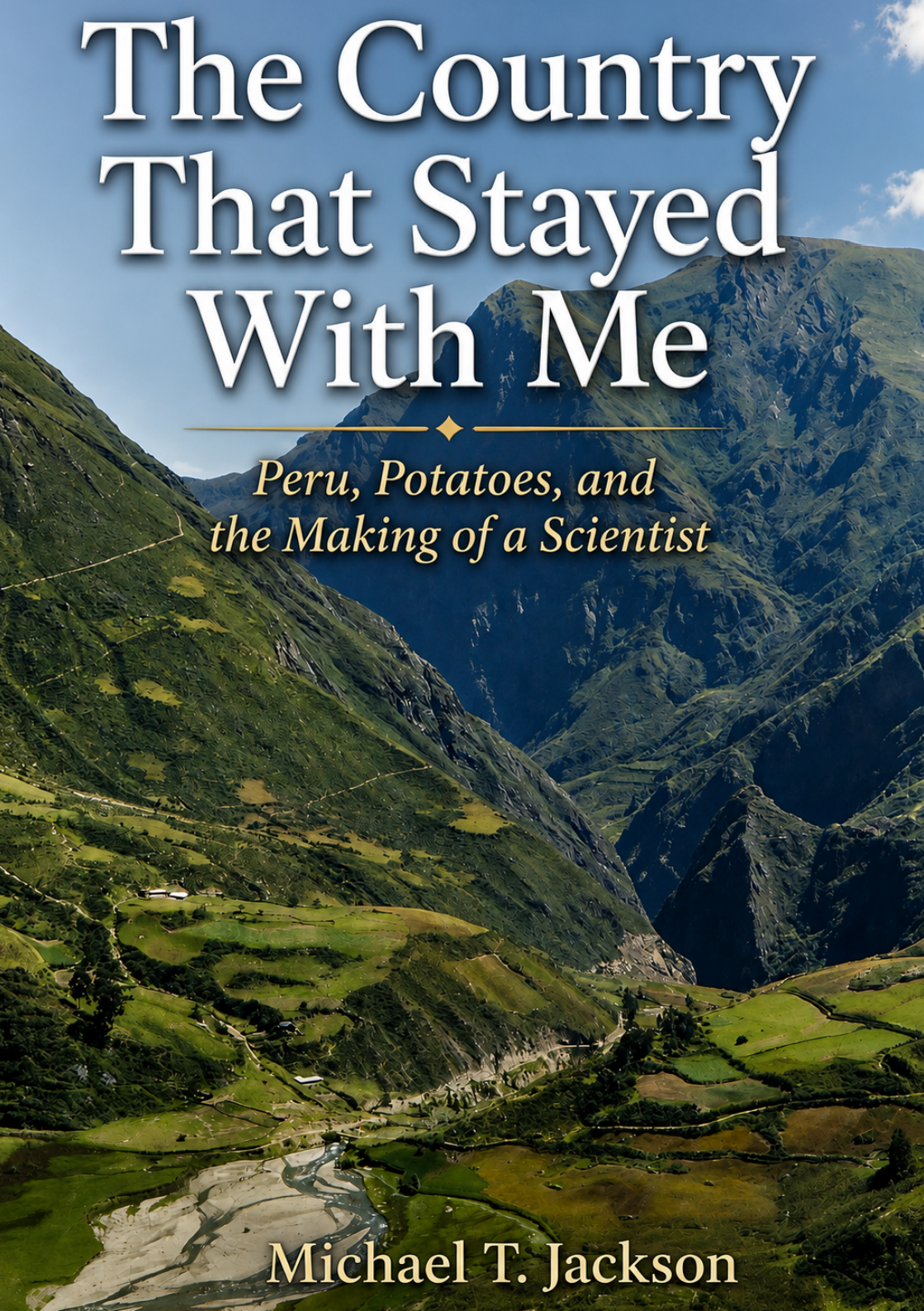

The Country That Stayed With Me
Peru, Potatoes, and the Making of a Scientist
Michael T. Jackson



The extraordinary diversity of cultivated Andean potatoes—the genetic heritage that lay at the heart of my work in Peru and throughout my scientific career.

Author's Note

This story began long before I first set foot in Peru. As a boy growing up in North Staffordshire, I was fascinated by maps, distant countries, mountains, and the extraordinary diversity of the natural world. Somehow, Peru captured my imagination more than any other place. I could never have imagined that, years later, I would step off an aircraft in Lima on a warm January evening in 1973 and begin a journey that would shape the rest of my life.

This is not a history of Peru or of the International Potato Center (CIP), nor is it a full autobiography. It is a memoir.

It tells the story of the years that transformed an inexperienced young scientist into someone who would spend almost four decades working in international agricultural research. Those years in Peru shaped my scientific thinking, my approach to leadership, my appreciation of other cultures and, in many respects, the person I became. Peru was also where Stephanie and I began our married life together. So much of what followed—our family, our careers, the countries in which we lived and worked, and the lifelong friendships we made—can trace its origins to those remarkable years.

Like all memoirs, this book has been written through the lens of memory. More than half a century has passed since many of the events I describe. Fortunately, I have been able to draw upon field notebooks, reports, photographs, publications, and other contemporary records that have helped me reconstruct those years with confidence. Nevertheless, memory is never a perfect archive. Conversations have been recreated from recollection, impressions are necessarily personal, and some interpretations

reflect the perspective that only time can bring. Others who shared these experiences may remember them differently, and I would not expect otherwise.

Nor have I attempted to tell every story. A memoir is as much about selection as recollection. I have chosen those events, people and experiences that, with hindsight, seem to have mattered most. The scientists, technicians, field assistants, administrators, farmers, friends and family who appear in these pages all contributed, in different ways, to the journeys that unfolded.

My purpose is much simpler: to rediscover a younger version of myself encountering Peru for the first time, learning a new language and culture, exploring the Andes in search of potatoes, making mistakes, celebrating discoveries, building lifelong friendships and gradually finding my place in a world that, in 1973, seemed unimaginably distant from the England in which I had grown up.

Readers may wonder why the later stages of my career receive less attention than my years in Peru. That is deliberate. The focus of this memoir is a formative period of my life. The chapters that look beyond Peru are intended not as a comprehensive account of the next thirty-five years, but to show where those formative experiences eventually led.

One unexpected aspect of writing this memoir has been the role of artificial intelligence. ChatGPT did not write my story or invent my memories. I used it as a research, organisational and editorial partner. It helped me organise and refine a lifetime of memories, photographs, publications and notes, asked questions that prompted long-forgotten recollections, and helped me identify connections between events separated by

decades. Throughout the process, I remained responsible for every memory, interpretation and judgement, and for the narrative voice in which they are presented.

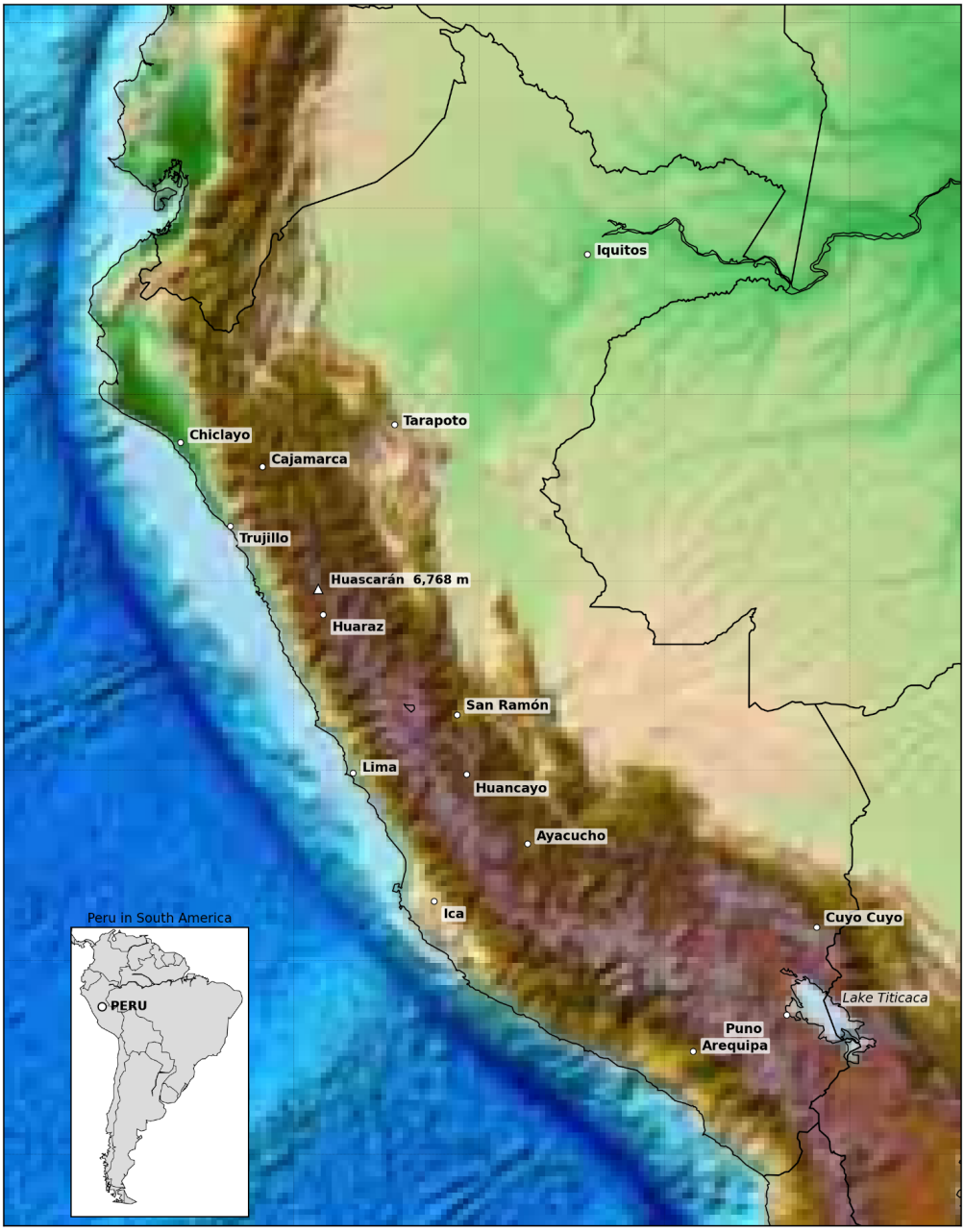
I have written this memoir first and foremost for my family, so that future generations may understand something of the experiences that shaped my life before they became part of it. But I also hope it will resonate with anyone who has ever set out on an uncertain journey, accepted an unexpected opportunity, or discovered that the place they thought would occupy only a few years of their life remained with them forever. This is, quite simply, my Peru, and I hope you enjoy the journey.

Michael T. Jackson OBE
North Tyneside, England
August 2026



1973 and 2025: from Machu Picchu to the Northumberland coast—two moments in a journey spanning more than half a century.

Peru - places in the memoir



Contents

Prologue
Chapter 1 – Closing One Door.....1
Chapter 2 – Finding My Peruvian Feet.....10
Chapter 3 – Building a Research Programme.....14
Chapter 4 – Confronting Reality.....28
Chapter 5 – Learning the Andes.....56
Chapter 6 – Building a Life Together.....67
Chapter 7 – Cuyo Cuyo: Reading the Agricultural Landscape.....78
Chapter 8 – El País Precioso.....88
Chapter 9 – Transition……..103
Chapter 10 – Costa Rica.....116
Epilogue.....140
Plates……...165

Prologue

Whenever I hear Roberta Flack singing *Killing Me Softly with His Song*, I am immediately transported more than half a century back in time. I am no longer in North Tyneside in the north-east of England. Once again, I am in Lima. Memory is a curious thing. It does not obey chronology or begin where a story begins and end where a chapter closes. Instead, it jumps across the years, linking places, sounds and people in ways that no historian would ever attempt. One melody can open a door that has remained closed for decades. In this case, I can almost feel again the warmth of the Peruvian sun, see the dusty streets of Lima, smell the unfamiliar mixture of sea air and exhaust fumes, and experience once more the excitement—and perhaps the apprehension—of a young man arriving in a country he had dreamed about for much of his early life.

For many people Peru is synonymous with Machu Picchu, llamas and the Andes. For others it is a place associated with ancient civilisations, remarkable archaeology or colourful textiles. For me it became something much more personal. It became the country that shaped almost everything that followed: my scientific career, my understanding of the world, many lifelong friendships, my marriage to Steph, and, in ways I could never have anticipated, the person I eventually became.

This is not simply the story of my years in Peru, nor is it merely a memoir of scientific expeditions, collecting potatoes on windswept mountain slopes, travelling through deserts or crossing high passes while working at the International Potato Center (CIP) in Lima. Those experiences matter, of course, and

many of them remain among the happiest and most memorable of my life. Yet they are only part of a much longer journey.

Peru did not suddenly enter my life in January 1973. It had been quietly waiting for me for years. When I stepped off an aircraft at Lima's Jorge Chávez Airport at the age of twenty-four, I imagined that I was beginning an adventure and had reached my destination. More than fifty years later, I realise that I was simply passing through another doorway. The real story had started much earlier, although I had no way of recognising it at the time.

As a boy growing up in England during the 1950s, I was fascinated by maps. I could spend hours studying atlases, tracing mountain ranges with a finger, following rivers to the sea and wondering what lay beyond the names printed in tiny black letters. Long before international travel became commonplace, maps offered a passport to the imagination. They suggested that the world was immeasurably larger than the streets around our home or the familiar countryside of North Staffordshire.

Among all those distant countries, one seemed to exercise a peculiar fascination: Peru. Why Peru? Even now, I am not entirely certain. Perhaps it was the Andes stretching like a spine down the western edge of South America. Perhaps it was the romance of the Incas, whose achievements seemed extraordinary to a schoolboy. Perhaps it was simply the attraction of a place that appeared unimaginably remote from post-war Britain. Whatever the reason, Peru lodged itself quietly somewhere in my imagination.

At the time, I knew nothing of potatoes beyond what appeared on our dinner plates. I had never heard of plant genetic

resources, centres of diversity or crop evolution. Scientific careers did not feature in my daydreams. I simply wanted to know more about this distant country.

Life, of course, has a habit of taking unexpected turns. School led to university. University introduced me to botany. Botany opened the door to genetics, evolution and the remarkable diversity of cultivated plants. Somewhere along that path I encountered the work of Professor Jack Hawkes, whose research on wild potatoes would profoundly influence my own career.

Even then, I do not think I appreciated where all this was leading. If anyone had told the young undergraduate at Southampton that one day he would spend years living in Peru, travel repeatedly through the Andes, marry there, help build an international scientific institution and return many times over the following decades, I would probably have smiled politely and dismissed the idea as impossible. Yet that is exactly what happened.

One of the pleasures of writing these recollections has been discovering how often the threads cross one another. Experiences that once seemed entirely separate now appear connected: a childhood fascination with maps, a university lecture, an inspiring mentor and an unexpected opportunity. What began as scientific fieldwork became something much richer. Only after more than fifty years do I recognise that none of these events stands alone. Together they formed a single narrative that I was living without fully understanding. This memoir is my attempt to explore that narrative.

It is a story about Peru, certainly, but equally about curiosity: about how interests formed in childhood can quietly shape an

entire life; about remarkable colleagues and generous friends; about learning that science is conducted not only in laboratories but also in fields, villages, mountain passes and conversations over countless cups of coffee or cold beers; and about discovering that another country can become part of your own identity without ever replacing the place you call home.

It is also, inevitably, a story about memory. Like many people of my generation, I accumulated notebooks, photographs, newspaper cuttings and letters without imagining that they might one day become historical documents. More recently, through writing hundreds of blog posts, I found myself recording individual memories almost accidentally. Each seemed complete in itself. Only when I stood back and looked across the last decade of writing did I begin to notice that they belonged to something larger. The story was already there; I simply had not recognised it.

As I write these words, I find myself thinking less about achievements than about people: mentors who encouraged a young scientist before he had earned their confidence; Peruvian colleagues whose friendship transcended language and nationality; farmers whose practical knowledge often exceeded that found in textbooks; travelling companions who shared impossible roads, indifferent hotels and unforgettable landscapes without ever losing their sense of humour; and, above all, Steph, who transformed what might have been a temporary overseas posting into the beginning of our shared life.

Without them, there would be no memoir. Some readers may criticise me for looking at the past through rose-coloured glasses. Maybe. But they are my rose-coloured glasses.

Every recollection is filtered through the perspective of someone. I know things that my younger self could not possibly have known. I understand the consequences of decisions that at the time appeared insignificant. Yet I have tried not to let hindsight overwhelm the excitement, uncertainty and occasional naivety of the young man who first boarded an aircraft bound for South America.

So let us return to the beginning—or rather, to what once seemed like the beginning. It is early January 1973. London Heathrow is cold, grey and unmistakably British. Somewhere beyond the departure lounge waits a BOAC Boeing 707 that will carry Jack Hawkes and me first across the Atlantic and then onwards, via Antigua, Caracas and Bogotá, to Lima.

I have no idea that Peru will become one of the defining landscapes of my life. I do not know that I shall marry there before the year is out. I cannot foresee lifelong friendships, scientific discoveries, extraordinary journeys through the Andes and Amazon, earthquakes, moments of exhilaration and disappointment, or the privilege of contributing, in however modest a way, to international agricultural research. All I know is that I am setting out for the country that first captured my imagination as a boy studying maps. Everything else still lies beyond the horizon.

Chapter 1 – Closing One Door

Thursday 4 January 1973. High above the Atlantic aboard a BOAC flight bound for Lima, Peru, I sat quietly sipping a gin and tonic, wondering what the future held.

I had turned twenty-four just seven weeks earlier. I was on my way to join the newly founded International Potato Center (CIP) as a taxonomist. Travelling on the same flight was Professor Jack Hawkes, Head of the Department of Botany at the University of Birmingham, my PhD supervisor, and one of the world's leading authorities on potatoes. Jack was travelling to Peru to chair a planning workshop on *Germ-Plasm Exploration and Taxonomy of Potatoes* due to begin the next week.

As the aircraft headed steadily westwards, I found myself reflecting on the unusual chain of events that had brought me there. The story had begun two years earlier, with a telephone call that changed the direction of my life.

There are moments in life that seem quite ordinary at the time but, in hindsight, can be seen as decisive turning points. For me, one of those moments came halfway through my MSc course on *Conservation and Utilisation of Plant Genetic Resources* (CUPGR) at the University of Birmingham in late February 1971, when Jack telephoned me at home.

His call was unexpected. Having just returned from an expedition to Bolivia to collect wild potatoes for scientific study, he told me of his discussions with Dr Richard Sawyer, the co-leader of the North Carolina State University-Peruvian Government potato programme, who would become CIP's first Director General later that year when the Center was formally established. There was an upcoming staff vacancy from

September 1971 (after I completed my MSc), when a Peruvian scientist, Zósimo Huamán, would attend the MSc course in Birmingham. Sawyer was looking for someone to take his place for a year to help manage a growing field genebank of potato varieties from the Andes. Did Hawkes know of a suitable candidate? Apparently my name was mentioned.

Knowing of my interest in working overseas, Jack asked me whether I might be interested in the possibility of working in Peru. The conversation was exploratory rather than definitive. There was no formal offer of employment, no discussion of dates, and certainly no certainty that it would happen. The proposed appointment depended upon funding arrangements involving the UK's Overseas Development Administration (ODA) and the new international centre. Even so, the possibility was both exciting and slightly unreal.

Until then my ambitions had been relatively straightforward. I wanted to build a career in plant science, preferably involving plant exploration, taxonomy, and the conservation of genetic resources. During my undergraduate years at Southampton I had been unusual among my contemporaries in expressing a desire to work overseas, and South America, particularly the Andes, already held a special fascination for me. Even so, Peru was still little more than a distant name on the map rather than somewhere I genuinely expected to live.

When it became clear later on in 1971 that the funding would not be approved by September, Jack persuaded ODA to find funds so that I could start my PhD studies at Birmingham, with the expectation that these would continue in Peru whenever that move came about. It was a sensible solution and one that I accepted readily.

At the time, however, it felt simply like the next logical step. I began work on my doctorate, and carried on with life much as before. Peru remained an intriguing possibility rather than a definite destination.

Over the months that followed, the idea gradually became more tangible. Conversations became more specific, practical arrangements slowly began to emerge, and what had started as an unexpected telephone call evolved into a genuine opportunity.

I could not know then that accepting that opportunity would take me to a country that would become my home for much of the next three years, introduce me to lifelong colleagues and friends, shape my scientific career, and profoundly influence the rest of my life.

But all of that still lay ahead.

For the moment, Peru remained a possibility, and the door had only just begun to open.

If the telephone call from Jack Hawkes had opened the possibility of Peru, the following eighteen months gradually turned that possibility into reality. One was professional, centred on completing my studies and preparing for an international scientific career. The other was personal, as my relationship with Stephanie Tribble steadily became one of the most important parts of my life.

The PhD was never intended to be a separate chapter of my life. From the outset it was closely linked to the work I hoped eventually to undertake in Peru. My research into the evolution of cultivated potatoes provided exactly the scientific

background that would be valuable at CIP. I regarded it as an opportunity to strengthen my scientific foundations.

During the same period, my relationship with Steph developed almost without either of us consciously deciding that it would. We had met when she began the CUPGR course in September 1971. Enjoying each other's company, we spent more and more time together, and gradually our futures became increasingly intertwined.

The prospect of Peru inevitably became part of our conversations. An overseas appointment offered exciting opportunities, but it also raised practical questions. There was no certainty about exactly when I would leave, how long I would be away, or what the future might hold for us. We were both still at the beginning of our careers and trying to make sensible decisions without knowing where they might eventually lead.

In mid-1972, I met Richard Sawyer for the first time. He had visited ODA in London hoping to shore up British funding for CIP, and then took the opportunity of travelling to Birmingham to visit Jack. And meet me. Or was it an interview? I must admit to feeling some trepidation ahead of that meeting. I'd only ever met a couple of Americans before, never thinking that one day an American would be my first employer. With his New England drawl and goatee beard, I imagined I was being interviewed by Uncle Sam!

In preparation for relocating to Peru, Sawyer told me to go ahead and purchase a vehicle for personal use, and CIP would ship it to Lima. After a good deal of thought, I decided to buy a left-hand-drive Volkswagen Variant. It was a considerable financial commitment for someone at the beginning of his

career. To make the purchase possible, I applied for a bank loan, something I had never done before. The loan was approved, the car was ordered, and I looked forward to taking delivery later in the year before it was shipped to Peru.

At the time, buying a VW simply seemed a practical decision. Only later did I realise that it represented something more significant. Until then, Peru had still retained an element of uncertainty. Ordering a car specifically for use there made the move tangible. I was no longer simply hoping to go; I was investing in a future that I fully expected to happen.

Throughout 1972, life settled into an unusual rhythm. My days were occupied by doctoral research, while evenings and weekends were often spent with Steph. At the same time, preparations for Peru continued steadily in the background. There were forms to complete, correspondence to exchange, plans to make, and occasional discussions with Jack Hawkes as the arrangements slowly took shape.

None of these events seemed especially dramatic. Yet together they marked the gradual construction of a new life. Without fully realising it, I was laying the foundations for a career that would take me far beyond the UK and for a relationship that would prove every bit as important.

The future was beginning to acquire shape. There was still uncertainty, but also the growing conviction that before long I would be leaving home for a country that, until recently, had existed for me only on a map.

Steph and I had known from the outset that my move to Peru would almost certainly come before we had decided what our

future together might be. As the months passed, however, uncertainty slowly gave way to reality.

One important milestone came when Steph was appointed to the Scottish Plant Breeding Station (SPBS) near Edinburgh, taking up her post on 1 November 1972 as assistant curator of the Commonwealth Potato Collection. It was an excellent opportunity for her, and I was delighted that she had secured a position so soon after completing her MSc. At the end of October I drove her to Scotland in the recently delivered VW. It was our first really long journey together, and, although neither of us said very much about it, we both knew that another, much longer separation lay ahead.

A few weeks later I drove north again to spend several days with her before returning to Birmingham. Those journeys to and from Edinburgh marked the beginning of a gradual series of farewells.

Meanwhile, practical arrangements continued. I vacated my flat in Birmingham, bringing to an end 2¼ years in the city as a graduate student. Birmingham had become much more than simply a university. It was where my scientific career had begun to take shape, where I had worked closely with Jack Hawkes, and where I had met Steph. Leaving felt like the closing of an important chapter in my life.

The VW, which had represented my future in Peru ever since I ordered it, now had to begin its own journey. It was delivered to Liverpool for shipment to Callao, where it would eventually be reunited with me several months later. Handing over the keys was another reminder that events were now moving beyond the planning stage. There was no turning back.

In December, Steph graduated from the University of Birmingham. It was a satisfying conclusion to her own postgraduate studies and another occasion that reminded us both how quickly our lives were changing.

Christmas that year was unusual. Steph returned to Essex to spend it with her family, while I went back to Leek to be with my parents.

Between Christmas and New Year we met in London and spent three days together before returning to our respective families. We talked about Peru, about Scotland, and about the future, although much of it remained uncertain. International telephone calls were expensive, letters would take weeks to arrive, and neither of us could predict exactly when we would be together again. Those few days in London were the real beginning of our separation. Heathrow was still to come, but emotionally we had already begun to say goodbye.

We both knew it would be many months before we saw one another again – if ever.

By the end of 1972, almost everything was in place. I'd laid the foundations of my PhD research. The Peru appointment was finally becoming a reality. The VW was on its way across the Atlantic. Steph had started her own career in Scotland. One chapter of my life was quietly drawing to a close, while another waited just beyond the New Year.

The departure itself was now only a matter of days.

The first three days of January 1973 passed remarkably quietly. After so many months of planning, preparing, and waiting, there was very little left to do except leave.

On 2 January I travelled to Birmingham, where I spent two nights with Jack and his wife Barbara at their home in Harborne. It was a thoughtful gesture on their part, saving me a longer journey to Heathrow from Staffordshire.

There was one small quandary. Overseas travel in those days was still regarded as a fairly formal occasion, and I did not own a suit that I considered suitable for the journey. Jack solved the problem in his usual practical way by gifting me one of his older lightweight ones. It more or less fitted, and that seemed perfectly adequate. It was a small act of kindness, one that I have never forgotten.

On the morning of 4 January we set off for Heathrow with a BEA shuttle flight from Birmingham Elmdon (now Birmingham International), only my fourth ever flight.

Air travel was a rather different experience from today. There were no online check-ins, electronic boarding passes, or mobile phones with which to send a final message home. Once the farewells had been said and the aircraft door closed, communication with family and friends would cease until letters began to arrive weeks later.

As I boarded the BOAC Boeing 707, I found myself reflecting less on where I was going than on what I was leaving behind. My parents were in Leek. Steph was in Scotland. My car was somewhere at sea, making its own way to Peru. Birmingham, where so much had happened over the previous two years, was now behind me. Everything familiar was being left on one side of the Atlantic.

Yet I felt no hesitation. Ever since that unexpected telephone call from Jack almost two years earlier, events had been moving steadily towards this moment. There had been delays,

uncertainties, and many practical problems to solve, but they had all pointed in the same direction.

As the aircraft accelerated along the runway and finally lifted into the air, England slipped quietly behind me.

One door had closed.

Another was about to open.



Brian Ford-Lloyd and Mike during a visit to Turkey for a conference, April 1972.



Zósimo Huamán, Martín Cárdenas, J. Peter Hjerting and Jack Hawkes near Cochabamba, Bolivia, during the 1971 potato-collecting expedition. Photograph: Phillip Cribb. Creative Commons.



Mike and Steph at her University of Birmingham graduation, December 1972.

Chapter 2 – Finding My Peruvian Feet

Almost eighteen hours after leaving Heathrow, Jack and I arrived at Jorge Chávez International Airport, Lima, on the evening of the same day, 4 January. We had hopped across the Atlantic and northern South America.

After passing through immigration and customs, we entered the arrivals hall, to be met by Dr Ed French, Head of CIP's Plant Pathology Department, who had driven from home to meet us. Jack was staying with Richard and Norma Sawyer at their apartment in the San Isidro district, while I had a room booked at Pensión Beech, on Los Libertadores, also in San Isidro, until I found an apartment of my own.

By the time we arrived in Lima it was fully dark, so there was little to see apart from the street lights and the lights of passing traffic. We first stopped at the Sawyers' apartment, where Jack was dropped off, before Ed drove me on to Pensión Beech.

Mrs Beech welcomed me and showed me to my room. After so many hours of travelling, I unpacked the few things I needed for the night and settled in. I was relieved to be in Lima, but too jet-lagged to think about much at all.

After my first night in Lima, I woke to a bright, sunny morning with no preconceived expectations. I had been too tired the previous evening to take much in, and the effects of the long journey were still with me.

Breakfast at Pensión Beech brought my first real encounter with everyday Peru. The waiter asked me in Spanish what I would like to eat. Although I had tried to learn some Spanish while still in Birmingham, I had made little progress and arrived in

Peru with virtually no command of the language. Fortunately, Mrs Beech came to my rescue and ordered breakfast on my behalf.

Later that morning, a CIP driver collected me from the pensión and drove me to La Molina. It was my first opportunity to see Lima in daylight.

Along the way I noticed the colourful bougainvilleas and poinsettias growing wherever there was irrigation. Crossing the cerro into La Molina, I became aware of the bare hills surrounding the valley and rising towards the Andes in the distance. It was my first appreciation that Lima, despite its gardens and tree-lined streets, lay in one of the driest deserts on Earth.

When I arrived at CIP, Jack Hawkes was already there. Richard Sawyer welcomed me to the Center. It had been more than six months since we had first met in Birmingham. He then introduced me to some of the staff. I believe I also met Dr Roger Rowe, one of the workshop participants (who would later play such an important role in my career) for the first time. After the introductions, one of the secretaries, Rosa Benavides, showed me round CIP's facilities at La Molina, modest as they were in January 1973.

What surprised me was how undeveloped the Center was. It occupied a single two-storey building alongside the National Agricultural Research Institute (INIA). What later became the core of today's headquarters was, in January 1973, the whole institute. My office contained little more than a desk, a chair, and a bookcase—and that was it. There were no laboratories yet. It was a far cry from the facilities and scientific equipment I had become accustomed to at the University of Birmingham.

Without access to equipment such as a high-resolution light microscope, I began to wonder how I would continue my PhD research. I also knew that, although the potato germplasm collection was being maintained at Huancayo, there was as yet no established field station there.

Among those I definitely met that day were Ing. Carlos Bohl, CIP's Director of Administration, whose warm and enthusiastic welcome immediately put me at ease, and Sr Oscar Gil, CIP's Comptroller, who was responsible for managing its finances. I also met Heather, Richard Sawyer's secretary. Among the staff was Dr John Vessey, a British plant pathologist working on bacterial wilt, two years older than me who had joined CIP just a few months earlier. Whether that first meeting took place on the Friday or shortly afterwards I cannot now remember. John and his wife Marian would soon become some of my closest friends.

At the end of the day, I returned to Pensión Beech.

I have no particular recollection of what we did on the Saturday. If anything out of the ordinary happened, it has long since slipped from my memory.

My next clear recollection, however, is of the Sunday. Richard Sawyer drove Jack Hawkes, Roger Rowe, and me to La Herradura beach, south of Miraflores. We spent the morning there before Richard and Norma returned around lunchtime to collect us.

They took us to one of their favourite seafood restaurants in San Isidro. I can no longer remember its name, although I think it may have been on Camino Real—or at least that is how I remember it. The meal itself I remember very clearly. It was my first opportunity to sample Peruvian seafood, accompanied by

pisco sours, Peru's national cocktail, which I came to savour over the decades. It was an excellent introduction to Peruvian cuisine.

After lunch, they dropped me back at Pensión Beech, where I was unfortunately thoroughly sick. Whether it was mild sunstroke, too much sun, or both, I cannot say. It wasn't the lunch. I had discovered that the Peruvian summer sun was far more intense than anything I had been accustomed to in England.



The original building of the International Potato Center (CIP) at La Molina, Lima, 1973. Source: CIP.



CIP staff at La Molina, 1972. Left to right: Ed French, Richard Sawyer, John Vessey, unknown secretary, Rosa Benavides, Carlos Bohl, Haydee de Zelaya, Rosa Mendez, Heather (Director General's secretary), Oscar Gil, Javier Franco, Luis Salazar and David Baumann. Source: CIP.

Chapter 3 – Building a Research Programme

On the morning of Monday, 8 January 1973, I arrived at CIP for the opening of the international planning workshop on *Germ-Plasm Exploration and Taxonomy of Potatoes*. Although only twenty-four years old and newly arrived in Peru, I found myself among many of the world's leading experts on potato taxonomy, biosystematics, and potato breeding. I knew some of them by name from the scientific literature, but this was the first time I had met any of them.

Richard Sawyer welcomed the participants before handing the chair to Jack, who directed the scientific proceedings. At the time, I regarded the workshop as an opportunity to meet distinguished scientists and to learn from them. Its wider significance only became apparent later.

The workshop was only the second scientific planning workshop organised by CIP. The first, on bacterial wilt, had been held only a few weeks earlier, in December 1972, in Costa Rica. These meetings were more than scientific conferences. They were the means by which a very young organisation began to define its research programme.

When I first arrived in Lima a few days earlier, I had found an organisation with only the most basic facilities and an equally small scientific staff. Apart from Ed French, John Vessey, and myself, the other scientists were Peruvian nationals. Dr María Scurrah was the only one who had completed postgraduate training overseas, while colleagues such as Ingenieros Luis Salazar, Oscar Hidalgo, and Javier Franco had been educated in Peru and were only beginning what would become distinguished scientific careers. In much the same way, CIP's

scientific programme was also in its infancy. Many of the priorities, responsibilities, and long-term objectives still had to be defined. The planning workshops became the mechanism by which that framework was developed.

Being a young organisation, CIP's relationship with the newly formed Consultative Group on International Agricultural Research (CGIAR) was itself evolving. Before CIP joined, the CGIAR comprised just four international research centres. It would later become the world's leading network of international agricultural research centres, but in January 1973 both the CGIAR and CIP were still finding their feet. Rather than attempting to concentrate all its expertise in Lima, Richard Sawyer recognised that many of the world's leading potato scientists were already working elsewhere. His approach was to build partnerships with those groups, support their research where it complemented CIP's objectives, and bring the results together within an international programme.

That philosophy extended well beyond established research institutes. Sawyer recognised the importance of universities and postgraduate training in building the scientific capacity that CIP would need in the future. Research grants, collaborative projects, and doctoral programmes became integral parts of that approach, creating links that would continue for many years.

I later joked that if you traced the scientific staff at CIP in its early years back to where they had earned their doctorates, many of the trails led to just four universities—Wisconsin, Cornell, North Carolina State, and Birmingham. Birmingham's contribution to CIP, however, took a rather different path. Through Jack Hawkes' potato research group, it became more than simply a source of graduates. It provided a continuing

route by which doctoral students could undertake much of their research in Peru while remaining registered for higher degrees at Birmingham. I was the first to follow that path, but at least five others did so over the years that followed.

Against that background, the January 1973 planning workshop assumed an importance that I could not have appreciated at the time. It was more than an opportunity for specialists to exchange ideas. It marked one of the occasions on which CIP's scientific direction was consciously shaped, specifically with regard to the collection and conservation of potato germplasm, and I had the privilege of witnessing that process from the very beginning.

When the workshop opened on Monday morning, I found myself seated among a remarkably distinguished group of scientists. Most were already internationally recognised authorities on potato taxonomy, biosystematics, genetics, plant breeding, or germplasm exploration. I was the only member of the Center's scientific staff attending the meeting but merely as an observer. The workshop was devoted specifically to potato taxonomy and germplasm exploration, disciplines outside the responsibilities of most of my new colleagues. Looking around the room, I had little idea how influential many of those scientists would prove to be—not only in my own career, but in the development of potato research during the years that followed. At that stage of my career, I was there far more to learn than to contribute.

Before describing the discussions themselves, it is worth introducing the scientists gathered around the table. Each had

been invited because of the particular knowledge and experience they could contribute to the workshop.

Jack Hawkes chaired the workshop since he was widely recognised as one of the world's leading authorities on the taxonomy of both cultivated and wild potatoes. Beginning with his first collecting expeditions in 1938 and 1939, he had undertaken extensive fieldwork throughout the Americas and had published prolifically, including several authoritative monographs. Much of what was then understood about the taxonomy and evolution of potatoes had been shaped by his research, and I regarded it as a privilege to be working under his supervision for my PhD.

Professor Carlos Ochoa was Peru's foremost potato taxonomist and one of the country's leading authorities on Andean botany. Based at the Universidad Nacional Agraria La Molina, he combined his taxonomic work with an active potato breeding programme. Among the varieties he developed was *Renacimiento*, which was widely grown in Peru during the 1970s. His knowledge of the potato flora of the Andes was extraordinary, having built it through years of field collecting and botanical study.

Roger Rowe, whom I introduced earlier, was a geneticist and curator of the IR-1 potato germplasm collection at the USDA Plant Introduction Station in Sturgeon Bay, Wisconsin. The collection was widely used by potato breeders, particularly at the University of Wisconsin, to study potato genetics and the potential of wild species in practical breeding programmes. Originally trained as a maize geneticist, Roger brought to the workshop considerable expertise in managing a complex germplasm collection and an appreciation of the challenges

involved in conserving genetically diverse material while making it available for research and breeding. Roger would join CIP later in 1973 as Head of CIP's Breeding and Genetics Department.

Dr Frank L. Haynes Jr. was a professor of genetics and potato breeder at North Carolina State University and a long-standing friend and colleague of Richard Sawyer. Through North Carolina State University's long collaboration with Peru, which had helped lay the foundations for what would become CIP, he brought to the workshop a broad understanding of potato genetics and breeding. His interest lay less in taxonomy than in how knowledge of potato diversity could be used in practical breeding programmes. Years later, one of his former graduate students, Dr Humberto Mendoza, would replace Roger as Head of Breeding and Genetics.

Dr Don Ugent was a botanist at Southern Illinois University in Carbondale. Having completed his doctoral studies under Professor Hugh Iltis at the University of Wisconsin-Madison, he had established himself as an authority on potato diversity and biosystematics. His interests extended beyond classification to the broader questions of the origin, evolution, and geographical distribution of potatoes in the Americas. He brought to the workshop a strong botanical perspective, complemented by extensive field experience.

Dr Richard Tarn began his scientific career at the University of Birmingham, where, after completing his undergraduate degree in the early 1960s, he became a research assistant to Jack Hawkes. He completed his doctoral studies in Birmingham before moving to Canada to join Agriculture Canada at Fredericton, New Brunswick, as a potato breeder. Richard

therefore brought to the workshop an unusual combination of experience in potato biosystematics and practical plant breeding. His understanding of the relationships between wild potato species and their potential use in crop improvement made him a valuable contributor to the discussions.

And then there was me. At twenty-four years of age, I was by far the youngest person in the room and had yet to establish myself as a scientist. Surrounded by men whose publications I had studied as a postgraduate student, I listened far more than I spoke.

In January 1973, CIP's formal mandate extended beyond potatoes to include several Andean root and tuber crops, but its scientific effort was initially necessarily concentrated on the potato. The Center was already responsible for maintaining a substantial collection of cultivated potato varieties at Huancayo in the Andes of central Peru, and the workshop was concerned not simply with taxonomy for its own sake, but with how those genetic resources should be managed and developed. Questions of conservation, collecting priorities because of the threat of loss of potato varieties, known as genetic erosion, or gaps in the existing collections, documentation, evaluation, and the future role of wild potato species all formed part of a broader discussion about building an international programme for potato genetic resources.

The workshop translated those discussions into practical priorities for collecting, conservation and research, while identifying where international expertise could contribute.

The workshop also confirmed that the research I had already begun under Jack at the University of Birmingham would

become an integral part of CIP's developing scientific programme. The same was true of the complementary studies being undertaken by Zósimo Huamán. Together, our research addressed different aspects of potato taxonomy and biosystematics that had been identified as priorities for the Center. In later years, postgraduate students arriving from Birmingham joined an established programme of research. In 1973, however, that programme was still being created, and our work formed part of the process by which it acquired its initial direction.

Among the practical outcomes of the workshop was agreement on how aspects of the taxonomic research should develop. Jack Hawkes would continue his long-established studies of the Bolivian wild potato species, while Carlos Ochoa would concentrate on the Peruvian species. It was a logical division of responsibility that recognised the experience and strengths of both scientists and helped define the direction of future taxonomic research within the Center and among its collaborating institutions, including the University of Birmingham.

The workshop did not end after three days in the conference room. To appreciate both the cultivated potatoes and the environments in which they had evolved, part of the programme took us into the central Andes. A field visit to Huancayo formed an integral part of the workshop, allowing participants to see at first hand the cultivated potato collection whose future development had featured so prominently in our discussions. For me, it would be my first journey into the Andes, my first experience of working at high altitude, and my

first opportunity to see a major potato germplasm collection at first hand.

The previous weekend had convinced me that I needed better protection from the Peruvian sun before venturing into the Andes. Somewhere along the Carretera Central (the Central Highway), perhaps forty or fifty kilometres from Lima, we stopped beside a roadside stall where I bought a simple straw sombrero. At the time it was no more than a practical purchase. I could not have imagined that it would accompany me on field expeditions throughout my career and, more than fifty years later, would still be protecting me from the summer sun while I sat in my garden at home.

The journey to Huancayo took more than six hours and was made in two Iranian-built Hillman estate cars, one of them driven by Richard Sawyer himself. As we climbed steadily away from the coastal desert the road zigzagged its way into the mountains, while the Central Railway, built with British engineering expertise, followed a similarly improbable route through the valleys and across the slopes by means of remarkable switchbacks. We eventually crossed the high point at Ticlio, more than 4,800 metres above sea level—the highest altitude I had ever experienced. Until then, altitude had simply been a figure on a map; now I discovered that it had a very real physical presence. During the next two years I would cross Ticlio many times on journeys between Lima and Huancayo, and what initially seemed an intimidating barrier gradually became a familiar gateway to the central Andes.

From Ticlio the road descended through La Oroya, where the ore smelters dominated both the town and the surrounding landscape. The pollution had stripped much of the nearby

hillsides of vegetation, creating a stark contrast with what lay beyond. As we continued south the broad Mantaro Valley gradually opened before us, revealing one of Peru's most productive agricultural regions. By late afternoon we reached Huancayo, situated at about 3,100 metres (just over 10,000 feet) above sea level, and checked into the Hotel de Turistas in the centre of the city. Huancayo would become my principal base for field research over the following two years.

That evening we enjoyed dinner together before relaxing over pisco sours. Afterwards Sawyer asked for a set of dice and introduced us to *dudo*, a traditional Peruvian bluffing game. He was intensely competitive, and I soon discovered that he approached the game with much the same determination that he brought to his work. It was an enjoyable end to a memorable first day in the Andes, and a fitting introduction to the environment in which much of my work over the following two years would be undertaken.

I realise now how fortunate I was. Despite spending long days working at over 3,000 metres above sea level, I experienced little difficulty acclimatising and rarely suffered from *soroche*, or altitude sickness. Indeed, it was not until I returned to Peru in the mid-1990s that I experienced my first real bout of altitude sickness.

After breakfast the following morning we drove a short distance north of Huancayo along the Mantaro Valley, where CIP maintained its cultivated potato germplasm collection. At that time the collection was not grown on a permanent research station but in rented farmers' fields, the location changing

periodically as part of a rotation system that helped reduce the build-up of soil-borne pests and diseases.

Waiting to meet us was Ing David Baumann, the young Peruvian scientist responsible for the day-to-day management of the collection. When Jack Hawkes had first discussed the possibility of my going to Peru in 1971, helping to manage the potato collection had formed an important part of the proposed appointment. During the intervening two years, however, responsibilities within the emerging programme had evolved. By the time I arrived, David had already assumed responsibility for the collection under the supervision of seed production specialist Jim Bryan, who had worked with the NC State-Peru programme and would shortly return to Peru (with wife Jeanne and family) to join CIP. My own appointment had become that of taxonomist, with a primary research role.

David took us around the collection, explaining how it was managed throughout the year. Each accession occupied its own plot, and every stage of the annual cycle had to be carefully organised—from selecting and preparing the seed tubers, through planting at the beginning of the growing season, to maintaining the collection during growth and finally harvesting every plot individually at the end of the season. When we visited in January, the plants were in flower, and the harvest still lay several months ahead.

Standing on the hillside overlooking the plots, I began to appreciate the scale of the undertaking. Every row represented a different cultivated potato accession, each requiring careful identification and meticulous record-keeping. Until then I had known potato collections largely through Jack's research material at Birmingham. This was my first opportunity to see a

major germplasm collection at first hand, and it gave me a much clearer understanding of what conserving potato diversity actually involved.

What struck me immediately was the extraordinary diversity before me. The tubers were hidden beneath the soil, but what I could see above ground was unlike anything I had encountered before. The plants varied in almost every imaginable way. Some were tall, others much shorter. Their foliage ranged from light green to dark green, some with a distinct purplish hue. But it was the flowers that remain most vivid in my memory. There were pure white flowers, white flushed with purple, deep purple flowers, delicate sky-blue flowers and even some approaching raspberry red.

Yet the most enduring memory was not visual at all. During the flowering season the whole collection seemed to be enveloped by a gentle, almost imperceptible perfume. More than fifty years later I can still remember standing among those thousands of flowering potato plants, surrounded not only by a remarkable diversity of form and colour but also by their subtle fragrance. I have occasionally asked Steph whether she remembers that perfume, but she does not. Perhaps it affected me more than other people, but it remains one of my strongest sensory memories of those early days in Huancayo.

After spending several hours in the collection, asking David Baumann many questions and gaining my first real appreciation of how a major potato germplasm collection was managed, we returned to Huancayo for a second night. The following morning we began the long drive back to Lima.

As we descended towards Lima, we entered the stretch of the Carretera Central between Chosica and San Mateo that was

particularly vulnerable to flash floods, known locally as *huaicos*. During the rainy season, heavy rainfall high in the Andes could trigger these sudden torrents carrying mud, rock, and debris towards the coast. Roads could become blocked or washed away with little warning. On this occasion we passed through safely, but it was my first awareness of a hazard that I would encounter on a number of occasions during my years in Peru.

The day after returning from Huancayo, Jack, Richard Tarn and I flew to Cusco in the south of Peru for a long weekend. Taking the early morning Faucett Peru flight to Cusco, we arrived in the city by 8.30 am. After checking into our hotel, Jack was keen that I should meet Professor César Vargas, a distinguished Peruvian botanist and an old friend whom he had known for many years. We took a taxi to his home on the southern side of the city. I have only fragmentary memories of that first meeting, but I clearly remember the warmth of the welcome. I suspect Jack also welcomed the opportunity to discuss some of the issues that had emerged during the workshop with someone whose judgement he respected. Whether or not that was one of the reasons for the visit, it was a privilege for me to meet another of the leading figures in Peruvian botany.

From Professor Vargas's home we made our way to Sacsayhuamán. We spent several hours walking through the immense Inca fortress, marvelling at its scale, the precision of its stonework, and the ingenuity of its construction. Unlike today, there were few visitors, no crowds, and little commercial activity. It was a quiet, almost contemplative experience that

allowed us to appreciate both the monument itself and its magnificent setting overlooking Cusco.

One of the things I came to appreciate about Jack was his remarkable understanding of the relationship between wild potatoes and their environment. He did not simply know where species had been collected before; he understood the ecology that determined where they were likely to occur. Travelling with him was an education in itself which I experienced again in early 1981 when I made a short collecting trip with him north of Lima, the only time I accompanied him on such a trip.

Inside the immense Sacsayhuamán fortress Jack said, "With any luck, Mike, we'll find *Solanum raphanifolium*. I've collected it here before."

It was not long before he spotted it growing among the surrounding vegetation. There, lying close to the ground, was my first encounter with a wild potato species in its natural habitat. Watching Jack locate it so confidently was another lesson from a master botanist.

Although I had been in Peru for only a couple of weeks, I had already learned some very important lessons. I had begun to appreciate the richness of Peru's history and culture, the extraordinary diversity of its landscapes, and the intimate relationship between wild potatoes and the environments in which they had evolved. Above all, I had started to understand what an education it would be to work alongside scientists such as Jack Hawkes.

I had come to Peru expecting to learn more about potatoes. I was beginning to realise I would learn a great deal more than that.

It was during that trip to Cusco that Jack told me of a conversation he'd had with Sawyer about the possibility of Steph joining me in Peru and working at CIP given her experience at the SPBS. Returning to Lima, I met with Richard who confirmed that Steph would be offered a position so, along with an explanatory letter from me, a formal offer was sent to Steph to join CIP as a geneticist later in the year. What a turn-up for the books. I was delighted. But would Steph accept the offer?



Wearing the same straw sombrero in my garden in 2026, more than fifty years after buying it beside the Carretera Central on my first journey to Huancayo.



Visiting CIP's cultivated potato collection near Huancayo in January 1973. Left to right: David Baumann, Frank Haynes, Jack Hawkes, Roger Rowe and Don Ugent.





The cultivated potato germplasm collection at Huancayo, and one of the distinctive potato varieties in that collection.



Jack Hawkes examining Solanum raphanifolium at Sacsayhuamán in January 1973—my first encounter with a wild potato growing in its natural habitat.

Chapter 4 – Confronting Reality

Jack's return to the UK marked more than the end of his visit to Peru. For the first time since I had embarked on postgraduate research, I found myself standing on my own. The security of having my supervisor nearby had disappeared, and the responsibility for turning a broad scientific objective into a workable research programme now rested squarely on my shoulders.

I remember asking myself a very simple question: what was I to do? Closely followed by another: had I bitten off more than I could chew? Working in a young international research centre with only modest facilities, in a country that was still unfamiliar, and in a language that I was only beginning to master.

Yet uncertainty was accompanied by excitement. I had not travelled halfway around the world merely to continue work that could have been done in Birmingham. Peru offered opportunities unavailable anywhere else. It was the homeland of the potato, home to extraordinary diversity, and the ideal place to investigate the questions that had fascinated Jack for many years.

My task was therefore not simply to complete a PhD thesis. It was to learn how to become an independent scientist: to identify important questions, devise practical ways of answering them, and make the best use of whatever resources were available. This was the beginning of a much broader education than I appreciated at the time.

The months ahead would become, in every sense, a voyage of potato discovery. They would take me across the Andes, into

farmers' fields, laboratories, glasshouses, and become immersed in CIP's germplasm collection. They would also teach lessons about research, leadership, and resilience that would shape the rest of my career. Before any of that could happen, however, I first had to define exactly which research direction I intended to continue.

Before leaving for Peru, the broad outlines of my research had been agreed. Its scientific objective was to investigate a long-recognised enigma that triploid potatoes seemed more common in farmers' fields than might be expected on the basis of breeding relationships between potatoes with different chromosome numbers. Jack believed that much more work was needed to understand it. There could hardly have been a better place than Peru to throw new light on the question.

My task was not simply to describe triploid potatoes. I wanted to understand how variable they really were and how they related to the other cultivated potato groups. Because Andean farmers traditionally grew mixtures of varieties with different chromosome numbers, opportunities for natural cross-pollination clearly existed, or so I surmised. Triploid potatoes must have arisen through evolutionary and breeding processes that deserved much closer investigation.

Those questions could not be answered in the laboratory alone. They required observations in farmers' fields, where potatoes were being cultivated under conditions little affected by modern agricultural practices. Collecting expeditions therefore formed an integral part of the research programme. They would provide additional germplasm for study, allow comparisons

between cultivated material growing in different regions, and place the scientific questions within their agricultural setting.

One expedition, to Cuyo Cuyo in southern Peru, would later prove especially important. It offered an opportunity not only to collect material but also to observe how farmers maintained and managed their potato varieties. The full story of that expedition belongs later in this memoir (Chapter 7), but it began as an essential component of the research programme.

Having identified the questions, I then had to consider what facilities would be needed to answer them. My research programme would evolve as evidence accumulated rather than follow a rigid blueprint from the outset. I required access to the germplasm collection, facilities for making controlled crosses, places to grow the resulting progenies, cytological equipment—particularly a good microscope—and laboratory techniques for studying variation, including protein analyses. The programme also depended on technical assistance and suitable field sites where observations and experiments could be undertaken.

On paper, those requirements seemed straightforward. In reality, they presented a formidable challenge. CIP was still a young organisation with very limited facilities. Laboratory accommodation was rudimentary, and much of the practical work had to be improvised.

In hindsight, I realise that I was building the research programme at the same time as I was carrying it out. Like many young scientists working in a rapidly developing international research centre, I learned by doing—adapting methods, making the best use of the resources available, and gradually shaping my research as experience accumulated.

At the time, this seemed entirely normal. Only later did I appreciate how much of those early years involved improvisation, resilience, and problem-solving. Those lessons would prove every bit as valuable as the scientific results themselves.

If my research programme was comprehensive, or so I thought, the facilities available to undertake it were decidedly modest. CIP in 1973 was still a young organisation, with only limited research infrastructure but with ambitious plans for growth. Laboratories were gradually constructed and equipped during the course of 1973. Research, however, could not wait until ideal facilities became available.

The research was guided by Peru's contrasting seasons. During the rainy months, the work moved to Huancayo, while the cooler Lima winter allowed work to continue in the screenhouses at La Molina. The Center might have been located on the coast, but the potato itself remained a mountain crop.

When I first began working in Huancayo during January and February 1973, CIP had no dedicated research facilities there. Instead, my colleague María Scurrah's parents generously made the garden of their home available as a secure place where several research activities could be undertaken. In effect, that garden was CIP's first highland experiment station. It was a characteristically practical solution for a young institute that was still establishing itself. Rather than waiting until ideal facilities became available, the work simply began with whatever resources could be found.

It was in that garden that I carried out my first experimental pollinations in Peru. Using the cut-stem technique, flowering

stems were placed in bottles of water beneath a simple cold frame, where controlled crosses could be made and protected while the berries developed. These early pollinations were largely exploratory, allowing me to gain experience with the material and refine the techniques that would later form the basis of my systematic crossing programme.

Making the crosses was only part of the scientific challenge. The more demanding task was deciding which crosses should be attempted. I had to select parents representing diploid, triploid, and tetraploid cultivated potatoes—plants possessing 24, 36, and 48 chromosomes respectively—and explore the breeding relationships between them. Were some geographical groups more compatible than others? Did success depend on whether the diploid or tetraploid acted as the male or the female parent? Were triploid potatoes reproductively functional? Every cross was designed to answer one or more of these questions rather than to produce improved varieties.

The pollinations themselves were only the beginning. Every cross had to be followed systematically. Did it produce a berry? If so, how many seeds did it contain? Were some combinations consistently more successful than others, and did patterns differ between potatoes collected from different regions of Peru? The seeds were harvested, dried, and sown to produce the next generation. Chromosome counts made from root-tip squashes allowed me to determine the chromosome numbers of the progeny and compare the outcomes of different crosses. At the same time I was documenting the extraordinary diversity of the triploid cultivated potatoes, *Solanum* × *chaucha*, and gradually building a clearer understanding of their evolutionary relationships.

None of these conclusions could be drawn from a handful of pollinations. The programme involved hundreds of carefully planned crosses carried out over five growing seasons in the mountains and on the coast. Only by working on that scale could meaningful comparisons be made and reliable biological patterns begin to emerge.

As my research programme became established, a regular annual cycle developed. During the wet season, from about December until May, the work moved into the mountains around Huancayo, where the cultivated potato collection could be grown under conditions similar to those in which it had evolved. When the cooler months arrived on the coast, usually from July onwards, attention shifted back to La Molina. By the time Steph arrived in Peru during 1973, I was able to continue the crossing programme in the screenhouses there, using exactly the same cut-stem technique that I had first developed in Huancayo. I still have photographs of those early pollinations. When the rains returned to the Andes, so did I, and the cycle began again. It was a pattern that continued through the 1973–74 and 1974–75 growing seasons, with the rhythm of my research dictated not by the calendar alone, but by Peru's contrasting mountain and coastal climates.

Much of my work at La Molina during 1973, 1974 and into 1975 depended upon the practical support of three brothers, Lauro, Félix and Walter Gómez. They were employed as *obreros*—the workers who undertook much of the essential practical work around the Center—and worked closely with me in the screenhouses. They helped care for the experimental plants, supported the crossing programme and dealt with the countless everyday tasks needed to keep the research moving. I came to

trust them completely. Lauro later became foreman of the *obreros*.

The brothers spoke no English and, when I first began working with them, my Spanish was still extremely limited. It was therefore with Lauro, Félix and Walter that I really began to use Spanish as a working language. Communication was a necessity, but they were helpful and patient as I gradually developed enough confidence and vocabulary for us to understand one another. Their contribution to my work went far beyond tending plants: they helped me find my voice in the language in which so much of my life in Peru would be conducted.

One of my regular tasks in Huancayo was to work through the cultivated potato collection, selecting material that would eventually form the basis of my crossing programme. I can no longer remember exactly how many accessions were present when I first saw the collection in January 1973. It already comprised many hundreds, perhaps several thousand, and it grew rapidly as new collections made by colleagues such as Zósimo Huamán and myself were incorporated during 1973 and 1974. Each accession was planted as a single row of about ten plants, with generous spaces separating one variety from the next. It was a practical arrangement that allowed each accession to be observed individually and made the collection relatively easy to work through.

At first I relied heavily on colleagues who knew the collection far better than I did. Gradually, however, I became familiar with it myself. Only later did I fully appreciate what a privilege it had been to work with what was undoubtedly the world's most important collection of cultivated potatoes. At the time,

however, it simply seemed the natural place to begin answering the questions that had brought me to Peru.

As a result of this annual cycle, I travelled to Huancayo regularly during my first two years in Peru, probably half a dozen or more times each season. The journeys usually began shortly after eight o'clock in the morning and took around six hours, depending on road conditions. In the early years, CIP adopted the sensible policy that these trips should be driven by one of the Center's official drivers, many of whom also assisted with field work once we reached our destination.

The journey itself became a familiar part of life. Leaving Lima, the Carretera Central climbed steadily out of the coastal desert towards the high Andes. East of Chosica there was a stretch of road that was always treated with respect, being particularly vulnerable to flash floods and landslides during the rainy season. We never knew whether the road would be open until we reached it. There were two regular stopping places. The first was San Mateo, where we usually paused for a meal before continuing the long climb towards Ticlio, the highest point on the highway. In those days glaciers and small lakes still surrounded the pass, and even after many journeys the altitude remained impressive. The air was noticeably thinner and we always carried oxygen in the vehicle as a precaution. One of the pleasures of the climb was watching the remarkable Central Railway as it zigzagged and switch-backed up the mountainside beside the road, an extraordinary feat of engineering.

Beyond Ticlio the road descended gradually towards La Oroya, a bleak mining and smelting town well known for its frog's legs speciality in one of the restaurants we often stopped at,

although I never felt tempted to try them. Soon afterwards the landscape changed completely as the broad Mantaro Valley opened before us. Bordered by mountains rising to well over 20,000 feet, it was one of Peru's largest and most productive agricultural valleys. The Carretera Central remained busy throughout, carrying potatoes, maize and many other agricultural products down to the markets of Lima. By the time we reached Huancayo, I always felt that I had left one Peru behind and entered another.

Even as I accumulated experimental evidence in Huancayo and La Molina, it alone could not provide all the answers. New questions arose that could only be explored in the field. Discussions with farmers and observations of how they cultivated and managed their potato varieties became an essential part of the scientific process. Many of the questions I asked were as much anthropological as biological. At the time I simply regarded them as another way of understanding the crop. Today I would ask many of those questions differently, but they formed an important bridge between experimental science and the realities of Andean agriculture.

Looking back after more than fifty years, I realise that this part of my PhD was never really about mastering a particular technique or completing a series of experiments. It was about learning how to conduct independent scientific research under conditions that demanded resourcefulness as much as technical ability. The facilities were often improvised, the questions were complex, and the answers emerged only gradually. The research was certainly good enough to satisfy the requirements of a PhD, but its lasting significance for me lay elsewhere. It was the experience of conducting that research—within the physical,

institutional, scientific, and personal environment of a young CIP in Peru—that shaped my development as an independent scientist.

After about three weeks at Pensión Beech, I moved into a small 12th floor apartment in Pasaje Los Pinos 156, Miraflores. It was comfortable but hardly luxurious. However, after the uncertainty of my first days in Lima it felt like a significant step. For the first time since arriving in Peru, I had somewhere that was entirely my own. The apartment consisted of a bedroom with an adjoining bathroom, a reasonably large sitting room, but a small and sparsely equipped kitchen. Consequently I often found it easier to eat out than to prepare meals there, but it quickly became home.

During my first months in Lima, before my car finally arrived from England, I travelled to La Molina each morning on the CIP bus. After moving to Pasaje Los Pinos, it was only a short walk to Avenida Benavides, where the bus collected staff for the journey out to the Center. Most of the passengers were Peruvian support staff—secretaries, technicians and administrative colleagues—and, quite without realising it at the time, those daily journeys became part of my education in Peru. They gave me the opportunity to get to know many of my new colleagues away from the office, to improve my Spanish, and to listen to the easy conversation that flowed around me. It was an unremarkable journey in one sense, but an important part of becoming integrated into the life of the Center.

Like many working days, mine usually began with a cup of coffee. José Machuca, the Center's janitor, took particular pride in making it, although 'strong' scarcely does it justice. José's

coffee rapidly became something of a legend at CIP. One cup was invigorating; two could leave your hands trembling. It was impossible to arrive at work without noticing the aroma drifting through the building, and impossible to think of those early years without remembering José and his formidable coffee.

Food shopping was straightforward enough. The Todos supermarket, almost opposite the apartment, supplied most of my everyday needs. Consumer shopping in Lima during 1973 was fairly limited, and I do not remember buying many clothes. The shops were not especially well stocked and, to be honest, shopping was hardly one of Lima's attractions. On the other hand, Kodachrome and Ektachrome film—and processing—were readily available, something I appreciated as I increasingly recorded both my work and my travels through photographs.

Once I had moved into the apartment at Pasaje Los Pinos and my stereo had arrived from England, the radio was rarely switched off for long. I listened mainly to Radio Panamericana, which seemed to capture the soundtrack of Lima in 1973. One song, in particular, was almost impossible to escape. Roberta Flack's *Killing Me Softly with His Song* had only recently been released and was climbing the charts in both the United States and the UK. It seemed to be played every time I turned the radio on, and before long it had become inseparable from those early months of establishing myself in Peru. At the time I thought little of it beyond enjoying another popular song on the radio, but memory has a curious way of assigning significance to things we scarcely notice. More than fifty years later, hearing those opening notes still transports me immediately back to quiet evenings in my apartment at Pasaje Los Pinos, when I was slowly changing from a newcomer into a resident.

One of the most rewarding parts of those early months was improving my Spanish. Sr Jorge Palacios was a language teacher contracted by CIP to teach Spanish to newcomers. In the first weeks he came to the Pensión Beech, but thereafter he visited me in my apartment in Miraflores. After my lesson he would often go downstairs to teach my colleague and neighbour, Rainer Zachmann, a German plant pathologist who arrived shortly after I had, and who lived on the 7th floor. When both lessons had finished, we would invariably walk together to one of the Chinese restaurants or *chifas* on Avenida Larco. Over a leisurely evening meal, the formal lesson continued in a much more relaxed way. I was certainly learning Spanish, but I was also learning Peruvian customs, humour, and everyday culture in a way that no classroom could ever have provided.

Rainer's arrival in the same apartment building meant that I was no longer establishing myself alone. We often met for meals or simply talked about our experiences of adapting to life in Peru. Those ordinary conversations helped make Lima feel less foreign and more familiar.

Richard Sawyer also made a point of ensuring that international staff became part of a wider social community. Before long I found myself ten-pin bowling in the U.S. Mission Mixed League alongside Richard and Norma Sawyer, Oscar Gil, Maurie Semel (a visiting entomologist from Cornell University), and John and Marian Vessey. It was enjoyable, but it also reflected Richard's belief that work and family life should remain in balance. He expected us to work hard during the week, but weekends belonged to family and personal life—a leadership principle that stayed with me throughout my own career. I even won a

small trophy for the 2nd High Game 1974, even though I was a bowling novice.

The arrival of my VW from England marked another important milestone. When Victor Madrid (one of the Peruvian staff who managed much of the official paperwork) accompanied me to collect it at Callao, my first sight of the car was rather dispiriting. It had suffered minor damage to the body during the voyage, including a broken rear light, but fortunately the repairs were straightforward and Peru had excellent Volkswagen workshops. Once back on the road, however, the car transformed my experience of the country. It gave me the freedom to explore Lima, the surrounding valleys, and eventually much more of Peru in my own time.

These events may seem unremarkable in themselves, yet they marked the point at which I stopped feeling like a recently arrived visitor. Through everyday routines, new friendships, improving Spanish, and the freedom to travel, Lima gradually ceased to be simply the city where I worked. Without consciously recognising it at the time, it was beginning to feel like home.

One of the pleasures that I particularly enjoyed was exploring Lima's handicraft markets and ferias de artesanía. Whenever friends or colleagues visited from overseas, I almost invariably took them there, knowing they would want to buy something that reflected Peru's remarkable artistic traditions. The stalls were filled with beautifully made leather goods, woven textiles, silver jewellery and countless other examples of Peruvian craftsmanship. We rarely came away empty-handed.

Part of the enjoyment was the inevitable bargaining. By then my Spanish had improved sufficiently for me to negotiate with

some confidence. The stallholders naturally assumed that a foreign visitor could be persuaded to pay more than the local price, while I had gradually learned that haggling was expected and very much part of the experience. Rather than engage in a lengthy ritual of offer and counter-offer, I usually suggested that we dispense with the dance altogether. 'Tell me your best price,' I would say, 'and then I'll decide whether to buy it.' It was a straightforward approach that usually produced a smile, a sensible price and a transaction that left both of us satisfied. The bargaining was almost as enjoyable as the shopping itself.

Saturday shopping expeditions around Miraflores and San Isidro often included a bookshop overlooking the Paseo de la República, opposite the *Petroperú* building. I can no longer remember its name, but it also had a department selling LP records. One time, while browsing among the books and magazines, I heard a piece of music playing in the background that stopped me in my tracks. It was Albinoni's *Adagio*, which I had never heard before. I immediately bought the LP and discovered that it also included Pachelbel's *Canon in D*. Both pieces became firm favourites and have remained so throughout the decades since that otherwise ordinary Saturday in Lima.

By the end of February or early March 1973, a very important letter arrived from England. Steph had accepted Richard Sawyer's offer to join CIP to help curate the potato genebank. Resigning from the SPBS, she returned briefly to her parents' home in Southend-on-Sea, to prepare for the long journey to Peru. Like me six months earlier, she travelled from Heathrow

on the same BOAC route to Lima. She was not simply joining me—she was beginning her own professional career in Peru.

Her appointment also gave us an unexpected sense of financial security. Stephanie's salary as a geneticist was slightly higher than mine as a taxonomist, reflecting the different circumstances of our appointments. We were both employed, both contributing, and began our life together with a degree of financial confidence that removed one potential source of anxiety.

Several colleagues kindly suggested meeting Steph's flight as a welcoming party. It was a generous idea, but I knew her well enough to realise that, after such a long journey into a completely unfamiliar country, a crowd of strangers would have been the last thing she wanted. I thanked them warmly but persuaded them to let me go alone.

Like other international staff, I held a Peruvian *Carné de Extranjería* ID card that recognised our status with an international organisation. One of its practical advantages was that it allowed me to pass through airport formalities well beyond the public areas. I made my way to the arrival gate, where, by chance, I found the British Ambassador waiting to meet his wife and children arriving on the same BOAC flight. When the aircraft stopped and the mobile stairs were wheeled into position, he showed his diplomatic credentials and walked onto the apron. I quietly followed, showing my own identity card.

To Steph's complete surprise, I was standing at the foot of the aircraft steps as she descended from the aircraft. There were no air bridges in those days, only the warm evening air of Lima and the familiar face she had travelled so far to find. She was

carrying a boxed orchid corsage that my parents had arranged for her before she left England—a thoughtful gesture that linked our families across the thousands of miles between the UK and Peru.

With the help of my identity card we passed quickly through immigration and customs, collected her luggage, climbed into the trusty VW—which she was delighted to see again—and drove through the quiet streets of Lima back to Miraflores. Traffic was light at that hour and within about twenty minutes we were back at Pasaje Los Pinos, ready for Steph's first night's sleep in Peru.

Although we were not yet married, we had already decided that we would live together. Peru in 1973 was a deeply Catholic country, where this was not the usual arrangement. Jeanne Bryan, with characteristic kindness, gently pointed out that alternative accommodation could be found for Steph until our wedding. I thanked her for the thoughtful offer but explained that we had already made our decision. The matter went no further.

Steph moved into the apartment at Pasaje Los Pinos and, for the first time, it truly became our home. We soon realised, however, that it was too small and rather too basic for two people, and by August we would move to somewhere larger and more comfortable. Yet this modest apartment marked an important turning point. Up to that moment the story had been mine alone. Now it became our story, and our life together in Peru could truly begin.

With Steph now in Lima, I had enough experience of everyday life, official procedures and travel in Peru to help her through the uncertainties I had faced six months earlier. Instead of being

the person who needed guidance, I could introduce her to CIP, explain the practicalities of life in Peru, and help her settle in.

My colleagues continued to play an important part. Rosa Benavides, whose kindness had already helped me establish myself, again came to our assistance by helping us find our second apartment. Her support reflected one of the many quiet ways in which CIP looked after newly arrived staff.

When I first arrived in Peru at the beginning of the year, CIP was still very much a work in progress. In one sense I had joined a new organisation, but it soon became clear that I had also joined one that was still being built.

The scientific staff was remarkably small when I arrived. Richard Sawyer, Ed French, John Vessey and María Scurrah were among the few colleagues who had already completed doctorates. Other talented Peruvian scientists, including Luis Salazar, Javier Franco and Oscar Hidalgo, had master's degrees and were at the beginning of what would become distinguished scientific careers. Supporting them was a small team of technicians, administrative staff and secretaries. It was a close-knit organisation in which everyone knew everyone else.

That first impression soon began to change as CIP began to grow rapidly. New scientists arrived with increasing frequency, and the corridors gradually became busier as laboratories were equipped and research programmes expanded. What remains most striking is how informally much of that growth took place. Richard Sawyer's approach to recruitment was very different from the carefully structured international appointment procedures common today. There were no multi-day interview panels, formal presentations or competency-based assessments.

Richard travelled widely, meeting scientists at conferences, airports and hotels around the world. He had an extraordinary ability to recognise talent and, more importantly, to judge whether someone would fit the collaborative culture that he was trying to build. In many cases, those informal conversations were all he needed before inviting someone to join the Center.

It was an entrepreneurial style of leadership that reflected the youth of both CIP and the wider CGIAR. Richard trusted his judgement, and more often than not it proved remarkably sound. Some scientists arrived as visitors or collaborators, only to remain as permanent members of staff. The same willingness to move quickly, adapt and make the most of opportunities that shaped Richard's recruitment decisions could also be seen in the way research programmes were established and scientific collaborations developed. It created an atmosphere of excitement and possibility that was infectious for those of us fortunate enough to be there at the beginning.

As CIP expanded during 1973, a number of key appointments strengthened both its scientific capacity and its organisational structure. Among the most significant were Dr Orville T. ('Ory') Page from Canada, who initially arrived as a visiting scientist but remained to become Director of Research, and Dr Richard ('Dick') Wurster, recruited from East Africa to lead CIP's Outreach Programme. Dick later became Head of Training when Ken Brown joined the Center in 1976 as Director of Regional Research and Training. Appointments such as these reflected the rapid evolution of CIP from a small, pioneering institute into a more mature international research organisation with clearly defined scientific and administrative leadership.

As CIP grew, colleagues arrived from many parts of the world, bringing with them different languages, cultures and scientific traditions. It would be impossible to name everyone who contributed to the Center during those formative years, but my abiding impression is of a remarkably harmonious institution in which people of many nationalities worked well together towards a common purpose. Much of that harmony—and much of the Center's smooth day-to-day operation—depended on staff whose work rarely appeared in scientific reports: the secretaries, administrative assistants, finance staff and others who quietly kept the organisation moving, allowing those of us engaged in the science to concentrate on our research. Their contribution was indispensable.

Perhaps the most significant arrival, at the end of June, as far as I was concerned was Roger Rowe—who I had first met at the germplasm and taxonomy workshop in January—accompanied by Ellen and sons Kevin and Timothy. For me personally this was an important development, since I now had someone to supervise my thesis research with whom I could seek scientific advice and direction.

Roger quickly became one of the colleagues I admired most. He was an outstanding scientist, but it was his qualities as a leader that left the deepest impression on me. He possessed a rare combination of warmth, openness and integrity. He was approachable and encouraging, yet never reluctant to make difficult decisions when they were needed. What impressed me most was his ability to separate the personal from the professional. Administrative decisions were taken fairly and objectively, but they never affected the respect or friendship he showed towards his colleagues.

Throughout the years that we worked together, Roger was consistently supportive of my research. He was never destructive in his criticism. If he thought something could be improved, his comments were constructive and intended to help rather than discourage. As my career developed, and our paths crossed again at other international research centres, I saw exactly the same qualities in him. I learned as much about leadership from observing Roger as I did about germplasm conservation and use from working alongside him.

In the late 1970s Roger left his position as head of the Breeding and Genetics Department to become the Deputy Director General, a position he held until leaving CIP in the early 1980s. He took equivalent positions at several CGIAR centres in the years that followed, and he has remained one of my dearest friends till this day. In my opinion, Roger Rowe is the best Director General the CGIAR never had.

The social life at CIP was never particularly organised. Apart from events such as the Center's annual New Year's party, most social activities developed informally through small groups of friends rather than as organised institutional gatherings.

Although international and Peruvian staff worked closely together and enjoyed good professional relationships, people generally developed their own social circles outside working hours. That seemed entirely natural at the time and reflected differences of language, family, culture and established friendships rather than any lack of mutual respect. Like most aspects of life at CIP, friendships evolved gradually and naturally rather than through any organised social programme.

Not every relationship developed as smoothly. Wanting to learn from Carlos Ochoa, whose scientific knowledge I greatly admired, I had asked Rosa Benavides to help arrange a meeting. Through an unfortunate misunderstanding, a *Lost in Translation* moment, my request was interpreted differently from what I had intended. Rosa and I were both embarrassed, and I felt it took a little time to establish the relationship with Carlos that I had hoped for. It was simply one of those cross-cultural misunderstandings that can arise when working in another language.

During those months I had also become part of a small but supportive circle of friends. Jim and Jeanne Bryan, John and Marian Vessey, Rainer Zachmann, Maria Scurrah and her husband Martin, an Australian. Each contributed in different ways to making Peru feel less foreign and more like home.

My relationship with Jim Bryan had not begun entirely smoothly. When he returned to Peru in February 1973 after home leave, he transferred from the North Carolina State University programme to CIP. He had previously held responsibility for the germplasm collection under the NC State programme, but that responsibility did not transfer with him to CIP. For a time, however, he seemed to assume that supervising my work still formed part of his role—an assumption I firmly rejected and made very clear to him. Fortunately, the misunderstanding did not last. As I came to know Jim, Jeanne and their family, I discovered a man of immense generosity, practical wisdom and quiet kindness. Few people taught me more about potatoes, potato production and the realities of farming than Jim. In time, he became one of my closest and most enduring friends.

As the months passed, I found myself learning less from formal instruction than by immersion. Colleagues, secretaries, friends, and everyday experience all contributed to my understanding of Peru and of CIP. The organisation itself was evolving rapidly, and almost without noticing it I had become part of that evolving community.

Steph's arrival therefore marked more than the beginning of our life together in Peru. It also marked the point at which I recognised that I had crossed an invisible threshold. I was still learning, and would continue to do so, but I was no longer simply finding my way in Peru. It had begun to feel like home.

Towards the end of 1973 the worldwide energy crisis reached Peru and, early in 1974, the government introduced an unusual system to reduce petrol consumption. Rather than issuing fuel ration books, private motorists were required to display a coloured windscreen sticker, or *calcomanía*, which determined the days on which they were allowed to drive. One colour prohibited driving on Mondays and Wednesdays, the other on Tuesdays and Thursdays, while Fridays and weekends remained unrestricted. It was a simple idea that immediately became part of everyday life in Lima.

John Vessey and I quickly worked out a practical solution. We deliberately chose opposite *calcomanías*, so that between us one car was available every weekday. On the days when my car could be used, we called at John's house on the way to La Molina; on the alternate days he collected Steph and me. It was a straightforward arrangement that worked remarkably well and ensured that neither of us was seriously inconvenienced. I cannot now remember exactly how the regulations applied to

official CIP vehicles, but they must have enjoyed some form of exemption or special authorisation, because our fieldwork, journeys to Huancayo and collecting expeditions continued without any significant interruption.

The *calcomanía* system was more of an inconvenience than a serious obstacle. Like everyone else, we simply adapted. Peruvians, too, quickly found practical ways of living with the regulations. Wealthier citizens adopted a rather different solution by acquiring a second car carrying the opposite-coloured sticker, thereby restoring unrestricted use throughout the week. It was one more example of how everyday life adjusted to changing circumstances without bringing the country to a standstill.

During the summer months, particularly in January and February, Steph and I often escaped Lima's heat by driving south to the beach at Santa María, sometimes on our own and sometimes with John and Marian Vessey. On one occasion I rather overestimated both my swimming ability and the power of the Pacific. Floating beyond the breaking waves on an inflatable air bed, I suddenly realised I was well out of my depth and no longer able to make progress back towards the shore. Fortunately, John was a much stronger swimmer than I was. He calmly swam out to me and together we made it safely back to the beach. It was a sobering reminder that the Pacific Ocean demanded rather more respect than I had given it.

Despite living in a city the size of Lima, neither Steph nor I ever felt personally insecure during our first years in Peru. We never experienced crime directly, nor did we feel threatened as we travelled around the city or ventured into the countryside. Even in the more remote parts of the Andes, where we often found

ourselves far from any obvious assistance, there was a reassuring sense of personal safety. We were fortunate, although at the time it simply seemed a normal part of everyday life.

During 1974, however, that feeling of security was tested for the first time. A period of civil unrest in Miraflores revealed social and political tensions that had previously remained largely beneath the surface. Later that same year, the devastating earthquake would shake not only buildings but also our confidence in the permanence and security of the life we had begun to build. Neither event changed our affection for Peru, but both altered the way we viewed it.

That began to change over the Independence Day holiday in July 1974.

On the morning after the first night of disturbances, we got up, had breakfast as usual and went downstairs, expecting an ordinary day. As we emerged onto Avenida Larco, we were confronted by a scene of extraordinary destruction. The plate-glass windows of banks and commercial premises had been completely smashed. Glass lay scattered across the pavements, and it was immediately obvious that serious disturbances had taken place during the night. Yet, from our apartment on the 10th floor at the rear of the building, we had slept through the whole event, completely unaware that anything unusual had happened.

The following evening, anticipating further trouble, we paid much closer attention. After darkness fell, we could hear the noise of crowds beginning to build, so we went down to the garage level, one floor above the street, where an open wall overlooked Avenida Larco. From there we watched events

unfolding below until the tear gas reached us, forcing us back inside. It was my first experience of tear gas and, although we were never directly involved in the disturbances, it was a vivid reminder that beneath the surface of everyday life there were political tensions that we neither fully understood nor wished to become caught up in.

Only later did I learn more about the causes of what became known as the *Disturbios de Miraflores*. At the time, however, the politics mattered less to us than the realisation that a city we had come to regard as calm and familiar could, almost overnight, be transformed into something very different.

By October 1974, I had been in Peru for almost twenty-one months and Steph for just over a year. During that time we had experienced numerous minor earth tremors, or *temblores* as they are known in Spanish. Although initially unsettling, they gradually became part of everyday life. They rattled windows and crockery, occasionally disturbed a conversation, and then passed. We had become accustomed to them and never regarded them as anything more than a reminder that Peru lay in a seismically active region.

The morning of 3 October 1974 was entirely different. I was in one of the laboratories at La Molina, demonstrating chromosome squash techniques to a young Peruvian colleague, while at the same time enjoying a cup of coffee. Without warning, the building lurched violently from side to side. Unlike some smaller tremors, which could occasionally be heard approaching almost as though they were rolling in from the surrounding hills, this one struck instantaneously. Within

seconds it was obvious that this was no ordinary *temblor*. This was a *terremoto*.

The earthquake struck at 09:21 a.m. Modern estimates place its magnitude at about 8.1, equivalent to roughly 8 on the old Richter scale. The shaking was extraordinarily violent and seemed to continue for an eternity. It actually lasted for a little over two minutes, which was unusually long, and La Molina experienced some of the strongest shaking in metropolitan Lima because of local ground conditions.

Cupboards burst open around us, bottles of chemicals crashed onto the laboratory floor, and the building itself groaned and cracked in a way that I had never experienced before. We made our way outside into the car park, where I found myself standing with my feet spread widely apart simply to remain upright. Only then did I realise that, throughout the whole ordeal, I had unconsciously been carrying my cup of coffee. In a mixture of relief and exasperation, I threw it onto the ground.

As soon as the shaking stopped, my first thought was not of the laboratory or the damage around me, but of Steph. She had been working elsewhere in the building. My immediate concern was to find her and make sure she was safe.

Everyone's thoughts turned immediately to their families. The laboratories could wait; wives, husbands and children could not. Arrangements were quickly made to get staff home as soon as possible. Buses were organised, and despite the *calcomanía* driving restrictions that were still in force, nobody paid the slightest attention to them that day. People simply shared whatever transport was available and headed for home.

Steph and I returned to our apartment on Avenida Larco wondering what we would find. Fortunately, the building was

still standing and there was no obvious structural damage. Inside, however, it was clear just how violently the building had moved. Furniture had shifted across the floor, including a large wardrobe that had somehow made its way across the living room. Other pieces of furniture were no longer where we had left them. It was an unsettling reminder of the forces that had been at work while we had been out at La Molina.

Like many people that evening, we did not relish being on our own. We contacted the Bryans and went out to La Molina, where we spent the night sleeping on their floor. During the afternoon, a small group of staff returned to the Center to assess the damage, spread peat over the laboratory floors to absorb the cocktail of spilled chemicals and begin the clean-up. I intended to help, but found myself sitting quietly in a chair, unable to summon the energy or concentration to do anything useful. Until that moment I had not realised how deeply the experience had affected me. Steph and I decided not to return to the laboratories that afternoon. We would only have been in the way.

The 3rd October earthquake itself was only the beginning. During the following weeks we experienced what seemed like countless aftershocks—probably hundreds, perhaps even a thousand, before the end of the year. Most were little more than reminders that the earth beneath us had not yet settled, but a few were powerful enough to bring back the anxiety of that October morning. One particularly strong aftershock occurred only a few days later while Steph and I were in our apartment. It was a deeply unsettling experience. For the first time we began to ask ourselves whether we really wanted to continue living so high above the ground. *Terra firma* is, perhaps, a

relative concept in a country as seismically active as Peru, but psychologically it made a great deal of difference.

That change in outlook remained with us. We still expected to return to Birmingham the following year, but when the opportunity arose to house-sit first for Roger and Ellen Rowe and later for the Bryans in La Molina while they were away on home leave, it was not a difficult decision to make. By the middle of December we had left Avenida Larco. The earthquake had not driven us away from Miraflores, but it had changed the way we thought about living there.

Only afterwards did I begin to appreciate the extraordinary geographical scale of what we had experienced. The epicentre lay beneath the Pacific Ocean off the coast of Lima, yet the earthquake was felt for well over a thousand kilometres along the Peruvian coast and across the Andes into the Amazon basin. As a geographer, I found that almost as remarkable as the earthquake itself. It was sobering to realise that almost the whole length of Peru had shaken. It remains the most powerful earthquake I have ever experienced.



A screenhouse at CIP headquarters, La Molina, 1973.



Making crosses in a temporary screenhouse at Huancayo, 1974: pollinating flowers on cut stems; stems held in bottles after pollination; and a screenhouse under construction.



Félix Gómez working in a screenhouse at La Molina.



With Jack Hawkes in CIP's cultivated potato germplasm field at Huancayo, January 1974.



My trophy for the second-highest game in the U.S. Mission Mixed Bowling League, Lima, 1974.



The Volkswagen Variant with its British registration plate, probably near Cieneguilla.



Steph and Mike in the Pasaje Los Pinos apartment, shortly after Steph arrived in Peru.







Earthquake damage at the CIP building, La Molina, after 3 October 1974.





Norma and Richard Sawyer preparing a pachamanca for CIP staff. Steph and Zósimo Huamán visible behind.

Chapter 5 – Learning the Andes

The story now returns to the spring of 1973, when life in Peru was beginning to settle into a routine. My PhD research programme was taking shape and, following the taxonomy and exploration planning workshop, preparations were under way for CIP's first major collecting expedition. It still seems remarkable that, having been at CIP for only a few months, I should have been taking part in such an undertaking. The timing of the expedition itself was determined by the potato harvest. Fortunately for me, however, Zósimo Huamán had completed the required period of PhD residency at the University of Birmingham and had returned to Peru to continue his research at CIP. Since we already knew one another well, we were able to begin planning the expedition together almost immediately.

One of the main outcomes of the January workshop was agreement on where future collecting should be concentrated. Although CIP already held an important collection of cultivated potatoes, there were still significant gaps, particularly in parts of Peru. Before many traditional varieties disappeared from farmers' fields, they needed to be collected, properly documented, and added to the genebank.

Two major collecting expeditions to northern Peru were planned. The first, in May 1973, would visit the Departments of Ancash and La Libertad. A second expedition, the following year, would concentrate on the Department of Cajamarca. Besides expanding the germplasm collection, these expeditions would provide valuable material for research and plant breeding for many years to come.

My PhD research focused on the cultivated triploid potatoes of the Andes, but until then my knowledge of potatoes had been gained largely from books, herbarium specimens, scientific papers, and discussions with Jack Hawkes. I had seen the living potato collections that he maintained in the Birmingham glasshouses, but I had never taken part in a germplasm collecting expedition or travelled through the Andes visiting farming communities and seeing these potatoes growing in their own fields. I was looking forward immensely to the opportunity.

In May 1973 I joined Zósimo Huamán on a three-week collecting expedition to Ancash and La Libertad. The expedition was one of my responsibilities at CIP, undertaken alongside rather than as a direct part of my PhD research. Nevertheless, it contributed greatly to my broader doctoral development. It allowed me to see at first hand the environments in which cultivated potatoes were growing, how farmers managed the crop, and the extraordinary variation they maintained in their fields. Only much later did I appreciate how important those early experiences would become in shaping the rest of my career.

Our objective was not to decide whether a particular variety was already represented in the genebank. That would have been impossible in the field. The same variety might be known by different names in neighbouring communities, while different varieties could sometimes share the same local name. Instead, we sought to collect as much morphological diversity as possible, visiting as many farming communities as time allowed and carefully documenting every collection.

We left La Molina in a rented short wheelbase Toyota Land Cruiser after lunch and travelled north along the Panamericana Norte, stopping overnight at Paramonga before beginning the climb into the Andes the following morning. There was little point attempting unfamiliar mountain roads after dark. Once we left the Panamericana Norte, we would not encounter a paved road again until descending to Trujillo almost three weeks later.

With only three weeks available, we aimed to cover as much of Ancash and La Libertad as possible. We placed greater emphasis on Ancash because its considerably more varied topography required more of our time, while still collecting in both departments.

From Paramonga we travelled almost due east into Ancash and then north through the Callejón de Huaylas, between the Cordillera Blanca and the Cordillera Negra. We also crossed to the eastern side of the Cordillera Blanca to visit Chavín de Huántar and farming communities farther north, before returning to the Callejón de Huaylas. We then continued north through an increasingly dry landscape, climbing again towards the higher country of the Callejón de Conchucos. Once we felt that we had covered Ancash as fully as the time available permitted, we moved north into La Libertad.

The Callejón de Huaylas was still recovering from one of the greatest natural disasters in Peru's history. On 31 May 1970, only three years before our expedition, a devastating earthquake triggered a colossal avalanche from Peru's highest mountain, Nevado Huascarán (at 6,768 metres or 22,205 feet). Lying in the path of the avalanche—which was estimated to have travelled at 250 mph—the towns of Yungay and

Ranrahirca were obliterated, and tens of thousands of people lost their lives. As we drove through the valley, the physical scars of that catastrophe were still plainly visible, lending a sombre atmosphere to what was otherwise an exhilarating scientific expedition.

The topography of the Andes often determined how we carried out our collecting. Roads did not always reach the farming communities we wished to visit, so it was sometimes necessary to leave the vehicle and walk the remaining distance. In other places we hired horses to reach more remote villages. The changes in altitude could be considerable. It was not unusual to descend more than 2,000 metres from the road to a community. Getting down was usually the easy part; the climb back up with our collecting bags at high altitude could be extremely strenuous.

My memories of our route through La Libertad are much less distinct than those of Ancash. I remember that we followed the same collecting procedures, but the precise sequence of places has faded over the years. By contrast, the landscapes of Ancash have remained firmly in my memory.

Our routine soon became well established. At each farming community, Zósimo would discuss the local potato varieties with the farmers and ask whether they were willing to share planting material. Sometimes we collected directly from fields awaiting harvest; on other occasions a farmer would take us to his potato store, where we sorted through the different varieties he kept. While Zósimo talked with the farmers, I recorded the details of each collection in the official field collecting book.

Before leaving Lima I had appreciated, in theory, that Peru possessed an extraordinary wealth of cultivated potatoes.

Travelling through Ancash and La Libertad brought that diversity vividly to life. Village after village revealed potatoes that differed in colour, shape, size, and local name. It was impossible not to be impressed by the richness of the crop and by the knowledge that farming families had accumulated over countless generations.

Collecting potatoes involved much more than filling sacks with tubers. Every sample had to be linked to accurate field records. We recorded where it had been collected, its local name, the altitude, details of the farmer growing it, and many other observations that might later help explain its characteristics or origins. Without that information, the scientific value of the collection would have been greatly reduced.

Every successful collecting expedition depends on teamwork. Although I was responsible for the scientific aspects of recording each collection, I was still new to Peru and had little experience of field collecting in the Andes. The expedition worked because Zósimo and I brought different knowledge and skills to the task.

Zósimo knew the country, the farming communities, and the cultivated potatoes we had come to collect. He normally took the lead when we arrived at a village or farm, explaining the purpose of our visit and discussing the different potato varieties with the farmers. Those conversations were conducted in Spanish, while I concentrated on recording the information accurately in the field notebook.

My principal responsibility was to ensure that every collection was documented correctly. Each distinct potato morphotype collected at a locality was allocated its own collecting number.

That number was entered into the field notebook together with the associated passport data and written on every tuber belonging to that collection. It was painstaking work, but accuracy at this stage was essential because once information was lost it could never be recovered.

The collecting numbers assigned in the field were temporary identifiers rather than the permanent accession numbers used within the CIP genebank. Once the material reached Lima it would be processed, verified, and formally incorporated into the collection, when accession numbers would be allocated. Maintaining that distinction was an important part of the scientific discipline behind germplasm collecting.

We shared the driving throughout the expedition. Normally it made little difference who was behind the wheel, but occasionally we encountered steep mountain roads that had become extremely muddy and difficult to negotiate. On one such occasion, while Zósimo was driving, the vehicle spun through 180 degrees before coming to a halt. Fortunately, there was no damage and neither of us was injured. After that, whenever we came to particularly difficult stretches of road, I usually took over the driving. My experience of driving on snow, ice, and muddy roads in the UK had given me rather more confidence in those conditions, and it became another example of how we each contributed different strengths to the partnership.

One particularly memorable driving incident occurred shortly after we left Chavín de Huántar to continue northwards. Climbing out of the valley, we entered a bank of mountain fog that lay across the higher slopes. The road was narrow and wet,

with a steep drop beyond its edge. Although the fog did not reduce visibility enough to prevent driving, it concealed the precipice, leaving us constantly aware that it was there without being able to judge quite how close it lay. I was driving, while Zósimo, sitting on the passenger side, had the unnerving experience of looking out into a wall of mist where the mountainside simply disappeared. We continued cautiously for several kilometres until the road eventually descended below the fog.

A few days later, after completing our collecting further north, we returned by the same route. This time the fog had completely cleared. Only then did we appreciate the scale of the drop that had lain hidden beside us on the outward journey. Later, studying the map in Chavín de Huántar, we estimated that the river lay almost a thousand metres below the road. I am still not sure whether I was relieved or wished I had never discovered quite how far down it was.

That evening, before dinner, we walked from our hotel through the village to a nearby restaurant. There was virtually no light pollution, we were at high altitude, and the sky was completely clear. For the first—and only—time in my life, I saw the heavens stretched from horizon to horizon in extraordinary detail. The sheer number of stars was almost beyond comprehension. I am not a religious person, but standing there beneath that magnificent sky gave me pause for thought. For a few moments, I simply marvelled at the wonder of the universe.

After dinner, Zósimo produced several bottles of *Ron Pomalca*, and we celebrated rather more enthusiastically than wisdom dictated. The rum disappeared steadily during the evening, but the consequences became painfully apparent the following

morning. The rough mountain road back to Huaraz, tolerable under normal circumstances, was considerably less enjoyable with a thumping hangover.

On several occasions, after a long day on horseback, Zósimo declared that *Ron Pomalca* made an excellent embrocation for aching thigh muscles. Whether it possessed genuine medicinal properties I cannot say, but he certainly seemed convinced that it worked.

On one occasion, although I can no longer remember exactly where, we drove as far as the road would take us, parked our expedition vehicle, and continued on foot several kilometres to two villages about one-and-a-half to two kilometres apart. By coincidence, both were celebrating their foundation day. At the first, we were welcomed by the mayor, sat and watched some dancing, and were offered an alcoholic drink—possibly *chicha*. As we still had to visit the second village, we thanked them for their hospitality and continued with someone from the village to guide us.

In the second village, the local schoolteacher decided that our visit was particularly significant. He described me as a representative of Queen Elizabeth II, although, of course, I was no such thing. He called a village meeting in the mayor's office, and between one and two hundred people crowded inside. He made a speech welcoming us and asked me to take a message back to Lima and to my government about the situation in which the village still found itself after the 1970 earthquake. The villagers felt they had been largely ignored by the Peruvian government and had not received the support they needed.

It soon became clear that I would be expected to reply, but my Spanish was still limited. While the schoolteacher was speaking,

I asked Zósimo for a few suitable phrases and wrote them in biro on my hand. When my turn came, I stood up and surreptitiously read what I had written, offering a few words of thanks and congratulations. Afterwards, everyone in the room came forward to shake my hand. We stayed that night in the schoolteacher's house before walking back to the Toyota the following morning and continuing our journey.

Not all our memories of accommodation were quite so pleasant. On one occasion, probably in La Libertad, we arrived at a village where there were two hotels—an older establishment that looked rather run down, and a newer one. We were advised to avoid the new hotel because it was supposedly infested with fleas. Unfortunately, we ignored the advice, assuming the newer hotel would be the better choice. It was not.

By the following morning both our clothes and sleeping bags were thoroughly infested. For the next week, as we bumped along the rough mountain roads, the fleas seemed to congregate around our waistbands, making life decidedly uncomfortable. It was not until we reached the coast that we could have all our clothes washed, and only after returning to Lima were the sleeping bags finally fumigated. It was a lesson we never forgot: sometimes the older hotel really can be the better choice.

Every isolated farmhouse seemed to have at least one large dog determined to defend its territory. I soon learnt that stooping to pick up a loose stone was often enough to make an advancing dog think twice. Even so, every encounter carried a nagging anxiety. It wasn't so much the prospect of being bitten that worried me as what might follow. Rabies remained a real concern in rural Peru, and the post-exposure treatment then

available involved a long series of painful abdominal injections. Fortunately, I never had to find out for myself.

Our final memorable incident occurred as we were leaving Trujillo to begin the journey back to Lima. After suffering a puncture, we replaced the tyre without difficulty. Unfortunately, each of us assumed that the other had carried out the final tightening of the wheel nuts. A few kilometres later there was a loud bang, the Toyota lurched violently, and to our astonishment we watched the wheel bounce past us down the road.

Fortunately, I managed to bring the vehicle safely to a halt on the sandy verge. We retrieved the wheel and walked back along the road collecting the scattered wheel nuts. Our own jack, however, proved inadequate to lift the vehicle, so we flagged down a passing truck—if I remember correctly, a *Petroperú* tanker—and borrowed its much sturdier jack. With the wheel refitted and the nuts this time carefully tightened, we continued the journey south to Lima without further incident.

So there you have it. Expeditions are not all about collecting botanical specimens—or, in this case, potatoes. It is the things that happen around an expedition that often leave the strongest memories.

A year after the Ancash–La Libertad expedition, I found myself once again collecting cultivated potatoes in northern Peru. This time, however, I was on my own, accompanied only by Octavio, my driver and *de facto* field assistant.

The expedition was confined to the department of Cajamarca, immediately north of La Libertad, and had also been identified during the January 1973 planning workshop as a collecting

priority. The pattern of the expedition followed much the same approach as that of the previous year. By then, however, I had already completed the Ancash–La Libertad expedition and, earlier in 1974, my field studies at Cuyo Cuyo. Those experiences gave me the confidence that I could organise and carry out the expedition competently and successfully on my own.

The landscape of Cajamarca was gentler than anything we had encountered in Ancash. There were no snow-capped mountains or dramatic valleys, and the countryside had a softer, greener character. Nevertheless, the expedition was not without its challenges, all of which we overcame successfully. As with any journey over rough mountain roads, unexpected difficulties were almost inevitable.

Cajamarca was one of the most beautiful cities I visited in Peru. Even then, I found myself thinking that, if the opportunity arose, it was somewhere I would very much like to bring Steph. That opportunity came just a few weeks later, when we returned with our friends John and Marian Vessey.

After more than fifty years, I cannot remember every village we visited or every potato we collected. Those details were faithfully recorded in our field books. What has remained firmly planted in my mind are a few memorable moments from the expedition—moments of tension, humour, companionship, and quiet reflection that made those weeks in the Andes unforgettable.



View along the Callejón de Huaylas with the Cordillera Blanca and the twin peaks of Nevado Huascarán in the distance, May 1973.



The devastation at Yungay caused by the May 1970 earthquake, seen during the 1973 Ancash–La Libertad collecting expedition.



Mike travelling on horseback in northern Ancash, probably returning from the Callejón de Conchucos, May 1973.



Zósimo Huamán discussing with two farmers which potato varieties to collect, northern Ancash, 1973.



Mike beside the Toyota where the road ended beyond Chavín de Huántar, May 1973.



The village teacher who made the speech, with his wife and child and Zósimo Huamán, May 1973.



Mike collecting potatoes from a farmer in Cajamarca while Octavio takes notes in the background, May 1974.



View south towards Cajamarca while climbing northwards, with steam from the Baños del Inca rising beyond the city, May 1974.

Chapter 6 – Building a Life Together

When Steph arrived in Lima in July 1973, she came back with me to my one-bedroom apartment in Pasaje Los Pinos. Before she arrived, I had replaced the original single bed with a double bed, but that simple alteration highlighted what was already becoming obvious. The apartment had served me well during my first months in Peru, yet it had really been intended for one person. With two of us living there, space was at a premium. The washing machine I had brought from England occupied part of the bathroom, the kitchen was small and only modestly equipped, and there was little room to spare. It was comfortable enough, but it was not somewhere we could imagine making our home for very long.

During the six weeks that we lived together at Los Pinos, we began looking for a larger apartment. Steph agreed with me that we wanted to remain in Miraflores, which had already become my preferred part of Lima. The shops, supermarkets, and restaurants were all within easy reach, and the journey each day out to La Molina was straightforward. Once again, Rosa Benavides came to our rescue. Through her, we found a furnished apartment on the 10th floor of a modern block close to the junction of Avenida José Larco and Avenida Benavides. It was far more spacious, with two bedrooms, a proper kitchen, and secure parking on the first floor, reached by an unusual lift that carried the cars up from street level.

The apartment belonged to a formidable landlady, who, after some persuasion, agreed to remove the enormous bed that occupied the main bedroom when we explained that we preferred to use our own. The apartment's location held another

attraction, at least as far as we were concerned. On the ground floor was an ice cream parlour called *Veinte Sabores*—Twenty Flavours. As enthusiastic ice cream lovers, we soon became regular customers. I almost invariably chose vanilla, while Steph developed a lasting fondness for *lúcuma*, the distinctive Peruvian fruit whose rich, caramel-like flavour was unlike anything either of us had tasted before.

Moving to Avenida Larco was one of the best decisions we made during our early months together in Peru. It gave us the space to live comfortably and to begin creating our first real home together. With both of us settled into our work at CIP, our thoughts soon turned to the practical question of how—and when—we would get married.

Initially, we were in no great hurry to get married. We had already decided that we would marry—that was one of the reasons Steph had come to Peru—but there seemed little point in rushing. It was far more important that she had time to settle into her new surroundings, become established in her work at CIP, and adjust to life in Lima. We had only recently begun living together and wanted to enjoy that new phase of our lives before embarking on the *trámites* that would eventually allow us to marry in Peru. By August, we agreed that the time had come to begin the necessary formalities. We knew from experience that official procedures in Peru rarely happened quickly and fully expected that it would take several weeks, if not months, before everything was in place. Rather than choosing a wedding date first, we would simply begin the process and allow the bureaucracy to determine when we could finally marry.

One of the first Spanish words I learned that defied easy translation into English was *trámite*. Literally, it means a procedure or process, but in Peru it conveyed something much broader. A *trámite* could involve official forms, certificates, signatures, government offices, queues, rubber stamps, photocopies, and more than one return visit because some essential document was missing or another signature was required. In short, it encapsulated the whole machinery of bureaucracy. Before Steph and I could marry in Peru, we soon discovered that we had a number of *trámites* to complete.

Before describing the *trámites*, it is worth explaining how marriage was normally celebrated in Peru at that time. The legal marriage was the civil ceremony, conducted by the local municipality. For many Peruvian families, that was then followed by a church wedding, which was often the larger family celebration. Steph and I had already decided that we would have only a civil ceremony. Neither of us was religious, and a church wedding would not have reflected our own beliefs. Our marriage would therefore take place at the Municipalidad de Miraflores, only a few blocks from our apartment on Avenida Larco, close to Parque Kennedy.

Having discovered what was required, we gradually assembled the necessary documentation. We had to prove who we were by producing our British passports together with our Peruvian identity cards, and we had to prove where we lived. That was slightly more interesting than expected because we were both registered at the same address before we were married, something that was evidently rather less common in Peru at the time than it might be today. To satisfy the authorities, a member

of the Guardia Civil visited our apartment to confirm that we really did live there.

Other *trámites* reflected long-established legal traditions. Our intention to marry had to be made public so that anyone with a legitimate objection had the opportunity to raise it. As British citizens, we were able to complete the equivalent of publishing the banns at the British Embassy in Lima, where notice of our intended marriage was displayed for the prescribed period. We also had to publish notices in *El Comercio* and *El Peruano* (the official government gazette). That seemingly routine requirement led to an unexpected episode.

By this stage, we had assembled most of the required documentation. On the day our notices appeared, I bought copies of both newspapers, carefully cut out the notices referring to Steph and me, and confidently presented them at the Municipalidad to add to our growing marriage dossier. Much to my consternation, the official dealing with our application explained that the cuttings were not acceptable. What the Municipalidad required was the entire newspaper page on which the notices had appeared, complete with the newspaper's masthead and publication date. Only then could the notices be accepted as official proof.

That presented an unexpected problem. Several days had already passed, and somehow I now had to obtain copies of *El Comercio* and *El Peruano* from the actual day of publication. Fortunately, I eventually managed to do so and returned to the Municipalidad. This time everything was in order. The official removed the relevant pages, added them to our ever-growing dossier, and another *trámite* had finally been completed.

There were further formalities. Our birth certificates and the relevant particulars from our passports had to be translated into Spanish and notarised before they could be accepted. It still seems remarkable that our original birth certificates became part of the official municipal record. Presumably they remain in the archives of Miraflores to this day. Steph and I later obtained certified copies for our own records, but neither of us has seen our original birth certificates since 1973. We also underwent the routine medical examination required before marriage, including a blood test for sexually transmitted diseases. That requirement applied routinely and was not prompted by any concern about us personally.

There was no timetable for completing the *trámites*. Our dossier simply grew as each requirement was satisfied over a period of several weeks. Eventually there came a point when the Municipalidad was content that every formality had been completed. Only then were we in a position to turn our attention from the paperwork to the much more enjoyable task of deciding exactly how our wedding day would unfold.

We settled on Saturday, 13 October 1973, as the date of our wedding. Just five days earlier, Steph had celebrated her twenty-fourth birthday.

Although, by October 1973, I had already developed close friendships with colleagues such as Jim and Jeanne Bryan, Steph had been in Peru for only three months. More importantly, Steph was naturally a quiet and rather shy person who disliked being the centre of attention. Neither of us wanted a large celebration or any unnecessary fuss. We decided that our wedding would be as simple and personal as possible. Apart

from the two of us, there would be just the two official witnesses required for the civil ceremony. We asked John and Marian Vessey if they would act as our witnesses, and they readily agreed.

Our wedding was scheduled for half past eleven in the morning. We got up much as we would have done on any other Saturday, had breakfast together, and then dressed for the occasion. I put on my suit, while Steph wore a smart outfit with a striking red blouse beneath her jacket. At that time she still had her long hair, and I can still picture her as she looked that morning. Our apartment on Avenida Larco was only a short walk from the Municipalidad de Miraflores. It was a bright, sunny spring morning, and we walked there together, where John and Marian were waiting to meet us.

The first stage took place on the ground floor of the Municipalidad, where there was, perhaps unsurprisingly, still more paperwork to complete. Our particulars were entered carefully by hand into enormous leather-bound *tomos*. I can still remember being struck by their sheer size. Every entry was written neatly in ink using a Parker fountain pen, and looking along the row of officials each seemed to have one. The process was deliberate and unhurried, taking well over half an hour before all our details had been entered.

Some weeks later we received officially certified photocopies of the relevant pages from the *tomo*. At first I assumed these were our marriage certificate, but I later learned that they were simply authenticated copies of the original register. The document we later used as official evidence of our marriage was the *Constancia de Matrimonio*, which referred back to the relevant *tomo*, year, page, and entry. Years later, while we were living in

Costa Rica, it was this document that the British Embassy accepted as the official evidence of our marriage.

With the formalities completed, we moved upstairs to the room where the civil ceremony itself would take place. My recollection is that it was a pleasant chamber with a large stained-glass window at one end. A table stood before the window where Steph and I took our places with John and Marian as our witnesses.

The ceremony was conducted by a single municipal official. Whether he was the Alcalde of Miraflores or one of his deputies, I cannot now say with certainty, but he was clearly authorised to conduct civil marriages. After a brief introduction, he turned towards me, read the prescribed words, and looked up with a simple "¿Sí?". I replied, "Sí." He then repeated the process with Steph, who also answered, 'Sí.'

Only then did a rather uncomfortable thought occur to me. Although I had been in Peru for a little over nine months and my Spanish had improved considerably, it was still far from fluent. Steph had been in Peru for only three months and knew much less Spanish than I did. It suddenly dawned on me that we had just agreed to something without being entirely certain what that was. I apologised and asked whether we might first read the text from which the official had been speaking. Without hesitation he handed me the paper. We read it through carefully, satisfied ourselves that it contained exactly what one would expect in a civil marriage ceremony, handed it back, and happily confirmed our agreement for a second time. The ceremony then continued without further interruption.

We exchanged the gold wedding rings that had been specially made for us in Lima. Mine was a plain gold band, while Steph

had designed her own ring. After a final handshake and words of congratulations from the officiating official, we left the Municipalidad as a married couple. Those original rings served us well for many years. Today, however, neither of us can wear them. Time has changed us more than it has the gold—our fingers have grown, but the rings have remained exactly the same size.

After the ceremony, the four of us—Steph and me, John and Marian—set off for a small, informal celebration.

John drove us east out of Lima along the Carretera Central to one of our favourite restaurants, La Granja Azul, at Santa Clara, in the district of Ate. It was already well known throughout Lima for its superb *pollo a la brasa* or rotisserie chicken and its equally famous extravagant cocktails. I had eaten there several times before, and I think Steph and I had already visited together before our wedding. It seemed the perfect place to celebrate such an important day.

As was customary, we spent a little time waiting for our table, enjoying one of those cocktails while sharing a plate of chicken livers served on skewers. They were a speciality of the house and absolutely delicious. Once our table was ready, we settled down to enjoy the meal that had made La Granja Azul famous: generous bowls of beautifully barbecued chicken, crisp chips, fresh salad, and relaxed conversation that lasted far longer than the meal itself.

When lunch was over, John drove us back to Miraflores. He and Marian dropped us at our apartment before returning to their own home. There was no formal reception to follow and no

evening party. In fact, after such an important morning, the rest of the day was surprisingly ordinary.

Perhaps the most unexpected part of our wedding day came later that evening. Rather than doing anything especially romantic, we went to the cinema and watched a murder mystery. It may seem an unusual choice for a newly married couple, but at the time it simply felt like a pleasant way to spend a Saturday evening together.

Sunday was simply a quiet day at home before life returned to normal. On Monday morning we both went back to work at CIP, but with one small difference. Until then we had been Michael Jackson and Stephanie Tribble. From that day onwards we were Mr. and Mrs. Jackson.

In Peru at that time, a married woman might be referred to socially—and sometimes recorded in official contexts—using de followed by her husband's surname. Steph therefore appeared as Stephanie Tribble de Jackson. We never cared for that convention because it seemed to imply ownership rather than partnership. Fortunately, in everyday life and at work she was simply known as Stephanie Jackson, which suited both of us perfectly.

Unlike many newly married couples, we did not leave for our honeymoon immediately after our wedding. Work at CIP continued much as before, and it was not until December that we were able to take a short holiday together. There was never much debate about where we should go. I had been fortunate enough to visit Cusco and Machu Picchu during my first few weeks in Peru, and I was keen for Steph to experience for

herself the places that had so fascinated me. They seemed the obvious destination for our honeymoon.

As I had done earlier that year, we flew from Lima to Cusco on a Faucett Peru flight across the Andes. I can no longer remember which hotel we stayed in, and in many ways that no longer matters. What I do remember are the experiences we shared together.

We spent our time doing three things. We wandered extensively through the streets of Cusco, admiring the remarkable blend of Inca and Spanish colonial architecture, the massive Inca stonework, and the beautifully carved wooden balconies that have always been one of the city's distinctive features. We revisited Sacsayhuamán, once again marvelling at the ingenuity of the Inca engineers, and, of course, we travelled to Machu Picchu.

I had been able to book us a room in the Tourist Hotel beside the ruins, allowing us to spend the afternoon exploring the site before staying overnight. The following morning we were able to wander through Machu Picchu at sunrise, long before the first day visitors arrived from Cusco. It was a magical experience, made all the more memorable by being able to share it together. Later that day we returned to Cusco.

After returning from Machu Picchu, we spent another two nights in Cusco. The following day, we took a taxi into the Sacred Valley to visit the famous Sunday market at Pisac. We spent several hours wandering through the market while I photographed many of the people we met. More than fifty years later, those portraits remain among my favourite photographs from the whole of our three years in Peru. We returned to Cusco that evening and flew back to Lima the following day.

One unexpected diversion in Cusco also remains firmly in my memory. While arranging our train tickets to Machu Picchu, I noticed that the old railway sheds were nearby. I have always enjoyed railways, although I would never have described myself as a railway enthusiast, and seeing several old steam locomotives standing there was too tempting to ignore. Steph and I simply wandered into the sheds, where nobody questioned our presence, and I spent some time photographing these splendid old locomotives.

Another memory at Machu Picchu has stayed with me ever since. As our bus began the descent from the ruins towards the railway station at the village now known as Aguas Calientes, a young boy stood beside the road with his hand outstretched, hoping for a tip or *propina*. The bus did not stop. As we reached the next hairpin bend, there he was again. He had simply run straight down the mountainside between the two sections of road while the bus followed the winding switchbacks. The same thing happened at every bend on the descent. Each time we emerged onto the next stretch of road, there he was waiting for us once more. By the time we reached the bottom, I think everyone on the bus had been won over by his determination, and I certainly remember making sure that he received a well-earned *propina*.



Steph in the living room of the spacious Avenida Larco apartment.



Mike and Steph outside the Municipalidad de Miraflores on their wedding morning, beside Parque Kennedy, 13 October 1973.

SECCION MATRIMONIOS
SERVICIO GRATUITO

CONCEJO DISTRITAL DE MIRAFLORES
LIMA - PERU
REGISTRO DE ESTADO CIVIL

CONSTANCIA DE MATRIMONIO

Don MICHAEL THOMAS JACKSON.
de 24. años, soltero, Cientifico. de nacionalidad britanica.
hijo de Don Frederik Harry Jackson. y de Doña Lilian May Jackson.
domiciliado en la calle Av. Larco. Miraflores. No 730.Dp.1003. ha contraido
matrimonio civil en esta Municipalidad con Doña STEPHANIE CLAIRE TRIBBLE.
de 23. años, de nacionalidad britanica. hija de Don
Arthur Vantin Tribble. y de Doña Myrtle Gertrude Tribble.
domiciliada en la calle Y. No indicados el dia 13-10-73.
hallándose inscrita el Acta a fojas 706. del Libro No. 83. del presente año.
Miraflores, 13 de Octubre. de 1973.

Es Conforme:

El Jefe de la Sección

El Oficial Registrador

F. R. U. Nº. 28

Constancia de matrimonio, 13 October 1973.



Exchanging rings during our civil wedding ceremony at the Municipalidad de Miraflores, 13 October 1973.



Marian Vessey, Steph and John Vessey before lunch at La Granja Azul.



Steph beneath the colonnades surrounding the Plaza de Armas in Cusco during our honeymoon, December 1973.



Mike and Steph together at Machu Picchu, December 1973.



Market scene at Pisac on the day before the return to Lima, December 1973.

Chapter 7 – Cuyo Cuyo: Reading the Agricultural Landscape

By early 1974, my experimental work and the Ancash-La Libertad collecting expedition had taught me a great deal about the diversity of cultivated potatoes, but they had not answered the question that fascinated me most. How had that diversity arisen, and how was it maintained? The triploid cultivated potatoes, *Solanum* × *chaucha*, could only have originated through natural hybridisation between diploid and tetraploid cultivated potatoes. Those crosses would have depended upon insect pollination—almost certainly by bees—with the resulting seeds falling into the soil, germinating, producing tubers, and eventually being harvested, recognised, and perpetuated by farmers. Nature might create new genetic combinations, but it was farmers who determined whether those new potatoes survived.

To understand that process, I needed to look beyond experimental plots and controlled pollinations. I wanted to study a traditional farming community where these evolutionary processes were still operating within an ancient agricultural system. The challenge now was to find such a place.

It was clear that such a study would benefit from being undertaken in a remote region of Peru where traditional agriculture still predominated, where the cultivation of native potato varieties had been little influenced by the introduction of modern cultivars, and where long-established farming practices continued much as they had for generations.

Before I met Peter Gibbs, a botanist from the University of St Andrews in Scotland, towards the end of 1973, I had never

heard of the remote Andean community of Cuyo Cuyo in southern Peru. Nor had I imagined that a chance introduction would lead to one of the most rewarding scientific collaborations of my years in Peru.

Peter was about ten years older than I was and already an established lecturer in taxonomy, plant evolution, and reproductive biology at the University of St Andrews. One of his postgraduate research students was Marta Vargas, the daughter of Professor César Vargas of the University of Cusco, whom I had first met during my visit to Cusco earlier that year. Peter's connections with Peru had developed through this association, and he was exploring opportunities to undertake field research in the Andes.

At some stage September 1973, as I recall, Peter visited CIP and met Richard Sawyer. Richard recognised that Peter's interests might complement my own doctoral research and suggested that we should meet.

It was one of those introductions that, in retrospect, seems almost inevitable. My own research was increasingly moving beyond taxonomy and cytology towards understanding how the extraordinary diversity of cultivated potatoes had arisen and was maintained within traditional farming systems. Peter's interests lay in the reproductive biology and breeding relationships of oca (*Oxalis tuberosa*). Although we approached the Andes with different scientific questions, it quickly became apparent that the same traditional farming communities could provide answers to both.

We explored a number of possible destinations before Peter returned to Scotland. Over the following months we continued our discussions by correspondence, refining our ideas and

considering where our respective field studies might best be undertaken. During our discussions he had showed me a paper by an American economic botanist describing oca and its importance in the highlands of southern Peru. It helped me understand why Peter regarded that region as such a promising one for his own research. We had provisionally identified a small community that appeared ideally suited to both our objectives. That community was located in the village of Cuyo Cuyo.

Although I had never previously heard of Cuyo Cuyo, Peter explained why he thought it might provide an ideal place for our fieldwork. Situated high in the eastern Andes of southern Peru and north of Lake Titicaca, it lay well away from the main centres of agricultural development. The journey there was not straightforward, and its isolation had helped preserve a traditional farming system that had changed little over many generations.

As Peter described the area, I realised that it appeared to possess many of the characteristics I had been looking for. Its remoteness suggested that the native potato varieties grown by local farmers might have been little influenced by the modern cultivars that were beginning to spread elsewhere in Peru. We knew that ancient agricultural terraces existed, but not how extensive they were or how closely they were still integrated into the farming system. Much of what we expected still had to be tested in the field. If those expectations proved to be justified, Cuyo Cuyo might provide exactly the sort of environment I needed to understand how cultivated potato diversity had arisen and been maintained.

The reality of Cuyo Cuyo, once we arrived, far exceeded even our highest expectations.

We left Lima in mid-February 1974 in a CIP short-wheelbase Land Rover with a canvas canopy. Peter and I shared the driving. The timing of the expedition had been chosen to suit both our research programmes. Peter needed to see oca in flower, while I needed to visit potato crops before they were harvested and to talk with farmers while their fields were still growing.

We carried all the equipment we would need for several weeks in the field—our collecting notebooks, cameras, suitable clothing, and Peter's plant presses for preserving herbarium specimens. Once everything was packed, we headed south from Lima along the Panamericana Sur.

The first day took us to Ica. It wasn't a particularly long drive on a good paved road, and the journey passed quickly as Peter and I talked about our plans for the expedition and the work we hoped to accomplish.

The following day we continued south to Arequipa, a much longer drive than the previous day. Beyond Arequipa the journey changed. The paved road ended and from there we were on dirt roads for the rest of the journey. Although driving was more demanding, we could still make reasonable progress. As we crossed the altiplano we eventually caught our first view of Lake Titicaca from the surrounding hills. It is a very impressive sight. I had actually visited the lake once before, flying into Juliaca and back out again, but that had been a brief visit. Seeing Lake Titicaca from the road on the approach to Puno was a very different experience.

By the time we reached Puno we had completed the longest stage of the journey. After finding our hotel, we discovered that several other CIP colleagues were also staying there. Quite why they happened to be in Puno I can no longer remember, but it was entirely by chance and had nothing to do with our expedition. We agreed to meet later that evening for a meal together.

During the evening Peter enjoyed several glasses of *algarrobina*, a Peruvian cocktail that he had grown to like. Peter certainly enjoyed it that evening, although I suspect he appreciated it rather less the following morning when he woke with a sore head.

As we left Puno early the following morning, we headed first north-west towards Juliaca to pass around the northern end of Lake Titicaca before turning north-east towards the Sandia Valley and Cuyo Cuyo. We remained on the Altiplano for some time before eventually beginning the long descent towards the valley. We had allowed the whole day for the journey.

As we descended, we reached a point where we entered cloud rising up the valley from the east. Almost immediately the vegetation began to change. We had reached l*a ceja de la selva*, the cloud-forest zone on the eastern slopes of the Andes.

Progress was not always straightforward. At one point we were delayed by a landslide while a bulldozer cleared mud from the road. It was there I photographed a beautiful white begonia growing beside the road. It was not an isolated plant. The whole bank was covered with them. There were also several river crossings, some of which required careful judgement before we drove through them.

As we continued our descent, the valley suddenly opened out before us. Below were hundreds of agricultural terraces extending from the valley floor high up the surrounding hillsides. I had never seen anything quite like it. At that moment I realised that Cuyo Cuyo really might provide the traditional farming community I had been hoping to find.

Eventually we reached the centre of the village. There was no hotel in the village, although there was somewhere to eat. Before long we found the local post office and met the postmaster. He very kindly offered us the use of a room behind the post office where we could stay for the next few nights.

Since our Land Rover had a canvas canopy and could not be locked, we unloaded everything and carried it indoors where we set up camp and Peter's herbarium presses and drying equipment ready for the work ahead.

We stayed in Cuyo Cuyo for three or four nights. It was a simple arrangement, but it suited our purposes perfectly and gave us an excellent base from which to begin our fieldwork.

We could not simply arrive in Cuyo Cuyo and begin our work. Before either of us entered the fields, we needed to explain why we were there and gain the confidence and cooperation of the local people. The postmaster was particularly helpful. We explained our work to him in terms that he could understand, and he in turn was able to explain our presence to others in the village. We also spoke with farmers, obtained their permission to visit their fields, and discussed the work we hoped to undertake.

Peter and I soon found that our work took us in different directions. Many of the oca fields happened to be close to the

village that year, allowing Peter to study the specialised floral forms in oca and to make herbarium collections. My own work took me further up the valley, and on most days I drove the Land Rover to reach the potato fields.

As I became familiar with the valley, it became clear that cultivation followed a rotation. One area might be planted with potatoes, another with oca, another with barley or broad beans, known locally as *habas*, while other terraces were left fallow. While barley and beans were originally Mediterranean or Middle Eastern crops imported many years before, they had become an integral part of the valley's agricultural system that otherwise was based on native potato and oca varieties. Sheep were corralled onto the fallow terraces so that their manure could be incorporated into the soil. Farmers owned terraces in different parts of the valley and moved between them as the rotation progressed. That was the picture I formed from my observations and from conversations with the farmers.

I also noted the traditional implements used by the farmers. These included the foot-plough, the huire or chaqui taccla, and the lawccana used for digging potatoes, both of which I photographed. Although similar implements are used elsewhere in the Andes, they formed part of the traditional farming system I was recording.

One or two farmers took me to their fields and patiently explained what they were growing. Together we mapped a number of terraces, recording the local names of the potato varieties and where they were planted. The terraces were not large, but they provided an insight into the way potato diversity was organised within the valley.

The farmers also knew that some potato varieties performed better in different parts of the valley. Some grew best on the lower terraces where conditions were wetter, while others were better suited to the higher terraces. This knowledge had been built up over many generations and formed part of their everyday farming practice.

The crops were approaching maturity. Although the tubers were not yet fully developed, they were sufficiently advanced for me to collect representative tubers of the different varieties, with the agreement of the farmers. These were taken back to Lima where I determined their chromosome numbers and established the frequencies of diploid, triploid and tetraploid potatoes within the farming system I was studying.

Another practice that interested me was the use of edible clay with freshly harvested potatoes. Farmers collected a particular clay, ground it into a fine powder, and mixed it with water to make a paste. Freshly harvested potatoes, especially those with a slightly sharp taste, were dipped into this before being eaten. I later learned that this practice is known as geophagy. Although I described it in my PhD thesis, it did not find its way into any of my scientific publications.

Cuyo Cuyo also taught me an important lesson about talking with farmers. At first I tended to ask questions that produced only a yes or no answer. I gradually realised that I learned much more by asking open questions. Rather than asking whether a particular variety was the highest yielding, I would ask farmers to show me the variety they considered the most productive and explain why. Those conversations often revealed information that I would never have obtained from a simple yes or no answer.

Our fieldwork in Cuyo Cuyo was complete. We had finished our observations, taken the photographs we needed, collected our specimens, and said our goodbyes to the farmers and other residents of the village, who had made us most welcome throughout our stay. With the Land Rover loaded once again, we began the journey back out of the valley.

We spent another night in Puno before driving on to Cusco the following day. Our return to Cusco had a practical purpose. The Land Rover was needed by Zósimo Huamán for his own fieldwork, but before handing it over Peter and I spent a couple of days working in the Cusco area. Peter visited additional oca fields, while I continued recording potato varieties with local farmers. Some of the more remote sites could only be reached on horseback, providing another reminder that fieldwork in the Andes rarely consisted of simply driving from one place to another.

Once our work around Cusco was complete, we packed our personal belongings and arranged for some of our equipment to be sent back to Lima by freight, as Zósimo did not need to be carrying it during his own expedition. We then flew back to Lima, leaving the Land Rover for him to continue his programme.

Only much later did I appreciate that our brief visit had left a small scientific footprint. The paper that Jack Hawkes, Roger Rowe, and I eventually published in 1980 was among the earliest modern studies to draw attention to the remarkable diversity of Cuyo Cuyo's potato fields, the agricultural use of its ancient terraces, and the knowledge by which Quechua farmers selected and maintained their varieties. In the decades that followed, researchers returned to Cuyo Cuyo to investigate

agricultural risk, household economy, nutrition, archaeology, terrace management, and the diversity of potatoes and Andean tubers. It would be claiming too much to suggest that all this work arose directly from ours, but our study helped place Cuyo Cuyo on the scientific map and formed part of the foundation upon which later investigations were built.

Back in Lima, each of us turned our attention to the collections we had brought home. I began sorting my potato material in preparation for chromosome counts and the other analyses that would occupy me over the coming weeks. Peter faced a rather different problem. He was preparing his herbarium collections of oca for shipment back to St Andrews, and I have a photograph of him in the laboratory patiently working through the specimens.

Oca proved to be an awkward plant for the herbarium botanist. Its stems are remarkably fleshy and, despite our best efforts to dry the specimens during the expedition and further attempts using the facilities at CIP, they stubbornly refused to behave like normal herbarium material. Peter eventually packed the specimens and sent them back to Scotland.

Some months later he wrote to tell me that the specimens had arrived safely. The surprising thing was that they were still fleshy and very much alive. Rather than continuing the battle to dry them, he planted them instead—and succeeded in growing living oca plants from material that had originally been collected as herbarium specimens.



Peter Gibbs beside the road near the begonia locality while the route was blocked by a landslide.



First view of Cuyo Cuyo and its terraces, with the village just visible on the valley floor.



With the Cuyo Cuyo postmaster, who allowed us to use a room behind the post office for sleeping and working.



Children outside the Cuyo Cuyo post office one morning as the team began work.



Peter Gibbs in a field of oca at Cuyo Cuyo.



Farmer about to dig potatoes at Cuyo Cuyo using a lawccana.

Chapter 8 – El País Precioso

The story of the journeys Steph and I made together begins earlier, in the middle of 1973, when Peru was no longer quite the unknown country that had greeted me six months before. Lima had become home. Life at CIP had settled into a comfortable rhythm, my Spanish was becoming increasingly functional, and I had travelled repeatedly across the Andes to Huancayo as my research gathered momentum. Those journeys had taught me much about Peru's mountain roads, the changing landscapes, and the practicalities of travelling in the high Andes.

I had also gained extensive experience of driving on unpaved Andean roads during my collecting expedition to Ancash and La Libertad with Zósimo Huamán. The mountains themselves no longer seemed unfamiliar.

When Steph arrived in Lima, the opportunity for a new kind of exploration presented itself. By then my VW had acquired its Peruvian registration plates. Looking back at photographs from those months, I am always struck by that small detail. One earlier photograph shows the car, still carrying its British registration plates, fording a small stream—a reminder that, even then, I was beginning to test both the vehicle and myself on rougher ground. By the time Steph arrived, the British plates had disappeared. The change was a practical necessity, but it also marked another stage in becoming established in Peru.

There remained, however, an important difference between travelling through Peru for work and setting off entirely under our own steam. With the VW properly registered, Steph and I

were ready to choose our own destinations, travel at our own pace and begin discovering Peru for ourselves.

For six months I had tried to describe Peru to Steph in my letters. Now, at last, I could begin to show her the country that had become such an important part of my life. It seemed only natural that one of the first places I should take her was the Santa Eulalia Valley, an easy drive from Lima that had already become one of my favourite escapes into the mountains.

The Santa Eulalia Valley branched from the broad valley of the Rímac. Initially, the road headed north before, at higher elevations, turning east as it climbed steadily towards the high Andes, eventually rejoining the Carretera Central near Ticlio. We never travelled that far up the valley, but even its lower reaches offered an easy escape from the winter fog or garúa that so often blanketed Lima.

What the Santa Eulalia Valley offered was easy access to a completely different Peru. Within a relatively short drive we could leave behind the city and enjoy mountain scenery, changing vegetation and a landscape that gradually revealed the close relationship between climate, altitude and agriculture. The lower valley was extremely dry, with cultivation dependent upon irrigation, while higher up the vegetation became richer and, on later visits, I often found wild potatoes growing in abundance.

The valley itself was remarkably quiet. We rarely encountered much traffic and could spend a leisurely day exploring without venturing far from Lima. It was neither a scientific expedition nor a demanding journey, simply an opportunity to enjoy the countryside and everything it had to offer.

I cannot speak for Steph, but I remember thinking that her reaction was very much what I had hoped for. As we climbed into the valley and she began to experience its landscapes and plants for herself, it became clear to me that she would come to appreciate Peru's remarkable scenery every bit as much as I did. I particularly remember her delight at seeing cacti growing naturally for the first time—something she had never experienced before.

We would return to the Santa Eulalia Valley from time to time over the following two years. Whenever we felt the need to escape the greyness of Lima for a few hours, it was an obvious destination and a reminder of why we found Peru such a fascinating country.

By the time Steph and I began exploring Peru together, my regular research journeys had made the route between Lima and Huancayo familiar.

The Carretera Central was one of Peru's principal highways, carrying a constant stream of buses, private cars and heavy lorries transporting agricultural produce from the Mantaro Valley to the capital. The Mantaro Valley was one of the country's most productive agricultural regions, and the highway formed its vital link with Lima. Although there were occasional rough sections, the road was generally well maintained and offered the facilities that made long-distance travel relatively straightforward. There were regular *grifos* (petrol stations), villages and small towns where meals could be obtained, and enough traffic that one rarely felt isolated.

That familiar highway provided a useful benchmark for the more remote roads we would later encounter.

In fact, we did remarkably little planning. We would throw a few clothes into the back of the car, make sure we had enough petrol to get us started, and simply set off. There was probably an element of youthful naivety in that approach. Today I would plan such journeys much more carefully, but at the time it seemed the most natural thing in the world. We were young, curious and eager to discover more of the country that had become our home.

Away from the Carretera Central, the nature of travel changed. Traffic became sparse, road surfaces less predictable, and the reassuring succession of grifos, cafés and roadside services could no longer be taken for granted. We knew that, if something went wrong, we might have to rely entirely on ourselves. Yet that growing independence was part of the attraction. Every road promised landscapes we had not seen before and experiences that could never be planned in advance.

Having gained confidence from our shorter excursions around Lima and from my regular journeys to Huancayo, Steph and I decided it was time to travel further afield. We planned a circular journey from Lima south to Pisco, inland to Ayacucho, north to Huancayo and then back to Lima over Ticlio. By the time we returned home we had travelled almost 1,300 kilometres entirely in our own VW.

Our first day was straightforward. We followed the Panamericana Sur to Pisco, where we spent the night. Before settling in, we visited Paracas to see the famous *Candelabra de Paracas* carved into the sandy hillside overlooking the Pacific. It was another reminder that Peru seemed to reveal something unexpected wherever we travelled.

The following morning we left after a good breakfast, knowing that Ayacucho, almost 350 kilometres away, would be our destination by evening. The first part of the climb away from the coast was reasonably easy. Although the road was unpaved, it presented few problems and we made steady progress into the Andes.

Higher up, however, conditions changed. Heavy vehicles had churned the road into mud and carved deep wheel ruts through which we had to negotiate our way. In several places the car bottomed out and slithered through the mud. We never became stuck, but for several kilometres I began to wonder whether taking a two-wheel-drive VW onto roads like these had been such a good idea. It certainly raised the blood pressure somewhat. Once we reached firmer ground, however, the worst was behind us and the drive became enjoyable again.

As the road descended towards Ayacucho we passed through an area where large numbers of *Puya raimondii* were growing. None was in flower, but seeing this remarkable giant bromeliad, the largest in the world, in its natural habitat for the first time made a lasting impression on me.

We reached Ayacucho late in the day, tired and very hungry after the long drive. We stayed for two nights in the Tourist Hotel, which gave us a full day to wander around what I remember as a delightful colonial city. From today's perspective, it is difficult to reconcile those peaceful memories with the knowledge that little more than a decade later Ayacucho became the centre of the *Shining Path* insurgency under Abimael Guzmán.

Our stay also meant that we could continue north on the correct day. At that time one narrow section of the road following the

Mantaro Valley was operated as a one-way route, with northbound traffic allowed on one day and southbound traffic on the next.

Leaving Ayacucho, we travelled through open, dry country where cacti were abundant and, being botanists, we were inclined to stop rather more often than most travellers. With no oncoming traffic through the one-way section, the drive was relaxed and by late afternoon we reached Huancayo. This time it was simply an overnight stop before returning to Lima the following day over the familiar Ticlio Pass.

By the time we arrived home, I knew that if we wanted to explore another part of Peru there was no reason why we shouldn't. We had successfully completed our first long journey together, and I felt confident that both the car and I were capable of tackling similar trips again should we decide to head off into another part of the country.

Our next journey took us in a completely different direction. We followed the Carretera Central across the Andes as far as the Mantaro Valley before turning north-east towards Tarma and beginning the long descent to San Ramón. Although the first part of the journey followed roads that had become very familiar through my regular visits to Huancayo, what lay beyond would introduce both of us to an entirely different Peru.

The valley above Tarma was one of the most attractive agricultural landscapes that we encountered anywhere in Peru. The broad, rolling countryside was intensively cultivated, creating a patchwork of fields that spread across the surrounding hillsides. I have photographs of that landscape which, even today, capture something of its quiet beauty. Tarma was also known as Peru's flower capital, with large

quantities of flowers grown there and transported to the markets of Lima. Although I have no photographs of the flowers themselves, I have always remembered Tarma for that association.

Beyond Tarma the road dropped steadily towards San Ramón. As we lost altitude, the air became warmer and more humid, and the vegetation changed accordingly. Before long we were seeing flowering trees, papayas and many other tropical plants for the first time. For both of us it was an entirely new botanical experience.

The road itself demanded rather more concentration than the one to Ayacucho. It carried a steady stream of heavily laden lorries transporting tropical produce towards Lima. I particularly remember trucks piled high with papayas slowly grinding their way uphill on their journey towards Ticlio before eventually descending to the markets of the capital. In places the road was narrow, making it difficult to pass oncoming vehicles, and the combination of heavy traffic and twisting mountain roads ensured that I kept my attention firmly on the driving.

We reached San Ramón by evening and stayed overnight in the Tourist Hotel. The following morning we continued down the valley of the Río Chanchamayo through La Merced, intending to drive as far as Oxapampa, home to a long-established German community in central Peru. As the day progressed, however, it became obvious that we had been rather optimistic. The road was slower than we had anticipated and Oxapampa was still some distance away. Rather than press on simply because it had been our original intention, we decided to turn back and return to San Ramón. It was a sensible decision and

one that left us with plenty of time to prepare for the next excursion.

The following morning promised something completely different. Soon after first light we made our way to the small airstrip at San Ramón, from where light aircraft provided an essential air taxi service to remote settlements in the eastern lowlands. These flights carried both passengers and freight, linking communities that had no practical alternative means of transport. Before long we found ourselves climbing aboard a single-engined Cessna for the short flight to Puerto Bermúdez, on the banks of the Río Pichis.

The flight lasted no more than about forty-five minutes, but it remains one of the most memorable I have ever taken. Leaving the last ridges of the Andes behind, we crossed the eastern escarpment and suddenly the landscape changed once again. Ahead lay the immense Amazon Basin stretching towards the distant horizon, while behind us the Andes rose as a continuous wall above the tropical lowlands. It was a view that conveyed, far better than any map, the extraordinary geography of Peru.

After arriving at Puerto Bermúdez we found a local boatman who was willing to take us for a couple of hours along the Río Pichis in his dugout canoe, powered by a typical outboard motor of the kind commonly used on the rivers of Amazonian Peru. We remained in the boat throughout the trip, simply enjoying the river and the surrounding rainforest from the water. I still have photographs of our boatman, Steph and me in the canoe, and others showing dugout canoes drawn up along the riverbank.

Back in Puerto Bermúdez we found somewhere for a late lunch before returning to the airstrip for the afternoon flight back to

San Ramón. There we discovered that our return journey was to be rather different from the outward flight. The aircraft was already being loaded, not only with cargo but also with three dead pigs. There were no passenger seats available. Instead, Steph and I were each offered an empty beer crate on which to sit. There were no seat belts.

Our departure was delayed because a rain front lay between Puerto Bermúdez and San Ramón. In radio contact with San Ramón, the pilot seemed reluctant to leave until conditions improved, and we waited on the ground for what I remember as quite some time. Eventually he appeared to decide that the weather was good enough, and we took off.

The flight proved rather bumpier than the outward journey as we climbed back towards the Andes, although fortunately the turbulence was less severe than we had imagined it might be. We landed safely in San Ramón and, since I'm able to write about it more than fifty years later, the journey clearly ended well.

We spent one more night in San Ramón before retracing our route through Tarma and over Ticlio. Crossing the pass once again, we knew that in a few hours we would be back in Lima and sleeping in our own bed. After several days on the road, that was a pleasant thought. What I remember most is not the roads themselves but the experiences they made possible. They took us from the high Andes to the edge of Amazonia, introduced us to landscapes and plants that were completely new to us, and reinforced the confidence we had gained on our earlier journeys.

Having explored much of central Peru, we eventually turned our attention to the south. This would become our longest journey yet, covering almost 2,600 kilometres and taking us through some of Peru's most memorable landscapes. Like our earlier excursions, it took place during the dry season when my research programme was less demanding and travelling was generally easier.

Our route followed the Panamericana Sur through one of the driest deserts in the world. Yet every river descending from the Andes transformed the landscape. Fields spread across the valley floors wherever water reached the coast, a reminder that in Peru, as elsewhere, water was the key to life. Among the crops was rice, the first time I had seen it growing on any scale. At the time it was simply another interesting observation. I could not have imagined that, less than twenty years later, rice would become the crop that occupied the final two decades of my professional career.

Our first overnight stop was at Nazca. Crossing the famous plain gave us an appreciation of the landscape that concealed the Nazca Lines, although we soon realised that their true scale could only be appreciated from the air. The following day we continued south to Camaná before reaching Arequipa on the third day.

Arequipa was unlike any other Peruvian city we had visited. Built largely from white volcanic *sillar* and overlooked by the snow-capped volcano El Misti, it had an attractive setting and a pleasant climate. We quickly understood why it was regarded as one of Peru's most beautiful cities.

After arriving in Arequipa and deciding not to take the car on to Puno, we found a secure parking area for the car and spent the

next day and a half exploring the city on foot. Most of our time was spent around the Plaza de Armas, the Cathedral and, above all, the Monasterio de Santa Catalina.

It is the architecture that has remained with me. I have little recollection of where we stayed or where we ate, but I remember the remarkable buildings surrounding the Plaza de Armas and the quiet streets, courtyards and cloisters of Santa Catalina. They conveyed a sense of Peru's colonial history in a way that no book could have done and left a lasting impression that has remained with me ever since.

The journey from Arequipa to Puno was made by *colectivo* or shared taxi, leaving the car safely behind. Although I had crossed the Altiplano before, this was Steph's first experience of that remarkable landscape. The road climbed steadily out of the city in a series of zigzags, with El Misti gradually receding behind us. We passed the *Laguna de Salinas*—where pink flamingos stood in the shallow water—before continuing across the immense open plateau. Then, almost without warning, we crossed the final rise and saw Lake Titicaca stretched out before us.

Puno became our base for the next few days. We explored the town itself and took a boat onto Lake Titicaca to visit the Uros communities living on floating islands constructed from totora reeds. I remember seeing children attending lessons in reed boats and, perhaps inevitably for a potato scientist, noticing potatoes growing in a disused totora reed boat. It was one of those small details that has stayed with me ever since.

We also explored beyond Puno. One day we travelled south by taxi as far as Juli, at one stage considering continuing towards the Bolivian border before deciding against it. The destination

itself has faded somewhat with time, but one image has remained remarkably clear: a small church beside the road and magnificent blue *Agapanthus* flowering nearby.

Another excursion took us north to Sillustani, where the impressive ancient Aymara *chullpas* or stone funerary towers overlooking Lake Umayo provided yet another glimpse into Peru's long history.

Returning by *colectivo* to Arequipa, collecting the car and driving on to Camaná before completing the final day's drive back to Lima brought another memorable journey to an end. I remember remarkably little about the roads themselves. They were simply the means by which we came to know another part of Peru.

Our final major journey around Peru took us north to Ancash and Cajamarca. Unlike our previous holidays, which Steph and I had made on our own, this time our close friends John and Marian joined us for the journey. Part of the route was already familiar to me. I had first travelled through Ancash during a collecting expedition the previous year, while Cajamarca was still fresh in my mind following a collecting trip only a few weeks earlier. John also knew Cajamarca well through his bacterial wilt research, making regular visits there. This time, however, we were travelling simply to enjoy another part of Peru together.

By the time we set off for Ancash and Cajamarca, a journey of around 2,000 kilometres no longer seemed particularly ambitious.

Our first destination was Huaraz, where we based ourselves for several days. On the second day we drove north to visit Yungay

and Ranrahirca. Only a few years had passed since the devastating earthquake and avalanche that had overwhelmed both communities, and the visit made a profound impression on all of us. It was one of those places where words seemed almost unnecessary. The scale of the destruction and the knowledge of what had happened there encouraged quiet reflection rather than conversation.

Leaving Yungay, we followed the winding road up to the Lagunas de Llanganuco, beneath Nevado Huascarán Sur. The climb itself was memorable, the road twisting steadily upwards until we found ourselves close beneath the great mountain. To me, Huascarán remains one of the most beautiful mountains in the world. Its twin snow-covered summits dominate the landscape, and I can still picture them today as clearly as when we first stood beneath them. I have some wonderful photographs from that day, but no photograph can quite capture either the scale of the mountain or the impression it made upon us.

Another day was devoted to a visit to Chavín de Huántar. Although I had visited the region before, seeing one of Peru's great archaeological sites with Steph, John and Marian was a very different experience. The journey itself was memorable, crossing spectacular mountain scenery before descending to the ancient ceremonial centre.

It was on our return to Huaraz that one of the more memorable incidents of the journey occurred. We struck a small boulder in the road, although at the time it seemed to do little more than give the car a sharp jolt. We reached Huaraz without difficulty and thought no more about it.

The following morning we left Huaraz intending to cross the Cordillera Negra and continue towards the coast. We had almost reached the point where the road began its descent to the coast when I became aware that something about the handling of the car did not seem quite right. Rather than continue, we decided the sensible course was to turn round and return to Huaraz. The decision proved to be the correct one. When the mechanics jacked up the car, one of the rear shock absorbers simply fell away. Unfortunately, a replacement could not be found in Huaraz. Instead, the mechanic welded the two pieces together using a reinforcing strip of metal. It was a practical solution that seemed to do the job, and before long we were once again on our way.

Back on the coast we visited Sechín, another reminder that Peru's remarkable archaeological heritage extended far beyond the Incas. We continued north to Trujillo and explored Chan Chan, the great capital of the Chimú Kingdom, whose vast adobe walls and streets provided another fascinating glimpse into Peru's past.

From Trujillo we climbed once again into the Andes, this time towards Cajamarca. I had been there only a few weeks earlier during my collecting expedition, but this time I was able to enjoy the journey without the pressures of fieldwork. Coming over the final ridge and seeing Cajamarca spread out below us remains one of my strongest memories of that part of Peru.

Cajamarca had a character all of its own. I particularly remember the unfinished cathedral, built from beautiful pale stone, and our visit to the *Baños del Inca*, where we enjoyed a long soak in the thermal waters. The region was also well known for its dairy industry, something I later came to appreciate through the work of the British ODA veterinary mission based there. One local speciality was *flan de leche*, a delicious caramel custard that reminded me of desserts I had enjoyed as a child. During my collecting trip to Cajamarca, and the stopovers in the city that it involved, I almost invariably finished my meal with a *flan de leche*. Returning with Steph, John and Marian, it seemed only natural to order it again. Somehow it became one of the tastes I came to associate with Cajamarca.

This final journey brought together so much of what Peru had offered us during those years—magnificent mountain scenery, remarkable archaeology, thriving agricultural landscapes, recent history, enduring friendships and the simple pleasure of discovering another part of an extraordinary country. By then, travelling long distances by road had become almost second nature to us, something that would remain part of our lives for many decades to come.



Steph enjoying the view during her first Santa Eulalia excursion after arriving in Peru.



The Plaza de Armas in a tranquil Ayacucho.



Road beside the Río Mantaro on the alternating one-way section, heading north towards Huancayo.



Steph at Ticlio on the journey to San Ramón.



A productive agricultural landscape above Tarma.





San Ramón journey: Mike in a dugout canoe on the Río Pichis; pigs being loaded into the Cessna for the return flight.



Within the Santa Catalina Monastery, Arequipa.



A teacher holding a class with schoolchildren in totora reed boats.



Potato cultivation in a totora reed boat on Lake Titicaca.



Ranrahirca, looking up the valley down which the avalanche came.



Close view of both peaks of Nevado Huascarán in the Callejón de Huaylas.



Steph, John and Marian Vessey near Lago de Llanganuco below Huascarán.



Cajamarca Cathedral on the Plaza de Armas.



Steph testing the waters at the Baños del Inca, Cajamarca.

Chapter 9 – Transition

The final phase of our first stay in Peru began several months before we actually left. It would be tempting to think that our departure started with packing suitcases in March 1975, but in reality the transition had begun much earlier.

From the outset, I had always known that this stage of my life in Peru would have to come to an end, at least temporarily. My appointment at CIP had been arranged so that I could carry out the research for my PhD, but University of Birmingham regulations required me to return to complete the final period of residence, write my thesis and present it for examination. The plan had never been to remain in Peru indefinitely. If all went well, and the PhD was successfully completed, there was every expectation that I would return to CIP to continue my career.

By the latter part of 1974 that timetable was becoming increasingly real. There was still a great deal of work to do, particularly in the mountains around Huancayo, and there was no sense that I was winding down professionally. On the contrary, some of the most important stages of my research still lay ahead. Yet, in the background, Steph and I were becoming increasingly aware that another chapter of our lives was approaching.

The earthquake in October 1974 brought that realisation into much sharper focus. I have already described its immediate impact, but its longer-term effect was more subtle. Although our apartment on Avenida Larco had survived, repeated aftershocks gradually changed the way we felt about living on the 10th floor. It was not so much fear as a growing sense of unease. The apartment that had become our home no longer

provided quite the same feeling of security, and we found ourselves thinking more seriously about the months that lay ahead.

The opportunity to house-sit for Roger and Ellen Rowe over Christmas therefore came at exactly the right time. House-sitting was a common arrangement among international staff at CIP. Leaving a house unoccupied for several weeks was never advisable, and trusted friends were often asked to look after a property while the owners were away. We were honoured that Roger and Ellen should place that trust in us, and moving to their house in La Molina provided an ideal solution for everyone.

Before leaving the apartment we decided to hold one final party and invited around thirty friends to join us. It was a memorable evening. The music was loud, the dancing energetic and the drinks flowed freely. As the evening wore on, the occasional glass was dropped and smashed. After everyone had gone home, Steph and I tidied the apartment, swept up the broken glass and left the rest until the morning.

Daylight revealed an unexpected problem. Although the broken glass had been cleared away, the polished parquet floor was covered with light-coloured scratches where tiny fragments had been trodden into the surface during the evening. My solution was simple, if somewhat unconventional. Armed with a tin of dark brown shoe polish, I spent hours on my hands and knees carefully colouring every scratch before polishing the entire floor to a high shine. Whether it was the shoe polish, the vigorous buffing or a combination of the two, I shall never know, but when our landlady carried out her final inspection before we finally handed back the apartment, she found nothing

to complain about. We returned the keys with our deposit intact, and she never realised quite how enthusiastically our farewell party had been celebrated.

Since our apartment had been rented fully furnished, there was little to dismantle beyond our own possessions. A few items that we had bought ourselves—small side tables, a leather coffee table and matching leather poufs—were packed away ready for our eventual return to Peru. The double bed that I had bought before Steph arrived in Lima found a new home with our colleagues Humberto Mendoza and his wife Isabel. Everything else that we needed for the remaining months—our clothes, personal papers and a few everyday possessions—simply travelled with us from one house to another.

The apartment also had a small maid's room, which we used mainly for storage. Among the things accumulated there were two years' worth of *Time* and *Newsweek*, to which I had subscribed throughout 1973 and 1974. As I sorted through them before we moved, I realised that their political cartoons formed an almost continuous chronology of the Watergate scandal during Richard Nixon's presidency. The cartoonists seemed to have sensed that there was 'something rotten in the state of Denmark' well before many of the political commentators fully recognised it. I cut out the cartoons and arranged them in a scrapbook, which I still have more than fifty years later.

Without fully appreciating it at the time, Steph and I had already begun preparing ourselves psychologically to leave the life we had built in Peru.

As the practical arrangements for leaving Peru gathered pace, one important question remained unanswered. Although it was

already clear that I would return to CIP after completing my PhD, what exactly would I do? My work in Peru had been centred on taxonomy, biosystematics and the potato germplasm collection, but I had begun to feel that I wanted to become more directly involved with practical agriculture. Richard Sawyer was receptive to that ambition and discussions gradually focused on the Outreach Department, later the Regional Research and Training Department.

CIP's Region II, comprising Mexico, Central America and the Caribbean, seemed the most appropriate opportunity. It was one of several regional programmes that CIP had set up around the globe. The regional headquarters were in Toluca, Mexico. Manuel Villarreal, the first Regional Representative whom I had come to know well, had recently returned to the Mexican national programme and my Lima colleague, Oscar Hidalgo, had taken over regional responsibilities. Rather than making decisions from Lima alone, it was agreed that Steph and I should visit the region on our way back to the UK.

Around the beginning of May 1975 we left Lima for Costa Rica, with an overnight stop in Panama before continuing to San José. It was in Panama City that we tasted our first Big Macs. During the following few days we met scientists at the University of Costa Rica, including plant virologist Dr Rodrigo Gámez, who would later become the founding Director of INBio, and plant pathologist Dr Luis Carlos González, with whom I would later work closely. We were also shown the potato-growing districts around Cartago and the slopes of Volcán Irazú by Ing. Fernando Cartín of the Ministry of Agriculture and Animal Husbandry (MAG), who likewise became a trusted colleague after our move.

Our first impressions of Costa Rica were overwhelmingly favourable. San José was then a modest city of around 250,000 inhabitants, and we stayed in the Hotel Amstel in the city centre, a hotel that would become very familiar during later visits. Beyond the potato fields we saw coffee plantations and a country that seemed calm, orderly and welcoming. Costa Rica had abolished its army many years earlier, and the police officers we encountered carried no firearms. It felt like a country where Steph and I could happily build the next stage of our lives.

From Costa Rica we continued to Mexico. Although we visited Toluca to discuss CIP's regional programme with Oscar and Manuel, we stayed with John and Marian Vessey at the El Batán headquarters of CIMMYT northeast of Mexico City, the International Maize and Wheat Improvement Center, a sister centre of CIP in the CGIAR network. John had completed his assignment at CIP in 1974 and joined CIMMYT's maize programme. Alongside the professional discussions we found time for some tourism, visiting the ancient pyramids at Teotihuacán.

There was one piece of luggage that demanded rather more attention than the rest. My briefcase contained virtually the whole documentary record of more than two years of research in Peru—field notebooks, data sheets, analyses, photographs and the material from which my PhD thesis would be written. In 1975 there were no laptop computers, memory sticks or cloud storage. There was one set of papers, and I carried them everywhere. The briefcase travelled with me from Lima to Panama, on to Costa Rica, then Mexico, New York, and finally Manchester, rarely leaving my hands.

From Mexico we flew with Eastern Air Lines to New York on a Lockheed L-1011 TriStar, the first wide-bodied aircraft that Steph and I had travelled on. At JFK we transferred to a British Airways Boeing 747-200, another first for us. As someone with a long-standing interest in aviation, boarding the *Queen of the Skies* was an experience I still remember vividly. After a short stop at Prestwick, the aircraft continued to Manchester. The final sector was almost empty, allowing us to pass from one side of the cabin to the other as the English countryside came into view for the first time in more than two years. At Manchester we were met by my parents, who drove us back to Leek and, with typical practicality, told us they had already placed a deposit on a second-hand car for us. Only later, when we were settled into our Birmingham flat and I unpacked the contents of that well-travelled briefcase in the department, did I feel that the scientific work of the previous two years was finally safe.

After more than two years in Peru, returning to England felt both familiar and strangely unfamiliar. Our first stop was my parents' home in Leek. It was good to be back with family after more than two years in Peru, but there was little time to settle. The immediate priority was to find somewhere to live in Birmingham so that I could begin writing my thesis. My father lent us his car and, after a couple of days, we drove south, staying in a hotel while we searched for a flat.

One of my first visits was to the Department of Botany to let Jack Hawkes know that we were safely back in the country. Before anything else, Steph and I needed to establish a home. With help from the University's Housing Office, we spent

several days looking at a succession of flats before finding one that suited us on Farquhar Road.

It was in a large house that had been converted into several self-contained apartments. Ours was a comfortable one-bedroom flat on the first floor with a sitting room, kitchen and bathroom. The owner occupied the whole of the ground floor. The house stood in extensive grounds with ample parking and proved an ideal place to live. Our landlady was kindness itself and, when we returned to Peru at the end of the year, she presented us with a small Worcester porcelain dish that we treasured for many years.

Once we had settled into Farquhar Road, Steph took the opportunity to visit her parents in Southend-on-Sea for the first time since leaving for Peru in July 1973. A few days later I drove our recently acquired Mini Clubman to Essex to meet them for the first time. It still seems remarkable that although Steph and I had been married for almost two years, circumstances had never previously given me the opportunity to meet my parents-in-law.

The location of our flat was equally convenient, roughly midway between the main Botany Department and the Winterbourne laboratories where I had been assigned office space. Our return coincided with one of the memorable British summers of the decade. After an unexpected fall of snow during our first week in Birmingham, the weather turned exceptionally fine. I can still remember sitting in our Farquhar Road flat on a sweltering Saturday afternoon, the windows open, watching Arthur Ashe win Wimbledon on our black-and-white television.

By the time we were settled in Farquhar Road, the immediate practicalities of finding a home were behind us and I knew exactly what I had to achieve. There were six months available to complete my PhD before returning to Peru, but I had set myself an even tighter target. If the thesis could be submitted to the University by the middle of September, there would be sufficient time for the examination to be completed before the December graduation ceremony. The timetable was demanding, but, I figured, realistic, and I was determined to meet it.

Many research students find the transition from practical research to writing the thesis one of the most difficult stages of a PhD. In my case, the research itself was essentially complete, apart from a small amount of additional fieldwork, and I had already begun planning the structure of the thesis. One chapter had even been outlined before the final results were available so that, once those results had been analysed, they could be fitted naturally into an existing framework rather than starting from a blank sheet of paper.

I imposed upon myself a strict daily routine. I rose early, prepared the same packed lunch almost every day—wholemeal bread with Red Leicester cheese and salad, together with fruit and perhaps a yoghurt—and was at my desk by eight o'clock. There was a coffee break during the morning and, on fine days, several of us escaped for half an hour to play cricket in a nearby field before returning to work. I worked until late afternoon, walked the short distance back to Farquhar Road for dinner with Steph and watched the six o'clock news, then returned to the department for another two hours before finally going home around nine o'clock. The routine rarely varied, but it suited me perfectly. None of it would have been possible without Steph

quietly creating the stable home life that allowed me to concentrate almost entirely on completing the thesis. The routine worked because we both made it work.

Before I began writing, Jack Hawkes and I agreed how the supervision would operate. He did not want to receive the thesis in dribs and drabs. Instead, each chapter should be presented as a complete piece of work with its own introduction, development and conclusion. In return, he promised that if I gave him a complete chapter, typed double-spaced, he would return it with comments within a day or, at the most, two days. He kept that promise throughout, and the combination of his prompt reviews and my disciplined timetable allowed the thesis writing to progress rapidly.

Preparing a thesis in 1975 was a very different exercise from today. There were no personal computers, word processors or digital graphics. Maps and diagrams were drawn by hand, photographs prepared in the darkroom and every page typed individually. The Department's Chief Technician, Miss A. J. (Joan) Cox, photographed my maps and diagrams and produced the negatives from which the illustrations were made. I then prepared the photographic prints myself, helped by the experience I had gained from my father's photography and many hours spent in a darkroom.

The typing itself was undertaken privately by Jack Hawkes's research technician, Dave Langley, whom I knew had typed theses for postgraduate students in his own time. I asked whether he would undertake mine as a private commission and, fortunately, he agreed. He had hoped to use an electric typewriter, but when that proved impossible the entire thesis was typed on a manual machine. Each day I supplied corrected

pages, sometimes visiting Dave at his flat so that we could work through queries together. Even small amendments often meant retyping an entire page, but Dave's skill and commitment kept pace with my demanding schedule.

In the end everything came together almost exactly as planned. The completed thesis was submitted to the University on my target date in temporary binding, a concession that gave students a little longer before permanent binding was required. Receiving the University's receipt for the thesis submission was a satisfying moment. Four years of research had been distilled into a single document. There was no magic in writing the thesis in six weeks. The real work had been done over the previous two and a half years in Peru. The disciplined routine simply allowed that work to be brought to its logical conclusion.

In the UK, the PhD examination was conducted quite differently from the committee-based systems used in many other countries. My thesis was examined by just two people: an external examiner, appointed for his expertise in the subject, and an internal examiner. In those days the internal examiner could still be the student's supervisor, so Jack Hawkes fulfilled that role. By the time I joined the University of Birmingham in 1981, that practice had changed and supervisors no longer acted as internal examiners.

The examination took place during the second half of October 1975. I can no longer remember the exact date, only that I arrived suitably dressed, conscious that four years of work had come down to a single oral examination. Before I was called into the room, the external examiner and Jack had spent some time discussing the thesis. Then the examiner greeted me with words

that immediately put me at ease: "Mike, I enjoyed reading your thesis." I never forgot that simple act of kindness. Years later, when I served as an external or internal examiner myself, I always tried to ensure that candidates heard something similarly encouraging before the questioning began, should the thesis warrant it.

My viva lasted perhaps two and a half to three hours as we worked steadily through the thesis. Eventually I was asked to leave the room while the examiners reached their decision. When I was invited back, they explained that they would recommend to the University that the degree be awarded, subject only to a small number of corrections. To my delight, those amounted to just one typographical error and one minor point of clarification. We shook hands, and I left the room to be congratulated by members of staff and fellow research students.

The elation of the afternoon was tempered later that evening. After telephoning my parents in Leek to share the good news, my mother told me that my father had suffered a heart attack earlier that day. She reassured me that he was comfortable, not in immediate danger and that there was no need to drive to Leek that night. We visited a day or two later, but the news inevitably cast a different light over what had begun as one of the happiest days of my academic life.

The following day there was work to be done. I made the required corrections immediately and passed them to Jack Hawkes for approval so that he could submit his report to the University confirming that the requested amendments had been completed. The external examiner had already submitted his report, and with Jack's confirmation the examination process was complete. I then arranged for the final bound copies of the

thesis to be produced: copies for the University Library and the Department of Botany, together with copies for myself and for the CIP Library in Lima.

With that, my PhD was complete. I suppose Steph and I must have marked the occasion with a bottle of wine, although I have no clear recollection of any celebration. The satisfaction came less from the examination itself than from knowing that four years of research, much of it carried out high in the Peruvian Andes, had reached a successful conclusion.

With the viva completed and the thesis formally accepted, the relentless pace of the previous months suddenly eased. For the first time in many months there were no pressing deadlines, no chapters to write and no corrections awaiting attention. Richard Sawyer could quite reasonably have expected me to return to Peru immediately. After all, I had remained on the staff of CIP throughout my period in Birmingham. Instead, he generously allowed Steph and me a few weeks before resuming my duties, giving us the opportunity to spend time with our families and attend my graduation.

Jack Hawkes and I also discussed how the research should now be published. We agreed that the thesis contained several distinct strands of work that deserved publication as individual scientific papers, together with material suitable for presentation at an international conference. At that stage these were plans for the future. The thesis itself was a record submitted for examination; the real scientific legacy would come through publication in the international literature, where the work could be scrutinised, cited and built upon by others.

The formal culmination of my time at Birmingham came on 12 December 1975. At precisely midday the academic procession entered the Great Hall of the University of Birmingham, led by the Chancellor, Sir Peter Scott. It was then, standing in the Great Hall, that I truly felt I had become Dr Michael Jackson. Each graduand was allocated two guest tickets. Steph generously insisted that they should go to my mother and father. Afterwards, Jack and I posed for a photograph outside the Great Hall, marking the successful conclusion of a journey that had begun almost five years earlier when he had first telephoned me with the opportunity to undertake a PhD based in Peru.

Christmas that year was spent separately with our respective families. Steph returned to Southend to be with her parents, while I travelled to Leek. My elder brother Edgar had flown over from Canada with his wife Linda, while my sister Margaret and her husband David joined my parents for Christmas. After almost three years overseas, it was a pleasure simply to be together again.

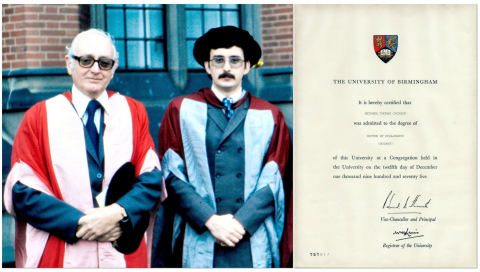
After Christmas I travelled to Southend, where Steph and I joined up once more before leaving for Peru. On or about 30 December 1975 we flew back to Lima and spent the next three months in the CIP Guest House at La Molina while longer-term arrangements were made. We had arrived just in time to celebrate the New Year at what had become CIP's annual New Year's Eve party, a happy reunion with friends and colleagues that confirmed we were returning not to an unfamiliar country, but to a place that had become our second home.



Steph with Ing. Fernando Cartín and Dr Luis Carlos González in a farmer's potato field on Volcán Irazú during the May 1975 Costa Rican reconnaissance.



Steph and Mike admiring the temples at Teotihuacán.



THE UNIVERSITY OF BIRMINGHAM

It is hereby certified that

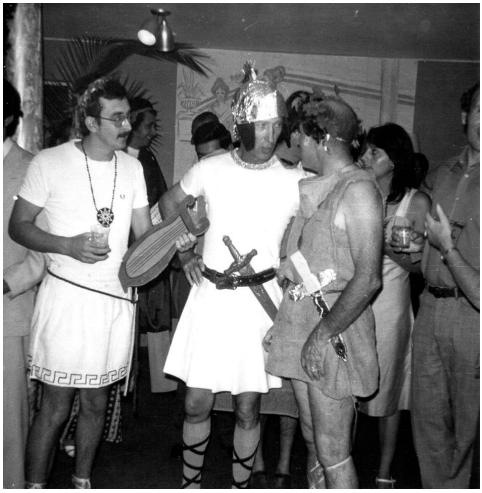
was admitted to the degree of

of this University at a Congregation held in the University on the twelfth day of December one thousand nine hundred and seventy five

Vice-Chancellor and Principal

Registrar of the University

With Jack Hawkes on graduation day at the University of Birmingham, 12 December 1975.



At a Roman-themed birthday party organised by Norma Sawyer for Richard in early March 1976. Left to right: Mike, Ken Brown and Professor Norman Thomson of Michigan State University.

Chapter 10 – Costa Rica

Our return to Lima at the end of December 1975 was to be a brief interlude before the next stage of my career. For the moment, however, it felt good to be back among friends and once again part of life at CIP.

However, there was one interesting incident shortly after our return in early January 1976. We borrowed one of the Center's Land Rovers and drove into Miraflores to see the movie *Jaws*, which had recently been released in Peru. We parked on Avenida José Pardo just outside Cine El Pacifico, as many others had done, and thought no more about it. When we came out of the cinema the Land Rover had vanished. My immediate reaction was that it had been stolen, but a traffic policeman wearing the distinctive white tropical helmet of the traffic police calmly informed me that it had been towed away for illegal parking and was now locked in a municipal compound until the following week, pending payment of a fine.

Assuming that this could not possibly apply to a vehicle belonging to the International Potato Center, I argued that it was an international organisation with diplomatic status, but to no avail. We took a taxi to the compound, where the same discussion was repeated through the locked gate. Whether I eventually persuaded the attendant, whether he telephoned someone for authority, or whether a discreet *propina* helped matters along, I honestly cannot remember. What I do remember is driving the Land Rover back to La Molina that evening, returning it to the vehicle pool on Monday morning, and reflecting that my only encounter with the law in Peru had ended rather more happily than I had first imagined.

Yet it was also clear that the Center had not stood still during our absence. New faces appeared in the corridors, research programmes had continued to develop, and responsibilities had shifted. A few days after our return, Dr Ken Brown arrived in Lima with his wife Geraldine and their five sons, including twins. Until they found a house of their own, we shared the Guest House with the Brown family and a succession of other visitors. Those weeks provided my first real opportunity to get to know Ken, although I had no inkling then how influential he would become in shaping my own thinking about leadership and management. In 1977, the Outreach Program was reorganised as Regional Research and Training, and Ken replaced Richard Wurster as Director for Regional Research and Training, becoming my new boss.

Enjoyable though it was to be back among friends, our stay in Lima would be only a brief interlude. Before leaving Peru the previous spring, it had already been agreed that, once I had completed my doctorate, I would join CIP's Outreach Program, contributing not only to research but also to potato development throughout Region II. This was one of several regional outreach teams established by CIP, each serving a different part of the developing world. Together they extended the Center's expertise far beyond Peru, adapting potato research to local farming systems and building partnerships with national programmes.

The immediate task was to determine exactly where a research base could best be established to support the regional programme, whose headquarters remained in Toluca, Mexico.

Only a few days into the new year, Roger Rowe, Ed French and I boarded an Air Panama flight to Panama City, followed by an overnight stop and a LACSA (Líneas Aéreas Costarricenses) flight to San José the following day. It was a reconnaissance mission rather than a formal transfer, to explore establishing that research base in Costa Rica and to meet the scientists and institutions with whom CIP hoped to collaborate.

One small incident from that journey has remained firmly in my memory. We had scarcely finished the climb out of Lima when the cabin crew began serving drinks. It was little more than seven o'clock in the morning. Without the slightest hesitation, all three of us enthusiastically ordered Cuba Libres. Back home in the UK, rum and Coke at breakfast time would have seemed distinctly eccentric. On Air Panama, however, it appeared to be accepted without anyone raising an eyebrow.

Our visit to Costa Rica confirmed what Richard Sawyer had hoped. We met the same scientists at the University of Costa Rica. We also travelled to CATIE (the Tropical Agricultural Research and Higher Education Center) at Turrialba, where discussions centred on the possibility of locating the CIP research base within its campus. The proposal was attractive to both organisations. CATIE could provide the physical base and opportunities for scientific collaboration, while CIP would establish a stronger scientific presence in Central America in support of its regional programme.

As the visit drew to a close, Costa Rica was no longer simply one possibility among several. Neither Steph nor I could have imagined how profoundly that small, peaceful country would shape the next five years of our lives, nor how many

friendships, scientific discoveries and leadership lessons lay waiting there.

By the end of February 1976 the negotiations with CATIE had been successfully concluded. An agreement had been signed between the two organisations, and all that remained was to complete the practical arrangements. Within a few weeks we would leave Peru and I would take up my new role as a Regional Scientist.

Although the move was only to another Latin American country, it felt very different from our arrival in Lima in 1973. Then we were inexperienced and uncertain of what lay ahead. We now left Peru with my doctorate completed, a clearer sense of purpose, and the confidence that came from three years of scientific and personal growth. We were not simply moving to another country; we were establishing CIP's research base in Costa Rica in support of Region II.

There was, however, one important difference between our move to Costa Rica and our arrival in Peru. From the outset we knew that Steph would no longer be able to pursue a professional career of her own. The immigration arrangements under which I would work at CATIE enabled me to take up my appointment, but offered no equivalent opportunity for her. It was something we had discussed and accepted before leaving Lima, but it inevitably altered the balance of our lives. While I set about establishing a new research programme, Steph would devote her considerable energies to creating another home for us.

The institutional arrangements were also rather different from those we had experienced in Peru. Although CATIE had

become an independent organisation, it had originally been the research institute of the Inter-American Institute for Agricultural Sciences (IICA) and retained close links with the Organization of American States. As members of that international community we enjoyed diplomatic status. Alongside my British passport I carried an official Organization of American States passport, while our car would eventually display the distinctive MI (Misión Internacional) registration plates that immediately identified it as an international organisation vehicle. We were also entitled to import a shipment of household goods free of duty, together with regular consignments of certain consumable items, a concession that proved invaluable as we established ourselves.

Our arrival in Costa Rica was rather less auspicious than I had anticipated. During the final weeks in Lima I had been suffering from a particularly heavy cold with severe nasal congestion. The flight to Panama caused no real difficulty, although my ears became blocked during the descent into Tocumen International Airport. They cleared the following day on the short flight to San José and, because the airport lies at about 1,200 metres above sea level, I assumed the problem had resolved itself. It had not. During the hour-and-a-half drive down to Turrialba I could almost feel the congestion moving upwards through my sinuses into my ears. By the time we arrived they had become completely blocked and I had effectively lost most of my hearing. The problem persisted for almost six weeks. Steph later told me that at one of my earliest meetings people would ask me a question and I would answer something entirely different because I had simply not heard them correctly. Fortunately, the congestion eventually cleared and with it my hearing returned to normal.

Although only about seventy-five kilometres from San José, the drive to Turrialba often felt much longer. The last section was still on a dirt road and formed part of the principal route between Puerto Limón, Costa Rica's Caribbean port, and the capital. Heavy articulated lorries, long trains of sugar-cane trailers, winding roads and frequent mountain mist demanded constant attention.

CATIE lay a few kilometres south of Turrialba on its own extensive campus, in a broad valley devoted largely to sugar-cane cultivation and cattle, with Volcán Turrialba overlooking the surrounding countryside. Throughout our years there the volcano formed a peaceful backdrop to everyday life. Only after we had left Costa Rica did it reveal a different character by becoming active once again.

The CATIE campus itself was a delight. Set amidst luxuriant tropical vegetation, it possessed an atmosphere very different from the irrigated desert surroundings of La Molina. We were initially accommodated in the attractive guest house, one of several fine colonial-style buildings on the campus. It was comfortable enough, but the arrangements were rather more spartan than those we had enjoyed at the CIP Guest House in Lima. We largely fended for ourselves and, without a vehicle, walked across the campus to the main dining room in all weathers. In Turrialba, 'all weathers' usually meant rain.

One of our first practical tasks was to buy a car. Once again we found ourselves behind the wheel of a Volkswagen, this time a Brazilian-built Brasília model. It quickly became part of our daily lives, carrying us between Turrialba and San José for shopping, medical appointments and the many other necessities of everyday life, while also allowing us to explore Costa Rica

during weekends and holidays and, on one occasion, a memorable journey into northern Panama.

However, before I had begun to settle into my office at CATIE, Oscar Hidalgo asked me to travel to Mexico in July 1976 to assist with CIP's annual potato production course. The three-week course was one of the most influential training activities in Latin America and traced its origins to the earlier Rockefeller Foundation Potato Program led by Dr John Niederhauser, an internationally-respected plant pathologist who later received the World Food Prize in 1990. It brought together scientists and extension specialists from across the region and reflected CIP's growing commitment to strengthening national potato programmes through training as well as research.

However, the invitation created an immediate practical problem. Steph had only just begun settling into life in Turrialba and we still had neither a permanent home nor a car. While I was away she moved from the guest house into the dormitory in the main CATIE building, where she had easy access to the cafeteria and the companionship of the campus community. It was another example of the quiet adaptability that had already become such an important part of our life together.

My first evening in Mexico was memorable for entirely the wrong reasons. Deciding to celebrate my arrival, I ordered what appeared to be an excellent steak dinner. Within hours I was probably the sickest I became during my entire overseas career. Fortunately, several cups of *té de manzanilla* worked wonders and, by 7.30 the following morning, I was out planting potatoes as though nothing had happened.

That first course also marked the beginning of a close professional relationship with Oscar. Although he remained based in Toluca while I worked from Costa Rica, we travelled extensively together throughout Region II, visiting national potato programmes across Central America and the Caribbean. It was an invaluable apprenticeship, showing me not only the diversity of potato production across the region but also the diplomacy and patience needed to build genuine collaboration between countries.

Returning to Costa Rica, my attention now turned fully to the responsibilities that had brought us there. Before any research could begin, it was important to establish relationships with the organisations and individuals who would become our principal collaborators. I met officials from MAG, including Fernando Cartín, and renewed contact with Luis Carlos González, whose friendship and professional collaboration would prove invaluable over the coming years.

I had been sent to Costa Rica to set up a research programme. Professionally, however, I was starting from scratch. My office was located in one corner of a former soils laboratory behind the main Crop Science Department. Much of the building was cluttered with obsolete equipment, and my office itself required cleaning, repainting and refurbishment before it became usable. Although I had little need for sophisticated laboratory facilities, I did require screenhouses where I could raise potato plants. CATIE allocated me one, and later a second, former cacao screenhouse. They were little more than wooden frames when we inherited them, but after considerable refurbishment they became indispensable to the research programme.

With the help of CATIE staff I recruited my first secretary, Leda Ávila, who gladly accepted a full-time appointment after previously working part-time elsewhere on the campus. Through local recommendations I also recruited Jorge Aguilar, a young Costa Rican from a coffee-growing family outside Turrialba, as my research assistant. Together with the acquisition of a small Datsun pickup, we finally had the nucleus of a functioning programme. A year later I recruited a second assistant, Moisés Pereira.

Jorge's training became one of my first priorities. I encouraged him to accompany staff from the national potato programme into farmers' fields so that he could learn about the crop and the practical problems facing growers. Although no formal potato experiments had yet begun in Costa Rica, we were laying the foundations on which the programme would depend.

As the programme expanded we replaced the Datsun with a larger four-wheel-drive Toyota pickup. Much to the surprise—and, I suspect, the disapproval—of some CATIE colleagues, I authorised Jorge to take the vehicle home each evening. It saved him considerable travelling time especially when he had to leave for our field plots on the Irazú Volcano. I regarded it as trusting a valued member of staff and judging him by results rather than rules.

Although the programme now possessed staff, transport and basic facilities, there were still no potatoes. That may sound a curious statement for a potato programme, but it reflected the reality of establishing a new research base from scratch.

The arrival of more than 300 potato clones from Toluca in the early months of 1977 marked the true beginning of our experimental programme. Until then we had been assembling

the people, facilities and equipment needed to undertake meaningful research. At last we had potatoes to plant. Only then could we begin addressing the central scientific question that had brought me to Costa Rica: could potatoes, domesticated in the cool Andean highlands, be adapted successfully to the humid tropical conditions of Central America? We wanted to discover how that crop would respond when grown under the very different environmental conditions of the humid tropics. Would the plants emerge satisfactorily? Would they grow vigorously? Would they flower and produce tubers? Above all, what unforeseen constraints might limit their successful cultivation?

Our first field trials on the CATIE farm were deliberately simple. There was no elaborate experimental design or sophisticated analysis. Each clone was planted in a short row of five or ten hills, with small gaps separating one entry from the next, creating a large observational nursery. At this stage our purpose was straightforward: to observe how the material behaved under humid tropical conditions and to identify the questions that later experiments would need to answer.

Initially everything appeared encouraging. The plants emerged well, established rapidly and responded to fertiliser and hilling. For several weeks the trial looked remarkably promising.

Then...

The first signs of trouble were subtle. A few plants began to wilt unexpectedly. Unsure of the cause, I called upon the expertise of my friend and colleague Luis Carlos González of the University of Costa Rica. After examining the plants he immediately recognised the symptoms as bacterial wilt, then known as *Pseudomonas solanacearum* (now *Ralstonia*

solanacearum), a bacterium that invades the vascular system, causes wilting and eventually infects and rots the tubers.

Working together we confirmed the diagnosis by applying Koch's postulates. We isolated the bacterium from diseased plants, cultured it, inoculated healthy plants and reproduced the disease before re-isolating the same organism. The diagnosis was clear. The next question was equally important: where had the disease come from? The potato clones had originated in Toluca, where bacterial wilt was absent, so the source clearly lay elsewhere.

That answer came when Professor Luis Sequeira of the University of Wisconsin, an internationally recognised authority on bacterial wilt, visited Costa Rica again. Standing in the trial for only a short time, he looked not at the potatoes but at the weeds growing among them. Several common weed species showed characteristic symptoms. We again applied Koch's postulates and demonstrated that these weeds were harbouring the bacterium. This was the first time that potatoes had been grown on the CATIE experiment station, and no other solanaceous crops had been grown there for many years. The weeds were maintaining the bacterial population naturally in the soil. What had seemed an unfortunate discovery immediately became one of the programme's greatest assets: we had identified an exceptional natural screening site for bacterial wilt.

Once bacterial wilt had revealed itself, the character of our field work changed completely. We carefully mapped the appearance of diseased plants across the field, building a temporal sequence that followed the epidemic week by week.

By the end of the trial almost every clone had succumbed. Of more than 300 entries, only three remained apparently healthy.

Appearance alone was not enough. Had these plants genuinely resisted infection, or had they simply escaped it? We therefore replanted tubers harvested from the three surviving clones into the same field after cultivation had redistributed infected plant material throughout the soil. Two quickly succumbed to bacterial wilt. One remained healthy. We repeated the experiment with that single clone, and once again it remained apparently unaffected. Its identity was CRUZA 148.

I had not bred CRUZA 148; the original cross had been made elsewhere. My contribution was to recognise its exceptional performance under intense bacterial wilt pressure and to demonstrate its value experimentally. In that sense I have always felt a special attachment to the variety. While CRUZA 148 was released commercially in only two East African countries, it became an important experimental variety and, from what I later learned, was widely used as a standard control in bacterial wilt research. It was not the complete solution we had hoped for, however. Later work showed that it was tolerant rather than truly resistant, and although it survived infection remarkably well it could still harbour the bacterium.

The discovery of CRUZA 148 marked the beginning rather than the end of our work on bacterial wilt. Luis Carlos González and I continued to collaborate closely, extending the programme into crop husbandry and disease management through postgraduate research. The work demonstrated that successful control depended not simply on varietal tolerance but on understanding the interaction between the crop, the pathogen

and the farming system. Those studies provided the bridge to wider regional work that would occupy much of my time over the next eighteen months.

While the bacterial wilt programme was gathering momentum in Costa Rica, another opportunity was beginning to emerge. It would take me increasingly beyond the boundaries of Turrialba and eventually throughout Central America and the Caribbean. That opportunity was PRECODEPA – Programa Regional Cooperativo de Papa.

The rationale behind PRECODEPA was straightforward. Outside Mexico, potatoes were a relatively minor crop in Region II, and most national potato programmes consisted of only one or two scientists. Unlike maize or rice programmes, there were rarely specialists covering every discipline. The obvious solution was cooperation: if each country contributed its strongest expertise, the region could function as a single distributed programme rather than six small, isolated national programmes.

The concept was developed by John Niederhauser. During the latter part of 1977, after I had assumed regional leadership, John and I travelled extensively meeting ministers of agriculture, directors of research institutes and national programme leaders, explaining the proposal and encouraging their participation. The Swiss government expressed strong interest in supporting the initiative, giving the proposal both credibility and momentum.

Senior representatives from Costa Rica, the Dominican Republic, Guatemala, Honduras, Mexico and Panama joined colleagues from CIP and the Swiss Agency for Development

and Cooperation (SDC), in mid-April 1978 at a meeting hosted by the Guatemalan agricultural science and technology institute, ICTA. They agreed the framework for regional cooperation and the allocation of responsibilities. I was asked to coordinate PRECODEPA during its formative period, a responsibility I retained for approximately eighteen months.

Professionally the meeting was satisfying. Personally, I had one ear on the discussions and one on the possibility of a telephone call from Costa Rica. Steph was only a couple of weeks away from the birth of our first child, Hannah. She could not give birth in Turrialba and would have to travel to the Santa Rita Clinic in San José. Fortunately everything worked out perfectly. PRECODEPA was successfully launched and, shortly afterwards, Hannah was born.

Although we did not use the terminology then, PRECODEPA embodied many of the principles later associated with scientific consortia and regional innovation networks.

Once PRECODEPA had been established, the emphasis shifted from planning to delivery. CIP's principal contribution centred on potato seed production and the transfer of practical technologies that national programmes could adopt immediately.

Jim Bryan, the seed production specialist and close friend at CIP, had pioneered rapid multiplication techniques using stem cuttings, single-node cuttings and tuber cuttings. During 1979–1980 he spent about a year in Costa Rica, based in San José but travelling frequently to Turrialba and the potato-growing areas. Together we demonstrated that, starting from a single healthy tuber, it was possible through successive multiplication cycles

to produce approximately one tonne of healthy seed potatoes within a year.

The production of cuttings was carried out in Turrialba and combined research with intensive regional training. Scientists and technicians from PRECODEPA countries learned the techniques before returning home to establish similar systems. We also introduced other appropriate CIP technologies, including diffuse-light storage for seed potatoes, adapting them to Central American conditions.

At the same time I became involved in farmer-based research in the potato-growing areas of Cartago. Comparing farmers' normal practices with improved management showed that pesticide use, particularly against late blight, and fertiliser inputs could both be reduced substantially while maintaining or even increasing yields. The work was subsequently published and reinforced an important lesson: better science often means using resources more intelligently rather than simply using more of them. Even so, farmers were often quite reluctant to relinquish their long-held potato production practices.

By the end of the decade PRECODEPA had become much more than an organisational concept. It was a functioning regional network through which technologies, ideas and experience flowed between countries. Supported by the SDC for more than twenty-five years, it fostered collaboration among potato scientists across Central America and the Caribbean well into the early years of the twenty-first century, later including countries beyond the six founding programmes. PRECODEPA became recognised as one of the CGIAR's earliest and most successful regional research networks.

PRECODEPA proved to be as beneficial to CIP as it was to the national programmes. By encouraging countries to work together and share expertise, it allowed CIP's relatively small regional team and specialist scientists to concentrate their efforts where they could have the greatest impact, rather than trying to support each country in isolation. The result was a genuine partnership in which everyone benefited.

As I reflect on this pioneering agricultural research and development initiative, I remain quietly satisfied with the part I played in helping transform John Niederhauser's original vision into a functioning regional programme. PRECODEPA was always a collaborative achievement. John deserves immense credit for conceiving the idea, while much of my own work lay in helping negotiate, organise and establish the network during its formative years. As often happens with collaborative ventures, later accounts have tended to associate PRECODEPA primarily with John. That is understandable, since the original concept was his. My own role in turning that vision into an operational regional programme has gradually faded from the historical record. I cannot judge why that happened, nor do I wish to diminish John's achievements. I simply remain pleased to have made what I believe was a substantial contribution during those formative years. By then PRECODEPA was functioning independently, responsibility was passing increasingly into national hands exactly as we had hoped, my own bacterial wilt programme was well established, and the seed multiplication work was flourishing. By the middle of 1980, it felt the right moment to seek a fresh challenge beyond Region II.

Each December, the headquarters and regional staff met in Lima for annual planning meetings. Once our workplans and budgets had been approved, Ken Brown, as Director for Regional Research and Training, largely left us to get on with our work. I sent quarterly reports to him and to Ory Page, the Director of Research, but otherwise he intervened only when guidance or a correction was needed.

Ken possessed one of the driest senses of humour of anyone I have ever known. Beneath that quiet wit lay a thoughtful, generous and immensely capable leader. Throughout the years we worked together, he gave his staff considerable freedom, trusting them to exercise their own judgement rather than constantly looking over their shoulders. He managed with what I often thought of as a 'loose rein': always available when advice was needed, but never inclined to micromanage. Watching him lead taught me as much about managing people as it did about managing research programmes.

The meetings in Lima were about much more than workplans and budgets. For those of us based in the regions, they provided a valuable opportunity to exchange experiences, renew friendships and feel part of a much larger international enterprise.

At one of those annual meetings, probably in 1979, several presentations were devoted to the emerging technology of true potato seed, or TPS. The work was attracting considerable enthusiasm within CIP, and those of us in the regions were being encouraged to consider its immediate application. Having listened to the presentations earlier in the week, I remained unconvinced that the technology was sufficiently advanced for

use in Region II. I could foresee no practical application for it there in the immediate future.

On the Thursday afternoon, Ory Page opened the meeting for general discussion. I had spent some time wondering whether I should raise my concerns, but eventually put up my hand and explained why I believed that TPS was not yet ready for adoption in Central America and the Caribbean. Richard Sawyer was sitting among the staff immediately in front of me. When I finished and sat down, he stood up, turned to face me and, clearly angry, accused me of being a 'doubting Thomas'. I may have smiled at that point—Thomas is, after all, my middle name—but the humour did nothing to defuse the situation.

Richard's response was a 'red rag to a bull'. The argument was no longer simply about whether true potato seed represented a promising technology. It had become a question of whether CIP scientists were permitted to challenge the direction of a research programme and express doubts about its readiness for practical application. I said so, and the exchange became increasingly heated. Eventually Dr W Glynn Burton, the British scientist who chaired the CIP's Board of Trustees Program Committee, suspended the meeting. Richard stormed out, followed by Ken Brown, who apparently told him that it was unacceptable to speak publicly to one of his staff in that way.

During the enforced break, several colleagues approached me. Some agreed with the point I had raised, but more than one suggested that I had probably destroyed any future career I might have hoped to have with CIP. For the next couple of days, I heard nothing. Then, late one afternoon, Richard quietly came looking for me. He apologised for the way he had reacted and acknowledged that I had every right to question CIP's

research and its proposed application. The incident revealed another aspect of his character. Richard could react forcefully—sometimes too forcefully—but he was not too proud to admit when he had been wrong. Far from ending our relationship, the confrontation probably strengthened it.

Alongside my professional commitments in Costa Rica and regionally, Steph and I had been building a life at CATIE from the time we arrived in 1976. Our first house proved rather disappointing. We were allocated modest accommodation in an area known as *Ciento Nueve* (109), considerably inferior to that provided for comparable CATIE staff on the main campus. It took several months—and no little encouragement from colleagues in Lima—before CATIE eventually agreed to treat us on the same basis as its own internationally recruited scientists. We were then allocated one of the newer, more secure houses on the campus, where we finally began to feel settled. Creating a home involved much more than simply finding somewhere to live. Taking advantage of our duty-free import allowance, we ordered many household appliances through the Sears Roebuck catalogue in Miami. A few months later they arrived by air freight. We complemented these with furniture purchased locally and commissioned a carpenter in Turrialba to build a Swedish-style dining suite from the beautiful reddish hardwood known as cristóbal, which remained part of our home for almost forty years.

Living at CATIE was not all work and no play. And it was unlike anything we had experienced in Lima. Most staff and many students lived on the campus, so home and work became

closely intertwined. It took time to adjust to a community where almost everyone was a colleague.

However, the campus itself soon became home. The calls of toucans and Montezuma oropendolas from the trees overhead were an avian backdrop to our everyday life. Monkeys, armadillos, coatimundis and the occasional venomous snake were taken for granted. I reckon we must have seen about fifty species of birds in our own garden alone.

At weekends I often sat on the doorstep with binoculars and a bottle of well-chilled *Tropical* beer. There was always something to watch.

Among CATIE's international community of scientists and their families was Dr Jerry Lawrence, a British plant pathologist working on cacao diseases, and his Costa Rican wife Emma, who were preparing to welcome their first son, Kevin in 1976. Jerry was the younger brother of Mike Lawrence, who had taught me genetics during my MSc course at Birmingham and would later become a close colleague. Jerry and I soon became firm friends. An accomplished clarinetist and enthusiastic collector of classical LPs, he generously allowed me to copy many of his recordings during long evenings accompanied by cold beer. That friendship and others became an important part of life in Turrialba.

Hannah's arrival in April 1978 changed the character of our home completely. Only a few months later, after returning from home leave following almost twenty-four hours of travel with a young baby, we gradually realised that our house had been burgled while we were away. Discovering this while trying to settle Hannah for the night made the experience particularly unsettling.

In general, however, life on the campus remained fairly quiet. There was a club with a swimming pool, although we rarely used it. For a bit of added excitement, several of us from the UK persuaded a few other Europeans and Caribbean students to form a scratch cricket team. And, around August 1979, we organised an enjoyable match against the San José Cavaliers, a mixed British and Dutch team, followed by plenty of cold beer. We lost, but nobody seemed particularly concerned.

Although my work took me into many of the potato-growing regions of Costa Rica, allowing me to see rather more of the country than Steph did, we made the most of weekends and holidays together. One family holiday took us to Guanacaste on the Pacific coast, where Hannah, still a toddler, experienced the beach for the first time.

On another occasion I travelled with two British friends high onto Volcán Turrialba by jeep before completing the ascent on foot. Even then it was not an easy place to reach, and today access is no longer possible because of the volcano's later activity.

Perhaps the most memorable family holiday came in April 1980 when we visited the Monteverde Cloud Forest Reserve. It is renowned for its exceptional array of animals and birds including the elusive jaguar and the resplendent quetzal. The owner of the lodge where we stayed close to the reserve suggested that we should explore on horseback rather than walking the trails with a toddler. With Hannah in a pack on my back for part of the time, or sitting close to Steph, we enjoyed the cloud forest vegetation, hearing bellbirds calling in the distance, and did indeed catch fleeting glimpses of quetzals, making the trek worthwhile. Our euphoria was short-lived.

Returning to the lodge later that afternoon, the proprietor told us that CATIE had received a telephone call from England informing us that my father had died suddenly from a heart attack on Tuesday 29 April 1980. The news had been relayed through CATIE earlier that day. After returning to Turrialba I was able to speak with my mother before making the difficult decision whether to travel back to England for the funeral. The contrast between the delight of the morning and the sadness that followed has stayed with me ever since.

In the end I did not return to England for the funeral. It was not an easy decision. Events soon confirmed that it had been the right one. Only a week later Hannah became seriously ill, apparently with a severe stomach infection, and after consultation with her paediatrician she required injections every four or five hours until she recovered fully. Giving those injections myself remains one of the most difficult experiences I have faced as a parent.

By the middle of 1980 professionally and personally I had achieved much of what I had set out to accomplish in Costa Rica. Beyond Region II. I discussed my thoughts with Richard Sawyer and Ken Brown, explaining that I wished to move on, whether back to Peru or to another region.

In November 1980 we closed the programme in Turrialba. We flew to Panama, stayed overnight, and the following day travelled by KLM to Lima. I was back in Lima by the end of the month.

I fully expected that our future still lay overseas. The most likely destination appeared to be the Philippines, and Richard Sawyer and I had already begun discussing the practical arrangements

for such a move. Earlier possibilities, including Brazil, had come and gone, but I remained committed to continuing my career with CIP.

Then, quite unexpectedly, another opportunity presented itself.

The University of Birmingham advertised a newly created lectureship in Plant Biology. Several colleagues suggested that I should apply. With full support from Steph, I sent off my application.

In due course I learned that I had been shortlisted. There was, however, one significant obstacle. The university could not afford to pay the travel costs for overseas candidates. If I wished to remain on the shortlist, I would have to finance the journey myself. Steph and I discussed the situation carefully and decided that the opportunity was important enough to justify using our own savings.

In early 1981, probably in mid-January, I therefore made the journey to the UK at our own expense. I flew from Lima to Miami with Braniff International Airways and then crossed the Atlantic on Freddie Laker's Skytrain service from Miami to London Gatwick, before travelling by train to Birmingham. The innovative low-cost transatlantic service made the journey financially feasible and allowed me to attend the interview without placing an impossible burden on our finances.

Before making the journey, I had sought advice from Ken Brown, who encouraged me to speak with Richard Sawyer. His response remains one of the clearest demonstrations of his confidence in me and of his generosity as a leader. He told me that he believed Birmingham represented the right career move. At the same time, he removed any anxiety about the future. If I was unsuccessful, he said, a five-year contract would be waiting

on his desk for me to sign, enabling me to continue my career with CIP in the Philippines.

That assurance transformed the interview from a gamble into an opportunity. I travelled to Birmingham knowing that, whatever the outcome, Steph and I had a secure future. The interview proved successful, and I accepted Birmingham's offer. The university even agreed to meet some of my travel expenses. After a brief visit to see my mother, I returned to Peru retracing the same route by Skytrain to Miami and Braniff to Lima to tell Steph that another major chapter in our lives was about to begin.

The Philippines would have to wait another decade.





CATIE's main administrative building and a campus view towards Volcán Turrialba.



Steph beside the Volkswagen Brasília on the CATIE farm.



The first observational potato plot on the CATIE farm.



Mike recording the incidence of bacterial wilt in a field trial.



At the inaugural meeting of PRECODEPA, April 1978. Left to right around the table: Ken Brown, Mike Jackson, Richard Sawyer and John Niederhauser (all CIP); Ing. Carlos Crisóstomo (ICTA, Guatemala); and an unidentified participant.



Training in rapid potato-multiplication techniques in the CIP screenhouse on the CATIE campus. Jim Bryan is on the right.



Potato trials on Irazú Volcano with scientists from CIP, the University of Costa Rica and the Ministry of Agriculture.



Steph and Hannah during a family excursion to Volcán Poás—a quiet moment between a young mother and her daughter.



Steph and Hannah on horseback at the Monteverde Cloud Forest Reserve, during our search for the resplendent quetzal.

Epilogue

It was with decidedly mixed feelings that we left CIP and Peru in the second half of March 1981. During my final three months, Jack Hawkes had been in Lima, and the two of us made a short trip to collect wild potatoes in the mountains north of Lima. It was the first time I had actually been in the field with him. Just a couple of months later Jack would become my head of department at Birmingham, and that collecting trip gave us a useful opportunity to discuss some of the practical details of the position I was about to take up.

Just before we left Peru, CIP organised a small farewell party for us one evening. There was no lavish presentation, nor would I have expected one. I was given a rather fine pair of silver cufflinks embossed with CIP's potato-god emblem. I cannot remember what Steph received. The cufflinks, however, were a tangible reminder of the institution that had shaped the first eight years of my professional life.

The following weekend, Steph, Hannah and I boarded a Lufthansa DC-10 for the nonstop flight from Lima to New York. Hannah was then only a few months short of her third birthday. We spent a couple of nights in central Manhattan. Travelling via New York had a practical purpose. Our checking accounts were held at Citibank there, and I had arranged to close them personally—a procedure accomplished efficiently by the branch president herself. Afterwards, we had some time for sightseeing, visiting the top of the Empire State Building and Macy's, which Hannah found particularly fascinating.

Arriving at Heathrow from New York, we crossed London and took the train to Westcliff-on-Sea, where Steph's parents lived.

Steph and Hannah remained with them until July, while I began my new appointment at the University of Birmingham on 1 April. For the following three months, one of my new colleagues offered me his spare room, and at weekends I would return south to spend precious time with Steph and Hannah. The purchase of a new car was a high priority, accomplished shortly after our return to the UK.

The next step was finding somewhere to live in the Birmingham area. Before leaving Peru, we had asked estate agents covering areas to the south and west of the city to send property details to Steph's parents. After sorting through those, I took an afternoon off shortly after arriving in Birmingham and quickly found a promising house in Bromsgrove, a small market town in North Worcestershire, about thirteen miles south of the university campus at Edgbaston. I asked Steph to come to Birmingham the following day. We viewed two or three other properties together and agreed that the house in Bromsgrove was the right one for us.

After arranging a mortgage, we received the keys at the beginning of July. Our personal belongings, which had remained in storage in Costa Rica for the previous seven months, were finally delivered, and we moved into our new home. Almost immediately, however, I had to leave for a university field course in Scotland. It was a disruptive beginning, and settling back into the UK proved to be a process rather than a single homecoming.

When I accepted the Birmingham position, I had no definite plan to continue working on potatoes. I had been appointed primarily to fill the anticipated gap in teaching after Jack retired in September 1982. During that first summer term, however, I

gave only one or two lectures in taxonomy to second-year undergraduates. The rest of the time was spent becoming accustomed to university life and considering what direction my own teaching and research might take.

At the time, Birmingham appeared to represent a new beginning. Only later did I understand that it was also another link in a chain that still led back to Peru. I had left CIP and returned to the UK, but the potatoes, the people and the professional relationships formed during those years had not finished with me.

Looking back, my ten years at Birmingham seem less like the beginning of a conventional academic career than an interlude between two periods of international agricultural development. That does not mean that the years were unimportant or unproductive. They brought professional opportunities, a growing family and friendships that have lasted throughout my life. Philippa was born at the end of May 1982, and as she and Hannah grew, family holidays became an important part of our life together.

Most of my teaching was associated with the CUPGR MSc course—the course on which I had myself been a student in 1970–1971. I taught crop evolution, germplasm collecting and the study of agroecosystems, and contributed to the data-management module. I supervised MSc dissertations and became the short-course tutor, responsible for scientists who came from around the world to study selected parts of the course without taking a formal qualification. By the time the MSc course eventually closed twenty years later, students from well over one hundred countries had studied at Birmingham.

I took my responsibilities as a personal tutor very seriously. Supporting undergraduates through their three years at the university was, for me, one of the most important and satisfying parts of the job. I hope that, at an important stage in their lives, I gave them confidence to continue and grow in their chosen studies. Two of my former tutees eventually became Fellows of the Royal Society. I claim no credit for what they achieved.

My research developed in several directions. Work with the MSc students drew me back towards the wild potato species, but I also renewed my earlier interest in grain legumes. This included research on beans, and more particularly, pioneering work on grass pea, a *Lathyrus* species that is a famine crop in some parts of the world. It is work that continues to be cited. The range of subjects reflected the breadth of my interests and the freedom I initially had to decide how my academic work should develop.

Peru and CIP nevertheless remained close. My first major collaborative potato project investigated whether single seed descent at the diploid level might contribute to the development of true potato seed. At the time, attempting to breed through inbreeding in a normally self-incompatible crop was distinctly unconventional. The project was supported by CIP and funded through the UK's overseas development programme, in collaboration with Dr Alan Thompson at the Plant Breeding Institute (PBI) in Cambridge. Dr Lynne Taylor, who graduated from the University of St Andrews, joined the project as the postdoctoral researcher.

Quarantine regulations surrounding the Hawkes wild potato collection prevented other potato research from being conducted at Birmingham, so the project was initially based at

PBI. It continued there for three years and was renewed for a further three. However, when PBI was privatised in 1987, the work had to return to Birmingham and a new glasshouse was constructed there. By then I had already relinquished the Hawkes collection, which was transferred to the Commonwealth Potato Collection in Scotland.

By the project's fifth year, the research had encountered a biological barrier that could not be overcome without considerably greater resources. We reported the position openly and, with the agreement of the funding agency and CIP, brought the project to a close. It had not achieved everything we had hoped, but it produced useful information from an approach that, in retrospect, was well ahead of its time. Knowing when to stop was as much a part of scientific judgement as knowing when an unusual idea was worth pursuing.

The project took me back to Peru several times. On one visit, *El Comercio* reported that a crowd had gathered at Jorge Chávez Airport after rumours spread that Michael Jackson had arrived in Lima, only to discover that the visitor was a British businessman rather than the pop star. The misunderstanding followed me to San Ramón, where children gathered outside our hotel chanting that they wanted Michael Jackson. When I appeared, their disappointment was evident.

Among the graduate students I supervised were two Peruvians who completed doctorates through arrangements resembling the one that had enabled my own PhD. René Chávez had begun his studies under Jack Hawkes but became my responsibility after Jack retired. His research used wide crosses to transfer resistance to potato pests and diseases from wild species of

potato. Carlos Arbizu studied resistance to virus diseases in wild potatoes. Each spent time at Birmingham, undertook the main research at CIP in Peru, and returned to Birmingham to complete and defend their theses. Both have since died, which gives those memories an additional poignancy.

Other projects renewed earlier friendships. Professor Brian Ford-Lloyd and I had been graduate students together, and we investigated whether somaclonal variation could produce improved potatoes for crisp production in research commissioned by my old friend John Vessey, who was by then working as a project manager for United Biscuits in the UK. John also brought me into a proposed cacao conservation project in northeastern Peru. The consultancy took me through Tarapoto to Iquitos, where we crossed the Amazon in a small boat to search for cacao trees collected in the 1930s and 1940s by the British botanist F. J. Pound. A later feasibility study to Tarapoto included John, his managing director, and cacao specialist Tony Lass. The project never proceeded however because narco-trafficking and terrorist activity made the region increasingly unsafe.

Around 1988, my former boss at CIP, Ken Brown, recommended me as a member of a review team for a three-week review of a Swiss-funded seed potato project in Peru. Our team visited La Molina, Huancayo, Cusco and Cajamarca, meeting project staff, farmers and cooperative groups. We concluded that the project had been highly successful and recommended a second phase. The report was written in Spanish, and I gave the verbal report to CIP staff in Spanish—a long way from the young man who had arrived in Lima unable to order breakfast. The second phase was approved, but the rise

of the *Shining Path* terrorist group made travel through the highlands too dangerous, and the project was eventually abandoned.

Birmingham therefore did not sever my relationship with Peru. Potatoes returned through research, Peruvian students followed the same path between CIP and Birmingham that I had taken, and consultancies brought me back to parts of the country I had never previously known. Even when individual projects failed to reach their intended conclusion, they extended relationships and taught lessons that would prove valuable later.

Nor were the Birmingham years a professional failure. I was committed to my teaching, my students and my research. Yet by the end of the 1980s, the sense that my future might lie elsewhere was becoming difficult to ignore. I did not yet know it, but another international journey was about to begin.

There were several reasons for that uncertainty. I had twice applied unsuccessfully for promotion to senior lecturer, although by October 1990 I had reached the senior-lecturer salary scale without formally being accorded the status. More important than the promotion itself was my growing dissatisfaction with the direction of British higher education under Margaret Thatcher's government. Biology was moving rapidly towards molecular approaches in which I had little experience, and I could see few opportunities to attract the funding needed to establish myself further in my own field.

Then, in September or October 1990, I received an anonymous piece of mail. It contained nothing except a flyer advertising a new position at the International Rice Research Institute—IRRI—in the Philippines. IRRI was seeking a head for a new Genetic

Resources Center (GRC) that would bring together the International Rice Germplasm Center, the International Network for Genetic Evaluation of Rice (INGER), and the Seed Health Unit. I had never managed a genebank, and I knew little about rice. But the position brought together genetic resources, international agriculture and management in a way that immediately caught my attention.

Steph was understandably less enthusiastic about another move overseas. Hannah and Philippa were approaching important stages in their education, and returning to the UK had been intended to provide some stability. Nevertheless, after considerable discussion, I submitted an application. I was shortlisted and invited to IRRI for interview in early January 1991.

The journey to Manila was not an auspicious beginning. I stayed overnight with my former CIP colleague Brian Honess, close to London Gatwick. A fault with the British Airways aircraft assigned to our flight meant waiting for an incoming plane from Florida to be unloaded, serviced and reassigned to us. The delay was about ten hours. Instead of reaching Manila with time to recover before the interviews, I arrived at about one o'clock in the morning and had to be ready for my first meeting at breakfast, only a few hours later.

The interviews lasted three and a half days. I met Klaus Lampe and the Institute's deputy directors general, including Hubert Zandstra, who was shortly to become Director General of CIP in succession to Richard Sawyer. There were panel interviews, meetings with scientists and a seminar, about genetic conservation and use of potato germplasm in breeding. I met some impressive people and one or two who impressed me

rather less. At the end of it all, I simply returned to Manila airport and flew back to the UK. The whole interview process contrasted sharply with my experience at CIP twenty years earlier.

There was an extraordinary connection among the three shortlisted candidates. All of us held both MSc and PhD degrees from the University of Birmingham, and all had been supervised by Jack Hawkes. Dave Astley had been Jack's research assistant during the 1970s. Quat Ng, then head of the genebank at IITA in Nigeria, had undertaken research at IRRI under the former head of its genebank, Dr T. T. Chang, and was widely regarded as the leading candidate. Unusually, our visits overlapped, making the Director General, Klaus Lampe, rather uneasy. We told him that if the candidates themselves were not troubled by the arrangement, he need not be either.

Towards the end of January, Klaus Lampe offered me the position and named the salary. I asked him to increase the offer considerably. Only then would I consider joining IRRI. I did not receive an immediate response, but he nevertheless soon agreed. I also made it clear that my acceptance also depended on the position including a research component. Conservation without research did not appeal to me. There was one further development. By the time the offer was made, the Seed Health Unit had wisely been removed from the Genetic Resources Center portfolio.

After much soul-searching, Steph and I agreed that I should accept. IRRI wanted me to begin on 1 April, but I could not abandon my third-year students before their final examinations. Lampe accepted a delayed starting date of 1 July instead. I did however represent IRRI at a meeting of the FAO *Commission on*

Plant Genetic Resources in Rome in April. It was my first taste of the international politics of genetic resources, something that would occupy—and frequently exasperate—me for much of the following decade.

I resigned from Birmingham and moved to the Philippines alone on Sunday, 30 June 1991. Steph, Hannah and Philippa remained in Bromsgrove until shortly after Christmas. We decided neither to sell the house nor to rent it. It would be our bolt-hole if the IRRI appointment failed or circumstances forced us to leave the Philippines. For the next nineteen and a half years, we reopened the house during annual home leave and closed it again when we returned to Asia.

We returned to campus life and were allocated a comfortable house. One of Steph's conditions for moving was that she should have domestic help, and throughout our years in the Philippines we employed a live-in helper, giving Steph the freedom to pursue her own interests.

The most difficult question concerned the girls' education. Hannah and Philippa were thirteen and nine in 1991, and we took them out of the British system and enrolled them at the International School Manila. Both later achieved strong results in the International Baccalaureate. Hannah began studying psychology and anthropology at Swansea University in the UK before transferring to Macalester College in St Paul, Minnesota, where she graduated *summa cum laude* in 2000. Philippa studied psychology at Durham University and graduated with a 2:1 degree in 2003.

Both went on to complete doctorates in psychology—Hannah at the University of Minnesota and Philippa at Northumbria University. Hannah eventually became Vice President for Talent

Acquisition with one of the largest Fortune 500 companies in the USA, based in St Paul, while Philippa became Professor of Biological Psychology at Northumbria University in Newcastle upon Tyne. Far from disadvantaging them, the move to the Philippines may have been the making of them. Their school was disciplined and genuinely international.

Asia was new to me. Apart from the interview and an earlier conference in Indonesia, I had no experience of the region. Culturally it was very different from Latin America, although there was less pressure to learn the local language because English was used throughout the Institute. The move represented a leap into an unfamiliar crop, continent and level of responsibility. I was leaving a lectureship for the management of a large international programme and staff whose work was central to the future of rice research. Yet I did not make the move without preparation. The lessons absorbed in Peru—about science, people, judgement and responsibility—would prove more relevant than I could then have imagined. I arrived in the Philippines on 1 July 1991, alone, and that first night was an emotional one as I wondered whether I had made the right decision. As it turned out, I had.

IRRI was the oldest of the international agricultural research centres and was already well established, but it was also undergoing renewal under Klaus Lampe. Staff were changing and funds were available for major refurbishment of its ageing infrastructure. Some of the staff I had met in January were no longer there.

I arrived at IRRI as head of the new Genetic Resources Center, with day-to-day responsibility for the genebank and oversight

of INGER. The arrangement was not without complications. My Indian colleague, Dr Seshu Durvasula, an older and highly regarded plant breeder who ran INGER, never really accepted that he now reported administratively to me. He had his own budget and had long operated independently. Managing that relationship required patience, as well as firmness. He left IRRI within the year and was succeeded by another Indian rice breeder, Dr Ram Chaudhary, who transferred from IRRI's country programme in Cambodia.

The management principles I brought with me were largely those I had absorbed from Ken Brown and Roger Rowe at CIP: be firm and fair, trust people to do the right thing unless they prove otherwise, and be prepared to take difficult decisions when necessary. I am an optimist by nature, but optimism does not mean avoiding responsibility. It means giving people the opportunity and support to succeed, while remaining clear about what is expected of them.

For my first six months, I asked many questions but made few decisions. I needed to understand the genebank, its people and its procedures before attempting to reorganise anything. I soon discovered that my predecessor, Dr Chang, had controlled almost every detail. Staff had been expected to follow instructions rather than exercise initiative. The consequence was a great deal of wasted time and an organisation that depended too heavily on one individual.

I sought opinions and expected changes to be thoroughly discussed. At the end of the process, however, the final decision would be mine, and I accepted responsibility for it. The same principle applied to the staff. Those who wanted greater authority also had to accept accountability. If a mistake was

acknowledged, it could usually be corrected; if it was concealed, it could become much more serious. The five words that mattered most in daily management were 'please', 'thank you' and 'well done'. Recognition, particularly when expressed in front of colleagues, could be as valuable as a monetary reward.

Genebank infrastructure also required attention. The genebank was regularly described as 'the jewel in IRRI's crown', and I told Klaus Lampe that if the Institute wanted it to remain so, it would have to invest in a programme of refurbishment. Screenhouses used for the wild rices were upgraded, the operation of the seed-storage rooms was reorganised, a seed-drying room was constructed and the seed-testing laboratory was refurbished. These were not glamorous changes, but they made accurate and efficient conservation possible.

After extensive discussion with the staff, responsibilities were redistributed. One person, Pola de Guzman, became genebank manager. Two others, Ato Reaño and Tom Clemeno, took charge of field operations, and another, Soccie Almazan, became curator of the wild rice species. Professional staff were given distinct areas in which they could exercise judgement and develop expertise. The data-management group, comprising Adel Alcantara, Vangie Guevarra and Myrna Oliva, had previously spent their days working at computers in quite unsuitable conditions. They received individual workstations and more powerful computers, with sufficient room for both the equipment and the documentation they constantly needed to consult in order to work efficiently.

We also produced a genebank manual, something no other CGIAR genebank had done at that time, as far as I knew. My reasoning was simple. If I left the next day, there should be a

document explaining exactly how the genebank operated. Others might later decide that a procedure should be changed, but they would at least know what the procedure had been and why. I had inherited nothing comparable when I arrived.

The value of the changes was confirmed during an external review in the mid-1990s. IRRI's genebank received a five-star rating and was identified as 'a model for others to emulate'. I was pleased by the recognition, but more important was the way the staff had responded. Once they were trusted with real responsibility, they demonstrated just how much they could achieve. We had come a long way since my arrival in 1991, but that did not imply that further progress and changes were unnecessary.

The hardest decisions always concerned people. At times IRRI's budget declined and staff positions had to be lost. I protected jobs where I could and looked for imaginative ways of deploying people, but I could not avoid every reduction. A few internationally recruited scientists behaved as though their appointments were permanent and their performance beyond question. I did not have the authority simply to dismiss them, but on more than one occasion I encouraged someone to seek greener pastures because his continued presence was preventing the programme from moving forward.

Alongside these organisational changes, we began research on the diversity of the wild species most closely related to cultivated rice. This was led by a Chinese scientist Dr Lu Bao-Rong, who also collected wild rice in several countries. Other research focused on seed conservation and physiology, and on the effects of the growing environment on seed quality and longevity. Two of my staff, Amy Juliano and Yvette Naredo,

took on research roles among the national staff. Some of the seed research was carried out with the University of Reading, with the support of a postdoctoral scientist, Dr Kameswara Rao from India. A DFID-funded collaboration with former colleagues Brian Ford-Lloyd and John Newbury at the University of Birmingham introduced molecular markers into our work. This maintained my links with Birmingham for several years and was pioneering in the context of genebank management at the time. I had an honorary senior lectureship there during those years.

During the 1990s, an increasingly polarised debate developed around *ex situ* and on-farm conservation. Some advocates of *in situ* approaches appeared to suggest that genebanks could be closed. I never accepted that one could replace the other. I saw them as complementary. Agriculture begins on the farm with farmers—and, in rice agriculture, often with women farmers and their husbands. Women frequently made the decisions about varieties and seed, while men provided much of the heavy labour. Any serious study of crop diversity therefore had to consider human behaviour alongside genetics.

With support from the Swiss government, we developed a major rice-biodiversity project with three linked components. I appointed Ms Eves Loresto, the most senior of the Filipino staff, as Project Scientist and asked her to help manage it. She also led training courses on germplasm conservation in Madagascar, Bhutan and Cambodia, among other countries. More than 200 scientists from countries across Asia and Africa received training—mostly through in-country courses—in germplasm collecting and conservation, and in data management. A large collecting programme added between 25,000 and 27,000

samples to the IRRI genebank, increasing its size by roughly 25 per cent, with an especially substantial effort in Laos. One of my staff, Dr Appa Rao, led the germplasm-collecting programme there. Finally, a French population geneticist, Dr Jean-Louis Pham, and a social anthropologist—first Dr Mauricio Bellon, then Dr Stephen Morin—worked side by side to investigate what on-farm conservation meant in both genetic and human terms. Bringing those disciplines together was a novel approach and, I believe, an important one.

The complementarity of the two forms of conservation was demonstrated after a typhoon devastated one season's agriculture in northern Luzon. Because local varieties had already been conserved in the genebank at IRRI, they could be returned to farmers who wished to receive them. Some did; others chose to continue with modern varieties. The point was that the genebank preserved options. By the end of the decade, however, genetic resources had become increasingly politicised through international negotiations and the developing *International Treaty on Plant Genetic Resources for Food and Agriculture*. More and more of my time was being drawn away from rice itself, and another change in direction was approaching.

Throughout those years, Peru never disappeared from my professional life. From 1993 to 1995, I chaired the CGIAR's *Inter-Center Working Group on Genetic Resources*, which brought together those responsible for the genebanks across the international centres. One of our meetings took me back to Lima, where I handed the chairmanship to my successor. We also travelled to Huancayo to see the germplasm collections. On that visit, for the first time, I suffered badly from *soroche*. After

all my earlier journeys through the Andes, altitude sickness had finally caught up with me.

Quite unexpectedly, in 2001, IRRI's then Director General, Ron Cantrell, asked me to leave the Genetic Resources Center and join IRRI's senior management team. He wanted me to become Director for Program Planning and Coordination, a title that later became Director for Program Planning and Communications (DPPC). After considerable discussion, I left the genebank on 1 May 2001, after almost ten years. My task in DPPC was to bring order to chaos: to establish what research IRRI was undertaking, who was undertaking it, which donors were funding it, and how we could increase IRRI's budget. In many respects, accepting the DPPC position was one of the best decisions of my career.

I inherited a small programme-planning group whose members had been in post too long and were unwilling to contemplate any way of working other than their own. However, I was allowed to rebuild a new team and recruited people from elsewhere in the Institute whose abilities I had noticed. Most importantly, I persuaded Ms Corinta Guerta to leave her soil-chemistry research behind and take on unfamiliar administrative responsibilities. She responded magnificently.

I approached the portfolio rather as I had approached the genebank. Every project was like a genebank accession, each with its own information that had to be accurate, retrievable and connected. We gave a unique identification number to each project, linking the scientific, contractual and financial records. My colleagues in the finance department initially resisted adopting this approach, since they relied simply on abbreviated

project titles to identify each one, and we could spend an extraordinary amount of time discovering whether our two offices were even discussing the same project. Once the value of the unique identifier became clear, it transformed the way information could be connected across the Institute.

Donor relations were equally important. In 2001, several donors were at their wits' end with IRRI. Reports arrived late, or not at all. Information was inconsistent, and the Institute was in danger of losing its hard-earned reputation as one of the CGIAR's leading institutes. Within nine months, however, we had begun to restore donor confidence. We knew who our donor contacts were, what information they required and when they expected to receive it. I visited donors regularly, particularly in Europe, and made sure that DPPC was their principal point of contact at IRRI.

Documents leaving DPPC acquired a consistent identity. Consequently, any proposal or report landing on a donor's desk would be immediately recognisable as an IRRI document, with the same 'branding'. This was more than cosmetic. It demonstrated that the Institute understood its obligations and could be trusted to meet them. By the time I retired in 2010, IRRI's annual budget had risen to more than $60 million.

I should clarify that I did not decide what research IRRI carried out; that remained the responsibility of the Deputy Director General for Research. My role was to understand the research portfolio, ensure that proposals and projects fitted coherently within it, engage with donors, provide the information they needed, and seek additional financial support. The distinction mattered. I was not directing the science, but I was helping to

create the conditions in which the science could be supported and delivered.

The position brought together much of what I had learned about leadership and management. I had always tried to treat people with dignity and courtesy, to listen before deciding, and to give capable colleagues room to act. At DPPC, those principles operated across the Institute rather than in one centre. The systems were important, but systems achieved nothing without people who understood their purpose and took pride in making them work. The members of my small team were outstanding and delightful colleagues to work alongside: Corinta, Yeyet Enriquez, who replaced Sol Ogatis, Vel Ilao, and Eric Clutario, who built our online project-management system. In both the genebank and DPPC, I was also fortunate to have extraordinary secretarial support from Sylvia Arellano and Zeny Federico. They took care of the administrative detail so effectively that I was free to concentrate on the work I was there to do. They were absolutely superb.

By 2005, the confidence that senior management placed in me was reflected in a much broader role in managing the Institute. I had acquired line-management responsibility for Communication and Publication Services, IT Services, the Development Office and the IRRI library.

Throughout my years at IRRI, I also tried to keep work and private lives separate, difficult though that could be on a residential campus. Soon after I first arrived, I went to my office on a Saturday and found the secretaries and research assistants there. They explained that Dr Chang had expected them to attend on Saturdays and Sundays. I told them to go home and be with their families. If someone chose to work at the weekend,

that was a personal decision; I did not expect it. Before long, we had organised a Saturday-afternoon bowling league with the national staff instead—a reflection of my own introduction to bowling in Lima in 1973.

The Philippines also gave me an important life beyond the Institute. I became an accomplished PADI open-water scuba diver and completed more than three hundred dives, most of them around Anilao, about ninety kilometres south of Los Baños. Steph preferred snorkelling, and we endeavoured to escape to the coast roughly once a month. Diving never became quite an obsession, but it was a major part of my life and a valuable counterweight to the demands of work. There are no phone calls or emails at one hundred feet below the surface of the sea.

In 2009, as another three-year contract approached, the then Director General, Bob Ziegler, asked me to remain for a further three years. I declined, but agreed to stay for one final year to see through IRRI's fiftieth-anniversary celebrations, which began in December 2009 and continued into 2010. I retired on 30 April 2010, and Steph and I returned two days later to the house in Bromsgrove that had remained our British home throughout the previous nineteen and a half years.

On 18 November 2011—my birthday—I was working outside when the postman handed me an official-looking envelope rather than putting it through the letterbox. Inside was an invitation to accept appointment as an Officer of the Most Excellent Order of the British Empire (OBE). I had to keep the news confidential until the New Year Honours were announced in the London Gazette on 31 December.

When the list was published, I discovered to my delight that my close friend and former IRRI colleague John Sheehy had also received an OBE. Our awards appeared in the diplomatic list, so I assume that IRRI and the British Embassy in Manila were involved in the nominations, although I never learned who had initiated either nomination or prepared the cases. On 29 February 2012, Steph and I travelled to London, where Philippa joined us for the investiture.

Also with us was Corinta, my former deputy in DPPC, who had succeeded me as director. She had entered IRRI decades earlier as a research assistant, and her rise to become the first Filipino to progress from that level to a directorship was a source of particular satisfaction. I received the OBE from the Prince of Wales, now King Charles III. Receiving the OBE brought home how profoundly the lessons first learned at CIP had shaped my later contribution at IRRI.

Retirement did not immediately bring an end to my involvement with IRRI. With the help of a small team I coordinated the scientific programmes for the 2010 and 2014 International Rice Congresses, held in Hanoi and Bangkok, respectively. Each brought together several thousand participants. The work continued the programme-planning role I had undertaken before retirement, but without the daily responsibility of life inside the Institute.

In 2016, the CGIAR's Independent Advisory and Evaluation Service asked me to lead a review of the CGIAR's Genebank Program, the network of genebanks, and the wider scientific and governance arrangements surrounding them. Having broken my leg that January, I was not sure I could undertake

such a commission. However, I recovered sufficiently to take on the task from April.

Brian Ford-Lloyd joined the review team, together with a Spanish colleague, Dr Marisé Borja. The work took us across several continents. I visited CIP, CIAT and CIMMYT with Marisé, while Brian and I travelled to ICRAF and ILRI in Nairobi, and to ILRI's campus in Ethiopia where its genebank was located. Brian and I joined the annual genebank meeting in South Australia—a long way to travel for just three days' work. Drawing on all those visits, we produced our final report, which was, I think, as well received as such reports generally are.

Returning to CIP in 2016 was both familiar and strange. The Institute was much larger and more bureaucratic, and its facilities had developed substantially. A few members of the national staff remained, including Alberto Salas, who had worked closely with Carlos Ochoa as his field assistant and had become a recognised expert on wild potatoes in his own right. Carlos himself had already died. Apart from those few familiar faces, I knew almost nobody. In many respects, it felt like arriving at a new organisation rather than returning to the place where my career had begun.

That sense of discontinuity was inevitable. I had been twenty-four when I first arrived in Peru in January 1973; by 2016, I was approaching seventy. My life had moved on through Birmingham, the Philippines and an international career that I could not possibly have imagined as a young scientist. CIP had changed just as profoundly. Yet beneath the institutional changes, there remained a strong thread connecting the two visits.

One of the most tangible links is CRUZA 148. It never became the variety we once hoped it might, but it was an important part of my scientific development and one for which Ory Page gave me considerable credit. The material found a continuing use in research on bacterial wilt. I was fortunate enough to recognise its significance, but I was also someone who set out to investigate systematically what it could reveal about the disease in the tropics. Its greatest value lay in the questions it allowed us to ask and answer.

That experience reflected a broader pattern in my career. At school, I studied geography, biology, English literature and general studies. My university degree combined environmental botany and geography, and the MSc in plant genetic resources ranged across an equally wide field. Only with my doctoral research on the evolution of triploid potatoes did I narrow my attention to one particular problem. Even then, the broader perspective never left me.

All the research and management I undertook reinforced the importance of interconnections: between crops and environments, conservation and use, genetics and human behaviour, projects and finance, institutions and individuals. A genebank accession had meaning only when the information around it could be understood and connected. A research programme succeeded only when the science, the people and the support systems worked together. The same principle ran through potatoes, rice and the management of an international institute.

The leadership principles were never taught to me as a formal discipline. I learned them by observing how people behaved and what followed from their behaviour. In Peru, I saw how

Ken Brown and Roger Rowe combined authority with fairness and how they took difficult decisions without unnecessary confrontation. Later, I tried to apply the same standards: trust people, listen to them, recognise good work, insist on accountability and treat everyone with dignity and courtesy.

But Peru means more to me than professional development. It is an extraordinarily beautiful country, from the Pacific coast to the high Andes and the lowland rainforests beyond. I remember the farmers in the mountains as gentle people, living and working in landscapes that could be both magnificent and unforgiving. I remember colleagues, journeys, potatoes and discoveries, but also friendships, music, family life and the everyday experiences through which a foreign country gradually became familiar.

Leaving CIP did not mean leaving behind the friendships formed there. The institutions and countries changed, but many of the friendships made in Peru endured. After Jim and Jeanne Bryan retired to Seattle, Steph and I visited them there, and on one journey home on leave from the Philippines we deliberately routed ourselves through the United States so that we could celebrate their golden wedding anniversary with them. Whenever my travels through the USA made it possible, I called in to see them, and we corresponded frequently for the rest of their lives. I also remained in touch with Ken Brown by email until his death in 2025.

Other connections endured in different ways. I met Richard Sawyer again on one or two occasions in Washington, D.C., and he took evident pleasure in seeing how my career had developed at IRRI. I still hear from María Scurrah, now living in

Australia, from time to time, while contact with John and Marian Vessey has continued more quietly through the annual exchange of Christmas cards, although we have not seen one another for many years. Roger Rowe has remained an even more frequent presence. During his later career with ICLARM—later the WorldFish Center and based in Manila until 2000—our paths crossed many times in the Philippines when he visited. Most recently, in 2023, Steph and I met Roger and Norma in La Crosse, Wisconsin.

When Steph and I left Lima in March 1981, we believed that one chapter of our lives had ended. In fact, Peru continued to reappear—in research projects, Peruvian students, consultancies, international meetings and, finally, the genebank review that brought me back to CIP forty-three years after my first arrival. I had left the country, but I had never entirely left the work or the relationships that began there.

Everything that followed can, in some measure, be traced back to 4 January 1973: the potatoes, Birmingham, rice, the Philippines, leadership at IRRI and the OBE. Peru gave me the opportunity to become a scientist, but it also taught me how science is carried forward by people, institutions, trust and chance.

Peru remains a country to which, given the opportunity, I would return tomorrow.





Left: Steph and Hannah at our home in Bromsgrove, Christmas Day 1981, when Steph was pregnant with Philippa. Right: Steph with newborn Philippa and her elder sister Hannah, 30 May 1982.



Professor Trevor Williams (Director General of IBPGR) with former MSc students returning to Birmingham for the course's twentieth anniversary, 1989. Carlos Arbizu is in the centre wearing the pale sweater.



Left to right: a Peruvian agronomist, Mike Jackson, César Vittorelli (CIP liaison), a Swiss economist, and Carlos Valverde (review leader).





Transition to IRRI: first encounter with a rice paddy in July 1991 and the formal welcome for Mike and Steph in early 1992.





Left: with genebank manager Pola de Guzman in one of the genebank coldrooms. Right: GRC staff visiting PhilRice around 1996.



Dr Seepana Appa Rao collecting rice germplasm with local farmers in Laos.



Mike with his DPPC team on his final day at IRRI before retirement, 30 April 2010.



Receiving my OBE from the Prince of Wales—now King Charles III—at Buckingham Palace, 29 February 2012 (© Buckingham Palace and British Ceremonial Arts); afterwards with Philippa and Steph.



Delivering the welcoming address at the International Rice Congress in Bangkok, 2014, as chair of the congress science committee.





Left: the CGIAR Genebank Program review team. Left to right: Jenin Assaf (Evaluation Unit), Marisé Borja, Brian Ford-Lloyd and Mike in Bonn for a visit to the Crop Trust. Right: Mike with Alberto Vargas at CIP.



Mike and Steph with Norma and Roger Rowe beside the Mississippi at La Crosse, Wisconsin, 2023.

Plates

What follows is a small selection from the many photographs I took during my years in Peru. These seven plates reflect much of what I found so enchanting about that beautiful country: its landscapes, people and culture.







Scenes from Pisac market, December 1973.







Potato production: top - preparing a field in Puno, southern Peru; left - farmers using traditional foot-plough near Huanuco; right - a potato field scene near Cuzco.







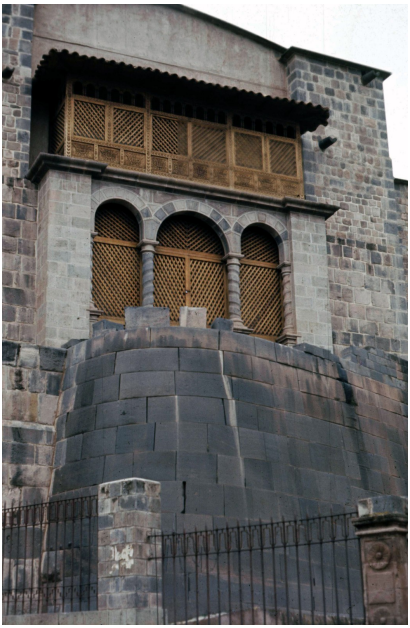
Scenes around Cuzco.



Machu Picchu.







Inca masonry at Sacsayhuaman and Coricancha sun temple in Cuzco.







Top - in a Cajamarca market; left - craft fair in Lima; right - seller of carved gourds.







Some examples of the diverse Peruvian flora, including high altitude cactus, a begonia species near Cuyo-Cuyo, and along the River Chanchamayo between San Ramon and La Merced.