Dilworth for 10 years (1941-1950). In this respect, he had an unusual upbringing by today's standards. He was effectively 'institutionalised', a common fate for many during WW2 and the post-war years. Character building no doubt, and of course he survived it. There is a family story of Jack walking along the railway tracks while at Dilworth and filling his pockets with interesting stones. No wonder he became a geologist! He matriculated from Dilworth with an excellent all-round education including sport, theatre and music. He excelled academically in languages, humanities and science. He aspired to becoming a doctor, but not to be in medicine.

He progressed on to tertiary education at Auckland University College, studying Chemistry and Geology for a BSc degree (1951-1953). At this time, the family no longer lived in Auckland and Jack would hitch-hike home to Hawera each term holiday to save money. He also worked as a haymaker over the Christmas Holidays to earn money for university fees. He sometimes picked up road-

kill possums as there was a bounty paid on them in those days.

In 1954 Jack had the opportunity to complete his degree with a flourish, something different; he went to Wellington and took Sir Charles Cotton's graduate course in geomorphology at Victoria University (Victoria University College as it was then). It was during this spell that he first met Wellington-based geologists and paleontologists and had a first taste of professional paleontology: he enjoyed some part-time employment with the New Zealand Geological Survey (NZGS), within the NZ Government Department of Scientific and Industrial Research (DSIR), then based at 256 The Terrace, central Wellington. He was greatly impressed and influenced by Jack Marwick, Charles Fleming, Harold Finlay and Norcott Hornibrook, four New Zealand paleontologists.

He graduated BSc in 1954, and then progressed to post-graduate research at the University of Auckland. This took three years (1955-1957) culminating in a thesis on "The Stratigraphy and Paleontology of Rocks of the Hokonui System (Trias-Jura) in the Awakino-Mahoenui Area, Southwest Auckland', for which he received an MSc with First Class Honours in 1957.

On the strength of this qualification, Jack was immediately employed as a Lecturer in the Geology Department by the University of Auckland, commencing in 1958.

That same year, Jack married a nurse from the Coromandel, Diana Margaret Ley (30 September 1937 - 10 September 2019), the sister of his best friend, Mike Ley, from Dilworth School days, and the love of his life. What a match! Jack and Diana were equally motivated, hard-working, competitive, sharp-witted, exacting, politically motivated, outspoken, as well as generous, playful and full of good cheer. They were great company and always good fun to be with.

They made good use of their biological potential to produce two sons, Ewan and Bryn, faithful likenesses of themselves, pretty much! Between them, Ewan & Kirsti and Bryn & Elsie have since increased the family with 10 grandchildren: Tayna, Elsie, Tiaki, Shaun, Georgie, Huia, Courtney, Millie, Emily and Lucas (Katie), plus 3 great grandchildren: Kingi-Hori, Elsie-Ley and Manurere. For most of their child-rearing years, Jack and Diana lived in Howe Street, Freeman's Bay, Auckland.

In 1959, Jack commenced a long-term research project on the occurrence and taxonomy of the fossil clam *Monotis* in New Zealand. This was no small undertaking with a burgeoning teaching load, family life, and all of his many other social interests and community commitments. There was little time available for concerted research. He finally graduated PhD in 1975 on completion of his thesis on "The Stratigraphy and Taxonomy of the Upper Triassic Bivalve *Monotis* in New Zealand." Two periods of Sabbatical Leave from academia enabled Jack to complete this research but it was nevertheless a major exercise in self-discipline and resolve, attributes that Jack had plenty of.

As a young scientist aged 31, Jack travelled to China in August 1964 as part of a two-man delegation with Wellington-based physicist J.A. (Henk) Jansen (Institute of Nuclear Sciences, DSIR) representing the New Zealand Association of Scientists (NZAS) at a conference in Beijing (Peking) on 'scientific aid to the under-developed countries of Africa and the Pan-Pacific area'. At the time, Jack was chairman of the Auckland Branch of NZAS and Jansen was a former chairman of the Wellington Branch of NZAS. They went at the invitation of the Scientific and Technical Association of the People's Republic of China a similar organisation to NZAS. To get there, they flew to Hong Kong and were then chaperoned to Beijing.

This was a momentous trip, not least because Jack got to meet Mao Zedong, Chairman of the Chinese Communist Party and President of the People's Republic of China. Hence the remarkable photograph that adorned Jack's office for all to admire and wonder at. Following the conference, Jack had 'special leave' to stay on in China for two weeks, visiting universities, government research organisations, and chasing his research on *Monotis*.

This trip was momentous for Jack in other ways. He took the sentiments of the conference in China on board and throughout his academic career, he assiduously promoted greater opportunities for higher education and scientific collaboration with so-called third world countries, especially within SE Asia and the SW Pacific. In this regard he was very much at the forefront of social enlightenment and greater equity within the NZ scientific establishment.

Jack meets Mao Tse-Tung, Beijing 1964.

Jack remained loyal to Auckland University throughout his long and distinguished academic career. He served as Head of the Geology Department (1981-1983) and on numerous university committees. He retired after 40 years of formal teaching in 1998. Thereafter, with Emeritus status, he extended his research life to the very end, maintaining a regular presence at the Tamaki warehouse where the Auckland University Paleontology Collections are housed. In all he, clocked up a remarkable 70 years of unbroken association with Auckland University.

Jack enjoyed 23 years of scientifically productive retirement, completing numerous 'loose ends' (unfinished research projects) and assisting with the 'writing up and publication' of (unpublished university thesis) research undertaken by ex-students of his, as well as collaborations with established scientists. During this period, Jack and Diana lived at 31 Moira Street in Ponsonby, Auckland. Life revolved around their many interests, and the comings and goings of family, friends and colleagues. A major past-time was watching their grand-children growing up, a source of constant pure delight. They also took pains to instil some wisdom: the importance of education, of relationships, of humility and of being human.

Jack and Diana were devoted to each other, so it was a huge blow to Jack when Diana died in September 2019. Fortunately, their younger son Bryn was in a position to come and live with Jack and care for him in his last few years.

You could say that Jack was also devoted to *Monotis*. The study of this extinct fossil clam dominated Jack's research life; its occurrence and distribution in shallow marine sedimentary rocks of Late Triassic age largely dictated Jack's research aspirations, travel destinations and international collaborations. In this regard he was very focussed and thorough. With his exceptional organisational skills and his position as an academic paleontologist, he systematically harnessed a remarkable international effort exploring every aspect of 'the *Monotis* phenomenon'.

Jack was a phenomenon in himself. He was larger than life with a strong presence, a big voice, a big heart, full of beans and good humour, warm, quirky, interesting, and very much a team player. No wonder he served as such a fine son, brother, husband, father, grand-father and father-figure. In terms of geology and more specifically paleontology, he was an enthusiastic slave of natural science, an inspirational teacher and leader, and an outstanding scientist. He may rightfully be considered as a much revered influential statesman of New Zealand earth science both at home within New Zealand and on the international stage.

Jack Grant-Mackie was a remarkably successful man, a principled man, who accomplished a rich legacy. Through his actions and his teaching, he touched and influenced many thousands, and has left this

world a better place than it was. He should be well-pleased with himself. This is exactly what he and Diana strove to do.

By Hamish Campbell (MSc student, 1976–1979) with valuable input and support from family members, namely Jill Dugan (Jack's sister), Ewan and Bryn Grant-Mackie; and also Donald MacFarlan.

Jack ponders the Late Permian–basal Triassic cherts at the north-west end of Waiheke, September 2010.

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Combined Auckland–Otago field trip, 1960s. Jack is talking to Doug Campbell.

Jack and Philippa Black with Geology PhDs from 1990: Rewi Newnham, Fauzie Hasibuan, Li Xiaochi.

Contributions

More than 30 years of research collaboration with Jack

Yoshiaki Aita

Professor Emeritus, Utsunomiya University
Koedo 2-15-23, Utsunomiya, 321-0951, Japan

I first met Jack in Tohoku University in 1978. I was an undergraduate student and attended his special lecture on *Monotis*. I remember the term “pseudoplanktonic”, which is a particular kind of mode of life, from his lecture. I learnt a new technical term as well as noting his memorable upwardly-curled, long eyebrows and his low-toned voice. Everyone recognizes these features as iconic to Jack. At that time, he travelled around Japan to visit several Japanese colleagues at various universities and museums.

Almost ten years later, during a period from 1987 to 1991, I was a postdoctoral fellow at the Geology Department, University of Auckland, working on radiolarian fossils in New Zealand under Bernhard Spörli, in close association with Graham Gibson and Jack Grant-Mackie. At much the same time, Chris Hollis had just started his radiolarian research work for his PhD project. The long journey on my own radiolarian research in New Zealand had just started. I worked on the geology and radiolarians from the basement rocks at Kawakawa Bay on the Waitemata Harbour to the SE of Auckland and became acquainted with very distinctive Jurassic radiolarian faunas which I had never seen before anywhere else. This was a first for paleontology: the discovery and recognition of high-latitude Jurassic radiolarian faunas. At that time, we had a month-long field trip with Bernhard, Chris Hollis, Li Xiaochi, my wife Shizuko and myself, exploring and sampling in both North and South Islands. Meanwhile, Jack took us to the Kawhia and Port Waikato sequences a couple of times. They were all memorable trips. Importantly, I learnt a lot about the teacher-student relationship and just how successful and positive it can be. The rewarding results achieved at Auckland University were outstanding.

On one occasion I saw Jack surrounded by several students with anti-evolution sentiments carrying a placard saying “Humans are not descended from apes” in front of the Geology Department building. I remember Jack showed an easy sympathy for the students with a cheerful face. It was the first time I had seen young fundamentalists with an anti-evolution idea, but two years later I was asked by a student in my lecture at Utsunomiya University about a picture in a book showing human footprints with dinosaur footprints. I had the same feeling that Jack had felt.

Since 1995, I organised the New Zealand-Japan collaborative research projects on radiolarian studies funded by Monbusho and JSPS. Original members were Bernhard Spörli, Jack Grant-Mackie, Hamish Campbell and Chris Hollis from New Zealand and Toyosaburo Sakai (Utsunomiya Univ,), Atsushi Takemura (Hyogo Education Univ.), Rie Hori (Ehime Univ.), Kazuto Kodama (Kochi Univ.) Satoshi Yamakita (Miyazaki Univ.) and myself from Japan. Later on, Satoshi Takahashi (Tokyo Univ.) joined the team. Our research team made numerous field trips almost every year (1995-2020) to work on Paleozoic, Mesozoic and Cenozoic radiolarian-bearing strata in New Zealand.

Photo 1. Jack Grant-Mackie, standing on top of the ridge at Te Maika Peninsula in Kawhia on 30 November, 1995. Rie Hori (red cap) and Yoshiaki Aita are sitting. Photo: Atsushi Takemura.

Our Japanese research team has benefited so much from Jack’s expertise and field guidance on all aspects of the Triassic and Jurassic

geology of New Zealand. There were so many times when we visited and worked on the Kawhia Coast with Jack, to measure sections and collect and sample suitable lithologies, such as calcareous concretions, for radiolarian microfossils.

Photo 2. Yoshiaki Aita giving a massage to Jack's stiff shoulders at the beach, Kawhia Coast on 29 November, 1995. Photo: Atsushi Takemura.

The extensive field work during an 8-day field trip from 26 November to 3 December 1995 was very memorable. We worked with Jack on the entire Kawhia sequence, without any resting day. Every member worked very hard from morning to evening and on the way back home to Te Maika wharf we often needed to climb up to the hilltop through gorse vegetation to avoid the high tide and we all ended up with scratched feet. Such scenes are shown here (Photo 1 and Photo 2).

Photo 3. My last field trip with Jack Grant-Mackie to Kawhia in March 2011. Chris Adams, Jack, Yoshiaki Aita, Rie Hori, Hamish Campbell and Satoshi Takahashi at Kawhia Harbour on 4 March 2011.

I remember the last field trip to Kawhia with Jack supported by his son Bryn. It was on 4 March 2011. Hamish Campbell, Chris Adams, Rie Hori, Satoshi Takahashi and I went to Kawhia (Photo 3) to work on the Ururoa Formation (Early Jurassic). Despite a heavy shower, all of us were very pleased to look at the sequence with Jack who was walking with difficulty. At night we celebrated Satoshi's completion of his PhD from Tohoku University as well as Jack's well-being in the field. We all enjoyed the cheerful conversation and dinner with Jack. That same year in late November 2011, was the very last field occasion with Jack. It was made at Administration Bay on Motutapu Island. The field party included Hamish Campbell, Atsushi Takemura, Satoshi Yamakita, my student Misato Shinagawa and myself as well as Jack. Later on Bernhard Spörli joined us. We stayed at the cottage just next to the chert outcrop and were working on the red chert and the overlying hemipelagic coloured argillite sequences exposed on the rocky beach of Administration Bay. Jack stayed one night with us. This was the very last occasion in the field with Jack (Photo 4).

Photo 4. My last field trip with Jack Grant-Mackie to Administration Bay, Motutapu Island in late November 2011. Hamish Campbell, Yoshiaki Aita, Jack Grant-Mackie, Misato Shinagawa, Yamakita Satoshi, and Bernhard Spörli are having a simple breakfast at the Cottage on 23 November, 2011. Photo: Atsushi Takemura.

Among the many radiolarian species described from New Zealand, a single species named as *Glomeropyle grantmackiei* Aita (Fig. 5) is one

of the representative high latitude forms of Anisian (Middle Triassic) age. It commonly occurs in sequences at Mahinepua Peninsula and Arrow Rocks in North Island, and also in South Island at Bull Creek and Watson's Beach (South of Dunedin), and Willsher Bay near Kaka Point. We have published several papers on radiolarians from the Jurassic in the Kawhia area (Aita & Grant-Mackie, 1992 ; Hori, Aita & Grant-Mackie, 1996; Grant-Mackie et al., 2000). However, the Jurassic radiolarian faunas from the Ururoa Formation on the Kawhia Coast have yet to be reported. The fauna includes diverse and well-preserved radiolarians, so we have unfinished taxonomic work to complete and hope to publish this as an atlas of the Ururoa radiolarians. I am sure Jack will want it.

The Covid-19 pandemic has changed everything all over the world since February 2020. At that time, I was leading a 14-day field trip to New Zealand from 23 February to 7 March 2020, taking 5 university and 2 high school students. We travelled to Dunedin, and worked on the geology at Bull Creek, then to Wellington to stay on Kapiti Island, and then on to Auckland. We greatly enjoyed the geology and nature everywhere we went, remote from places with tourists. We knew it was our last safe overseas trip when we came back to Japan. We hope to visit New Zealand again to see our friends and to work with our colleagues in the near future. It won't ever be quite the same for me without Jack. He was a wonderful field companion and an outstanding paleontological mentor.

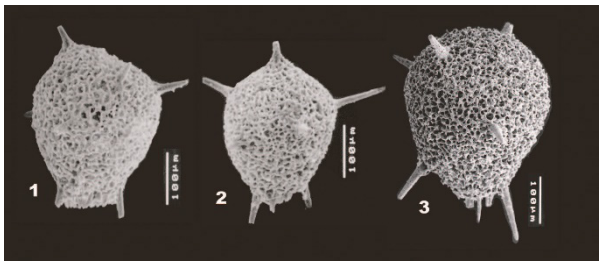


Photo 5. Radiolarian species, *Glomeropyle grantmackiei* was named in honour of Jack's many paleontological contributions on the Triassic molluscs of New Zealand (Aita and Bragin, 1999). YABC-26, Bull Creek.

An academic mentor, colleague, and friend

John Ash

"Jack", "J.A.G-M" – the problem with people like Jack is where to begin.

Probably with the word "BIG".

Big man; Big smile; Big voice; Big laugh; Big capacity; Big brain and an even bigger heart.

Jack was probably approaching 30 when I arrived at the Geology Department, to be confronted by an energetic and entertaining lecturer, who made a mockery of the adage, "Paleontology is as dry as the old bones and fossils that it deals with". (A hard rock perspective?) Here was a man who was a consummate communicator, who presented you with a clear and engaging perspective of where his passion lay. His individual and collaborative publication record attests to this, as does his willingness to take up positions of leadership in the many groups and associations of which he was a member.

Very often one can pass through the hallowed halls of learning with little memory of the texture and variety of the many personalities who command the lectern to share their wisdom. Not so with Jack. He was a strong proponent of "experiential education" - learning by being there and doing. And so it was that Jack's field trips became legendary.

His often-visited stamping grounds never became too familiar, droll and boring.

And this is probably because his expectation was to "work hard and play hard". A master of keen observation and provocative questioning, who would test environmental and equipment limits in order to gain access or retrieve a prized specimen.

Braving the thixotropic mud at Puti Point, armed with sledge-hammer and cold chisel, demolishing huge, buried, septarian concretions in search of the elusive lytoceratid. Inventing "coasteering", before it became an adventure tourist activity, with sturdy belts ready to be linked together for a safety or rescue line in the event of a mis-read tide chart. Discovery, adventure, excitement and enough adrenalin to put you on the edge of exhaustion

before retreating to the Pub, to unwind, relax, drink and sing!! Oh that Welsh Choir voice!

WorkSafe would have been an anathema for Jack, who had discovered such driving competencies as overcoming a broken axle by simply using 4 wheel drive; and that gear sticks really were for sorting those gears out – until they came loose in your hand. The term "abuse" did not apply, it was simply "use".

For a man who pushed himself hard and was so generous with his time and knowledge, Jack lived a long and fruitful life. If asked was there a secret, one wonders whether the reply would have embraced "Peach Brandy Liqueur" – easily obtained by a short detour at Te Kauwhata when heading south to Castlecliff for yet another field excursion.

JACK GRANT-MACKIE—an appreciation

John Begg

Jack, my friend, I wish I could in some way convey how important the time we shared is to me. The content of a short text can convey only a small part, but I hope that it captures something of the warmth of my memories and your significance in my life.

In 1980, there wasn't much work for paleontologists. I was writing up my PhD, in part within a discipline that was in decline even before neo-liberal tightening of funding and employment opportunities. As I approached completion in the depths of the south basement of the University of Otago Geology Department, it was starting to dawn on me that after finishing, I had no employment, much less a masterplan for life to follow. Several months before completion, I learnt that you were in the process of organising a paleontological post-doctoral fellowship at Auckland University. To me this represented a lifeline that could prevent me falling into that yawning abyss of unemployment. Such opportunities were few and far between for paleontologists, so I applied and was lucky enough to be awarded it. At that stage, I had no idea that the core of the privilege was going to be working closely with you.

You welcomed me to the Department in Auckland when I arrived in the middle of the Christmas holidays and saw that I had everything needed for my work. You and Diana welcomed me into the warmth of your home for many meals over the duration of the post-doc. Through our social and professional contacts, you showed me a number of special attributes that influence me to the present day.

You always balanced your positive actions with humour and humility. Your belief and dedication in ensuring the best outcomes for all those around you was one of your central philosophies – a true socialist. I saw you working hard with your neighbours with all their troubles and difficulties. This was also the case at work, where you invariably encouraged and advised all who sought your help. I watched your dedication in encouraging overseas students with their daily lives and helping them achieve the best results for themselves, their families and their countries. You treated everybody with respect and honesty.

I regularly tagged along with you and others to the "Staff Club" for lunches, where it was such a pleasure listening to animated discussions of issues of the day, ethics and politics. I especially appreciated the time we spent with Māori university staff, and I tried to absorb the content of these conversations and the cultural perspectives that you covered together.

My post-doc study was on the Triassic and Jurassic marine snails of New Zealand and New Caledonia and involved two trips to collect fossils in New Caledonia. I failed to publish this work by the end of my post-doc, and I know that this frustrated you a little. But your patience in encouraging me ultimately led to the successful completion of this work.

1981 was the year of the Springbok tour, with the country equally divided between engagement with rugby and demonstrations against an apartheid state. A group from the University mobilised to join the demonstrators and your measured arguments for resisting the tour convinced me to join them. While our efforts failed to result in cancellation of the tour, the reward for these efforts came after the political change in South Africa that saw

Nelson Mandela released from prison and ultimately assume leadership of that country.

Thankyou Jack for your support, your friendship and for showing me how life should be lived. I will never forget it.

Memories of Jack Augustus Grant-Mackie

Wilma Blom and Hugh Grenfell

We remember Jack as being somewhat larger-than-life with an incredible commitment to his whanau, to science and the wider community. A big physical presence, with a bigger voice and the biggest outlook on life. Bluff, gruff and generous to a fault.

Anyone who knew Jack well will have an anecdote or two. One of WB's abiding recollections during her undergrad years would have to be of Jack on the Stage II Port Waikato field trip, being handed a precious fossil by a budding paleo student (from memory an all-important *Australobuchia plicata*). As was his wont, with one hand Jack lifted his glasses up off his nose and with the other he brought the fossil close for detailed inspection. He then proclaimed the species, and with a “but it’s rubbish” flung the fossil over his shoulder before the horrified student could retrieve it. Another peril of showing Jack your find was a "Oh that's good. We'll have that for the Collections".

Also etched in the memory of WB are the sleepless nights on the annual Geology Department Waiheke fieldtrip to Church Bay. Jack was an inveterate and dedicated snorer, as was Graham Gibson. On this particular trip, Jack provided the bass notes while Graham’s were more tenor in nature, but both were sustained and "complementary". HG remembers being quite pleased with himself at a Palmerston North Geological Society Conference in that he had accommodation a long way away from Jack at the other end of the building. It didn't work.

Post-grad fieldtrips and field work were frequently accompanied by a bottle of gut-rot called Stone’s Original Green Ginger Wine. Jack would generously offer it to others but most only tried it once. Often any of Jack’s extended family or friends in need of a break also came on fieldtrips. One such trip was to Parengarenga for HG’s Masters project for which Jack was the primary supervisor. Diana and a family friend and her children, who could not otherwise afford to go away, came along for the week-long trip. All expenses for the latter paid by Jack and Diana. Diana and co went up separately, while we and Jack drove up in the departmental Land Rover. It was dark by the time we hit the tombolo north of Houhora and as we drove north, we were greeted by the most amazing lightning display. The torrential rain which hit us shortly after did not slow Jack down, who must have hit every single pothole on the then-unsealed road to Te Hapua. Jack's driving was to say the least "legendary".

We stayed in an A-frame batch (since demolished) right on the beach. Fabulous weather, fabulous geology and fabulous company. Geologising for the prof and students, sometimes with the aid of a dinghy with a gutless Seagull outboard to navigate the mangrove choked harbour arms, sometimes with the direct approach through thigh-deep mud. And fishing and beachcombing for the others. The latter activities produced a dogfish early on - which was then hung on a tree branch too close to the A-frame- and later a partially decomposed cetacean flipper –which was brought back to Auckland as a reference specimen for the paleontology collection. It was thought the smelly flipper in a jute sack should not be inside the Land Rover and would be best stashed in the engine compartment. This was not a great solution. Hot engines and smelly cetaceans do not mix.

However, jokes aside, Jack kept his students on their mettle, demanding high standards in both behaviour and academic performance. At the same time, he had a real concern for his charges. His wicked, earthy sense of humour kept life in perspective and his infectious laugh invited participation. And as for the eyebrows, enough said. But then he did work on fossil penguins.

Jack wore his social conscience with pride and his commitment to the common good was exemplary. He was a tremendous role model to many of us. A photo of Jack meeting Chairman

Mao took pride of place on his office pinboard. During the Springbok Tour Jack and family were deeply involved in the protest movement and our memory of Jack is of a be-helmeted figure in a brown woollen bush-shirt bestriding the streets of Mount Eden. HG remembers going to the Palmerston North protest with Jack and others. We arrived well before the game so Jack decided to fill in the time; we would drop in on one of the University Geology staff. Jack found it most amusing that despite arriving unannounced the staff member carefully would not inquire as to why we were in town. He was none the wiser from Jack or us as we played out his silly dance. Jack also decreed that those students who participated in the protests would be cut some slack academically for taking time out of lectures. Given the polarising nature of the Tour, this was not to everyone's liking, but fortunately for those of us who took part, the powers that be concurred and no one was penalised academically.

In June 1982 we moved to Sydney University, Hugh to pursue PhD studies and Wilma to work as research assistant and later to also complete a PhD. The reason for the visit is forgotten (probably a conference), but only a few months later Jack stayed with us for nearly a week. We recall he was invited to dinner by one of the Associate Professors at the Geology & Geophysics Dept, who arranged to pick Jack up from our place. Near the appointed time Jack was appalled to discover that only he had been invited. We had to inform him that the social hierarchy at Sydney University was much more pronounced than at Auckland Uni and that from all accounts, invitations were rarely extended to mere post-graduate students and junior staff. However, Jack himself was the consummate guest, mucking in with dinner, dishes and the like and stayed with us a couple of times. It was very nice to return the incredible hospitality of Jack and Diana that many graduates had been the recipients of.

We remained in touch with Jack and Diana and post-return to New Zealand in 1990 our paths often crossed during departmental functions or through our work at Auckland Museum.

Jack had a very long career in the Geology Department at the University of Auckland from 1958 until retiring as Assoc. Professor in 1998 (Gregory, 1998). He continued as an Honorary Research Associate from 1998–2021. With his great breadth of interest and study in geology and paleontology, it is fitting that he has had at least 15 species, from a diverse range of fossil groups, named after him. He believed in taking scientific research results to the public and wrote many popular scientific articles. He was active in many local, national and international scientific bodies (e.g. Royal Society of New Zealand, Geological Society of New Zealand from 1955 (member of the national committee for 14 years, President 1975-76 and made an Honorary member, 2015) (Browne et al., 2016), founder member (1967) of the Fossil Record File sub-committee (FRED) and the Paleontology Special Interest Group. He was Patron of both the Conchology Section of the Auckland Institute and Museum (aka Auckland Shell Club), and the South Auckland Rock and Mineral Club, and also a continuous member of GeoClub. Jack has been a long-time supporter of Auckland Museum and served on the Institute's governing council from 1989 to 2000, including as its President from 1999-2000. During part of this period, the Institute and some Museum staff were being shafted by the then director (Rodney Wilson), abetted by a complicit Trust Board. He has also contributed greatly to, and been a user of, Auckland Museum's collections and received the Auckland Museum Medal in 2018.

A great guy, a great mentor. He will be missed.

Jack Grant-Mackie—Tribute

Dr Margaret A. Bradshaw

University of Canterbury (retired)

The memories that I carry of Jack are good ones; of a big man with a commanding voice that carried well, very upstanding and with amazingly bushy eyebrows. He was a perfect gentleman, always courteous, and his laugh was a big one that travelled far.

We were both interested in fossil bivalves, but were c. 226–170 million years apart, me in the Paleozoic, and Jack in the Mesozoic. But we always enjoyed swapping research notes and publications.

I remember going on a Geological Society field trip led by him to the west coast of the North Island and inland from Hamilton—new territory for me, and the first time I had seen the massive iron-sand deposits. Jack's knowledge was encyclopaedic, and he was never reluctant to share it. I particularly remember him talking about the belemnite hooks preserved in the Jurassic siltstones. I was sceptical—surely, they were too small and delicate to be preserved. But we dug around and found some belemnites, and in the mud around them he pointed out the tiny hooks and the faint outline of the tentacles that bore then. Beautiful preservation and magical to see. Jack had a keen eye and an open mind and liked enthusing his colleagues. I've never forgotten that fieldtrip and how willing he was to share something exciting.

Over the years I saw him at many Geological Society conferences and I remember the last time I met him at the icebreaker in Wellington. It was very crammed and noisy. Jack was finding it difficult to hear and we went into a 'side-line huddle' to try and catch up about our current projects, consequently missing out on the finger food that never quite reached us across the sea of younger members.

Jack was a lovely, cultured and enthusiastic man who was a great taxonomist and generous with his help and advice.

We are all the better for his attitude and wisdom.

Recollections of Jack Grant-Mackie: fossil man extraordinaire

John St J. S. Buckeridge

Professor Emeritus, Earth & Oceanic Systems Group, RMIT University, GPO Box 2476, Melbourne, VIC 3001, Australia

I enrolled as a doctoral student at the University of Auckland in 1976, being supervised by Jack Grant-Mackie (paleontology) and Brian Foster (biology). As my study was essentially in paleontology, Jack was the senior supervisor and thus I was based in the Geology Department. Jack had a formidable presence—in part due to his size, but also due to his knowledge and passion.

My memories of fieldwork with Jack in the 1970s are coloured by two things: the need to collect voluminous bulk samples, and a somewhat cavalier disrespect for tides. An early trip, undertaken around Tawharanui Peninsula, North Auckland, springs to mind: we had located some superb, but very delicate fossil barnacle specimens on the intertidal platform, and undertook to meticulously extract these, along with the appropriate host rock. In light of the excitement of finding these rare fossils, it should not surprise anyone to guess that we were somewhat oblivious to a rapidly rising tide. Although this apparently did not worry Jack too much, we ended up having to wade along a rocky shore in one-metre-deep water, augmented with occasional "neck-high" waves. This would not have been too onerous, except that our backpacks were now heavily loaded. What eventuated was my first close-up encounter with intertidal barnacles: even with a pack-load of rocks, one's buoyancy is significantly increased when submerged, with loss of footing leading to slippage. It was in the swash, over barnacle-studded rocks, that effected most damage, with clothing and skin tearing when being dragged into deeper water. Jack's pack was undoubtedly heavier than mine, but his greater density was augmented by his mighty sledge-hammer. His extended hand stabilised my descent and we each recovered safely – although both reminded, by bloodied legs, that living barnacles are not to be trifled with.

Jack was an excellent supervisor, always there when advice was needed, and on a number of occasions was more than happy to participate in my fieldwork. I know that he loved getting out into the field, enjoying the natural environment, and trying to grasp the message that the rocks had to tell.

Paleontology is one of the most complex of the sciences: to fully appreciate paleontology requires an integration of both physical and biological sciences, and Jack was a master of this approach. I also owe much to him for his careful and comprehensive editing of the text of my thesis. Lessons that, in time, I have passed on to my own students.

Since graduating I have spent much of my academic life in engineering departments, and this may seem odd for a paleontologist. Nonetheless I was able to retain my interest in paleontology, although it was only at the end of my career I was able to devote most of my time to it. I know that Jack helped me retain this curiosity for the fossil world – by encouraging my participation in research projects over the decades. He was also most helpful when pursuing opportunities to work overseas. I thank Jack for his advice, his comradeship, his humour, his professionalism and for "being there".

Tribute to the memory of Jack Grant-Mackie

Hamish Campbell

On a miserable winter's day in July 1976, I wrote a fateful letter to the Geology Department, University of Auckland, asking if I could possibly sign up for an MSc. The response from Professor Nick Brothers was swift and immensely welcoming and positive. I happened to be the 'acting manager' of Wharekauri Station, northern Chatham Island, at the time. I was 23 and had at last figured out that farming was not for me.

I commenced my new life in Auckland a few weeks later, and I chose to do a thesis-only MSc research project in New Caledonia under the auspices of UNESCO IGCP Project no. 8 and led by Jack Grant-Mackie. My MSc studies commenced with a bang: attendance at the International Symposium on Geodynamics in the Southwest Pacific held in Nouméa, New Caledonia, from August 27 to September 2, 1976. And then straight to my field area near Moindou, some 125 km NW of Nouméa, with Jack, and logistical support from BRGM, most notably Jean-Pierre Paris. Jack had just turned 44 (on the first day of the conference) and there was significant celebration in his honour.

Within the space of just two intense two weeks, I saw Jack in his element within his multifaceted natural habitat as traveller, field geologist, observer, collector, writer, reader, paleontologist, speaker, linguist, raconteur, conversationalist, wit, comedian, critic, intellectual, philosopher, academic, committee man, project manager, organiser, sportsman, diplomat, scholar, consultant, advisor, colleague, friend and highly sociable, somewhat flamboyant, somewhat loud, playful, larger than life, extrovert party animal. He was also political, ideological, humanitarian, principled and disciplinarian. He could also be abrasive, demanding, argumentative and slightly scary at times (not least his driving and snoring skills). Despite all, he was strong, courageous, outspoken, persuasive, very fair-minded, a natural leader who stood up on matters of principle and he was highly organised. He was a man of action and got things done.

Later, over the duration of my MSc studies (1976–1979), particularly during thesis writing-up and preparation of manuscripts for publication, I spent many times with Jack in his home environment and got to know Diana and the boys, Ewan and Bryn. To know Jack was to know not just the person and his immediate family, but also his local community within which he was deeply imbedded and involved. And beyond the local community was a much wider very diverse multi-ethnic international community. He seemed to be connected to an endless number of people and organisations all over the world, not just Auckland and New Zealand. He was truly global.

In short, Jack was very impressive, and I was very happy to have him as my supervisor and mentor. I remember thinking that if I could only be like Jack in some measure, I would be okay. And so it was. My experience as one of Jack's MSc students really set me up for life. Jack was instrumental in my being appointed as a 'paleontologist' with NZGS, and also in determining the research topic for my PhD (1982–1985) at Cambridge University, England. I enjoyed a wonderful professional career (1978–2019) spanning 40 years as a research scientist (paleontologist, geologist, science communicator) with NZGS and then GNS Science based in Wellington. He played a huge role throughout my career, and we participated on many memorable field excursions, projects, conferences, publications and committees together, mainly on aspects of Triassic–Jurassic stratigraphy and paleontology of New Zealand, New Caledonia and SE Asia. Inevitably, Jack was much more

than a mentor to me: he was a wonderful colleague and friend, just as he was to my father before me.

Personal reminiscences about Jack Grant-Mackie

Kathleen (Kathy) Campbell

I arrived in the Geology Department at the University of Auckland in July 1997 to take up a research and teaching position in paleontology, as Jack Grant-Mackie was close to retirement. By some miracle, the administration allowed a time overlap in our positions, so that I was able to learn the ropes from him directly, with particular regard to the on-campus and field-based teaching programme that had been established for decades prior to my appointment. During this interval and for years afterwards, I also learnt of the significant legacy that Jack was leaving, and this continued with his ongoing research activities many years into his retirement.

In those early days of my new Kiwi life, Jack was a pillar of generosity, both academically and in helping my family adapt to life in New Zealand. He naturally advised without being overbearing, and also gave me space to find my own way, which was more on the paleoecology/paleoenvironments side of the discipline than in taxonomy and biostratigraphy. Jack was always engaging and supportive as I drew on the strengths of the 'soft rock' academics to combine aspects of their high-quality teaching pedagogy with some new directions. During this first decade of my employment, I often worked with Jack on teaching and research projects and my recollections come from these years.

Jack in the field.

I heard about Jack's notoriety as a vehicle driver and got my first taste of it on an undergraduate paleontology class field trip to the Pliocene Kaawa shell beds on the Tasman Sea south of Auckland, where we stayed at Limestone Downs (and yes, I also found out about his snoring as he was banished to a spot as far away from the rest of us as possible). We got stuck in the mud on a track and he cheerfully stated that this was what students were for, as they all piled out of the van to push us out of the muck and then get covered in it themselves during the extraction process. Jack's ability to identify micro-molluscs was readily on display on that Kaawa trip, the beginning of my admiration and witnessing of the great breadth and depth of his taxonomic capabilities on the many field trips I attended during those years.

Jack in the field.

By far and away my favourite field trip with Jack was our visit to the Mesozoic marine reptile and dinosaur fossil locality at Mangahouanga Stream, west of Wairoa, with Joan Wiffen and our post-graduate paleontology class students. Visiting American paleontologists Annalisa Berta and George Stanley also were there. While Jack arranged the trip and set the stage for it academically, he stood back while we were there so that we could maximize our time with Joan. It was magical, from exploring the field site itself to the time I got to spend in the evening staying with Joan in her cabin and hearing her stories by the light of her camp lantern. The rest of the class stayed with Jack in the main building, which unfortunately meant lack of sleep for them due to Jack's snoring. While I appreciated the trip at the time, over the years I have realised how truly special it was and can thank Jack for this

amazing experience with one of our national treasures, The Dinosaur Woman.

Outside Joan Wiffen's camp, Mangahouanga Valley.

Jack and Kathy, Mangahouanga Stream.

A close second favorite field excursion with Jack was our trip to Motuketekete Island in the Hauraki Gulf with another post-graduate paleontology class. Through his extensive contacts, Jack again arranged the trip, which involved a boat and accommodation on nearby Kawau Island. I still vividly recall Jack paddling away in a small dinghy to the shore platform on the island and his extensive knowledge of the Miocene Waitemata fossils. It was a thrill to find sheet coral encrusting Mesozoic greywacke boulders at the base of a paleo-shore platform. We published a paper from the trip and subsequent study with the students during the semester. Jack described a new turbinid gastropod, *Bolma* (*Bolma*) *ballancei*, in honour of University of Auckland's sedimentologist Peter Ballance. I heard my first wild kiwi bird call on that trip and am grateful to Jack for his never-ending ability to whip up paleontological adventures that resonate many years later.

In closing, I reflect on Jack's personal values – his fight for social justice and his priority of putting other people first – with great admiration. He taught me that working together collaboratively for the greater good, in research and education, is far better than the competitive academic model under which I had trained. He unselfishly made a huge contribution to a nationally significant fossil research collection and trained generations of students, some of whom are working professionals today. It's no surprise to me that Jack was actively planning a road trip with his son a day or so before he died. That was Jack for you, right until the end looking onwards and upwards for the next adventure.

Jack Grant-Mackie

Susana Damborenea and Miguel Manceñido

La Plata, Argentina

Jack Grant-Mackie was an indefatigable, brilliant scientist as well as a warm, generous person. Our relationship with him dates back to the early eighties, when one of us (SED) began correspondence exchange (via the traditional air-mail letters), initially concerned with the likely presence of representatives of the (reputedly Maorian) bivalve genus *Otapiria* in early Jurassic deposits of western Argentina (reported at the Fifth Gondwana Symposium). This gradually led to developing mutual interests in exploring other potential faunal links between the Andes and New Zealand. By the end of the decade, a befitting opportunity turned up. Next year the Second International Brachiopod Congress was going to be held in Otago, and he urged us to apply to a New Zealand Royal Society Grant, through the "Prince & Princess of Wales Science Award" scheme, and Jack was one of the key mentors for its success. This not only allowed us to attend the said conference, but also to pursue research at several institutions as well, spread from Auckland in the north, plus Lower Hutt, Wellington, Christchurch, down to Dunedin. What was initially planned as a two-month stay, eventually stretched to three, thanks to the hospitality and assistance offered by him and other 'kiwi' colleagues. Having

taken our children along (then aged 14 and 8), Jack was instrumental in making it easy for their attendance at school while in Auckland. It was a fruitful and pleasant experience throughout, and we were able to examine the rich and well-curated fossil collection at his Geology Department.

He further guided us on several field trips to key Mesozoic outcrops, as he was a fine field geologist himself, fully convinced of the importance of looking at fossils in the field, so as to better appreciate their paleoenvironmental and biostratigraphic significance in the geological context. Those memorable field excursions took us to some iconic Jurassic localities, such as Kawhia, Marokopa, Huriwai, some with other foreign colleagues as companions (such as Francis Hirsch, Yoshiaki Aita). Jack would tenaciously stick to the planned field activities and would not be set aback by challenging weather conditions (which provided us with the new experience of looking for fossils under an umbrella…). Jack was more than a geologist; he was truly a naturalist in the broad sense (having been brought up in the classical school of Sir Charles Fleming…). Hence, during those trips he could easily embark on enlightening digressions on mangroves, cabbage-trees, toe-toes, pohutukawas; or take us to see thousands of *Spirula,* white shells paving a strand line of black sand, to pick them up and see if they had been colonized by tiny goose-barnacles during their nekro-planktonic drifting ashore; or to tell us interesting stories about the Maori and their culture…. During (and after) that study sojourn, we exchanged many ideas with him, and he spurred us to produce a synthesis of what we learned from the voyage, and our 1992 paper in the "Journal of the Royal Society of New Zealand" is a concrete testimony of his persistent friendly encouragement.

After our trip we remained as friends in the distance, we exchanged loads of correspondence with him, not only about fossils. Such exchange was not limited to letters but included also bibliography and even fossil specimens and casts, as well as positive interactions with some of his PhD students. He always kept a keen interest in advances on Mesozoic Gondwanan paleobiogeography.

Diana and Jack with Susana Damborenea, December 2018.

We had the last opportunity to visit him and his wife Diana in 2018, when we attended the Meeting of IGCP # 632, within the frame of the "Geosciences 2018" conference at Napier, and we were fortunate to spend some time with them at their home in Ponsonby remembering old times. We just regret he was not able to come to visit us in Argentina, so as to share field trips in the Andes with us, and to show him some Triassic and Jurassic sections from Argentina in reciprocation. We are thus most grateful to the organizers of this special tribute volume, for inviting us to contribute to this well-deserved homage in Jack's memory.

Collecting with Jack

Mike Eagle

We sat eating lunch in the cool shade of an overgrown dump in an abandoned aggregate quarry in the Waitakere Ranges. Associate Professor Jack Grant-Mackie wanted to recollect a small, Early Miocene, deep water arcid that I had discovered when searching for Miocene faunas preserved in marine sediments. That was the first time together in the field, a half-day, Auckland backyard expedition. It was about this time that Jack referred me to Curator Bruce Hayward at Auckland War Memorial Museum for a position in the Marine Department, another friendship that has endured.

Jack and I were re-introduced by an enigmatic fossil collected from Moewaka Quarry, Port Waikato, thought to be the aboral facet of a crinoid calyx tegmen, but later identified as a

Jurassic sea-star. Given my interest in the subject, Jack suggested that I should come to his classes free of charge to learn more about paleontology. Instead, with his encouragement, I enrolled concurrently in a BSc at the University of Auckland and Massey University. So commenced my education in geology, specifically research into fossil echinoderms, which culminated in a doctoral capping breakfast in 2012 with my Supervisors Jack and Professor Phillipa Black. I have much to thank Jack for his unstinting perseverance in critiquing and correcting four volumes of PhD text, maps, diagrams, and photographs. His grammatical lessons and jocular erasure of words considered "tautology" haunt me to this day.

Jack and I collected many New Zealand geological sites. Several occasions are memory entrenched, some represented by the papers we co-authored (Eagle et al. 1995, 1999, 2005). Port Waikato was particularly noteworthy to me because of Jack's penchance to recollect an old fossil locality that yielded rare crinoid ossicles and calyces in exposed strata on Sunset Station. His enthusiasm for the Huriwai Plant Beds was responsible for my carrying two Jurassic tree trunk sections out, one to adorn his garden as a monument of time! I was grandly introduced by him at Kiritehere to *Monotis*, a Late Triassic molluscan marker fossil and his doctoral subject. Additionally, whilst undertaking Jurassic fieldwork south of the Taharoa iron-sand mine site, I was able to share with him some Late Triassic invertebrate fossils previously undiscovered, hence not mapped. His pleasure in identifying them was most gratifying, as was his interest in the new site later revisited.

Jack and I shared a common interest in collecting the Awakino Gorge Triassic/Jurassic boundary and a deep-water Early Jurassic (Ururoan) site with a fault running through it denoting different biotopes. Part of my PhD research involved a trip to the Chatham Islands with Jack funded by the University of Auckland and the Royal Society of New Zealand. That was our first trip there, and other than expectations of travelling to a new destination and collecting different paleontological localities on both Chatham and Pitt Islands, the pleasure of Jack's companionship in the field was rewarding enough. I remember Jack eating three crayfish in one sitting in the Glory Bay Cottage on Pitt Island and successfully defending my rights to DOC in front of the local policeman at the airport, for me to keep a Moriori adze recovered from below the high tide line there. In the Chatham Islands we collected: Cretaceous and Oligocene crinoids, penguin bones, Pleistocene bird bones, Cretaceous and Paleocene molluscs, and chondrichthyan teeth. Jack was elated with our finds.

Fig. 1 Jack perusing his fossil collection at lunch-time at Flowerpot Harbour, Pitt Island, Chatham Islands in 2002.

Sharing a small, billeted room with Jack was interesting. His extensive, bulky collection of Mesozoic and Cenozoic molluscs and boxes of frozen blue cod, compared to my miniscule crinoid collection and a few bird bones, made movement difficult and the flight home interesting.

Fig. 2. Jack collecting Momoe-a-toa Tuff hellbeds, near Cape Young, northern Chatham Island.

One evening after a field trip to Waihi Beach, Hawera, and dinner in a hotel, we all crammed into our motel's laundry to do some much needed clothes washing, but also to talk about local marine vertebrate fossil localities and modes of preservation with Joseph McKee, just returned from an overseas dinosaur conference. A few too many bottles of 'Stones' ginger wine drunk from paper cups saw the washing neglected and a snoring Jack fast asleep in a plastic chair. When woken, to shuffle off to bed, he instantly proclaimed that *Velociraptor* being a Cretaceous dinosaur, should never have been in 'Jurassic Park'!

Tired of my ineptness, Jack donated his Dilworth School Latin book to me as a memento to pronounce and name new species gender specific correctly. I treasure it. I regularly attended his singing in the Welsh Choir. I remember a particularly auspicious occasion when Paleontology Curator Joan (Isabel) Sutherland and I were invited to attend an afternoon tea at Jack and Diana's Moira Road home to meet with colleague Doug Campbell and celebrate his achieving a Doctor of Science degree. It was a most happy, pleasant time. Jack and my mutual geological interest in China and our experiences there also complemented our friendship. Jack was a gentleman, professor, scholar, and excellent tutor, always approachable, always a standard-bearer of the English language and a staunch advocate of Maoridom. It was my privilege to have been mentored by him, to have shared his enthusiasm for paleontology, and to have been fortunate to partake of his wealth of experience and scholarship. He was an academic mentor, colleague and friend never to be forgotten.

Paleontology with Jack

Roger Evans

It is sad to hear that Jack has finally passed, he was a larger-than-life reality among the lecturers of the Geology Department in my student days, back in the second half of the 1970s.

Recall takes me back to Stage 2 Paleontology, poring over trays of fossils under his tutelage, learning such arcane terms as "phaneromphalous" (I still recall navel-gazing that one particular specimen of a widely coiled gastropod); being taught the subtle differences between *Buchia plicata* and *Buchia hochstetteri* in the lab, then attempting to discern them oneself in the middle of a wet creek on the Port Waikato fieldtrip. Also forever etched into my student memory is Jack holding forth confidently on some point of geology at the Leigh Marine Laboratory, after a day examining the fossils of the Cape Rodney Formation.

Many years have passed since, but I still have the greatest respect for anyone who can juggle those obscure Latin names and ascertain the finer points of species differentiation from a few battered bits of oddly shaped rock.

Jack Grant-Mackie's connections with Auckland Museum

Brian Gill

Curator of Land Vertebrates (retired), Auckland War Memorial Museum

Involvement with collections

In his paleontological research, Jack Grant-Mackie was, of course, immersed in collected and curated specimens. He was heavily involved in running and developing the large geology collections, and associated museum displays, of his own Geology Department at the University of Auckland. This led him naturally to strong connections with Auckland Museum, the large encyclopaedic museum of his home city. Auckland Museum had a geology collection and geological displays, but it had employed no geology curator since M.H. Battey departed in 1955.

Auckland Museum's Marine Departments (Malacology and Marine Biology) curated the large collections of fossil molluscs (and other marine invertebrates) while the Land Vertebrates Department cared for fossils of terrestrial vertebrates, including Holocene moa remains. The rock and mineral collections were "orphaned", with occasional curatorial activity if there were marine staff or associates who had the geological interest and expertise. With Jack's passion for museum collections, and with his personal collegiality and keenness for public service, he was always a great friend and supporter of Auckland Museum and its natural science activities. He was, for example, an adviser for the museum's long-term multi-media exhibition "Auckland Landscapes – Past and Future" that opened in November 1980. It was unsurprising that Jack should also turn to a governance role at the museum.

Advice and collaborations on land vertebrates

I was appointed Curator of Land Vertebrates at Auckland Museum in 1982 and made Jack's acquaintance within the first 18 months. One of my main tasks was to improve the registration, numbering and documentation of the land vertebrate specimens (birds, land mammals, reptiles, amphibians). In the collection I found a large fossil egg, broken and incomplete, but held together by being half encased in sediment. It was unnumbered and there was no accompanying label. Although most likely to be a moa's egg, there was no certainty that it came from New Zealand. I showed Jack the egg when he visited the museum one day in 1983. His advice was to send a sample of the sediment to the New Zealand Geological Survey. As a result, petrographic analysis by W.A. Watters indicated that the sediment was consistent with an eastern South Island location although a foreign source could not be excluded. Much later, I found archival documents that showed the mystery egg had indeed been collected in Central Otago, and it could take its important place as Egg 3 in the list of only 36 known whole moa eggs.

In 1998 and 1999, I accompanied Jack (and Fred Brook) to sand-dune sites in Northland to collect Holocene fossil bird bones exposed on the sand surface. With his cheerful, outgoing disposition, and his wealth of knowledge and interests, Jack was always an ideal companion for long car journeys or time in the field. Jack often passed fossil bones to me so I could identify them using Auckland Museum's large osteological reference collection. Jack's generosity and willingness to collaborate led to me being a co-author of papers reporting two Pliocene bird bones from Pitt Island (Chatham Islands) ([Eagle, M.K., Gill, B.J., Grant-Mackie, J.A. 2005). and a Middle Pleistocene goose bone from Hawke's Bay [Gill, B.J., Grant-Mackie, J.A., Hayes, B. 2005). Using an articulated turtle skeleton received by Auckland Museum from the Royal College of Surgeons in 1879, and loose bones from turtles washed up dead in New Zealand, I was able to identify the exact section of the vertebral column represented by Eocene fossil turtle vertebrae collected near Whangarei by Jane

Hill [(Gill, B. 2012. We described this fossil as a new species *Eochelone monstigris*.

Auckland Museum governance

Auckland Museum has always been owned and administered by a stand-alone governing body (with elected and nominated members) independent of local-body government, although much of the funding comes from ratepayers. Jack Grant-Mackie was elected to the governing council of the Auckland Institute and Museum in 1989–90. At this time, neoliberalism (the "Rogernomics" initiated by the 1984 Labour government and maintained by all subsequent administrations) was upending New Zealand's society and governance. Even not-for-profit public organisations like museums were under pressure to adopt corporate-style structures and behaviour. Rodney Wilson was appointed director of Auckland Museum in July 1994. He had been an art gallery director, whereas his predecessor (Stuart Park), like all previous Auckland Museum directors, had risen through museum ranks and possessed first-hand experience of the encyclopaedic museum and its academic disciplines. Wilson's appointment marked a shift to the neoliberal ideology that subject-specialisation is no longer required in those who manage an organisation.

Within two years Wilson had enlisted the necessary local authority and ministerial support for a re-writing of Auckland Museum's enabling act of parliament. The new Auckland War Memorial Museum Act 1996 disestablished the Auckland Institute and Museum council, on which Jack served, and created a smaller trust board. Significantly, its first chairman was from the business community. Thus, by October 1996, Jack had been side-lined to the council of the "Auckland Museum Institute". The latter (a confusing re-naming by means of word-shuffling) was established as a membership body acting as "friends of the museum" with its council also serving as an electoral college to select four incumbents for the museum's 10-member trust board. Jack was vice-president of the lesser body by 1997 (and from 1998 to 2000 I held one of two positions for elected staff representatives; such representation being firmly supported by Jack).

Rodney Wilson lost no time in implementing a major restructuring of Auckland Museum, with the loss of some 26 staff positions in 1997. The axe fell heavily on the two marine departments, and hence on geology and much of paleontology. The two marine curators lost their jobs and care of the large collections was reduced to oversight by one technician. Jack protested actively against this attack on the museum's science capacity. He spoke out at a public protest meeting that attracted 150 concerned citizens. "Closure of the Auckland Museum's marine department cannot be allowed to happen. ... The two scientists to be "lost" are acknowledged experts across a broad field, they have high profiles in both scientific and popular publishing, including a regular *Herald* column, deal with a huge number of public inquiries and thus add enormously to the museum's service to the people of Auckland".

Jack remained on the Auckland Museum Institute council until 2001–02, thereby serving continuously in Auckland Museum's governance for 13 years. At a ceremony in February 2018, attended by many of his family and friends, Jack was made an Associate Emeritus of Auckland Museum with the award of a museum medal.

Tribute to Jack Grant-Mackie

Dennis Gordon

NIWA

My first encounter with Jack was not auspicious. It was 1964 and I was an undergraduate. Geology was one of the three courses I chose to enrol in that year, and I was in the Auckland University Geology Department building, sliding trays part-way out of cabinets and admiring the beautifully curated fossils therein. While engrossed in this activity, Jack came up to me and told me off. It seems I needed permission to do what I was doing, and I didn't know (or maybe didn't want to know) I was intruding where I shouldn't. I was wary of Jack after that.

Encounters with Jack during the next 25 years were occasional and positive. One of his students, Ron Whitten, did a PhD on bryozoans

in the sediments of Hauraki Gulf and we had several interactions. Another bryozoological connection was via Priska Schäfer of Kiel University. She and Jack published on New Zealand Triassic bryozoans (one of the globally richest such faunas) in 1994. These bryozoan connections led to Jack's involvement with the 10th conference of the International Bryozoology Association, which I organised in January 1995. Though the conference was held in Wellington, Jack led the first part of the preconference field trip in the North Island, taking the coach-load of bryozoologists to Goat Island and Mathesons Bay near Leigh before crossing to Maori Bay on the west coast at Muriwai. I discovered one impressive thing about Jack at that time when we shared a motel. After a long day with the tour group Jack began snoring loudly 2 minutes after hitting the sack. I couldn't believe how loud he was! After enduring it in the same room as Jack for about 15 minutes I had to retreat to a spare bed in an adjacent room occupied by a German colleague. Jack edited the paleontological contributions to the conference volume, which was published by NIWA in 1996 as *Bryozoans in Space and Time*, with editors Dennis Gordon, Abby Smith and Jack Grant-Mackie.

In March 1996, I and paleontologist friend and colleague Paul Taylor (Natural History Museum, London) were greatly aided by Jack when he took us to the northeastern shores of Kaipara Harbour at Waipukua Bay to collect bryozoans from the Miocene of the Pakaurangi Formation. We could not have done it without him. Jack generously arranged and led the field trip and provided guidance and explanations when collecting samples. It helped a lot that Jack had a great relationship with Mikaera Mini, then Chairman of the Mini Whanau Trust, who gave us permission to visit the site. A day or two later, Jack showed us outcrops in the Waitemata Series around Auckland, including a beautiful bryozoan-rich stratum at sea-level on the small headland between Waikowhai and Faulkner Bays, Manukau Harbour. A new genus and species, *Cureolipora miocenica* was discovered at Pakaurangi Point (published in NZJGG in 2000).

Subsequent bryozoological emails kept us in touch intermittently until they petered out in the late 2000s. Over the many years I knew Jack, I came to appreciate that, while he didn't tolerate fools gladly (so it seemed to me), he was also a generous-spirited man, and I came to like and respect him hugely. He left a great and lasting legacy to New Zealand paleontology and will live long in our memories. Kia kaha!

Memories of Jack Grant-Mackie

Bruce W Hayward

Only a few events that occurred during my time at university stand out as memorable and two of these involved Jack. The first was in 1969, when a much younger Jack walked into our regular Stage II paleontology lecture one day and started with an apology. He stated that he was here lecturing to us because that is what he was paid to do, but morally he would prefer to be across the road with Tim Shadbolt and others on the protest line outside the Big I hotel where a US dignitary was staying, demanding withdrawal from the Vietnam war. Two days later Jack featured in the local paper shouting and waving a placard.

The second event I remember vividly is when I knocked on his door and asked if he would be willing to be one of the two supervisors for my upcoming PhD thesis in the Waitakere Ranges. Am I the only grad student that Jack said no to? He had a good excuse, however. He said that the HoD had instructed that he was not to take on any more grad students as was he already supervising 15. Instead, he was told he should be concentrating on finishing his own PhD thesis (completed in 1974). Although he was not my supervisor, Jack was still extremely generous of his time and probably read more chapters of my draft than any other staff member (because it had morphed into a strongly paleo thesis). This was however after he had handed in his thesis.

Soon after I joined the NZ Geological Survey in 1978, I was rather shocked to realise that Jack was not universally appreciated in the way he was by the students and younger staff at Auckland. At my table in the tearoom, I could not help but overhear two senior

paleontologists (both now deceased) making disparaging remarks about Jack, his supervision of students and his political leanings in what was clearly a NZ version of McCarthyism. I had been on the receiving end of a similar sentiment a year earlier when a paleo paper I had submitted from my PhD was shamelessly decimated by an anonymous DSIR referee who went on to lay the blame not on me, but on my assumed supervisor Jack. An Otago University referee recommended the paper be accepted without need for any changes. I withdrew it and did not revise it and resubmit it for another decade.

Jack's and my paths crossed often over the next 40 years. He was a senior and steadying voice of reason on the national committee of GSNZ in the late 1970s–early 1980s, and again on the Council of the Auckland Institute and Museum in the 1990s. Jack was very generous with his time and always ready to assist anyone who came to him with a question that he could answer. It was because of this that he was made patron of the South Auckland Rock and Mineral Club and the Auckland Museum Conchology Section. Until his last few years, as his eyesight was failing, Jack attended and supported most monthly meetings of the Auckland Geology Club and he gave lectures to all these groups, and I am sure many others around Auckland. I remember his leading a Geoclub weekend field trip in the 1990s where we all stayed in the old Kiritehere School building (now derelict).

As curator of Marine Invertebrates at Auckland Museum I attended most of the Conchology Section (Shell Club) evening meetings held at the museum in the 1990s. One of their activities, which I struggled to support, was their practice of buying and selling shells, often at their annual shell auction held in a local hall. Type specimens were not allowed to be auctioned but I was uncomfortable with the common practice of taking live specimens to get mint shell specimens of rare species. In spite of his scientific background, Jack accepted this activity as still promoting the love and knowledge of natural history and relished the opportunity, when asked, to be the auctioneer at several of these events. Usually, 200–300 lots were sold at any one of these 3-hour auctions, which must have been quite taxing even for Jack.

I never had the pleasure of experiencing Jack's legendary driving, batting or bowling in the annual department cricket match, but no doubt others will describe some of these exploits from first-hand knowledge. Jack was larger than life, undoubtedly the most influential staff member in geology that Auckland University has ever had, in part because of his extra lengthy association with it (70 years).

Dan Hikuroa

University of Auckland

Jack was many things to me—a teacher, a mentor, a role model. Someone who had confidence in me to achieve, who created opportunities for me both as a geologist and Māori, and who had a seminal role in setting the trajectory for my journey.

My earliest memory of Jack has nothing to do with geology or paleontology, his political views or anything like that, no it was my awe of his eyebrows, which seemed to defy gravity and capable of holding their own weather systems and even perhaps orbiting planets. Heoi ano, I worked through my degree as an unremarkable student, one who passed (mostly) but never excelled, having entered University with a pre-existing love of fossils and hence was always attentive in his lectures.

Jack also organised the Geology Department Tuākana programme—tutorials and forging of friendships and support networks for Māori students studying Geology, contemporaneously with other Tuakana programme's elsewhere in the Faculty. The reason I mention this is because ahakoa he pākehā, he mahi rangatira tēnā – even though he was pākehā, that was chiefly work. This was a different type of connection with Jack, beyond that of teacher and learner, one that I only fully began to realise the nature and impact of when I ultimately took over the Tuākana responsibilities during my PhD candidature. It was an expression of manaakitanga—responsibility to create the spaces and places for Māori to thrive, hence the chiefly-ness of it. I both received a lot and

learnt a lot on that chapter of my journey with Jack.

I think the most enjoyable and memorable times I had with Jack were on fieldtrips. Starting with Port Waikato for the stage two mapping project, to the series of fieldtrips we undertook during the papers-year of my Masters (1997)—to Hawera and south Port Waikato investigating different Pliocene faunas, and to Mangahouanga, the Valley of the Dragons, hosted by Joan Wiffen in the Hawkes Bay Paleontological Group hut and everything in between. Just learning so much in incredible places, discovering Jack's liking for Stones Green Ginger Wine, and picking up on his reasoning why he always found the most amazing specimens – 'they who see the most rocks find the most fossils'. Well, I must say as an eager student I was frustrated by that – how could he know which rock to crack open? Which rock contained that fossil? In time a Māori approach to learning I have come to know starts with the premise that the knowledge is always there, but it only reveals itself when you are attuned to it and ready to receive it. Reflecting back today, I now know the answer.

Jack and Hikuroa whanau

Jack recommended me for a once-in-a-lifetime PhD opportunity—to go to Antarctica and map geology, and I ended up being chosen for it. He had confidence I would be up to the task. It was only through the experience of working with him on that, in particular the graft of taxonomy, as well as being precise and concise, that I felt any right to call myself a scientist—someone who could practice science.

In my experience Jack was fierce about being fair and just and was humble – he didn't preach these things, he quietly and consistently modelled them. He prioritised his students and published endlessly because the knowledge was there and deserved to be written up. He was never driven by a need for recognition nor tried to be anyone other than himself.

In my opinion, because Jack was the epitome of tika (just) and pono (genuine) he was the embodiment of rangatiratanga—chiefly-ness. No reira, e te rangatira, kua wheturangitia, moe mai rā i to moenga roa, i te taha o to hoa rangatira e Diana.

A long journey exploring the Murihiku

Rie Hori

It was always such an impressive and enjoyable time doing field work with Jack. I first met Jack in 1993 in Auckland via Philippa Black and I have kept in close touch with him ever since. I collaborated with him on paleontological studies on the Triassic-Jurassic strata of the Murihiku Terrane of New Zealand. When we went off on fieldwork, Diana, his wife and life-long partner, always baked her excellent banana cakes. We greatly enjoyed her home-made cakes at afternoon-teatime during field trips.

In 2005, we conducted a field trip looking at the Triassic-Jurassic boundary sequence exposed in the Awakino Gorge with one of my graduate students from Ehime University (K. Akikuni). Jack found a new species of *Otapiria*, tentatively called *O.* aff. *marshalli* at the time, from Lower Jurassic strata within the study area. He told me, "I would like to describe it as *Otapiria diana* sp. nov." naming it after his Diana. The results of this field work were published in Akikuni et al. (2010) and Grant-Mackie (2011).

We also undertook several memorable field trips along the Kawhia Coast. I remember many times when Jack stayed at one fossil locality for what seemed like ages, collecting specimens of ammonites, bivalves, and so on. While he was hard at work with his hammer, 'quarrying', I would often complete the

stratigraphic logs and then finish up by collecting all the samples required for radiolarian study.

Fig. 1. Jack, on location in 2005, near the Triassic-Jurassic boundary sequence, Awakino Gorge, Murihiku Terrane, NZ.

I last met Jack in December 2018, at his house with Philippa Black. He mentioned some paleontological work that he was completing for publication. I sincerely respected his amazing attitude and passion for research and his continued devotion for paleontological study. He was one of the best paleontologists I have ever met.

Fig. 2. A photograph of *Otapiria* from Awakino Gorge, Murihiku Terrane, NZ.

This photo of Jack and Diana was taken at their home in Moira St., Auckland in early December 2018, when I visited Jack with Prof. Philippa Black after attendance at the 2018 Geosciences Napier conference.

Jack's Contribution to Auckland University's geological collections

Neville Hudson

Jack's contribution to the advancement of Paleontology and Geology is well-covered elsewhere in this memorial volume. So, it is timely to outline another, easily overlooked, aspect of his legacy for future generations. Specifically, the large number of samples that he was directly or indirectly responsible for contributing to the School of Environment's Geological collections (originally collections of the former Department of Geology).

His greatest contribution in this regard, was predictably, to the school's Paleontology Collection. He was single handedly responsible for collecting 1767 samples and a further 1304 samples with other collectors. In total, roughly 15% of the entire Paleontology collection and probably significantly more by volume! Notable amongst the latter were at least 88 samples collected with the late Peter Ballance in 1961 and 1962. These were from classic South Island localities, many no longer productive, ranging in age from Permian to Miocene. Most were from the rich Cenozoic localities of Canterbury, Otago and Southland. These sampling trips supplied teaching specimens used by both Jack and Peter for their courses on New Zealand stratigraphy (Geology 21.202) and the very comprehensive advanced (third year) Paleontology course (Geology

21.303 and its subsequent iterations). Jack's other notable collecting contribution was a significant proportion of the large holding of Triassic-Jurassic fossils from New Zealand and New Caledonia, as these faunas were a particular interest to him dating back to his Master of Science and doctoral studies.

In addition to the material he collected, there is the material collected by the numerous research students he supervised. How much of the paleontology collection is a result of these students' work is hard to estimate, but likely to be in the order of 60-70% of the total amount. Then there is the material donated to the collection as a result of people contacting him about an interesting fossil they had found (e.g. the Glen Murray giant Penguin, found by Mrs J.P. Simpson) or his longstanding friendships (e.g. the large personal fossil collection of the late Elwyn Richardson).

Lastly, Jack also contributed specimens to the Petrology Collection, (86, including 67 collected from the early 1960s South Island trips with Peter Ballance) and 3 specimens to the mineral collection.

Jack spent many happy hours working in these collections following his retirement. His initially regular visits to the collection store became less frequent as the years passed and sadly they came to an end a few months before he died. I for one will miss his visits, but never forget them.

A Paleontologist for all seasons

Daphne Lee and R. Ewan Fordyce

Department of Geology, University of Otago, PO Box 56, Dunedin

Jack was a New Zealand paleontologist to the core—somewhat larger than life, always interested in what was happening in paleo-related research anywhere in the country, enthusiastic and very supportive. Field trips with Jack were always insightful and memorable—though his driving could be a 'fearsome experience'.

He could be described as a polymath. Jack published on a vast range of topics beginning with his MSc in 1958 and continuing for more than 50 years—everything from stratigraphy to vertebrates (turtles, penguins, sharks and Pleistocene birds) to ammonites, brachiopods, radiolarians, plants and even a Jurassic insect! He teamed up with many people—students, colleagues from New Zealand and much further afield. But bivalves were Jack's primary focus—mainly but not exclusively Mesozoic, and especially *Monotis* and its close relatives. New Caledonia was another special place for Jack with significant faunas having close links to those of New Zealand.

Out of interest, I checked in the back issues of *Nomen Nudum* available on-line and discovered, without surprise, that in spite of Jack announcing in 2011 that he was unlikely to publish much more, he produced at least 20 more items including some peer-reviewed papers, opinion pieces and other articles in the next few years.

Jack was responsible with Doug Campbell for the enduring, decades-long and fruitful collaborations and student interchanges established between the Auckland and Otago geology departments. These brought Donald MacFarlan, Neville Hudson and Lee Braithwaite south while Hamish Campbell and John Begg, and later on Seabourne Rust, went north to work on projects with Jack in the Auckland Department.

Jack had a few projects with a South Island flavour—he was particularly interested in the Late Pleistocene avifauna from the coastal site at Cape Wanbrow, south of Oamaru and published an important paper on this fauna with Trevor Worthy in 2003.

Jack was one of a kind. He will be sadly missed and long-remembered by his many paleontological colleagues and friends in New Zealand and further afield.

Jack with Doug Campbell and George Stanley at Red Rocks, near Wellington, November 1997. Photo RE Fordyce

Jack is heroic in protecting the Library

Elva Leeming

I became the Geology Librarian in August 1980. Jack was Head of Department then and therefore one of my three interviewers for the job. Although I had been working in the Library's reference department for the previous 6 years I hadn't met Jack before. He stalked into the room in a white lab coat stretched at the buttons. His size and manner, not to mention those daunting eyebrows, made me a little nervous and it was quite obvious that he wasn't going to be pandered to by the Library bigwigs should they be wanting to rid themselves of a misfit. He listened but ignored the questions from the other two interviewers and what surprised me was that he wasn't really interested that I had little geological knowledge. Rather, how was I to organize the Geology Library, interact with its users and survive in this sole charge position. I had two days learning the ropes from the previous Librarian and then there I was on that first Monday morning, sitting at the Library desk and wondering what was to come next.

Jack was always helpful in Library matters and particularly supportive of the non-academic staff in the Department. He fought hard to keep a separate Library for geologists. I have many fond memories of Jack but the following one, in my early tenure, stands out.

As Geology HOD he possessed a key to the Library door and as he got to work with the sparrows, the Library door was often open when I arrived with Jack invariably browsing paleontological periodicals. However, one particular morning on unlocking the door with Jack seemingly absent, I was confronted with a room that looked as if it had been burgled. Books and journals were scattered across the floor, shelves were dishevelled, my desk was in disarray and worse still there was a dreadful ammonia stench emanating from the photocopy machine. As I stood aghast, Roy Harris the draughtsman tapped me on the shoulder and said "Lass I'm afraid Jack has been seen running loose around the Library trying to catch a possum". I stormed into Jack's room where he was cowering behind his desk awaiting my onslaught. Jack muttered that a top window had been open overnight and a student had left a banana skin in a wastepaper basket as reason for the possum to be there. He hadn't been able to catch the possum as it was squeezed into the base of a freestanding shelf, hemmed in by books preventing its escape. Now why couldn't he have quietly cornered this poor critter so as to cause the least upheaval. I suppose Jack didn't do anything by halves. Here I had to get the Library in order and clean down a possum-peed photocopy machine that never did entirely recover from the ordeal. The poor cowering possum was coaxed from its book cage by members of the Psychology Department. Nan Howett in all her wisdom suggested that as they were used to euthanizing rats after experiments, the kindest thing to do was to involve them. Eventually my Library was back in order, and I was able to forgive Jack, but student excitement took longer to dampen.

With respect and gratitude for Jack's appreciation of the Library and his kind and considerate support in Library matters in often administrative disruptions.

Fifty years with Jack

Donald MacFarlan

I first met Jack as a first-year student at Auckland University in 1970, when I was taking geology 1 with no intention of going further. Second year followed with the Port Waikato field school, and the decision to go on to Stage 3 was inevitable despite the dire warnings of lifetime unemployment. Opposition to the Vietnam war, was at its

height on campus, with Tim Shadbolt holding forth daily. There was never any doubt about Jack's views, but he put no pressure on us to follow. Many of us did, and Jack as a key marshal with the demonstration pivoting around him was a magnificent sight.

An MSc with Jack as supervisor was the next step. I went to the Vaile building to see him on a Friday afternoon, once Stage 3 exam results were out. He offered me Marokopa, then adjourned the meeting, with most of the graduate students in the Vaile, to the top floor of the Station Hotel.

These were the glorious days when Auckland MSc students were given an area of poorly known geology and sent to map it. Marokopa resulted in a large pile of Mesozoic fossils, and the surprising discovery that much of the fauna was undescribed. I hadn't been especially interested in paleontology before then, but the challenge of identifying the unknown got my interest (and still does). Jack's own PhD on *Monotis* was in its final stages. By this time, he had an office in the main Geology building in the Quad, and I took over part of the back bench in the paleo lab. Jack came past several times a day. The best part of his supervision was the suggestions he made in passing: "have a look at *Sakawairhynchia"*, and "try *Asoella*".

Jack on a field trip, 1970s

I went to the Treatise on Invertebrate Paleontology and then the primary literature and enjoyed doing it. He encouraged me to give a paper at the Geological Society conference in Wellington.

After the MSc I worked in industry in Auckland, then Britain. On my return, my father told me that Jack had phoned to ask when I would be back. He offered me a job on one of the work schemes running at the time, to put together a Mesozoic reference collection for the Geology Department. This filled the gap before I could start at Otago and was a great re-introduction to the Mesozoic.

The PhD on Triassic and Jurassic rhynchonellides built directly on the work I had done under Jack's supervision and took it much further. I saw Jack regularly, and went with him, John Begg and Noel de Jersey to New Caledonia in 1981.

Jack and goat. Üitoe, New Caledonia, 1981

Jack with Nick and Margaret Brothers, Nouméa, 1981

Once I finished the PhD, I went back to industry but saw Jack fairly often. He pressed me to publish the Marokopa paper and asked me to contribute to the Jurassic chapter of the review "Jurassic paleobiography of Australasia", which is still widely quoted,

especially in Australia. Later he asked me to work up the brachiopods from Fauzie Hasibuan's Misool (Indonesia) PhD. This took several years, fitted around consulting work. Fauzie and I presented the results to the International Brachiopod Congress in Melbourne.

Jack and Diana came to visit me on an oil exploration rig in eastern Taranaki, so I had the pleasure of showing them what had become my world.

My own partial, then full retirement led to a return to Zealandian brachiopod systematics, continuing work that started under Jack's tutelage forty years before. I met up with Jack once or twice a year at the Panmure fossil store—a bleak industrial warehouse in Panmure, enlivened by lunch at the Indian café in Meadowbank. Despite several announcements to the contrary, Jack also continued research work. This was at times heralded by a request from him for me to search the Fossil Record Electronic Database or the Internet in general for relevant data. The last, in 2020, was about ascothoracican barnacles.

Extraordinary paleontological support

Cam Nelson

School of Science, University of Waikato, Private Bag 3105, Hamilton 3240

I first met Jack Grant-Mackie when I joined the academic staff of the Geology Department at the University of Auckland as a full-time Junior Lecturer in February 1966. At the same time, I began a part-time PhD study of the limestones in the Oligocene Te Kuiti Group in the wider Waikato region. While Peter Ballance and Arnold Lillie were my main supervisors, Jack, then a Senior Lecturer in Geology, provided considerable support when it came to seeking out paleontological advice and helping with the identifications and significance of my macrofossil collections. He was always available for a chat in a timely manner, often suggesting refreshing ideas, and was a great source of relevant paleontological references. At the time, Jack was involved in his own part-time PhD study of Triassic *Monotis* bivalve fossils, and so regrettably it was not possible for him to be named as part of my formal supervisory panel.

One particular paleontological concept that Jack introduced me to was the utility of recording the growth shapes of bryozoan colonies, known as their zoarial growth forms, for assisting with the paleoecological and paleoenvironmental interpretations of their host sediments. He was using this approach in a study of the bryozoan fauna in the mid-Miocene Waikuku Limestone at North Cape (Leitch, Grant-Mackie & Hornibrook 1969, Trans RSNZ 7:21-32). As a sedimentologist with relatively limited paleontological knowledge this zoarial growth form approach appealed to me, especially because bryozoan remains were by far the dominant skeletal contributors in the Te Kuiti limestones I was studying. The limestones were generally far too well-cemented to extract the individual bryozoan fragments and specimens, although some valuable information as to their zoarial growth forms could be ascertained in petrographic thin sections of the rocks (e.g. Nelson et al. 1988, Sed Geol 60: 301–322).

In the late 60s the Geology Department was located nearby the University of Auckland Clock Tower in a two-story prefabricated building on the northern edge of a driveway off the western side of Symonds Street. The majority of the Geology staff were housed in that building, but most MSc and PhD research students, including me, shared rooms in several old buildings on the eastern side of Symonds Street, within the corner area bounded by Symonds Street, Grafton Road and Wynyard Street. One of these was the 'Vaile', a grand two-story solid edifice right on the corner of Symonds Street and Grafton Road where, for some time at least, Jack and I were housed in separate work rooms. On a day-to-day basis the Vaile buzzed with the geo-research activities of a diverse group of thesis students, not only during usual office hours but commonly also in the evenings and weekends. Lunch time and tea/coffee breaks provided much social interaction with each other for catch-up chats and the sharing of research ideas and progress, but often also for a raucous hand or two of card games like Five Hundred

or Black Lady. Late afternoon on Fridays would see many retire down the road to the Station pub on Anzac Avenue for a social beer or two. Jack was an enthusiastic and lively participant in all these activities. He was held in very high regard by all the research students, irrespective of their research area.

Jack was a big friendly guy with a distinctive loud voice and a hearty laugh. He stood out in a room. Some stories are told that behind the wheel of a vehicle his normally mild temperament could change. Personally, I never experienced this. But I do recall Jack seemingly having a "personality switch" at one time on a Port Waikato fieldtrip in the late 1960s. Field staff (Jack and I included) and students had walked down the Waikawau Stream valley from the inland road to the Tasman Sea coastline. From here the party was to head north recording aspects of the coastal stratigraphy and structure, mainly involving mudstone, sandstone and limestone units of the Oligocene Te Kuiti Group. But near to the north of the stream mouth, where a major fault exits the backing cliff face, it was necessary to traverse a steep-faced, narrow gut eroded back into these rocks. On this occasion the tide and roughish sea state were unexpectedly against us, so the general consensus was to delay crossing for a while. Not Jack, however. On he went, and in (the sea) he went, eventually emerging safely but sodden and rather shaken on the other side of the gut. Any enthusiasm amongst the group to immediately follow his example quickly disappeared!

Following my shift to the University of Waikato in 1971, and having no paleontologist on staff, Jack continued for the next almost 50 years, to provide macropaleontological support to me and my research students on many occasions. By visiting him, or sending fossil specimens along, he gave generously of his time and advice. He is acknowledged in several Waikato-based publications and theses. Jack and I are co-authors on two "low-key" articles, one in 1980 on the growth of carbonate concretionary material about a moa bone unearthed in Holocene tidal flat deposits buried beneath Auckland city (Rec Auck Inst Mus 17 [1980]:105-1120), and the other 40 years later involving a short obituary for Brian Challinor, a Hamilton-based pharmacist who became an internationally-regarded belemnite researcher (GSNZ Newsletter 30 [2020]: 52–57). A quote from this article (p. 55) again demonstrates Jack's willingness to encourage and support others in their paleontological endeavours: "Brian commonly used Jack Grant-Mackie as a paleontological sounding board and critic for his ideas, so that Jack had a close relationship with him and his research results, although he never accompanied him in the field for research purposes".

Unexpectedly, the last time I saw Jack was when he came down to Hamilton for Brian Challinor's funeral in Hamilton in late January 2020. Yes, it was evident he had slowed down a bit, but his mind was as sharp as ever as we chatted and caught up on recent geo- and other news over afternoon tea. Jack played a distant but nevertheless important background role that influenced several facets of my university research career. A big thank you Jack for all that freely-given paleontological assistance.

Cam Nelson and Jack Grant-Mackie 13 February 1971.

Jack Grant-Mackie

Rewi Newnham

Victoria University of Wellington

It is an honour and a privilege to be invited to write about Jack. Not only is it an opportunity to reiterate my gratitude for his work but I have stumbled upon something in the process. In writing this piece I have come to learn that our relationship, although forged from the outset as student–supervisor, has evolved such that I have become, over the years, more of a disciple. This has only just struck me even though it has been playing out for more than 30

years during which period we actually had minimal contact with one another. This revelation has only emerged from the process of deep reflection motivated by the need to prepare for this piece. Now that I find myself at a stage of career similar to where Jack was when he took me on as a raw PhD student all those years ago, I realise that his influence on my career development has been much more profound than I had thought and previously acknowledged. The most obvious example is my approach to supervising my own PhD students, of which there have been a few, and which has been a richly rewarding part of my own work.

Supervisors may be characterised—at least by their students—by the extent to which they 'drive' the PhD project and 'steer' the student throughout the process. If I were to position myself (or better still, my students were to place me) along a supervision continuum that ranged from hands-off at one extreme to firmly in the driving seat at the other, it would be much closer to the former than to the latter. Of course, much depends upon circumstances—funding, individuals, institutional pressures etc—but leaving those variables aside, for better or for worse, I'm hands-off. For this, I blame Jack. Right from the get-go, his approach to supervision, although never articulated, was to support, not control; to encourage, not require; to suggest, not tell. This was my project, my destiny; not his. At first, I thought this was normal, but I soon learnt from my doctoral student peers that this style of supervision was by no means typical. So, then I thought maybe it was due to individual circumstances; that my project was quite marginal to Jack's core expertise, I was independently-funded, and was able to develop a strong external network of advisors. All of those things are true but nevertheless my conclusion was wrong. Jack's other students—and there were a few of us—mostly went through much the same experience. There was nothing much peculiar about mine.

Looking back, I now understand Jack's philosophy. A PhD is a unique opportunity to demonstrate a high level of research capability and expertise in a particular field. A commencing doctoral 'student', by definition and process, has already paid some heavy dues. Already they ought to be largely self-determining, self-motivated. Tellingly, Jack would refer to us as 'candidates' not students. What the candidate should expect from a supervisor is an appropriate level of support and encouragement that enables them to flourish. All too often—even in Jack's 'day'—many a promising candidate would be stifled by never really being handed the car keys.

Don't get me wrong. Jack may have been hands-off, but he was by no means detached. His visibility and availability could be taken for granted and you could always count on his support. And there were occasional interventions that inevitably proved to be timely. I recall one pivotal instance in particular. I was supposed to be 'writing up' the thesis. The final, much anticipated stage, with all the heavy lifting behind you and the finishing line clearly in sight. Only nothing was happening. The blank page remained undisturbed. I didn't know where to start. I couldn't bring myself to mention this to Jack and yet, he sensed it, no doubt having seen it many times before. His advice at that moment was subtle but prescient. One small nudge in the right direction went a very long way.

The point of this self-indulgent navel gazing is that it has taken me 30 years—and this process of circumspection—to come to the realisation that my approach to PhD supervision remains to this day, much the same as Jack's. That might not seem surprising but, in those years, much has changed. Institutional and financial pressures for timely completions are forcing supervisors more and more into the driving seat. The supervisor's career advancement too is much more dependent upon successful outcomes, especially publications, from the PhD process. Having sat through many a PhD examination it sometimes feels as though the supervisor is under examination as much as the candidate. We all feel these pressures more and more and it is getting harder to resist them. Jack would have felt them to some extent too but remained true to his principles. I was the chief beneficiary, and I would like to think the legacy benefits have been passed to my students too.

Kua hinga te tōtara i te wao nui a Tane.

A mighty totara has fallen but is not forgotten.

Tribute to Jack Grant-Mackie

Wendy Pond

2225 Wyuna Bay Road, Coromandel 3581

My godmother was Rona Stephenson, wife of Chip Bailey, unionist. Rona was a communist and came from Wellington city to visit us on our farm at Hinuera. In 1960 I enrolled for a BA degree in languages at Auckland University. When I needed help, I went to Jack Grant-Mackie because he was a communist too.

I was keen to study Marxism, so I joined a small group of working men and women who were being tutored in a private Auckland house. I was quite startled to discover that Jack went from being a university lecturer in geology to being the night tutor of a group of working people. And disconcerted also to find that working people in the city of Auckland had a higher standard of living than our family farming in the country. We had mats on board floors, and they had wall to wall carpet. Our mother made our clothes, and they wore bought clothes. I still have a clear picture of the cosy, old-fashioned room where we met and sat in arm-chairs. Their working day had finished. They lived to a routine. On the farm we worked until nightfall. Our patterns changed with the weather. Our farmhouse had a verandah full of overcoats and gumboots and stacked firewood and stored pumpkins and eggs preserved with vaseline and shoes on the shelves, and the laundry and toilet and the dog and the cat belonged there. I wasn't used to animals and amenities inside.

By 1965 I had shifted my aspirations to anthropology. Anthropology was taught in three old houses in Symonds Street. The political works of Marx and Engels were informed by Engels' observations of Manchester workers. That is what anthropologists are supposed to do: investigate social systems and human society. When I wrote a PhD thesis, I drew my theory from Mao Tse Tung's essay, "On Contradiction": look for the contradictions in society; if they cannot be resolved, there will be social change. That was all the theory I needed to recognise that Tonga's pro-democracy movement was stirring in the 1960s, before it was given the name. Mao's famous essay "On Contradiction" was possibly written by an unnamed philosopher.

Nonetheless, Professor Piddington pinned a notice on the departmental notice board advising staff that they should not engage in the political debate surrounding New Zealand's participation in the Vietnam war. In 1965 Karl Stead in the English Department likewise supported America's war against Vietnam.

So, I went back to Jack. Jack taught us how to put up slogans around the city. He drove the car while two of us hopped out with a spray can. He told us, "Stand close together. When a car comes, embrace".

In 1965, it was decided that while the NZ government deliberated, we would hold a 12-day fast in Queen Street. Kirk was sitting on the fence over sending combat troops. The Methodist Mission allowed us to sleep on the steps in front of their building on the corner of Queen Street and Wakefield Street. We had just two supporters from the University: Gerhard Rosenberg from architecture and planning, and Walter Pollard from the French Department. Not one anthropologist joined us. We spent long hours standing in Queen Street with our banners, engaged in rigorous debate with passers-by. The greatest hostility towards us came from members of the RSA. At night I slept on the concrete pavement, on a sheep skin my mother had cured. We had no fear of sleeping in the open.

Whatever the anger at our protest, there was no act of physical violence towards us. When the fast was over, people brought us soup and bread.

I missed the protest movement against NZ's participation in the Vietnam war. In 1967 I sailed to Tonga to begin fieldwork as a self-appointed social anthropologist. Staff in the Anthropology Department did not recognise me as a creditable researcher.

Jack and Rona were evicted from the Communist Party because they did not agree that armed revolution was appropriate to New Zealand. But like Jack I have respected certain tenets of Marxism: unto each according to his need, from each according to his ability. I

would like everyone to be paid equally. What matters is the quality of social relationships between us. When I obtained a PhD I vowed that I would use it to give people a voice. Dear Jack Grant-Mackie. He taught me common decency.

A few short comments on Jack.

Dr W. R. (Ross) H. Ramsay

I well remember the first lectures that I had in second year geology with Jack back in 1967. Lectures that were organised, direct, and from someone who knew his topic. During subsequent years those attracted by soft rocks and fossils gravitated to Jack, and even the harder rock adherents all had a soft spot for Jack.

Jack effortlessly attracted and was at ease with a range of students be it in the lecture theatre, laboratory, in the field, football field, or pub. An iconic academic out of Auckland University.

Catherine Reid

University of Canterbury

Jack was one of my lecturers in undergraduate geology at Auckland and the senior supervisor for my MSc thesis on biostratigraphy and paleoecology of Miocene rock from the Weber area. I started at Auckland University in 1991 with the intention of doing paleontology, with no idea about career options, but as an innocent first year student was too scared to talk to an actual lecturer. That changed on the 2nd year geology field trip to Port Waikato and I discovered that although Jack could seem a bit imposing, he was a warm and generous lecturer who was more than happy to help students. During our 4th year, I and a couple of classmates asked Jack if we could go on a field trip to his Mesozoic stomping ground in Kawhia, which I recall was agreed to very quickly. We spent the best part of a week collecting fossils at Puti Point, Whakapirau Road, Kiritehere and Marokopa and had a ball given there were fossils everywhere, Jack on hand who knew everything and absolutely no assignments to do. One rainy afternoon Jack suggested we bail out to the pub, but in a brief break in the rain on the way back to Taharoa we stopped near the famous giant *Lytoceras* site on Whakapirau Road, and within minutes had found a portion of a large ammonite (smaller though than the giant) and spent the next day and a half on the side of the road getting it out. We never made it to the pub in the end. We also stopped off at the Otorohanga bird house on the way home, and actually saw live birds, but the purpose was for Jack to collect some dead natives from the park freezer. These birds spent time on the roof of the Geology building letting insects do most of the work, and Jack would collect the smelly pile for final clean-up and addition of the skeleton to the comparative collections.

I started my MSc thesis field work at the end of 1994 (with Dave Francis introducing me to the outcrops) and did another trip in 1995 when Jack had been down in Wellington for the International Bryozoology Association conference. Jack was not a bryozoologist but his involvement in this conference was really an indicator of his interest in anything related to New Zealand paleontology, and in this case he was working with Priska Schäfer on Triassic bryozoans. Jack came to visit me after the conference and spent several days in the field with me. All of which was very valuable academically, but one of my strongest memories is of getting a telling off (what the bloody hell are you doing!) at the end of the day—I had the audacity to muck about washing my hands before the more important task of getting the beers out of the fridge while Jack took his boots off in the sun. This trip also ended up being my first introduction to bryozoans with Jack and Priska, and little would I know that 18 months later I'd be starting a PhD on Permian bryozoans.

I also remember thinking never to let Jack drive my car which I had in the field with me. He drove a rental van all the way to town one day screaming away in third gear, and on getting back to the field the poor van gave up the ghost half-way up a steep paddock to the outcrop. The van was abandoned, but the day cooling off meant it at least started at the end of the day and had an easy run down the hill to get going.

Jack was always dedicated to his students, and I remember as an undergrad he would be concerned about the financial welfare and fair treatment of students. The same dedication and support came through in post-grad where he was there to help and support provided you got on with the work. He also held a mana that meant you wanted to work hard, and he didn't have to demand it. Once work was produced Jack patiently sat with us going over sentence structure and layout and always had work back to us quickly, even letting us know his schedule of when he would be away and not able to get chapters back. We never got to join in the office chat complaining about supervisors. We once mentioned something and were bluntly told by our fellow students "Jack is your supervisor! What can you have to complain about?!". Jack was always someone you could rely on for support, and although I may not necessarily achieve it, he has been my best guidance as to how to treat students with care and respect. He has left a gap in the NZ paleontological community that may never be filled, and he will be missed.

Letter from Seabourne Rust

Seabourne Rust

To be honest I am finding it rather hard to put my thoughts about Jack into words... it's sometimes still a bit surreal that he has left us, we miss the friendship with him and Diana. Jack had such an expansive knowledge and interest in the wider world around him. Not just natural history but cultural history also. He was a genuine good man, honest, kind, generous, non-judgmental. Perhaps that's it in a nutshell. When in 2004, I arrived in big city Auckland from rural Kaikoura to embark on a Paleontology doctorate, I felt like a fish out of water. I did not know anyone there, but after entering Jack's office, seeing his welcoming smile, glinting eyes (and expressive eyebrows), I felt at home. His practical, hands on, down to earth manner yet infectious passion for all types of fossils kept me on track with my study, and I felt privileged to have him as a friend and mentor, despite into his retirement. The time we spent in the field together was terrific, even trying to find outcrops he had last visited 50 years ago! And to be openly welcomed into Jack and Diana's colourful home and spend time with their special family was a real treat for all who visited. They are sorely missed...

Jack and Seabourne Rust in the Hokianga, 2020.

Jack in the Wilkies Shellbed, Whanganui Basin, with giant oysters, 2005. Photo: Seabourne Rust.

Another side of Jack

Ian Speden

Jack was very well known, and respected, for his research, especially on Mesozoic stratigraphy and fossils, and for his enduring

support for the Geology Department of Auckland University, geoscience organisations and students. I first meet Jack in the mid 1960's and over the years had several field trips with him. He was a relaxed person and a communicator, always ready to openly discuss topics and issues. Much is likely to be written about his scientific contributions. However, I would like to record one of his distinctive personal behaviours.

In the early 1970's NZ Geological Survey established a programme to support students to study the geology of Cretaceous sequences in the East Cape region and the Wairarapa. These included Mike Isaac, Phil Moore, and others. Jack was a keen supporter and also keen to join some field trips to extend his knowledge and to see how the students were progressing. On one trip we were based in a Ministry of Works hut in the centre of the Waioeka Gorge south of Opotiki. There on the first night Mike Isaac and I learned of Jack's ability to snore loudly and continuously. So loud was his snoring that the wooden walls of the small hut seemed to vibrate. After a while Mike could no longer tolerate the noise so he threw a soft shoe to hit Jack, as it did, with no effect. We finally managed to go to sleep.

On another field trip in the Wairarapa where Jack was very keen to learn about the Cretaceous geology and fossils, we were based in an upstairs unit in the campground at Castle Point. On this trip I was accompanied by my wife Erica and our two young children Graeme and Anne. I quietly advised them not to worry about any unusual noise that night. However, Jack's snoring was so loud that the two children, who had not heard snoring until then, came and pleaded to know what all that noise was. We told them that it was Jack snoring and explained to them about snoring, which they probably did not understand. They did not believe a person could make such a noise when sleeping. Eventually, we quietly opened the door to Jack's room so that they could see where the noise was coming from.

Jack's ability to snore did not deter me, or others, from joining him on field trips. Nor did it affect his ability for fieldwork, related research or personal contacts.

In the field with Jack

Larry Wakefield

Mt Martha, Victoria, Australia

As a student attending Auckland University from 1965, I first encountered Jack as he lectured paleontology to undergraduate students. His lectures were traditional in their approach as he worked his way through all the fossil groups, one by one. While Jack's lectures could be dry affairs, I enjoyed the lab sessions and most of all his field trips. Jack was a consummate collector of fossils. I have lasting memories of Jack in his element - at the outcrop. It was remarkable how much newspaper, tissue and containers Jack would haul out of his pack as he demanded from students to hand over their prize finds for the betterment of science.

In my undergraduate years, a couple of field trip memories have stuck fast. The excursion to well-known Kawhia Harbour fossil localities was one. On arriving at Puti Point, it was dead low tide and the concretionary Puti Siltstone was well-exposed in the shore platform. On this particular occasion, Jack decided that the Puti ammonites were getting increasingly scarce due to the ease of access for amateur collectors. It was another case of securing them in the interests of science. So, the class was under instruction to go and collect and so we did. Sometime later, all uncracked concretions had been cracked and Jack was busily wrapping up ammonites left, right and centre. On that particular field trip, the class also visited some open coastal exposures. It was a blustery day, a big swell running, and the tide wasn't in our favour. As a result, it was getting increasingly difficult to stay dry but the last straw for most of the class happened when Jack, in one of his rare moments of "walking on the wild side", expected us to follow him by climbing down into a narrow gut, make a mad dash to the other side before the next wave surged in. Jack led the way, and almost got washed away. Some students made it but the rest of us decided discretion was the best part of valour and took the steep climb up the hill to bypass this now treacherous part of the coast.

Driving with Jack at the wheel of the departmental Land Rover had its moments. On one trip north to my thesis area in Hokianga, Jack decided to practice his rally skills on the tortuous gravel road through the Waipoua Forest. The sense of relief was palpable on emerging out of the forest knowing that there were only a few kilometres to go before reaching our destination in the Waimamaku Valley. On another trip to North Cape, I had the good luck to have a brand new Toyota Landcruiser at my disposal during my thesis field work. It was the pinnacle of comfort after the departmental Land Rover. Jack took one look at it, muttering “Japanese junk” or words to that effect and asked if he could put the vehicle through its paces. He promptly drove off the bulldozed road we were on and across country to our planned campsite. In the way was an obvious boggy swamp and the Toyota was heading straight for it. We got halfway across, pretty good progress considering, but then we spent the next hour digging the vehicle out. Jack’s riposte: “see, told you, Japanese junk!”

Whether it was perched on the cliffs of North Cape collecting *Bathylasma* plates, fish otoliths on the shore of Parengarenga Harbour or retrieving Holocene moa and other bird bones from the floor deposit in a small cave in Te Kuiti, I will remember Jack fondly for his unbridled enthusiasm for all things fossil and the inspiration he gave me whilst at Auckland University in the 60s and 70s.

Jack and the South Auckland Rock and Mineral Club.

Judy Wright

Secretary/editor

Jack was a long-time member of South Auckland Rock & Mineral Club Inc., and we have many memories of the field trips he led the club on. One thing we soon learnt was Jack's "A SHORT WALK" usually meant a long, sturdy hike, and when Jack describes the terrain as "MAYBE A LITTLE DAMP IN PLACES", it would be crossing streams too wide or too deep to jump over, or getting wet feet from wading through a 1/4 mile wide bog. We also named Jack the RAINMAKER! As usually the nearer we got to the meeting place the more it would rain. Later, the closer we got to home at the end of the day - the more the rain eased off or stopped.

One very memorable trip Jack led to the Port Waikato area, we found, as the tide wasn't out enough to do the beach first, we would go up the narrow, winding road between Port Waikato and Limestone Downs. This road is busy, narrow and winds up over a hilly range zigzagging all the way. One side it drops away and is bush covered. The other side rises up from the road edge and has some bare patches of loose shale with marine fossils. Small grassy patches on some bends, opposite the fossil faces allows parking for a few cars - if you're lucky.

Once parked we all walked downhill to a patch with the best fossils. With rapid moving traffic it has to be single file at the face and keep your bum tucked in well is a must. Within a few minutes, Debbie stretched up, hooked the point of her rock-hammer into a V shape crack and begun pulling, about nine feet up the face. My eyes followed the widening V crack almost to road level. I said ‘don't pull it Debbie’ but it was too late. Fortunately, Debbie jumped clear as the huge wedge fell out with more than half of the 2 ton hunk sticking 6 - 7 feet out onto the tar seal. Speedy traffic would not see it after rounding the up-hill bend until too late and it would cause accidents if not moved.

Tow-ropes and a 4WD couldn't move it so our only option was to break it up until small enough to move. After more than an hour attempting to reduce its size, with hammers, everyone began to slack off. Then Jack pointed out that a number of good sized ammonites have been found in this road cutting and there could probably be some in this wedge. From then onward, each time the rock breaking slowed, Jack reminded all about the ammonites within - but none were found and the wedge was still on the road. Two of us found a pedestal road works sign doing nothing, just a short way up the road. We dragged it to the wedge, put it uphill about six feet off the wedge, facing oncoming traffic. Next stop - the beach for more fossils.

Jack arranged winter field trip visits to the Geology Dept. at the University of Auckland.

As well as looking at displays laid out on tables, we would get to see a related video in the lecture theatre. But one of the real highlights was for Jack to take us down into the archives to see some of the Fossil collection rarely seen out of that area.

One thing that was always certain— we always had a full house when we had Jack as a speaker.

In the archives, University of Auckland, 2007

Port Waikato road, with large wedge-shaped block. Jack in grey hat, Debbie in green jacket.

Jack (back right) at Auckland University Field Club Reunion, Motutapu, 1972, with members from the early 1960s.

Jack in his office. Photo: Isabel Sutherland.

Jack and Isabel Sutherland with a selection of Jurassic fossils. Photo: University of Auckland News.

Jack points to a feature on a vertebrate fossil. (in the old Pal Store below the Geology building, 1960s?)

Open Day 1990, with David Rout and Darren Reedy.

Obituaries

OBITUARY: Jack Grant-Mackie (27 August 1932–20 February 2021)

Auckland Branch, NZ China Friendship Society

23 March 2021

It is with great sadness that we record the death of Jack Grant-Mackie, a friend of China and a stalwart of the Auckland Branch for more than 50 years. Jack and his wife Diana regularly hosted committee meetings at their Ponsonby home.

Jack was an Honorary Life Member and former President (1975-76) of the Geological Society of New Zealand (GSNZ).

Jack was a practising geologist and an active member and a passionate supporter of GSNZ from the late 1950s throughout his life. He was the third-longest standing member of the National Committee (14 years) and a founding member of the NZ Fossil Record File Sub-Committee (from 1967). He attended almost every GSNZ conference from 1967 to 2015.

Jack was a paleontologist on the staff of the Geology Department, University of Auckland, 1958-1998, and a research associate in his retirement. He supervised untold numbers of graduate student theses, helped run numerous outside organisations, and was a major player in NZ paleontological research for five decades.

Jack was awarded a PhD in Geology from the University of Auckland and, subsequently, was appointed as a Professor of Geology at Auckland University. As a young member of the faculty, he joined a New Zealand Science delegation to Beijing in 1964 and met Chairman Mao.

Jack was proud to show his photo of their meeting, when he and his granddaughter were guests of honour at our Auckland Branch dinner in Mount Eden last year.

Jack and his wife Diana represented the best traditions of the progressive intellectuals who supported the New Zealand China Friendship Society's objectives during the years when it was not easy to be a friend of China. They both took cameo roles in our music video One Promise that Sylvia Yang co-wrote and produced for screening at the 2009 Lantern Festival.

We send our sincere condolences to Jack's family.

Reproduced by permission of the New Zealand China Friendship Society.

Mourning Professor Dr. Jack Grant-Mackie with deep grief

I am extremely sad to hear that Professor Dr. Jack Grant-Mackie has passed away!

Professor Dr. Jack Grant-Mackie is one of the greatest scientists in the world. He had a wide and deep range of knowledge in geoscience, history, literature, music and much more.

In geoscience, he is not only one of the very well-known experts of paleontology and stratigraphy, but also a very excellent researcher of paleogeography, paleoclimatology and paleoecology. He devoted himself to education and research, and published a great number of scientific papers, monographs and public science articles. Even more remarkable is that he cultivated dozens of international graduate students, BSc (Hons), MSc, PhD and post-doctoral fellows, across several generations spanning almost 70 years.

He was a great father, grandfather and great-grandfather. He and his wife Diana Grant-Mackie have 2 sons, 7 grandchildren, 3 great grandchildren. There are four generations in his family. Such a family is the happiest and most glorious family in China, also in the world. He was devoted to his beloved wife Diana Grant-Mackie and he was ever loyal and protective of his family.

He was so kind and so helpful that scientists from all over the world sought his help. Many Chinese have enjoyed very friendly and fruitful collaboration with him. Even on Feb. 11th of 2021, he sent me his best wishes for my research this year. Professor Dr. Jack Grant-Mackie is one of my best friends, one of China's best friends, and one of global scientists' best friends.

He was as strong as an ox, but he was very humorous and ready to make jokes, and particularly his whistle was very professional, loud and melodious.

In a word, Professor Dr. Jack Grant-Mackie is one of the world's greatest scientists and teachers, an outstanding man, a model husband and a wonderful father. He is respected and worthy of everyone's learning!

Professor Dr. Jack Grant-Mackie is a tremendous loss to the geoscientific and educational communities.

I express my most profound condolences over his death and we will miss him forever.

May Professor Dr. Jack Grant-Mackie rest in peace!

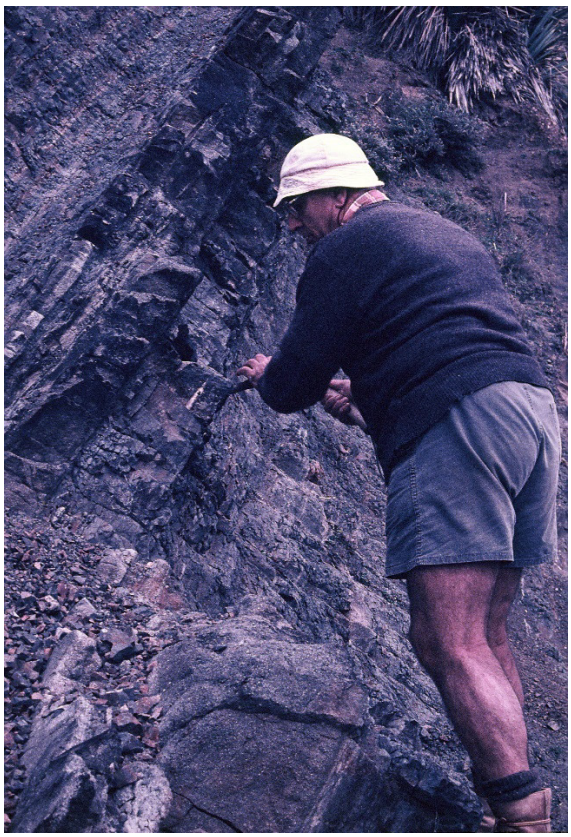
Jingeng Sha

Jack and Diana on duty during the 1981 Springbok tour. Photo: Isabel Sutherland.

Jack in academic regalia. Photo: Isabel Sutherland.

Jack making full use of the Land Rover. Photo: Isabel Sutherland.

Jack, Geology Wake 1990. Photo: Neville Hudson (?).

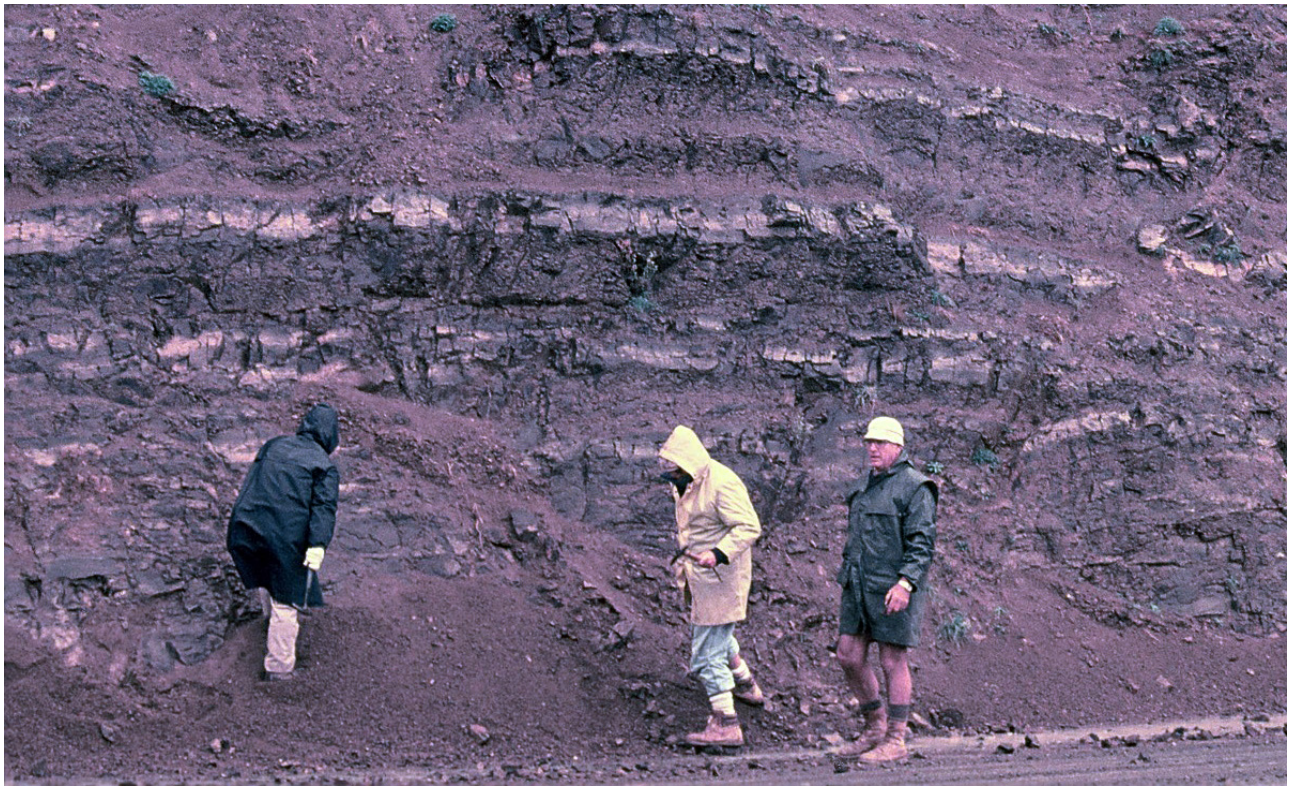


Jack at Kiritehere, 1990. Photo: M. Mancenido and S. Damborenea.

Jack with an amateur group, 1990. Photo, M. Mancenido & S. Damborenea.

Jack with Yoshiaki Aita, Susana Damborenea, and Francis Hirsch, Kiritehere, 1990. Photo, M. Mancenido.

Jack with Francis Hirsch and Miguel Mancenido, 1990. Photo, S. Damborenea.



Jack (right, with Francis Hirsch and Yoshiaki Aita, 1990 (Whakapirau Road?). Photo: M. Mancenido and S. Damborenea.

Species named in honour of Jack Grant-Mackie

Compiled by Bruce Hayward

CNIDARIA

Hydrozoa
Pliobothrus grantmackiei Squires 1965 Oligocene

MOLLUSCA

Gastropoda
Monilea grantmackiei Hayward 1981 Miocene

Bivalvia
Ouamouia grantmackiei Campbell 1984 Triassic, New Caledonia

Cephalopoda
Coleoidea
Hibolithes arkelli grantmackiei Challinor 1975 Jurassic

Ammonoidea
Xenocephalites grantmackiei Westermann and Hudson 1991 Jurassic

Paraboliceratoides grantmackiei Stevens 1997 Jurassic

BRACHIOPODA

Loboidothyris grantmackiei MacFarlan 2016 Jurassic

ARTHROPODA

Cirripedia
Graviscalpellum grantmackiei Buckeridge 1983 Miocene

Tasmanobalanus acutus grantmackiei Buckeridge 1983 Miocene

Ostracoda
Oculocytheropteron grantmackiei Milhau 1983 Miocene

CHORDATA

Fish otoliths
Congridarum grantmackiei Grenfell 1984 Miocene

Birds
Pachyplichas jagmi Millener 1988 Quaternary

RADIOLARIA

Siphocampe grantmackiei O'Connor 1997 Miocene

Glomeropyle grantmackiei Aita 1999 Triassic

Polyfistula? grantmackiei Sashida 2000 Permian, Thailand

Genera and species described by Jack Grant-Mackie

Compiled by Donald MacFarlan.

Cnidaria

Hydrozoa

Stylaster gigas Cairns and Grant-Mackie 1993

Heterastridium conglobatum disciforme Schäfer and Grant-Mackie 1998

Eoheteropora caledonica Schäfer and Grant-Mackie 1998

Anthozoa

Genus *Paravolzeia* Roniewicz et al 2005

Paravolzeia alpina Roniewicz et al 2005

Paravolzeia timorica Roniewicz et al 2005

Craspedophyllia ramosa Roniewicz et al 2005

Mollusca

Gastropoda

Clifdenia inflata Grant-Mackie 1965

Powellisetia marshalli Grant-Mackie and Chapman-Smith 1971

Rissoa (Haurakia) basispiralis Grant-Mackie and Chapman-Smith 1971

Rissoa (Haurakia) curvicostata Grant-Mackie and Chapman-Smith 1971

Austrorissopsis ponderi Grant-Mackie and Chapman-Smith 1971

Subonoba (Austronoba) obessa Grant-Mackie and Chapman-Smith 1971

Joculator decapitatus Grant-Mackie and Chapman-Smith 1971

Uttleya subcarinata Grant-Mackie and Chapman-Smith 1971

Buccinulum (Euthrena) heteromorphum tepikiensis Grant-Mackie and Chapman-Smith 1971

Neoguraleus (Fusiguraleus) plenecomptus Grant-Mackie and Chapman-Smith 1971

Mioawateria aitanga Grant-Mackie and Chapman-Smith 1971

Tibersyrnola pupaformis Grant-Mackie and Chapman-Smith 1971

Eulimella kempi Grant-Mackie and Chapman-Smith 1971

Odostomia whangaparaoa Grant-Mackie and Chapman-Smith 1971

Besla lawsi Grant-Mackie and Chapman-Smith 1971

Cryptoconchus mucronatus Grant-Mackie and Chapman-Smith 1971

Talantodiscus? mackayi Begg and Grant-Mackie 2003

Pleurotomaria karetai Begg and Grant-Mackie 2003

Pleurotomaria waimumu Begg and Grant-Mackie 2003

Pleurotomaria otapiriensis Begg and Grant-Mackie 2003

Pleurotomaria kiritehereensis Begg and Grant-Mackie 2003

Pleurotomaria awakinoensis Begg and Grant-Mackie 2003

Genus *Murihikua* Begg and Grant-Mackie 2003

Murihikua tuhawaiki Begg and Grant-Mackie 2003

Murihikua marwicki Begg and Grant-Mackie 2003

Murihikua aparima Begg and Grant-Mackie 2003

Genus *Mamoea* Begg and Grant-Mackie 2003

Mamoea wairakiensis Begg and Grant-Mackie 2003.

Genus *Tahua* Begg and Grant-Mackie 2003

Tahua waipiro Begg and Grant-Mackie 2003

Tahua taiaroa Begg and Grant-Mackie 2003

Genus *Mamoetomaria* Begg and Grant-Mackie 2006 (replacing *Mamoea*, pre-occupied)

Bathrotomaria foronica Hasibuan and Grant-Mackie 2007

Bivalvia

Kalentera marwicki Grant-Mackie 1960

Monotis (Eomonotis) Grant-Mackie 1978

Monotis (Inflatomonotis) Grant-Mackie 1978

Monotis (Maorimonotis) Grant-Mackie 1978

Monotis (*Maorimonotis*) *awakinoensi*s Grant-Mackie 1978

Monotis (*Maorimonotis*) *maniapotoi* Grant-Mackie 1978

Monotis (Entomonotis) subcircularis discordans Grant-Mackie 1978

Monotis (Eomonotis) diptonensis Grant-Mackie 1980

Monotis (*Eomonotis*) *kiritehereensis* Grant-Mackie 1980

Monotis (Eomonotis) rauparaha rauparaha Grant-Mackie 1980

Monotis (*Eomonotis*) *rauparaha mokaui* Grant-Mackie 1980

Monotis (*Eomonotis*) *rauparaha aries* Grant-Mackie 1980

Monotis (*Eomonotis*) *murihikuensis murihikuensis* Grant-Mackie 1980

Monotis (*Eomonotis*) *murihikuensis taringatura* Grant-Mackie 1980

Monotis (*Eomonotis*) *marwicki* Grant-Mackie 1980

Monotis (*Eomonotis*) *wairakae* Grant- Mackie 1980

Monotis (*Inflatomonotis.*) *warepana* Grant-Mackie 1980

Monotis (Pacimonotis) Grant-Mackie and Silberling 1990

Grant-Mackie (2015) raised the subgenera of *Monotis* to genera, and some subspecies to species, with other subspecies synonymised.

Pholadomya (*Pholadomya*) *beaumontensis* Campbell and Grant-Mackie 1995

Pholadomya (*Pholadomya*) *oretiensis* Campbell and Grant- Mackie 1995

Pholadomya (Kanakimya) Campbell and Grant- Mackie 1995

Pholadomya (Kanakimya) uitoe Campbell and Grant- Mackie 1995

Pholadomya (*Moewakamya*) Campbell and Grant-Mackie 1995

Austrocardium Freneix & Grant-Mackie, 1978

Austrocardium acherontis Freneix & Grant-Mackie, 1978 Mp-Mh

Cardium (Bucardium) lillei Freneix and Grant-Mackie 1978

Schedocardia? *waiparana* Freneix and Grant-Mackie 1978

Glycymerita (*Manaia*) *marwicki* (Matsukuma & Grant-Mackie 1979)

Pseudopecten (Pseudopecten) dugong Grant-Mackie 1994

Gervillaria tibetica Yin and Grant-Mackie 2005

Trigonodus xiabolangensis Yin and Grant-Mackie 2005

Isocyprina lhasaensis Yin and Grant-Mackie 2005

Genus *Lhasanella* Yin and Grant-Mackie 2005

Lhasanella lhasaensis Yin and Grant-Mackie 2005

Jurassicorbula fuersichi Yin and Grant-Mackie 2005

Australobuchia partimlirata Hikuroa and Grant-Mackie 2008

Australobuchia wherowhero Hikuroa and Grant-Mackie 2008

Otapiria diana Grant-Mackie 2011

Genus *Makoiamya* Grant-Mackie 2013

Makoiamya cotterallae Grant-Mackie 2013

Cephalopoda

Nautiloidea
Cymatoceras nichollsi Grant-Mackie 2015

Genus *Stipamonotis* Grant-Mackie 2017

Stipamonotis herangiae Grant-Mackie 2017

Ammonoidea
Ectocentrites thibaudi Meister, Maurizot and Grant-Mackie 2010

Coleoidea

Dicoelites aviasi Challinor and Grant-Mackie 1989

Brachiopoda

Ptilorhynchia pugnaciformis MacFarlan, Hasibuan and Grant-Mackie 2011

Aucklandirhynchia yefbiensis MacFarlan, Hasibuan and Grant-Mackie 2011

Pentactinella pachycostata MacFarlan, Hasibuan and Grant-Mackie 2011

Zugmayerella bogalica MacFarlan, Hasibuan and Grant-Mackie 2011

Prochlidonophora spinulifera MacFarlan, Hasibuan and Grant-Mackie 2011

Bryozoa

Stenodiscus zealandicus Schäfer and Grant-Mackie 1994

Stenodiscus kawhiae Schäfer and Grant-Mackie 1994

Pseudobatostomella lobatula Schäfer and Grant-Mackie 1994

Pseudobatostomella aestiva Schäfer and Grant-Mackie 1994

Genus *Dyscritellopsis* Schäfer and Grant-Mackie 1998

Dyscritellopsis isoseptatus Schäfer and Grant-Mackie 1994

Genus *Styloclema* Schäfer and Grant-Mackie 1994

Styloclema morozovae Schäfer and Grant-Mackie 1994

Metastenodiscus Ernst, Schäfer and Grant-Mackie 2015

Arthropoda

Cirripedia
?*Neolepas augurata* Buckeridge and Grant-Mackie 1985

Chordata

Reptilia
Eochelone monstigris Grant-Mackie, Hill and Gill 2011

Radiolaria

Glomeropyle bispinosa Hori and Grant-Mackie 2003

Glomeropyle campbelli Hori and Grant-Mackie 2003

Poulpus (?) caveaformis Hori and Grant-Mackie 2003

Spores and Pollens

Antulsporites verrucatus Zhang and Grant-Mackie 1997

Polycingulatisporites radiatus Zhang and Grant-Mackie 1997

Uvaesporites projectus Zhang and Grant-Mackie 1997

Uvaesporites viriosus Zhang and Grant-Mackie 1997

Rugaletes intestiniformis Zhang and Grant-Mackie 1997

Fossil Wood

Podocarpoxylon paralatifolium Vozenin-Serra and Grant-Mackie 1996

Tordoxylon warepanense Vozenin-Serra and Grant-Mackie 1996

Sahnioxylon novaezelandiae Vozenin-Serra and Grant-Mackie 1996

Jack teaching botany students with John Braggins, partly obscured left with glasses, late 1990s.

Jack at the Geology wake 1990.

Jack at the GSNZ conference, 1981. Photo: Bruce Hayward.

The Student’s Lament or Professor’s Delight

Roger Evans June–July 1978

T’was 5 a.m., the night was spent
An eastern tinge of orpiment
Illumed the sky of basalt black;
While overnight the cinnabar
Had dropped inside the quartz, quite far –
To well below the zero mark.

A Prof., whose speciality
Is macrofossil-ology,
Leapt out of bed that chilly morn.
He rubbed his hands with utmost glee
And thought of the Quaternary.
His lecture, timed for half-past dawn.

(Whilst all around Auckland, yawning wide,
A group of students, bleary-eyed,
Awake to yet another day.
It seemed they'd scarcely gone to sleep
Before alarm and Aves' cheep
Aroused them to a world of grey.)

The prof, with whetted “apatite”
Devoured his meal with great delight:
(Hot, roast plicatas by the score)
He brushed his teeth Ignim-brite
(The one that's got the Fluorite)
Until, like quartz, they shone once more.

He shaved his face with Razor-shell
(A method cheap which works quite well)
Removing stubble by the ton.
He combed his hair until it shone
Like slickensides in fault crush zone;
And then by seven he was gone.

A key is rattled in the door
Grant-Mackie breezes in once more.
Behind him trails a weary class!
A languid mob from 202
Who need the sleep, but lectures too
If they're to gain a Finals pass!

Photos from Jack's Retirement Function 1998

Jack is bewildered.

Jack, Neville Hudson and *Monotis* cake

Jack with Patricia and Brian Challinor.

Arnold Lillie speaking, Alan Mason, Jack and Doug Campbell seated.

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