Mountains My Lab

Jim Milledge

2017

Introduction

These memoirs were written over a period, during the later years of my retirement. They are intended, in the first place, for my children, and family. If other friends find them of interest that is, for me, a bonus. At my age, I feel I cannot face the hassle of trying to get them published for a wider audience but would be happy should anyone want to use the material for some wider publication.

So, I intend to distribute it by e-mail or DVDs of the work, to my family and a few friends.

I must acknowledge the help and support of a number of people who have helped in this modest enterprise. First, to Harriet Tuckey, a friend, made during the years that she was writing her wonderful biography ("First On Everest") of my friend and teacher, Griffith Pugh, her father. She read and commented on most of the chapters. To Erica Neustadt, who did the same for some chapters. My cousin Jill Inskip did the same, especially for the earlier chapters dealing with our shared childhood. Finally, my grateful thanks, to my wife, Pat Howell, for her patience and support during these years.

Editors note:
This version has been made into a PDF. The contents are:

Chapter 1

Beginnings, Childhood and School Days

Forbears

Aunty Nansi used to say, "Jim was born on holiday and has been on holiday ever since!" I was to have been born in Tianjin, a big industrial city in North China, in September 1930 after my parents had finished their seaside holiday at Bai Dai Hu but wishing not to miss out, I arrived a month early.

My father, Geoffrey was a medical missionary with the London Missionary Society. His father had been an ordained missionary in Madagascar and my father was born there in 1904. However, my grandfather died when Dad was only four and he, his mother and elder sister came back to England. Later his mother returned after a few years to teach in the mission girls' school in Antananarivo, as she had done before her marriage. In the 1919 influenza epidemic, his sister died and just after he qualified in medicine at Edinburgh, his mother died of cancer. They and a couple of maiden aunts brought him up mainly in his maternal grandparents home in London.

My father's maternal grandfather, James Sibree, after whom I was named, was a well-known missionary and polymath who served in Madagascar for 50 years. He was principal of the Theological College in Antananarivo and a prolific writer in both English and Malagasy. He originally went out to Madagascar in 1863 as a Master Builder on a three-year contract, to build four churches in memory of Malagasy Christian martyrs. He had to clear the sites, quarry the stone, teach the masons to dress the stones and supervise the building as well as design the churches. He also leant the language, preached and taught Sunday school! He completed two churches, built most of a third and made preparations for the fourth. On coming home he went to College, was ordained and returned with his bride to Madagascar for the rest of his working life. He died a year before I was born, having been knocked down crossing a road leaving the British Museum where he was still working on a book at the age of 93. (See fig 1.1)

Fig 1.1. *James Sibree and family. May, my paternal Grandmother left. Aunt Elsie Right*

My mother, Miriam was one of four children of Gwilym and Annie Thomas. Gwilym hailed from Bargoed, South Wales. His father was a smallholder and he had seven brothers and one sister (or, as he used to say with a twinkle in his eye, "seven brothers and a sister each"). He left school at 12, as was usual in those days and got a job in a grocery store. However, he couldn't reach the top shelves and was sent home "to grow a bit more"! Later he gained entry to Bala-Bangor Theological College in North Wales and his first church was a small Congregational chapel in Arthog, a village across the estuary from Barmouth. Here he met and married Annie Roberts, daughter of a local farmer.

Fig 1,2 Thomas family, Emrys, Annie Thomas, Nansi, Alun, Miriam, Gwilym Thomas. Arthog, c1910

My mother's elder sister was Nansi. Both girls were musical and became teachers. There were two younger brothers, Emrys and Alun who both became doctors. Emrys was in Edinburgh and was responsible for introducing my father and his friend of school and university, Greville Young, to his sisters. Greville and Nansi soon fell in love and became engaged. Greville's parents were missionaries in India and Greville was sent out there as a medical missionary. Nansi followed and they were married in Calcutta. After the classical romantic hiccups, Geoff and Miriam got it together and followed suit up the aisle but in their case the wedding was in Cuckfield, Sussex, where Grandpa was by then the minister of the Congregational Church. On their way back from a short honeymoon on my father's motorbike, they had a bad accident, which could have ended their lives there and then. They were due to sail for China in a week or two and Grandpa Thomas had to pack for them under their direction.

China

My early childhood in China was a very happy one. Tsang Chow, where my father worked in the mission hospital, was a modest town in the North China plain about 80 miles south of Tientsin. It was on the Grand Canal constructed to bring rice from the south to the Emperor and city of Peking. One of our regular outings was to walk to the canal and watch the rice boats sailing, if there was wind, or being towed by men along its placid waters. The compound contained a school, a church and a hospital as well as houses for the half dozen ex-patriot missionaries and Chinese staff members. My mother had been a music teacher before getting married and she taught in the school and led the church choir. There was a surrounding wall and beside the buildings there were trees, shrubs and brick paths. I can just remember driving my pedal car around the place with my teddy bear as passenger.

Fig 1.3 Me in my Chinese made pedal car aged about 5 in the compound at Tsang Chow

Besides our main base at Tsang Chow there was an "up country" mission station at Siao Chang. My father had to go there on occasions when there was a staff shortage and my mother and I, with my Nanny, Li Ni Ni, might go too. The journey was quite an expedition taking at least two days or more. We went partly by train but mainly by cart. These were two wheeled, flat decked, covered, un-sprung conveyances and pretty uncomfortable rides on the unmade country roads. These were lawless times, when bandits were not uncommon. On one occasion when I was about two, I think, we were crossing a dry, sandy riverbed when the driver suddenly whipped up the horse and we started careering along in danger of overturning. My mother asked what was the trouble, "Bandit" yelled the driver! He was trying to get to the village on the far bank before the bandit caught us. We made it and all was well. However, we were aware that a gang of bandits, around that time, shot one of my parents' colleagues, an English man. I don't remember the bandit escape but I do remember, when I was about five, riding pillion on my father's motor-bike on the same journey. My little legs were unable to reach the foot-rests, and with my shorts riding up, I got my thighs sunburnt!

When I was very young there were a couple of older British children with whom I played but latterly my playmates were Chinese and I spoke both English and Chinese from the start. My particular friend was Jar Sur the son of the Headmaster of the Mission School. My father took a delightful picture of the two of us with catkins on our ears pretending we were brides with dangly earrings! One of our misdemeanours when we had just learned to write our names was in Jar Sur's father's study where we found his writing brushes and ink. We decorated his walls with our names his in Chinese characters, mine in roman script JIM. My mother said we were surprised that the grown ups knew it was us who had done it!

Winters were dry and very cold and we wore padded clothes. Summers were very hot and we used to go to the seaside east of Tianjin to my birthplace, Bai Dai Hu. In those days it was little more than a fishing village with a few concrete beach huts where we stayed. Later it became a favourite holiday place for Mao Tse Dung and now is a large resort town with continuous restaurants and hotels along its sea front. We loved it and one of my earliest memories was of waking up and seeing the sun rising over the shimmering sea through the open door of our hut. I remember the shear, unalloyed joy of realising I had another whole day of delight ahead.

Back to UK

We came back to Britain in 1936 after my parents had served their first term of seven years in China. We travelled by P&O liner from Shanghai and stopped off in India for a holiday with Greville and Nansi Young, and my cousins Jill and Terry. Jill was a year older and Terry a year younger than me. We had a wonderful three weeks with them at their home in central India.

Then on again via the Suez Canal to Port Said where we left the boat to visit Emrys and Peggy Thomas (my uncle and aunt) in Damascus. They were both doctors and worked at the Victoria Hospital there supported by the Edinburgh Medical Missionary Society.

Fig 1.4 Damascus 1936. Lt to Rt. Dad, Mum, myself, Aunt Peggy Uncle Emrys

An incident I remember there was to do with a large leather pouf of the type sold in the Middle East with ridges or corrugations round the edge. I was playing with this while the grown-ups chatted amongst themselves. I knew about tanks with caterpillar tracks, which enabled them to climb up over obstacles and, in my five-year old mind, I wondered if the pouf could be made to do the same. I rolled it to the bottom of the stairs (it was much too heavy for me to lift) and tried to see if it would grip the stair edges as I rolled it up. It did and I rolled it up the first flight of stairs to the landing second flight to the top. I was very pleased with myself! Now for the controlled descent. Of course, being so heavy it got away from me almost immediately. The landing stopped short of the back wall leaving a 2-foot space between it and the wall in which

was a large window from floor to ceiling. On the landing was a pair of large brass ornamental vases. I watched in appalled horror as the pouf gathered speed and smashed into both vases sending them crashing through the gap down to the ground floor below! Alerted by the awful din, all the grown-ups came running. However, I got away without much telling off because they were so relieved that I was not hurt; although the vases were damaged beyond repair. My Aunt disliked them but, as they were a present, she could not dispose of them, so actually she was quite pleased: lucky Jim!

We were met at Southampton by my Grandpa Thomas and made our home with my mother's youngest brother, Uncle Alun, in Rock Ferry, near Birkenhead. My grandparents were also there, Grandpa having recently retired. Alun was in his first job after qualifying as a doctor. He was in a General Practice and, as was usual at that time, "lived over the shop". So, our extended family plus two maids, Maud and Jessie lived in this large semi-detached Victorian house, which on the ground floor also housed the waiting room and Uncle Alun's surgery. I think part of Jessie's job description (had she had one) included acting as receptionist to the practice. Maud, a motherly, middle-aged soul, was exclusively on the domestic side. There was a very small back garden with a miniature wooden fence and gate round a tiny triangle of grass. My mother had taught me lots of songs popular of her generation and I used to tease and amuse Maud by standing at the little gate and singing the Victorian ballad setting of Tennyson's words:

Come into the garden, Maud,
For the black bat night hath flown.
Come into the garden Maud,
For I'm here at the gate alone!

My Uncle Alun was a bachelor and had, at this time, a welsh girl friend called Neste. Either because she liked me or more possibly to improve her standing with our family, she took me over to Liverpool for a treat, including tea at one of the teashops fashionable at the time. It was a large tearoom full of customers and during one those lulls in the background chatter, I apparently piped up in my 6-year-old penetrating treble, "When I was in China…" Heads swivelled in our direction. Another lull: I piped up again, "When I was in India…" More surprised looks, Neste tried to look nonchalant. A third lull and "When I was in Damascus…" I added. Neste didn't know where to look. But she told the story against herself to my mother on our return!

We all attended a Congregational church near Alun's house and it must have been there that I first heard the reading from Isaiah of his vision in the temple and his call to be a prophet. I could well imagine the awesome scene. The part that puzzled me was about the angels. The reading was, of course, from the King James Bible, "Above him stood the seraphim: each one has six wings; with twain he covered his face, with twain he covered his feet and with twain he did fly". What was this stuff twain? I knew twine was a kind of thread so I guessed that twain was probably a sort of material woven from twine and so suitable for covering the face and feet and, if you had wings, presumably you could cover them with twain too and thus fly!

The Japanese, who had already invaded Manchuria, decided, in 1937 to invade North China. Tsang Chow was obviously threatened and it was decided that my father should hurry back and try and get there before the Japanese. I remember waiving him off on the train and my mother crying. He travelled the then fastest way, via the trans-Siberian railway, which took only two weeks instead of the six weeks by sea. However, the Japanese beat him to Tsang Chow. He

spent time in Tiensin but got through eventually. The situation was quite chaotic with the Japanese controlling the main towns whilst the countryside was a sort of no-man's-land with various Chinese resistance groups, nationalist, communist and others moving in and out as their fortunes fluctuated. But then this was not so very different from the situation in my parents first term of service when it was the warlords fighting it out amongst themselves.

School days and World War II

I was largely unaware of all this as I started school at the age of six at a local private school for two years before going to my father's old school, Eltham College, as a boarder at the age of eight. Eltham was originally set up as the "School for the Sons of Missionaries" and so was free or heavily subsidised for my parents. It was situated in the South East suburb of London in Mottingham. It was an independent school with a boarding section of about a hundred boys from eight to eighteen and there were about three hundred day boys drawn from the locality. We youngest boarders were in a separate small house and I remember being very happy during that first year at Eltham. That first term there was the excitement of the Munich crisis when the imminence of war was sufficient for us to be evacuated to Taunton School for a few days until Chamberlain came back with his piece of paper ensuring "peace in our time". Hitler promised this land grab of part of Czechoslovakia was his last territorial claim.

The next year 1939 of course, war really did come when Hitler invaded Poland. This gave us what I thought was a very cleaver couplet:-

Piecrust never could be brittler
Than the word of Adolf Hitler.

The Youngs, Greville and Nansi, Jill and Terry who had returned from India that summer now augmented our extended family. We had all gone for a seaside holiday in August to the North Wales village of Penmaenmawr. With war looming, the grown-ups decided that we should evacuate ourselves from Birkenhead to the country and during the holiday they found a house to rent in Penmaenmawr. So after hearing the news of the declaration of war during the Sunday morning service at the English Congregational Church, plans were made to move to this house, Crofton, which became my home for the next ten years and more.

At the end of the summer holidays in 1939 instead of going back to Eltham, I was sent to Taunton where again the boarders and some dayboys from Eltham had been evacuated. The senior boys were numerous enough to have their own "house" with an Eltham master in charge. We juniors were not so fortunate. Boys can be cruel at that age and we were made to feel unwanted refugees and it was not a happy experience. But the worst time was the second term when I went back to School after the Christmas holidays. I said goodbye to my mother as my train pulled out of Crewe station and I knew it would be some years before I saw her again. She was going to join my father in Japanese occupied China. Uncle Alun went with her as far as Hong Kong, to work in the Nethersole Hospital there, also under the London Missionary Society. It may seem incredible, looking back, that she and my Uncle should go out in the middle of the war. But, of course, Britain was not at war with Japan and the view was that Japan had already bitten off more than it could chew with China. Pearl Harbour was still almost two years off when Mum and Alun sailed for China in January 1940 during the "phoney war".

When Japan bombed Pearl Harbour in December 1941 and USA and Britain declared war on Japan, my parents, in Japanese occupied China became "enemy aliens". This made little

difference at first. Dad went on working in the hospital in Tsang Chow. But after a while they were ordered to go to the British concession, an area of Tenzin, with all other British in North China. Then they were offered a chance of repatriation to the UK with the Consular party from Shanghai. However, when they arrived in Shanghai they found they had been removed from the Consular list in favour of British business people from Shanghai. They were told they would be on the next ship. But, of course, there never was a next ship and they spent the rest of the war in a succession of internment camps in and near Shanghai. They were not ill treated by the Japanese but the cramped conditions, lack of privacy and poor food were tough. Communication was limited to 25-word Red Cross letters, which arrived irregularly. Unlike Japanese prisoner of war camps, they were able to organise themselves within the camps with a camp committee of internees. With diverse talents amongst the inmates, they were able to organise schools, choirs, entertainments as well as duties, such as cooking, cleaning, firing the boiler etc. My father worked as the camp doctor and occasionally was allowed to visit other camps to give medical advice. In 1943 my brother, David, was born and my mother was allowed to go into a hospital in Shanghai to give birth. There was, of course great rejoicing when the war ended after the 2 atomic bombs were dropped on Japan and they soon came home by sea to join us in Penmaenmawr. A short time later my uncle Alun, his wife Jean and their daughter Marged (born on a hospital ship on the way home) joined us. So for Christmas 1945 we were indeed a very happy family. (photo)

Fig 1.5 Christmas 1945. L-R Back row. Alun, Greville, Emrys Dad, Jill, Terry, Jim Front, Nansi, Grandpa, Peggy, David, Marged, Jean, Miriam.

Going back to 1940, my time at Thone (the Prep school for Taunton) aged nine was the most unhappy period of my life, so I was very pleased when, in the Summer holidays of 1940, Nansi and Greville, now my guardians, decided that, with the blitz starting on London, it was foolish to send a boy all the way from North Wales to Taunton via London and wiser to send me to a school in Colwyn Bay. So it was that in September 1940, I went, with Terry, to Rydal Junior

(Prep) School. Terry had been there a year and so introduced me to his friends and immediately I felt at home.

Rydal School

Rydal was, I suppose, one of the best in the second division of public schools. It had a Methodist foundation and drew its boys predominantly from the upper middle class of Mersey-side with a sprinkling of local North Wales boys. Lancashire accents were common and Manchester United and Liverpool were the football teams most supported. In the Junior School we worked towards the Common Entrance Exam, which provided a good all round education. I was not much good at schoolwork. Terry and I were in the same form; I was amongst the oldest and he the youngest. However he was always in the top three in the class and I was bumping along in the bottom group. I know now that I was moderately dyslexic but, of course, that diagnosis was not known then. However, I was good at sport, especially football (soccer), and was popular and so was rarely teased about my poor reading and appalling spelling.

We were very fortunate in having a number of good, caring teachers. I especially remember two in the Junior School, John Lewis and Earnest Bradfield. Bradfield taught English and in my last year at Rydal Prep, I remember doing Julius Caesar in considerable depth and enjoying it immensely. I still remember many of the speeches we learnt from that play.

Hill Walking

By my second year, Uncle Greville had joined the Army and was posted to India (at his request) so both Terry and I had our fathers abroad. Perhaps that was why, one summer holidays, these two teachers invited Terry and I to spend a day with them on the hills near Capel Curig. I guess we got there by bus from home, and then we all climbed the Glyders, both three thousand foot peaks, and returned to their hotel for tea. Uncle Greville had taken us three children out on two occasions hill walking on the Carneddau when I was about 12 and I loved it. Terry and I used to walk up on the hills behind Penmaenmawr on our own or with family or friends. But it was not until we moved up to the Senior School that we got into serious hill walking. The Headmaster's secretary was a characterful single lady named Hester Norris. She was a mountaineer who had done some alpine climbing before the war with guides. Now she formed a "Hill Walkers" club in the school of which Terry and I were enthusiastic founder members. Almost every trip we made into the mountains of Snowdonia was memorable.

On one occasion we walked up on the Glyders from Lake Ogwen, past the Devil's Kitchen, onto the plateau above it, in standard Welsh weather; that is to say, rain and mist. We stopped for lunch and as the weather was so bad we decided to head back down to Ogwen. We boys started off in the direction we thought we had come but Hester consulted her compass and pointed out we were almost 180° wrong. We were surprised but realised that we had learned an important lesson in navigating in bad weather: how easy it is to loose one's sense of direction! So we plodded off in the direction of her compass course. The lie of the land didn't seem right but eventually we started to descend and got down below the mist. We were surprised to see that the valley we were looking at was quite unlike the valleys of Idwal and Ogwen. Soon we realised we were coming down into the Llanberris valley! Hester had been reading the South pointing end of her compass needle as North!

Another fine day in the summer term we cycled from Colwyn Bay to Pen-y-Pass and did the Snowdon Horseshoe before cycling back. That was the first of many times I have done that

wonderful walk, I guess I was 15 at the time, and each time I top the rise at Bwlych Goch I remember that first time when the view of Llewedd and Llyn Llydaw is suddenly before you: quite breath taking. During the famously cold winter of 1946-7 we did a walk over the Carneddau in a foot or so of snow. There was a wire fence with wooden posts along the whale back ridge. The snow had built up on the posts forming fantastic gargoyle-like structures 3-4 feet in all dimensions.

Reading, listening, singing

Our two physics masters, Fisher and Britain were quite influential on me. Doc Brit was my House Master and, at that time, a bachelor. He allowed us free use of his library encouraging me to read such authors as Aldous Huxley, D.H. and TE Lawrence, and James Joyce. The two of them also ran a "Listener's Society" on Sunday evenings when boys took it in turn to select and present a program of classical music using records from the two master's record collections. I am sure my subsequent love of music and literature stems in large part from these influences as well as from my Mother. I also enjoyed singing in the school choir under two good music masters.

Headmasters

Rev Costain was head when I went to the Senior School (see below). He retired after my second year there. We were fortunate in the new Headmaster. Donald Hughes was a man ahead of his time. He abolished corporal punishment on his arrival in 1946, long before it disappeared in most Public Schools, though before that, only the Headmaster gave the cane, and only occasionally for the more serious offences. Hughes had a quiet way and was able to get on the same wavelength with boys. One regret I have, is that in leaving school after the lower sixth form, I did not get to know him in the way that my cousin Terry did in the two years he stayed on after I left.

As I said, I was not much good at academic work at school. One day, towards the end of the summer term when I was approaching 16, an Old Boy came to school looking for a possible recruit for his family jam-making firm in Liverpool. We had a very active Old Boys Association. He asked the then Headmaster, Rev. Costain, if he could recommend a suitable boy. I think Costain has a soft spot for me, perhaps because my parents were missionaries and interned under the Japanese. Academic distinction was not required for this job but the ability to "fit in" and be, "a good chap" was, so he recommended me. I visited the firm and saw how jam was made on an industrial scale. It was explained to me about the job, that the hours were not long and the holidays generous, as was the likely pay. I must say I was tempted but I eventually decided that, to choose a life's work on the basis that one would have plenty of time not doing it, was not a very good reason. So I thanked them and turned the offer down.

I decide to try for Medicine

As I came to choose my subjects for the fifth form and School Certificate I had to decide what I wanted to do. I don't remember discussing it with anyone other than perhaps my school friend Mike Kendrick. I went through a phase in which I would not consider Medicine since people seemed to assume I would choose that because my father, four uncles and an aunt were in the profession. But then I thought, it was cutting off my nose to spite my face, to <u>not</u> choose something that I wanted to do, just because folk expected it and I wanted to show my independence!

The only slight problem was the matter of exams and competition for Medical School places. Anyway, I thought I would at least give it a try and so opted for the appropriate subjects in the Fifth form and surprisingly, did well enough at School Cert. (as the exam was called, taken at aged 15/16) to go on into the Sixth Form. There I took Chemistry, Physics, Zoology and Botany, considered then the standard subjects for Medicine. However, knowing I was likely to be weak when it came to Higher School Certificate (now A levels) and in competition for Medical School places I researched the scene and found that at my Mother's old University, Birmingham, they offered an entrance at "1st MB level". This was equivalent to Higher School Cert. and was aimed, I think, mainly at men coming out of the armed forces after the war and who had not done the correct HSC subjects. Anyway I thought I could have two goes if I applied for this after only one year in the Sixth Form. If I did not get in I could try again next year. Fortunately I did make it; possibly due to the fact that in those days admission was entirely in the gift of the Sub-Dean, Prof. Charlie Smout, who, besides being a professor of Anatomy, was a lay Methodist Minister. Perhaps the fact that I came from a Methodist school and my parents were missionaries, helped.

Holidays and Home life

I have written about my life at school but equally important was my life at home during the school holidays. These were years of war and immediate post war. Nansi, my Aunt, was a wonderful mother substitute. For most of the war our household consisted of Nansi (Greville was in the army in India) Grandpa and Grandma Thomas and we three children, Jill, Terry and myself. We had a good sized garden where Grandpa grew vegetables. There was an orchard with Apples, a pear and a Siberian crab apple tree. Nansi made jam from the fruit and from blackberries we picked from the hills and hedgerows. This all helped to feed us- a difficult job for Nansi with rationing. In many households the working menfolk would have a midday meal at work. The garden which had a grid of paths separating orchard from vegetable patches, gave us a great place to play in our adolescent years and an excellent imagination inventing acted our games in which Terry and I took leading roles

Grandma and Alzheimer's

My grandmother, during these years became progressively more demented with Alzheimer's disease. She was strong physically, which in some ways made matters worse because she would wander. She was a great walker and many-a-time we kids would be sent out to find Grandma. Fortunately, she was well known and as we followed her trail the townsfolk would happily tell us, "O yes, we saw Mrs Thomas go past about twenty minutes ago". "Why didn't you stop her!" we would think but have to say, "Thanks very much" and hurry on! Later on she became physically ill with breast cancer and became bed ridden. The burden on Nansi must have been immense. One of the few times I remember her getting irritated with her father was when he would ask from his chair, smoking his pipe and reading his newspaper, "Has mother's tray gone up?" She would reply under her breath, "Yes, it grew legs and trotted up stairs on its own!" Later Grandma became incontinent and the washing load became enormous. Fortunately we had what would now be called a utility room in the basement, which was ground floor at the back. Here we later got one of the very early washing machines, built like a battleship. But through most of this time Nansi had to do the washing by hand with a tub and a dolly. We were recruited, sometimes to turn the mangle and help peg out the clothes.

Hills and Sea

For us children, Penmaenmawr was a wonderful place in which to grow up. The sea was 15 minutes walk down hill and Jubilee Walk, round our local hill, Moel Llys (bilberry hill) about half an hour up hill in the other direction. From the age of about 10 we were allowed to roam up these hills or down to the sea on our own

Fig 1.6 Jill aged 10, Jim, 9 and Terry. 8, out on the hills behind Penmaenmawr, i*n our school uniforms. 1940.*

Terry nearly drowns

We had a near tragedy about this time when the three of us went swimming on our own. Jill, aged 11 and I aged 10 could swim but Terry, 9, could only manage a few strokes. The tide was coming in as we went down the shingle bank into the sea and waded through a slight trough onto a sand bank. We played happily in the waves up to our chests in water. When we had had enough, we started back to shore but suddenly found ourselves out of our depth. The tide had come in and we were in the trough. Jill and I were quite happy and urged Terry to keep swimming. I could see his head coming back and the occasional wave washing over face. Jill swam to shore to get help and I attempted to life-save Terry. I had learned to do this in theory but found myself holding his head on my chest swimming on my back but pointing out to sea. Each time I tried to turn us round, the waves knocked me back. However, I was able to keep him up until rescue came. Jill had found a man, an off duty policeman, who came running in and scooped up Terry in his arms, carrying him to shore. Terry was unconscious by now but soon revived. Looking back, I am amazed that this incident did not affect our freedom to go swimming on our own.

Terry and I were both fond of poetry, especially if it had a good rhythm and told a story, such as The Charge of the Light Brigade. We both had no difficulty in learning and remembering verse and reciting it to each other. A piece from Punch from just after the war I think, has stuck in my head. Detergents, as we now call them had just been discovered and the press release must have explained that their action was to "Make water wetter". Punch's take on this news was:-

Whilst Empires fall and temples totter
They're busy making wetter water
O all the things that they could better*
They go and make the water wetter!!

*Improve the taste of beer for instance.

Growing up during the war seemed quite natural to us kids. Food and clothing rationing was a fact of life and news of the progress of the war part of it. But living in North Wales, we were oblivious of any direct, frightening aspect of war. The nearest we came to any experience of war was listening to German aircraft flying over us, at night, as we sat in the changing room of our school boarding house, the nearest we had to an air raid shelter. This precaution, of getting us up at night to shelter there, was soon given up as unnecessary, since it was clear the Germans were not going to waste bombs on us on their way to the Liverpool Docks. Near our home in Penmaenmawr was an Army training camp and they trained the soldiers on the hills above the town. Auntie Nansie used to entertain men from this camp in our home and the most appreciated offer was that of a hot bath!

A story from School from this time told of the discussion in the Staff common Room when news of the fall of France had just come through. The two history masters were discussing the situation in sombre terms. Was it graver than when we faced invasion from France under Napoleon? They decided, yes, it probably was. Then the games master walked in. "Have you heard the news Bunch (Mr Bumphry)? France has fallen". "Well" he answered. "That's a bloody good job. Now we can get on and finish the war without 'em".

Chapter 2,

University, Air Squadron, Medical School, Climbing

University

I was just 18 when I went up to Birmingham University. In some ways I was quite confident. Being away from home was no problem; boarding school had been a good introduction to the hall of residence, Chancellor's Hall. The work in the first year was not too demanding, since I had covered some of it already in the Lower Sixth Form at school. But in other ways I was very naïve, especially in respect of girls. However, with the help of a succession of girl friends I learnt the exciting, frustrating and curious ways of dating in those far-off and innocent times. It was clearly understood that there could be no question of any permanent relationship until after we graduated in six years time, if all went well! I quickly made many friends, played some rugby, joined a small church choir. We went to "hops" at the Students Union on Saturdays and I joined the University Air Squadron.

University Air Squadron.

This became an important part of my University life. We attended parades, lectures on airmanship, weather, aero-dynamics, engines both jet and internal combustion and, most exciting, were taught to fly. Our airfield, all grass, was out at Castle Bromwich on the east side of Birmingham, that is, down-wind of the city. It being the days before the clean air act, this brought the polluted air of the city over our airfield most days of the year. That didn't bother us much; it was the accepted order of things. Our planes, at first, were Tiger Moths, wonderfully primitive bi-panes, (see photo). They were designed in 1929, with two open cockpits, one behind the other. We had no radios, only speaking tubes connecting instructor, in the front cockpit and pupil.

Fig 2.1 Tiger Moth. The type of plane in which I learnt to fly. Photo taken Aug 2000

This photo was taken in 2000. My wife, Pat, gave me a flight in this restored Tiger Moth, a seventieth birthday present. I am in the student's place, and obviously enjoying it!

Towards the end of my first term at Birmingham University I went solo for the first time after nine flying hours, a never to be forgotten experience. I had been practising "circuits and bumps" with the instructor for some time. That is, you take off climb up, turn left, level off, left again start a descent, turn left again, line up with the runway and land. Suddenly the instructor said, "OK I guess you're ready" and got out. I was thrilled to be considered good enough to go solo and excitedly taxied out and took off. Now suddenly I was on my own with no friendly helmeted head in the cockpit in front of me! Added to the thrill was more than a twinge of anxiety! But all went well though the landing was not one of my best.

I have many happy memories of flying with the squadron. On cold winter days when we dressed up in padded inner one-piece and outer windproof suit, plus fur lined boots and inner and outer gloves, leather helmet, goggles and mask.

Fig 2.2. Me in the rear cockpit. Photo taken in Aug 2000

Providing you were warm to start with, you stayed warm for the 30-40 minute flight. Often in the winter there would be inversion conditions. This meant that the haze hung over the city and airfield. You climbed up through it then, suddenly, ping! And you came out above it, into brilliant sunshine and the haze formed a pencil sharp horizon. The ground was just visible, hazily in a tight circle below. These were perfect conditions to practice aerobatics which I loved doing. However, after doing a series of loops, slow rolls and stall turns, you didn't know where you had got to. With no radio, you were on your own and had to find your position by flying down into the murk and picking up some landmark. It was said that if the worst came to the worst, you should find a railway line, fly along it until you found a station and fly low enough to read the station name! I never had to resort to this tactic but did have some anxious moments.

In the summer vacation we went on camp for two weeks to an RAF base. Though called "camp" we were not under canvas but in quite comfortable officer's mess accommodation. These were great times with plenty of flying and parties in the mess etc. I remember my first long, solo, cross-country flight from Aston Down in Gloucestershire to Oxford and back. It was such a warm day I flew in shirtsleeves in the open cockpit of the Tiger Moth, over the beautiful green countryside and the spires of Oxford. At these camps we linked up with two other squadrons and pooled our planes and instructors. If we couldn't go to our own camp we could go to one of the other squadron's camp. One year I went on the Queen's University, Belfast Squadron's camp. These Irish students were full of stories; here is one of them.

Their airfield was called Nut's Corner (which I thought amusingly appropriate) and of course they also flew Tiger Moths with fixed undercarriage and no radios. The Flights, the place where the planes were parked, was in the middle of one side of the field. One was supposed to taxi down-wind to the end of the field, turn into wind and take off. However, they often didn't bother but just taxied into the field, into wind and off! At the end of the field was quite a high stonewall. One day when the wind was light, a pupil and his instructor did just this and barely got off the ground by the end of the field. Unfortunately, they didn't quite clear the wall and knocked a wheel off. The watching pupils and instructors were horrified. They knew that it was not possible to see the undercarriage from either cockpit. There was no way to warn them of this mishap so that they could make a pancake landing rather than a wheelie one. A pupil had the bright idea that taking a spare wheel, he and an instructor could go out, find them and formatting close to them, indicate by signs, their problem. So they grabbed a spare wheel, rushed out and off. Unfortunately, in their hurry they also did not taxi down-wind but just took off straight away and barely got off the ground before the wall. They too touched a wheel on the wall, knocking it off! They found the first plane, moved alongside it and lifting up the spare wheel gesticulated vigorously. The instructor in the first plane shouted to his pupil, "Well, that's a bloody clever trick! I wonder how they'll get it back on again?" A typical Irish tall story.

After a couple of years flying tiger Moths we were reequipped with De Havilland Chipmunks. These training planes had closed cockpits and radio. So now we could be recalled by the control tower if, for instance, the weather was about to deteriorate. Also if I got lost we could call up the Tower and ask for a "course to steer". Using my radio signal they could get a "fix" on me and give me a compass course to follow and get me back to base. So some of the fun of flying was lost!

Hill Walking, Climbing.

It was in my third year at university that I first went rock-climbing with the University Club known as the Stoats. The name came from an episode when an exasperated instructor had been trying to teach some club members the rudiments of climbing and exhorting them to keep their bodies away from the rock. He is reputed to have said something like, "Keep your bellies off the rock. You're like a lot of bloody stoats!" One particular friend, a Stoat and a medical student in my year, was Phil Astill. I really owe it to him for getting me off the ground (so to speak) in rock climbing. Unfortunately not long after getting me started, Phil had a fall on Tryfan breaking his leg. He never really got back into climbing after that. Jeff Sellars, my closest friend at university, a medic and Air Squadron member, then became my climbing partner. He was a natural climber and seemed to be quite unfazed by what climbers call "exposure", that is, the added difficulty of a move made high off the ground compared with the same move made just off the ground. In our fourth year we had a wonderful ten days of climbing at Easter, based on the Climbers Club Hut in the Llanberis Valley, Ynys Ettws. When we started the holiday I was the leader, leading climbs up to V. Diff (very difficult, in the grading system of the time; this is actually quite an easy grade) and by the last two days climbing, Jeff was leading VS (very severe, the highest grade at the time). Our first VS climb was Longland's Climb followed by Curving Crack, both on Clogwyn du'r Arddu. This was in 1952 when Cloggy was considered the hardest face in N. Wales.

By this time I had got to know John Watson, a middle aged businessman in Birmingham. He was an established member of the Climbers Club and used to go up to N. Wales regularly in his open-top car and gave me a lift. We used to stop at the Pen Y Gwryd Hotel on our way to Ynys Ettws. This was the hay day of the Hotel run by Chris Briggs and his wife Jo. It was patronised by the foremost British climbers of the day including many who made up the team of the successful 1953 Everest Expedition. I remember being in the hotel on the evening when on the day of the Queen's coronation, the news came through that Everest had been climbed. A group of us attempted to compose a suitable telegram combining congratulations to her and the Everest team with our expressions of loyalty to Her Majesty! The quantities of Worthington E bitter completely defeated our efforts.

The fifth year of the medical course was generally considered to be the busiest for students. We did many of the courses in the so-called minor specialities, including obstetrics and gynaecology, paediatrics, ophthalmology, dermatology, as well as lab based subjects of pathology, microbiology etc and had exams in these subjects. This was the year 1952-3 by which time I was thoroughly bitten with the climbing bug and was going up to North Wales at every opportunity as well as flying and having quite an active social life. At the end of the summer vacation I spent three weeks acting as handy man at Pen-y-Gwryd. My hours were 9-5 each day with Saturday and Sunday off and my pay was, 50 shillings per week £2.50 in to-days money, plus bed, or rather bunk and board. But bear in mind that beer, Worthington's best bitter, was only a shilling (5p) a pint. The food was wonderful hotel fare prepared by Jo Briggs and two very attractive hotel trainees. I had a motorbike by now and after five I would dash off for a quick climb (solo). At the weekends friends would come up and we would climb or walk whatever the weather. It was during this time that I came closest to killing myself rock climbing. It was on a rather damp Sunday when Tony Champion, a man a couple of years older than me, came to the hotel looking for a climbing companion. I was free and we went down the Llanberris Pass to attempt a classic climb, Main Wall, on Cern Lass. I was leading and on the

second pitch, the rock was cold and slippery on an outward sloping gangway ledge. I retreated a couple of times, but on the third attempt got across it. However, I seemed to have used up all the strength in my fingers, and on the next steep section, when I had to pull up with little help from my feet, my fingers just gave up and I fell off. Fortunately my second was belayed on about the same level as me and I just pendulumed down to a grassy ledge about 20 feet below. I did not see or hear of him for the next 55 years when he wrote to me out of the blue enclosing an account of this day, which I place as an appendix to this book.

On another weekend the Saturday was wet and I went for a hill walk with John Neil, a Climbers Club member. The weather was typical of North Wales, i.e. wet and windy. We had a good day out and got soaked. In the evening we got to discussing our next day's walk. I had long wanted to do the well-known "Three-thousanders" walk; the 14 peaks of Wales over 3,000 ft but to Moulam's rules. These stated that you did the walk by including all the peaks and that you started and finished at the same place. The usual way to do this famous walk was to have someone take you to the start and pick you up at the other end. Often people would have friends to bring them food and drink at the points where the route crossed roads in the valleys. I suggested that we have a go at this walk the next day. Chris Briggs and everyone in the pub derided our presumption, it was still pouring with rain outside, but that, and the Worthington E, only made us more determined. Jo said there was no question of any support for our crackpot idea; they were fed up with helping various walkers who had then given up. Indeed Chris was prepared to wager the pub against our doing it! I took him on and put up Ynys Ettws as my wager.

John and I retired to the bunkhouse behind the Hotel and set our alarm clock. At three am it went off. I woke up, stopped it and listened. The rain was pattering on the tin roof of the bunkhouse. John seemed to be still asleep. It looked hopeless and I thought if I just went to sleep again we could say we had slept through and not heard the alarm, and so not lose face. But then I thought I had better give John a chance to agree, so woke him up. "O right", he said, "Lets go". Our first problem was that we found we had left our walking clothes and boots in the Hotel drying room so had to burgle our way in to retrieve them. At least they were dry but before we had reached Pen y Pass, short of a mile up the road, we were wet through (no Gortex in those days).

I was grateful to have John lead up the pig track from there to the col, Bwlch y Moch where we left the pig track for the broad ridge up to Crib Goch and it began to get a little less dark. By the time we reached our first of fourteen summits, the rain had stopped but we were only just below the heavy mist. Along the knife sharp ridge we went carefully on the wet rocks to Crib y Ddysgl and on quickly to Snowdon summit. There we encountered a huddle of miserable walkers who had come up to see the sunrise! The only view they had was the inside of a wet cloud. As we strode down the broad path towards Llanberis we came below the cloud. At Cloggy station we dived over the edge to the right, steeply down with no path into Cwm Glas Bach and made our own route down to the road in the Llanberis Valley. Now it was down the main road, past Beudy-Mawr, a climbing hut belonging to the Wayfarers Club. We were quite short of food and hoped we might beg a cup of tea and perhaps a snack but no one was in residence. So we ate our only sandwiches there on the doorstep in our wet clothes. As we went up the long pull up to Elidir Fawr, the first of the next range of peaks, the weather improved and beyond its long summit ridge, the sun came out. Our sprits rose as we hurried along over Foel-Goch and Y Garn to the Glyders, Fawr and Bach. Down beside the Bristly Ridge we went to Bwlch Tryfan and up

the rocky ridge to Tryfan summit. It was now one o'clock, the sun was out and I felt great. John had been very good to come with me because he knew he could not complete the walk, as he had to be back at the Gwryd to get his lift back to London at five o'clock. So we said goodbye, he went south whilst I ran down north towards Lake Ogwen, which I reached in about 15 minutes.

Then my path went past Glan Dena. This is a very nice hut belonging to the Midland Association of Mountaineers and I really hoped I might beg some food here as I was getting very hungry and still had the six summits of the Carneddau to climb and return to the Gwryd. The door was open so I haled the occupants, a cheerful couple. Remember, in those days there were far fewer hill walkers and climbers and therefore greater camaraderie amongst us. I hoped for a cup of tea and perhaps a bite. I said I was attempting the three-thousanders walk and had Snowdon and the Glyders under my belt; pause, just the Carneddau to go; pause, "then I plan to walk back to Pen y Gwryd" I said. "O yes" they said. "Well" I said, "Hm, well, I suppose I had better be on my way – I guess" pause. "Yes" they said, "You better had". So I left.

Half way up the long pull up to Pen-yr Ole Wen I assessed my provisions. I had part of a Cadbury's milk chocolate bar with centimetre blocks. I calculated that I could have one small block on alternate summits! I was very hungry. But the sun was out and I felt strong, so on over Pen-yr Ole Wen to Carnedd Dafydd, a detour to take in Yr Elen, back up to Carnedd Llewellyn. There my luck changed. I met a couple of Liverpool businessmen out for the day. Each of their wives had given them food for both and they generously shared it with me. I remember a Penguin bar and it never tasted so good. I completed the last two summits, Foel Grach and Foel Fras by about five o'clock. Then back past Llewellyn and Craig yr Ysfa to the A5 road, as it was getting dark. The final seven miles along the road to Capel Curig and up to Pen y Gwryd were a slog but knowing I had done it against the odds and that I had won the Hotel kept my sprits up. I arrived to a hero's welcome and a fry up supper at about ten pm.

With my three weeks handy-man job I found I had spent 30 weekends in North Wales out of 52 of that year. My final year was equally enjoyable though without quite so much climbing.

Final year

The Medical faculty, led by the Professor of Medicine, Melville Arnot, was very enlightened. Arnot explained to us that as we were now adults we could organise our own education in preparation for the final exams. The School laid on a menu, as it were, of lectures, tutorials, teaching ward rounds, outpatient clinics and there was the library. It was up to us to make up our own timetable and attend any of these we felt useful to us. In previous years we had had to study subjects which often seemed to be a far cry from "real medicine", though I now see were essential to an understanding of the subject but in the final year it was just Medicine, Surgery, Obstetrics & Gynaecology and Paediatrics and I loved it. In the summer I did a week's locum for one of the House Physicians at the General Hospital. This was great hands-on experience and helped give one confidence for the clinical parts of the final exams. In the finals I did well, it seems and I was awarded my first (and only) academic prize, the Foxwell Prize in Clinical Medicine.

Fig 2.3 Graduation Day 1954

We final year students, in those days, were allowed, to "stand in" for House Physicians or Surgeons (F1 in todays parlance) when they went on leave. The House Physician whose locum I did was Betty Astle, a girl in the year above me. I had long admired her from a distance but she had a boy friend in the same year as herself. However, about this time they split up. She had a holiday walking in the Lake District with a group girl friends and I got to do her locum. After she came back, I asked her out and was over the moon when she said "yes" and we became an item, as they now say.

In August after graduating I went, with John Watson and a friend of his to the Alps. We went to the Eastern Grains. The weather was not very good and we only did some relatively insignificant peaks but had a good time crossing passes and seeing a lot of this unspoilt corner of the Italian Alps. Six months later a group of about ten of us

Mostly from my year, but including Betty, went skiing in Austria. Soon after that we became engaged.

Chapter 3

Royal Air Force

RAF in the UK, Marriage, Honeymoon, Sailing to Hong Kong Note file not saved

In 1955, young men sill had to do two years "military service". That summer, completing my one-year house jobs (my internship), I was called up to join the forces. Having been a member of the University Air Squadron, I went into the Royal Air Force, as a medical officer. Instead of doing the mandatory two years, I elected to sign on for a three year short service commission, hoping that that would improve my chances of getting an overseas posting, foreign travel being then very expensive, especially to the Far East, where I wanted to go.

After a few months spent doing locum medical officer jobs in the south of England, I got news that I was to be posted to Hong Kong. Both Betty and I were delighted but it meant we had to get married quite quickly. This we did on a bright cold day in February 1956 in Kidderminster, her hometown. Knowing we were to go out to Hong Kong by sea, taking six weeks, Betty suggested that, to save money, we might take that as our honeymoon. I insisted that we should have a proper honeymoon first, so we went to Switzerland for two weeks of wonderful skiing in the Bernese Oberland.

Fig 3.1 Betty and I cutting our wedding cake, watched by Terry Young, my cousin and Best Man, and Margaret Corsham, Betty's cousin and bridesmaid.

It was just as well that we had not banked on having our honeymoon at sea, as the ship we sailed on, the Asturias, was a very old trooper. Betty found herself on B deck in a cabin with two other women and three children and I was on D deck with three other officers! We spent most of the trip, it seemed, waiting about for each other in corridors with only a few furtively snatched moments to ourselves on the boat deck after dark!

Hong Kong, our first home

Hong Kong was a fascinating place, with wonderful shops and such a variety of foods eating places; though perhaps not the easiest situation in which to start married life, with a strange, new culture to assimilate. We were to have RAF married Quarters but on arrival there was none immediately available. So had first to find a hotel and then to find our own accommodation. However I was given an allowance for this, and the pay was adjusted for the cost of living in Hong Kong and was quite generous. There had been a lot of recent immigration from the China mainland and accommodation was not easy to find. We eventually found a flat in Kowloon; about 20 min. drive from my place of work at Kai Take Air base and Aerodrome. The flat was, in a Chinese part of Kowloon, lived in previously by Chinese tenants whose idea of house maintenance and kitchen hygiene was rather different from ours. Betty had a tough job cleaning the flat, especially the kitchen with its layer of grease on the walls and we were setting up home for the first time. But we were young and threw ourselves into the life of the community there.

On the RAF side I was one of two medical officers at Kai Tak, the airfield we shared with civilian flights. My duties were mainly work as a GP, though we did have a small sick quarters where we could admit Air Force patients. The forces men were, of course, pretty fit and, venereal diseases apart, had little need of our services, apart from routine annual medical examinations. However, many had their families with them and looking after the wives and children was more demanding and interesting.

On the day we arrived we looked up the people at the Nethersole Hospital, the Mission Hospital on the Island of Hong Kong, where my Uncle Alun had served in the 1940s before and after internment by the Japanese. Ted Patterson was the surgeon there and was overjoyed to learn that Betty was an anaesthetist skilled in the new techniques, which used nitrous oxide, hypnotics, muscle relaxants and controlled ventilation. Up until then, they had used ether, given, under Ted's guidance, by a junior doctor or nurse. Ether is an explosive anaesthetic and they had just received their first diathermy machine, used for controlling bleeding. When used, it gives off sparks and cannot be used with ether! Betty gave anaesthetics there twice a week for the two and a half years we were in Hong Kong, travelling over on the Star Ferry from the mainland to Hong Kong Island, then taking the tram to the hospital.

Another worthwhile addition to our life was helping in a backstreet clinic in Kowloon run by a wonderful Chinese Christian man, Thomas Wong, who lived with his wife and five children in a tiny area behind the clinic, all contained in a small third floor flat in a tower bock. He relied on volunteer doctors, mostly from the forces. Thomas also tried to teach us Cantonese. These contacts enriched our life with interests outside those of the forces social life, though the latter was also good fun with a pleasant United Forces Club including a bar, restaurant and swimming pool. One incident from there I remember was when ordering a round of drinks I had to ask the Chinese bar man for a vermouth. I thought this would be an unusual order for him so I added, "Ver-mouth, you know?" "Yes Sir" he said. "French or Italian?". I felt very small!

Figure 3.2 Tea in our married quarters, Kai Tak RAF Station Hong Kong 1956

Trips out of Hong Kong

One of the drawbacks of a Hong Kong posting was that, not being allowed into mainland China, forces personnel often felt constrained within the confines of the colony. The nearest place to go for leave, apart from Macau, was Saigon or Singapore and in those days such travel was too expensive for most of us. However, we were fortunate in that, in the twenty-seven months we were there, I managed to get right away five times, four of them with Betty.

First Japanese Trip

The first trip was only a couple of months after arrival in Hong Kong. The Commanding Officer of Kai Tak, Group Captain Tony Smyth, was a mountaineer, and he dreamed up the idea of starting an RAF mountain rescue team. He pointed out that we had a fighter squadron based in the New Territories and if one of the pilots were to bail out and land injured on the top of Ma On Shan, the 3000ft highest hill in the colony, it would be important to have a mountain rescue team to get him out. On this slender argument, he got permission from the Air Ministry to start a team - but with no financial support.

Tony had heard that, with the rundown after the Korean War, there was ex-army equipment to be had in Japan at Iwakuni a hugh US air base in Japan. Including items such as jungle boots, camouflage trousers, jackets and floppy hats with which we could equip out team. So I was told to get myself there and pick them up. Things were much more casual in those far off days. I managed to get a lift in a New Zealand Air Force Bristol Freighter plane from Hong Kong to Iwakuni, the large US base in Japan. The Freighter, one of the first planes to have large front opening doors, which could load a tank if necessary, had a fixed undercarriage and two small piston engines. I had to make myself as comfortable as I could in the hold of this freight plan. It took ages to fly up to Japan, stopping to re-fuel in Taiwan and Okinawa.

Japan, in 1956, was still recovering from the war and was almost a third world country. What I remember were the terribly potholed roads. It rained quite a bit and one had to have an umbrella as much to protect from splashes as lorries bumped into the potholes, as from the rain itself. While I was there I visited Hiroshima and the site of the first atom bomb dropped in anger. This was only 10 years after it was dropped. It was a fine summer day and the contrast of the beauty of the azaleas, with the devastation of the site, was intense. I managed to get a lift on a forces air-sea rescue launch back to Iwakuni across the Seto Inland Sea, a lovely trip.

Equipment duly packed up, in two sacks, I returned to Hong Kong by getting lifts from the US Air Force via Clarke Air Base in the Philippines. I spent a night on the base and had my first taste of American cuisine. I was astonished at their 16oz T-bone steaks, the meat overhanging the large plates!

Thailand and South India

One of our extra duties was to carry out medicals for some Hong Kong-based aircrew of civilian airlines. One of these was Air India and we got to know the chief pilot quite well. We could not charge for this service and the RAF billed them, I think, twelve and sixpence (63p) per medical! Even in those days it was a very good price for Air India. So they said they would be happy to offer us medical officers, a couple of complimentary tickets each year, to anywhere they flew!

Betty and I took them up on this offer and for our first Christmas we flew with Air India to Calcutta and then, on our own, went by train to visit my parents in Neyyore, a town near the very southern tip of India where my Father was working in the Mission Hospital there . En route we stopped off in Bangkok where I had a distant cousin, Jim Sibree, working in import/export. At that time there was very little tourism and we had a wonderful five days doing the sights of that fascinating city. There were few cars and no air pollution in those days. The Buddhist Temples were beautiful, peaceful with few other people about, apart from a few monks. The floating market fascinating; the locals selling all sorts of foods and other merchandise from boats to customers also going around in boats..

Arriving in Calcutta, we went by taxi from Dumdum airport to Howrah railway station through, what I hope, is the worst of Calcutta slums. As we arrived at the station we saw many people spitting, as we thought, blood, and assumed they had TB. Later we understood the red spit was due to chewing betel nut.

Despite nine months in Hong Kong, we were in considerable culture shock and just wanted to get on the train and out of the dreadful place! I have since come to appreciate and love India and have no such problems now, but remembering that time, I can understand how people can be completely overwhelmed by suddenly being confronted by third world poverty, crowds and smells.

Once on the train, sharing a first class compartment with a delightful Brahmin couple, we were fine and enjoyed the two nights and days' journey to Madras and a further 24 hours to Trivandrum where my parents met us. It was good to have two weeks with them, seeing something of their life and work in the mission hospital and community of Neyyore. This was the place where Howard Somervell had worked after the two Everest expeditions in which he was involved (1922 and 1924). My father took over from him, with a six-month overlap in 1951

before Howard went to be Professor of Surgery in the Christian Medical College & Hospital, Vellore (where we later worked).

Kinabalu Expedition

By the summer of 1957 the Kai Tak mountain rescue team had pretty well exhausted the rather limited climbing possibilities of Hong Kong, although it was great fun going out on exercises or finding and trying climbable crags. Since then a lot more rock climbing has been found and I was surprised to find a climbing guide published in the '70s, in which a "Milledge Buttress" is described, not far from our base at Kai Tak. I'd quite forgotten that I had discovered this!

So, Tony Smyth suggested an expedition. The objective was an ambitious one: to make a new route on Mt Kinabalu (4,101 m) in North Borneo (now Sabah). The only route at that time was an easy one, first climbed in 1840, but our aim was to make a new route from the other side of the mountain, starting in Kota Belud.

The team consisted of Group Captain Tony Smyth, leader; four mountain rescue team members all of whom had had quite a bit of climbing experience and myself, as medical officer. At the last minute there was room on the flight for Betty to come as well and she travelled with us as far as the last town, Kota Belud, where she stayed with the young British District Officer and his wife. We flew out from Clark Air Base to Labuan and on to Jesselton (now Kota Kinabalu), then by Land Rover to Kota Belud.

From there we started trekking with 17 Dusun porters. For the first ten miles, we were on a good jeep track and Betty came this far with us on a pony, then turned back. We then got onto small paths in primary jungle. This was my first experience of this ecosystem and very exciting. There were all sorts of huge trees, unknown to me with vines and creepers. There were few if any animals to be seen, but plenty of leaches. When the tropical rain came in the afternoon it was not so good but after an hour or so it stopped, the sun came out, the jungle steamed and we dried out. There were no places to but food or drink and we carried and cooked our own food, as did the porters.

We stopped in a village for the night and were invited to sleep in the long house on stilts. The second day was similar though the paths got smaller and we reached the last village. I was amazed to find how clean the villages were. Of course in those days there were no plastic bags and any bottles or tins were few and valued as vessels. Also it seemed that the pigs were responsible for the lack of human waste. The euphemism for going to the toilet was, "I'm just off to feed the pigs"!

Next day following the river we found progress was, if anything, even slower as we crossed and re-crossed the stream, clambering over boulders and wading through pools against quite a fast flow. At the end of the day, having made camp, we held a council of war. We had only come about three miles that day and calculated that at this pace we would only just get to the foot of the mountain when it would be time to turn back! But if we retreated now, we could march round the mountain and just have time to get up and down by the ordinary route. Tony Smyth was for pressing on but was out-voted by the rest of us. To his credit he accepted the

foot of the mountain when it would be time to turn back! But if we retreated now, we could march round the mountain and just have time to get up and down by the ordinary route. Tony

Smyth was for pressing on but was out-voted by the rest of us. To his credit he accepted the vote of the majority, rather than pull rank. The next day we turned tail, back to the last village and over the next three days of hard walking we got ourselves round and up to a pass where the Kinabalu trail started. Unfortunately Tony was unwell, (though not incapacitated. I don't know just what was wrong, perhaps he was just fed up with the trip and our not attempting a new route, and wanted out). He decided to go down and get started back. His going ahead would smooth arrangements for our return but it was disappointing for him.

The tourist route up Kinabalu is now very well worn path but still a great trek. The only difficulty is the altitude, but we were well acclimatised by now so we had no problems. The path leads up through primary jungle, then through fern forests with wonderful pitcher plants, then shrubs and finally bare slabby rock set at an angle which just allows enough friction to get one up. There are no handholds! I understand there is now a fixed rope as a hand rail, on the steepest places.

We had one night in a cave at about 3000m and the next day made it to the summit. Then, all the way down plus a few miles along the jeep track before making a bivouac in an isolated store hut we found. The next morning most of the party and the porters were very tired and stopped at a village a few miles down the track. We were expected back at a spot called "Mile 10" that day so I pressed on with one strong porter to cover the 18 miles to the rendezvous where Betty met me with a jeep.

The next day we all assembled at Kote Belud and set off for Labuan by jeep and train via the port of Weston. Because of delays in getting a launch from Weston to Labuan, we missed our flight and had to spend three days at Labuan. But were well entertained by the District Commissioner there and had some superb snorkelling on the coral in the lagoon; probably the best I have ever had. *(Several maps to illustrate this section would be really helpful)*

First Nepal trek

Towards the end of 1957, back in Hong Kong, we saw a small paragraph in the newspaper, which said that Nepal had opened its borders to tourists. Before that, Nepal had been closed to almost all foreigners except large nationally organized mountaineering expeditions such as the French Annapurna Expedition in 1950, the Swiss to Everest in 1952 and the British Everest Expedition in 1953. Actually, only the valley of Kathmandu was opened but we did not realise that. We met a couple of Gurkha officers who, with special permission and as part of their duties, had done some trekking in Nepal, visiting the home villages of some of their Gurkha soldiers. They gave us the idea of doing a trek and since time was limited, we decided to trek from Kathmandu to Pokhara and then to fly back from there to Kathmandu. This was long before the road from Kathmandu to Pokhara was built. It was also before trekking became popular and trekking agencies and lodges for trekkers were established.

We were in touch with the small group of missionaries in Kathmandu who had themselves only been allowed in to Nepal about three years before. They had established a hospital in Kathmandu in an old Rana palace, Shanta Bhawan, and were now just establishing a station at Ampipal, a village halfway between Kathmandu and Pokhara. We decided to visit this place and to go north up the ridge on which it was situated, as far as we could, possibly to a pilgrimage site of some lakes at about 4,500m. We could allow ourselves 12 days for this trek.

We were able to get courtesy flights again from our Air India contacts, which took us to Calcutta. From there we hoped to get flights to Kathmandu but there was only one seat. Betty took that and I took the train from Calcutta to Raxaul on the border with Nepal, which included a crossing of the Ganges by steamer. Early the next morning I took the little train from Raxaul to Simra in the Nepal Terai. From there I was able to get a flight for the short hop to Kathmandu on a Dakota freighter plane with local Nepalese, some freight, chickens and goats.

In Kathmandu, members of the United Mission to Nepal including the American couple, Bethel and Robert Fleming, looked after us. Bethel was a surgeon and senior doctor at the hospital and Robert, a teacher, was best known as an ornithologist. He and his son wrote the first book of birds of Nepal and I still have a copy as one of my most treasured possessions.

The only foreign people to be found outside Kathmandu were on fully-fledged mountaineering expeditions. With no tradition of trekking for tourists, we were told that it was very unlikely that we would get government permission to go out of the Kathmandu valley.

However, after an initial setback we suddenly were given permission from the relevant officer in the old Singha Durbar, the incredible old Rana palace that was then the Whitehall of Nepal. To find porters for our trek we were directed to a shop in the bazaar, which acted as an agency for porters for merchants. There we met Man Bardur Traukuri and Man Jar Tumang who were to become our two porters. We had no common language so through the shopkeeper we explained what we wanted to do. They knew the trail to Pokhara but not, of course, the part north to and beyond Ampipal. We arranged for them to come to Shanta Bhawan the next morning and Dr Fleming kindly took us to the end of the road, still within the valley, by jeep, and there we started trekking.

This path, being the main road from Kathmandu to Pokhara, was quite busy with porters and travellers, who were mostly Nepalese but a number were Tibetans and some, Indians. The Tibetans were especially intrigued by Betty, who was probably the first western woman they had seen. They were amazed at the hair on her arms and could not resist tweaking it.

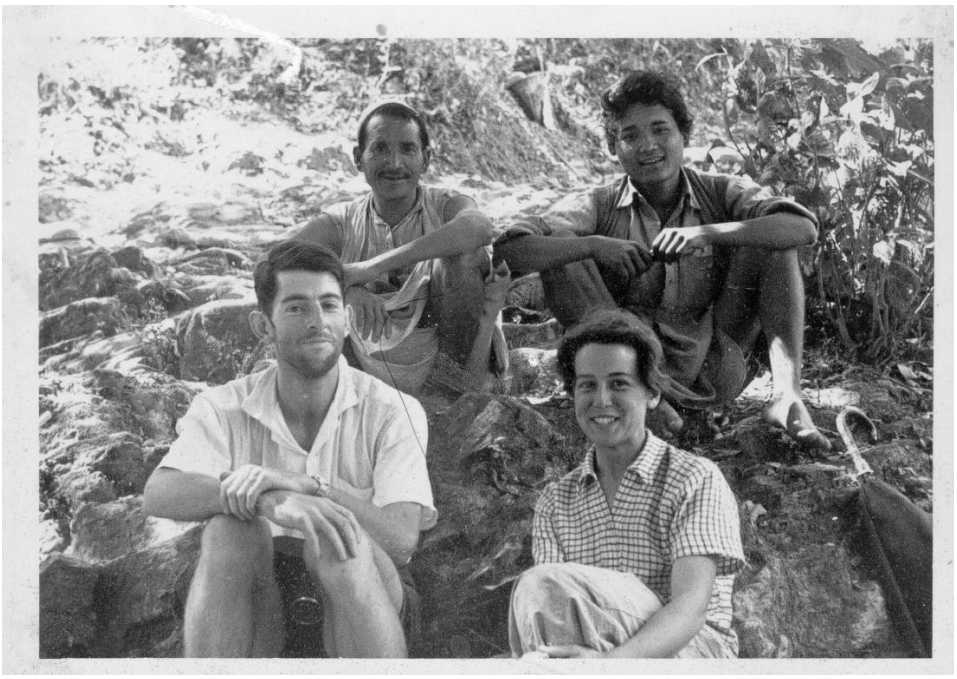


Fig 3.3 First Nepal trek, Kathmandu to Pokhara with our two porters, March 1958

The trail wound up out of the Kathmandu valley and eventually to a pass at just over 2000m from which we had fine views of the Ganesh and Annapurna ranges to the west. Our route lay west across the grain of the country, up over passes, down into the next valley, across the river and up again.

It was March, which is a fairly dry month being the early pre-monsoon season. We were not able to take a lot of food with us but knowing we would pass through villages, hoped to buy food on the way. However, food stores from the previous year were in short supply, so towards the end of the trek we got quite hungry. On two occasions we managed to buy a chicken and when crossing one of the rivers we saw a man catch a good-sized fish and bought it from him. Our porters were attentive and helpful but of course we "did for ourselves" as far as provisions and cooking were concerned, unlike the luxury of more recent expeditions and treks where there have been a whole team of Sherpas looking after us.

The valleys could be quite hot, but the ridges and passes, delightfully cool. The woods, mostly of rhododendron trees, were in full flower. In my subsequent 16 visits to Nepal I have never seen a better show of these lovely flowers; whole hillsides were a blush of red.

It was a five-day trek to Ampipal where we stopped for a night at the recently established mission station, where the missionaries were still building their houses and some were still sleeping in tents We were welcomed as the first outsiders to have visited this little community where they were starting a school and clinic. Ampipal was a half-day trek north of the main trail, situated on a ridge with fine views to the north of the Buddha and Himal Chuli mountains.

After a night with these kind folk, we headed north along the ridge for two days, and on the third, tried to reach the pilgrimage site of Panch Pokhari ('five lakes' – one of many such named in Nepal). We had beautiful walking, past little villages with terraces dropping below us.

Then up through rhododendron woods with tree orchids to our "assault" camp above the tree line. Our "assault day" was hampered by snow and mist, but we reached a little peak on the ridge at about 4500m and, having done so, retreated to our tent and porters.

This had been Betty's first taste of snow climbing and was not too pleasant as the snow was wet and quite deep in places. We had one ice axe between us and a short length of rope. But given the conditions we were quite pleased with our day and had reached a new high altitude for both of us.

A further day's trek got us back to the main trail and three more days brought us to the city of Pokhara. On our last morning we awoke to a perfect day and the incredible view of Annapurna and Machapuchari from our camp south of Pokhara. A pleasant morning's walk brought us to the town and in the afternoon of that day we flew back to Kathmandu and to our friends at Shanta Bhawan Hospital.

Second Japanese Trip

We were due to return to UK and I was to be demobilised in September 1958. In the few remaining months in Hong Kong we were keen to get in one more trip and found a freighter firm, which offered 50%, discount to forces personnel on their tramp steamers. So we booked a return passage to Japan. This was a delightful if slow trip. The vessel had only four passengers, two young English men, and us. They were very good company. We had our meals with the ship's officers as we made our leisurely way taking a week to reach Yokohama. At noon each day all the deck officers "shot the sun", that is, took sextant readings of the height of the sun above the horizon, from the bridge. I learned to do this as well. The average of these readings was used to fix our position. Each evening before dinner we gathered in the Captain's cabin for drinks. After the first drink he would observe, "No bird can fly on one wing" and press a second generous sherry on us.

Once in Japan we had the choice of staying on the ship and using it as a moving hotel, as it visited various ports, or leaving it, re-joining it later. We did both, leaving it at Yokohama to visit Tokyo and the Mount Fuji area and using it as a hotel in Kobe making day trips to Osaka, Kyoto and Nara. It was early summer and Japan was very beautiful. It was cherry blossom time. Near Fuji we stayed in a Japanese Inn enjoying the, traditional life-style: food, baths and dress. On entering the Inn, one took off ones shoes and Jacket and were given a Kimono (like a silk dressing gown) to wear. The rooms had rattan floor coverings and no other furniture. Meals were brought to the room by small Japanese waitresses in traditional dress and served on the floor at which one sat cress legged. In the evening futons (thin matrasses) were brought in and unrolled on the floor. We enjoyed the Japanese baths at which one first soaped and showered thoroughly before stepping into the large communal bath. In come it was "mixed bathing" though in an increasing number of places and public baths the sexes were separated.

The season for climbing Mt. Fuji had not started but we managed to make the assent from the small timber hotel at the road head reached by bus. We had the mountain to ourselves. However, coming down we had to walk the eight miles or so from the hotel back to the town as no buses were running.

Farewell to Hong Kong and the RAF

A month or two before we were due to leave Hong Kong, the Wing Commander medical officer, my boss, interviewed me and urged me to sign on with the RAF with a permanent commission. I had enjoyed my time in the services and was very tempted to do so. But I reckoned that I had been very fortunate in my posting for most of my three years and other postings might not be so enjoyable. More importantly, I did not think that, in the long run, forces medicine would be really satisfying, so it was "thanks but no thanks".

Our return to UK was much more enjoyable than the passage out. We were on a new troop ship, the HMS Devonshire, with a nice two-berth cabin to ourselves. In Singapore we had able to visit a wonderful Avery with free flying tropical birds. In Sri Lanka we had splendid swimming at the lovely Mount Lavinia beach resort. The Suez Canal was interesting as was Port Said with the "Gully-gully" man who came on board with his incredible tricks to entertain us. Then, cruising through the Mediterranean with sighting of Create and the rock of Gibraltar. So four weeks on board were delightful, with good food and plenty of interesting company.

Back home, a GP in Lymington, Dr Webb-Peploe, for whom Betty had done a locum job some time before, offered her an assistantship in general practice for a year and got me a job as a house officer with a local physician at the Royal South Hants Hospital in Southampton. So we came out of the RAF and into jobs without a break.

CHAPTER 4

SILVER HUT EXPEDITION 1: PREPARATIONS and MARCH OUT

I get into respiratory physiology.

In November 1959 I was working as a Registrar at the Chest Hospital in Southampton. My chief, Dr. William Macleod, had suggested that it was time we started to do lung function tests on our patients with chest diseases. He gave me "The Lung" by Julius Comroe, a small green book that distilled the results of years of work in this field by a group of outstanding American researchers. I started reading without much enthusiasm but soon became fascinated with the possibilities of understanding the nature of our patients' breathing problems. The patients were all short of breath on exertion but Comroe showed how, by using simple breathing tests, one could distinguish those patients whose breathlessness was due to increased resistance in the airways as in asthma or bronchitis, from those due to problems of exchanging gas between air and blood in the depth of the lungs. This is a less common cause of breathlessness and can be more difficult to recognize.

Soon after reading the book, we had a patient with this sort of problem. He had been a farmer and went to his doctor complaining of shortness of breath when he exerted himself. His doctor could not find anything wrong and referred him to a chest specialist who also could not find any abnormal signs in his chest and his chest x-ray was normal. He continued to complain of increasing shortness of breath if he exerted himself at all, though he was perfectly all right when sitting quietly at rest. He was even referred to a psychiatrist since there seemed to be no physical cause for his complaint. Eventually he was sent to Dr. Macleod who suspected he might have Farmer's Lung, a condition cause by inhaling the dust of moldy hay. By now, his chest x-ray was showing the very earliest sign of some generalised haziness; his lung function test showed no evidence of increased airways resistance, such as patients with asthma or emphysema have. I took a sample of blood from an artery (considered a rather bold investigation in those days, though now considered quite routine) and found that the level of oxygen was well below normal, indicating that his lungs were not passing oxygen across into his blood in the normal way. This defect caused no problem at rest but as soon as he began to need more oxygen for climbing stairs for instance, the lack of oxygen became acute and fully accounted for his symptoms.

It was because of this patient, and others like him, that I became fascinated in the workings of the lung, respiratory physiology, a subject I had found quite boring as a second-year medical student. I realised that the problems of the patient with Farmer's Lung was similar to that of a mountaineer at high altitude. In both cases, the cells of the body are short of oxygen, especially on exercise. In the case of the patient with famer's lung, this is due to the disease having damaged his lungs so that the delicate membrane separating air in his lungs from the blood becomes thicker, so impeding the passage of oxygen into his blood. In mountaineers, at altitude, it is due to the reduction in barometric pressure and hence the pressure of oxygen in the air he breathes. This means that each breath contains fewer oxygen molecules than that at sea level. The interesting thing about mountaineers is the way they can acclimatise to high altitude, so that they not only stay alive and conscious but also can actually continue climbing and functioning almost normally, at an altitude (such as the summit of Everest) at which, if they were suddenly exposed, they would die in a few minutes. This process of acclimatisation had been studied for many years by a few scientists but was still not entirely understood. Indeed, that is still true today.

Getting onto the Silver Hut team

About this time (November 1959) I noticed a short paragraph in 'The Telegraph' announcing that Sir Edmund Hillary was going to lead an expedition next year to the Everest region of Nepal. It was to be a scientific and mountaineering expedition, which would "winter over" at high altitude in order to study the effects of altitude on the expedition members over a period of six months. Then, in the following spring, an attempt would be made on Mt. Makalu (8470m), the fifth highest mountain in the world. The physiology would be continued if possible at advanced Base Camp (6,300m) and on the Makalu Col (7,400m). The scientific leader was Dr. Griffith Pugh of the Medical Research Council. Pugh had been the physiologist attached to the successful '53 Everest Expedition. This sounded like just the sort of expedition I would love to go on! I dreamed about it for a few days, discussed it with Betty, my wife and then, with a feeling that I was being very cheeky, I wrote to Dr. Pugh. I mentioned my climbing and skiing experience, such as it was, then gave my medical experience which was fairly general such as might be useful as an expedition Medical Officer. I added that now I was interested in lung function testing and therefore in respiratory physiology. Might there be a place on his team either as assistant Medical Officer or assistant Physiologist?

Much to my surprise he replied by return; he said that actually the team was more or less made up but that if I happened to be in London to come and see him at the MRC Laboratories on Holly Hill in Hampstead. Well, I made sure that I "happened" to be going to London the very next day. I found Griff in the tower office of his cluttered laboratory in the red brick block of the MRC Labs. He was quite welcoming in his absent-minded way. We chatted about my background briefly and about the expedition and it began to emerge that one member of the team was uncertain about coming.

Griff's method of choosing the team was to decide what pieces of work he wanted done, then to choose people with the necessary expertise to do them. One project was to repeat, at altitude, the work, which had been done at the Oxford University Physiology Department on the chemical control of breathing. Both carbon dioxide and lack of oxygen stimulate the breathing (make you breath more – make you breathless} and the workers at Oxford had been studying the details of this control mechanism. Because of the lack of oxygen at altitude (due to the lower barometric pressure) it was almost certain that acclimatisation to high altitude involved changes in this control. We knew that the body seemed to become more sensitive to carbon dioxide in some way, but what about changes in response oxygen lack? Did the body become more or less sensitive to this stimulus? No one knew. Griff had asked the Oxford workers, Dan Cunningham and Brian Lloyd, if they could suggest a man to join the expedition and do a project along these lines. This was the man whose joining was uncertain. If Cunningham and Lloyd would accept me as Oxford's man (and if Hillary was satisfied with me as a member) then I might get on board.

I felt it unlikely with all the keen young men available in Oxford, that Cunningham and Lloyd would choose an unknown red-brick graduate like me as their representative on the expedition.

However, I went to Oxford to meet them. They were very affable and rather than interview me in the conventional way they took me into one of the large class laboratories and using the blackboard which covered all of one wall, Lloyd went through their work in detail. It involved not only conventional respiratory physiology but also quite a lot of mathematics, which were very much on the edge of my grasp. They seemed to judge my suitability by my response to this erudite exposition and the questions I asked. We parted amicably and I suppose I must have

satisfied them because the next thing was a telegram from Griff inviting me to join the expedition.

Preparing for the Expedition

In the early months of 1960 I got permission to spend an occasional day at Oxford. I would drive up there early in the morning from Southampton. Then we would do one of these three hour control of breathing experiments in which a volunteer subject would breathe various gas mixtures while we monitored his rate and depth of breathing and collected samples of his expired air.

Fig 4.1 *I conduct an experiment in the physiology labs, Oxford*

In the afternoon we would analyse these samples using Brian Lloyd's modification of Haldane's apparatus for measuring carbon dioxide and oxygen in expired gas, by chemical means.

Haldane (1860-1936) Born in Scotland in 1860, JS Haldane was an important respiratory physiologist based in Oxford in the early years of the 20th century. He had led one of the first expeditions to high altitude to study acclimatisation: the 1911 Pikes Peak Expedition in the Rockies. He invented this apparatus for the accurate measure of the levels of carbon dioxide and oxygen in gases. Nowadays, electronic instruments can do such analyses in a fraction of a second while the experiment is in progress; whereas the Haldane apparatus, even in the most expert hands, requires about 10 minutes per sample. Each experiment would produce 10-15 samples, which had to be analysed in duplicate.. The chemical method is still used for checking the calibrating gases needed to calibrate these electronic instruments. In order to become familiar with the Lloyd-Haldane apparatus, I took one home and practiced with it. It is a beautiful looking piece of apparatus of blown glass, filled with mercury and coloured reagents. (See Fig 4.1). However, in using it, it is all too easy to pull the reagents into the wrong part of the apparatus then the whole lot has to be emptied, cleaned out and refilled, a job taking an hour or more. Even at sea level, when this happens, it is hard to control one's language; at altitude, impossible! But one of the unsung achievements of the expedition was that John West, with my nudging, learnt to use the Lloyd-Haldane in the Silver Hut at 5,800m. But I anticipate.

During this period we worked out how we would carry out this sort of experiment at high altitude without all the resources of a physiology laboratory. In particular, how we could to manage without large cylinders of oxygen, nitrogen and carbon dioxide, which they used in Oxford. We hit on the idea that in order to steadily increase the level of carbon dioxide, we would collect the expired air in a large plastic bag and then have a subject breathe this gas and again collect his expired gas. In this way he would breathe successively, mixtures containing more and more CO_2, which would stimulate his breathing.

About this time, I met Sir Edmund Hillary in Griff's lab on one of his trips through London. I had met him briefly soon after the '53 Everest Expedition, with his New Zealand friend George Lowe, who was also also on the '53 Everest expedition.

I remembered him then as very much "one of the boys". Now seven years later he seemed very much more mature and clearly a leader of men. Betty had no ties and was very keen to come with us to Nepal. She knew she would be welcome at Shanta Bhowan Hospital where her anaesthetic skills would be put to good use. We arranged with Ed that she would act as liaison officer for the Expedition in Kathmandu in return for her fare there and back. In May 1960 I resigned from the National Health Service and we went to live in London.

Griff and Ed had been together in Antarctica in1956-7 (as well as of the '54 Everest Expedition) when Foulks and his UK team made the first crossing of the continent. Hillary and his New Zealand team supported him by laying supply dumps from the NZ base on the other side of the continent. So they discussed the possibility of a combined mountaineering and scientific expedition to the Himalaya to study the effect of really long term exposure to high altitude on the physiology of the members. Their plan for the expedition was an ambitious one. It would start after the monsoon, leaving Kathmandu in September, spending the autumn in establishing a Base Camp and building a high altitude winter station. Griff insisted that condition for the winter should be as good as enjoyed by scientists in Antarctica. So a hut must be provided for accommodation and lab work, which could be warm, comfortable and provide accommodation and lab space for up to 8 people. There should be electricity for lighting and for lab equipment. It must be capable of being carried out from Kathmandu to the Everest region by porters, so loads must be not more than 30 kgs at most and its erection should not be too difficult at altitude. Griff and Ezra Leven (of the Timber Research association) designed such a hut. It was made up of panels using marine plywood with three inches of fiber inside for insulation. It worked very well and with its stove for hearing and cooking was almost too warm!

I was to spend 3 months full time in preparation for the expedition working with Griff from his laboratory. Besides getting all the equipment together, we had to carry out the sea level control experiments on the expedition members against which we would compare our results at altitude. It was a very busy and varied three months. Mike Gill, a New Zealand medical student and a strong climber, came over and worked with us for some of this time and I met John West and Mike Ward, two more members of the scientific team, as they came to do their exercise tests in Griff's lab. John was just making a name for himself as a leading young physiologist at the Postgraduate Medical School, Hammersmith Hospital. Mike had been with Griff and Ed on the '53 Everest Expedition as well as having masterminded the '51 reconnaissance expedition, which discovered the southern route up Everest. He was our expedition Medical Officer and Griff had chosen him because of his proven ability to function at high altitude. Some people just do not seem to be able to adapt to high altitude. The ability to do so cannot be predicted; except by a history of precious good experience of altitude. There was no guarantee that any of us

novices would be capable. In the event we all acclimatized quite well, though some took more time than others.

During this time the high altitude laboratory, the "Silver Hut, was being made for us. The Sherpas referred to it as the Silver Hut because of the silver paint used on its wood panels, and eventually the expedition became known by that name. Griff's idea of making and taking out a hut for our use in the winter was novel for a mountaineering expedition. It was no doubt biased on his idea that good science required good living conditions and from his experience of the Cho Oyu and Everest Expeditions, as well as his Antarctic experience. He insisted that if we were to do good work we must have good conditions to live and work in. Also, we wanted to be sure we were studying the effects of high altitude alone without the effects of cold, starvation or dehydration, so we had to have warmth, plenty of food and fluid. The Silver Hut was the answer; it was constructed from boxed up plywood members, painted silver, 5 inches thick, containing 3 inches of plastic foam insulation and silver foil to reflect radiant heat back into the hut. These sections fitted together with pegs and holes like a three-dimensional jigsaw puzzle. The shape was cylindrical like the section of a London Underground carriage. At one end was a door with a snow porch within and the other end had large windows with four panes of Perspex separated by air gaps. The whole hut rested on three longitudinal beams and these on two cross beams with four jacks as legs, the idea being that if the glacier melted on one side we could jack it up. Wires with turn buckles pulled the sections together circumferentially and longitudinally. No piece was more than a porter load (30 Kg.) nor too bulky to be carried on the trail. Inside were 8 bunks, a table, stove and lab benches. It was a brilliant design and worked perfectly in the field. Many of the expedition members came together at the builders in Marlow to have a practice assembly. This was a very good idea and meant that when we came to erect it at 5800m on the Mingbo Glacier it went up fast and efficiently. After this practice, Sir John Hunt (as he was then) invited us to his gracious home near Henley on a lovely June afternoon with tea on the lawn.

Expedition membership

There were three types of members, Climbers Scientists and other or specialists. Some, of course, were in more than one category. Then, some came for the autumn, some for the winter and some for the spring parts, some for two or all three parts. All together there were 21 members as shown in table 4.1, which shows their roles, country, and when they were with the expedition.

London to Kathmandu

Eventually in mid-August Betty and I with 45 crates of equipment (including the Silver Hut) set sail from Tilbury for Bombay on the S.S. Oriana. Lila Bishop, wife of Barry Bishop an American member, also came with us by sea. The other members all traveled by air. We had a delightful trip especially as having to book rather late, only a first class cabin was available. I remember particularly in the Red Sea enjoying days with marvelous buffet lunches served beside the ship's swimming pool. At Bombay we anticipated problems with Customs and these there were. Our previous experience of the Far East stood us in good stead and with patience, we got through in three days. One incident, which typifies Indian bureaucracy, I remember. I was waiting in a large shed in which there were rows of desks occupied by officials each with piles of files on each desk and on the floor. I watched one 3-ring official peruse a file slowly then initial it. He looked up and with an imperious wave summoned a Pune (messenger) from the end of the shed. The Pune weaved his way slowly between the desks and the piles of files to

the august person who handed him the file and with an upward tilt of his chin indicated that the Pune was to take the file to the next desk, a distance well within the reach of this official!

We now had to get our 45 crates and ourselves across India to Patna. There we were to meet Peter Mulgrew and Wally Romanes - two New Zealanders who were bringing the main bulk of the expedition equipment, tents, climbing gear clothing and food, by road from Calcutta. Peter was an officer in the New Zealand Navy and a close friend of Hillary and Wally was carpenter/builder. Both were also climbers. From Patna we were to fly it all and ourselves to Kathmandu. We were to go by train and the first leg was uneventful, Bombay to Ahmadabad. There we had to change and catch the Delhi-Calcutta express. There was only 10 minutes to spare but with a great effort and a small army of porters we got our 45 crates out of the guards van and across to the correct platform. However, when the express pulled in, the guard took one look at our mountain of crates and pronounced that there was no hope of getting them into his van. So Betty and Lila went on to Patna in our reserved sleeper and I stayed. Fortunately there was a fast goods train going that night and I was able to arrange for all our crates to go in one locked truck. I followed by slow passenger train.

It was good to meet more members of the Expedition in Patna including Peter Mulgrew and Wally Romanes. We were very well entertained there by the British Council representative, Jeremy Jasper. We charted a DC3 (Dakota) aircraft, which for 3 days shuttled us and our baggage between Patna and Kathmandu. In Kathmandu we renewed acquaintance with our friends in Shanta Bhowan Hospital who we had met two years before when we had visited from Hong Kong. They were delighted to welcome Betty as an honorary staff member for nine months. The expedition made its headquarters at the Royal Hotel, a hotel set up in an old Rana Palace and run by a larger-than-life white Russian, Boris. Its main advantage was a large area in front where we could unpack and repack our baggage. Inside, it had character and quaintness with its "Yak & Yeti" bar, but a high incidence of gut infections. Poor Peter Mulgrew got amoebic dysentery and most of us had minor degrees of gut rot. Only now, as we gathered together, could we appreciate the size of our expedition.

Composition and shape of the Expedition

There were about equal numbers of British, New Zealanders and Americans. The scientists were mostly British; the climbers mostly New Zealanders and America supplied various specialists - an animal man, a biologist, a geologist, a doctor/bioengineer and our sponsor's public relations man see table 4.1. The finance was from the Chicago based World Book Encyclopedia. Although the original concept was for a scientific and mountaineering expedition, Ed had decided that, partly as an acclimatisation exercise and partly because he was genuinely interested, that during the autumn the main body of the expedition would try and solve the question of the existence of the Yeti. I think that this objective may have been the main reason for World Books sponsoring the whole expedition. At any rate it was, of course, the aspect that the media latched on to and there was a real danger of the whole expedition being seen as just another Yeti hunt.

The Yeti part of the expedition, complete with our colourful Journalist, Desmond Doig, and the World Book PR man, the animal man, Martin Perkins (who had his own TV show in the States), capture guns, trip wire cameras etc. set off a day ahead of the small party that I was assigned to. They were going into the remote Rolwaling Valley to hunt their Yeti and reach the Everest region via a high pass, the Tessi Lapcha. Our party would take the usual Everest march-in trail and take the bulk of the expedition supplies for the winter, plus the Silver Hut and scientific equipment.

With me were' Norman Hardie, the leader of this group, Wally Romanes and Barry Bishop. Norman was an experienced New Zealand climber, an engineer, who had climbed Kangchenjunga with Charles Evans' successful, first ascent expedition in 1954. Norman had a great love for the Sherpas and on the march-out passed on to us, all the Sherpa lore he had acquired from trekking and living with them for 6 months after the Kangchenjunga expedition. Wally was also from New Zealand, a builder, electrician and general handy man. He was a strong climber and a delightful companion who would contributed enormously in setting up our huts in the autumn and acting as maintenance man during the winter. Barry Bishop was from the States. He came as Glaciologist having majored in that subject after a degree in Geography. He was on the staff of the National Geographic and a keen semi-professional photographer. He was also a climber and three years later climbed Everest with the'63 (first) American Everest Expedition. He was very conscious of the public relations slant that seemed to be required by the National Geographic magazine and on which his job and prospects seemed to depend. This meant that the glaciological project, which Griff regarded as important, was always being interrupted to pursue various photographic ventures.

Fig 4.2. The "Working Party" L to R, Wally Romanes, me, Barry Bishop, Norman Hardy.

The March Out to Solu Khumbu

Our march out was, on the whole, delightful. It was the post-monsoon season with occasional heavy showers, but the country was green and lush. The first day of a trek is often a bit chaotic before the party gets into a routine and this trip was no exception. With 300 or so loads to assign and a deal of haggling over the less popular, awkward ones, we were late leaving. So we reached the nights camp, as it was getting dark. I seemed to have the job of finding food for our

group from amongst the many loads. I had spotted some crates of tinned steamed pudding. So I praised one of them open to find the two dozen tins were Christmas pudding. I banged the nails back and opened another, Christmas pudding again. A third crate was also Christmas pudding. It was Ed who had chosen our stores and although this manufacturer made a range of seamed puddings Ed had chosen only crates of just Christmas pudding.

On the march out we were very well looked after by our Sherpas. The day would start by our Sherpa waking us with tea and tsampa. Tsampa is fine ground roasted barley. The Sherpas make porridge with it and eat it hot or cold; I liked a spoonful of it in my tea. Then we would strike camp and get a few miles completed during the cool of the day before a breakfast stop at some pleasant spot usually beside a stream. While breakfast was cooking we might wash and bathe, write diaries or read. Norman often gave us rudimentary Hindi lessons and by the end of the 18 days march out I could carry on some sort of conversation with the Sherpas in kitchen Hindi. Hindi, of course, was not their mother tongue either but a trade language, so neither of us was much concerned with the niceties of grammar. After a leisurely breakfast we would complete the day's march and if we did not hurry, by the time we arrived at our campsite, tents would be pitched and tea ready. I would then do a sick parade with the help of Ang Tsering, a Sherpa who had quite good English. My patients were drawn from our porters and the local people near where we camped. Mostly they had trivial complaints and no doubt in many cases were just curious to try a bit of western medicine, but more serious problems included loose teeth, or in one case a root abscess requiring extraction. There was also one lad with multiple inflamed sores round the front of his neck, oozing pus. I gave him penicillin but wondered very much how he got on afterwards, as I could not see him again.

So, our trek continued. At Junbaisie we had to leave the usual trail because the bridge over the Dhude Khosi had been washed away. This was an expected annual event in the monsoon. It meant that we had to use a lesser trail over a 4,550m pass. We were very conscious that the Swiss Everest Expedition, 4 years before, had lost two lowland porters on the pass in bad weather. The weather was not good for us and we waited one day hoping it would improve. We crossed the pass the next day but only with difficulty and Norman and a Sherpa having to help a number of porters. After the crossing one more day brought us to the first village in the Dhude Khosi Valley. If post monsoon clouds often obliterated the distant views, the wild flowers at our feet made up for this and so we arrived in the Khumbu, the heartland of the Sherpas.

Members of the Silver Hut Expedition

Name	Role	Time in the field	Remarks	Nationality
Sir Edmund Hillary	Leader	Autumn, spring	Had Stroke on Makalu	New Zealand
Dr Griffith Pugh	Scientific leader	Late autumn, winter, spring	Remained in Khumbu	British
Barnu Banerjee	Assistant to Desmond Doig	Autumn, spring	Remained in Khumbu	Indian
Pat. Barcham	Climber	Autumn	2nd ascent Puma Dablam	New Zealand
Barry Bishop	Geologist and Photographer	Autumn, winter, spring	Remained in Khumbu 1st ascent Ama D	USA

Desmond Doig	Reporter, *the Statesman,* Calcutta	Autumn, Spring	Remained in Khumbu	British, resident in India
Michael Gill*	Med. Student climber	Autumn, winter spring	On 1st Makalu summit attempt, 1st ascent Ama D	New Zealand
Norman Hardie*	Climber	Autumn	Ldr. Working party to Khumbu	New Zealand
John Harrison	Climber	Spring	Rescue of Mulgrew	New Zealand
Sukhamay Lahiri	Physiologist	Winter, spring	Remained in Khumbu	Indian
George Lowe*	Climber	Autumn		New Zealand
Jim Milledge*	Physiologist Club climber	Autumn, winter spring	Ret. with Ed from Makalu	British
Capt. S.B. Matwani	Army Doctor	Autumn, winter	Remained in Khumbu	Indian
Peter Mulgrew	Climber Radio Officer NZRN	Autumn, spring	Near death on Makalu	New Zealand
Tom Nevison*	NASA scientist	Autumn, spring	On 2nd Makalu summit attempt	USA
Leigh Ortenburger	Climber	Spring	Rescue of Mulgrew	USA
Marlin Perkins	Animal expert	Autumn	Yeti hunter	USA
Walter Romanes	Climber, Handyman	Autumn winter spring	On 1st Makalu summit attempt, 1st ascent Ama D	New Zealand
Larry Swan	Biologist	Autumn		USA
Michael Ward	Surgeon, M.O. physiologist Climber	Winter, spring	1st ascent of Ama Dablam	British
John West*	Physiologist	Winter spring	Rescue of Mulgrew	Australian

An * after the name indicates that the member is known to be still alive (Jan. 2017). The second column is the role played by the member on the Expedition. Of course, members had other roles and occupations outside of the expedition. In the Remarks column, "stayed in Khumbu" means they did not go over to Makalu in the spring. The nationality is that at the time of the Expedition.

Table 4.1

CHAPTER 5

SILVER HUT EXPEDITION 2: THE HIEGHTEST WINTER IN THE WORLD

It was wonderful to arrive at last in the Sherpa country, which Norman had told us so much about. We paid off the lowland porters at Thyangboche and were very hospitably entertained by our Sherpas. There was still a lot of monsoon snow about and we had difficulty making our way up the Mingbo valley towards the site, which we had planned to place the high altitude winter station. This valley branched right (east) off the Dudh Kosi, the main valley running north to Everest. The valley curves round the east side of Ama Dablam.

Fig 5.1 View of Everest and Ama Dablam from above Namche. Tangboche on ridge below Ama Dablam. The Mingbo Valley is off right, in front of Ama Dablam

Ama Dablam, this most beautiful of mountains, was to be our constant companion for the next six months, our eyes being drawn repeatedly to its wonderful lines. "This mountain" writes John Hunt, in The Ascent of Everest, (p64) "rises to 23,300ft and appears utterly inaccessible, out-rivalling the most sensational aspect of the Matterhorn". From the south, the direction from which we approached it, its bold front rises to an ice field with a hanging glacier at its base. Such is the scale of Himalayan peaks that this glacier looks like a large block of ice and gives the peak its name. A dablam is a charm box or phylactery worn by Sherpa women, often with a photo of the Daly Lama, or a Buddhist prayer, inside. Ama means mother and derives from the two ridges running down from the central peak like enfolding arms.

We reconnoitred the route up the Mingbo Valley behind Ama Dablam and in October, with Pemba Tensing, one of our senior Sherpas, I climbed the fluted walls that limit the nevè basin. It was a great thrill to reach this col at 5866m (19,250 ft), the highest I had ever climbed to, and look out into the vast Hongu Valley basin on the far side. This was the site Ed Hillary had suggested for the high winter station (Silver Hut). It was a clear sunny day but blowing hard and it seemed a very exposed site. Later after the Yeti hunting party arrived and after Ed and others spent a night here, they quickly decided, wisely, to relocate the Silver Hut on Mingbo glacier basin below.

Fig 5.2 The Expedition Members, Nov. 1960.
Lt to Rt. Back row Pat Barcham, Desmond Doig, Mike Gill, Jim Milledge*.*
Middle row, Barnu Banerjee, Ed Hillary, Wally Romanes, Peter Mulgrew, Larry Swan,*
Front row, Tom Nevison, George Lowe, Marlin Perkins, Capt. Matwani, Griffith Pugh*.*
Mike Ward and John West* arrived in December.*
** Member of the Winter Party. Others left soon after this, some to return in the spring with other new members.*

On Nov 7 the whole expedition mustered on the site and erected the shell of the hut in one day. A small group of us spent the next ten days fitting it out with stove, bunks, shelves etc. We had a 12-volt electrical supply from a windmill generator and a bank of marine batteries. This gave us lighting and power for our scientific instruments. We also had a small petrol generator; but the wind generator was adequate for our needs until the spring, when we started using a power hungry single sideband radio.

Fig 5.3 Upper Mingbo basin. Site of Silver Hut below the Mingbo col. The peak, left Puma Dablam (Ombigichen) was an obvious goal, which I climbed with Ang Tsering. The route lies up the sky-line from the col.

Above the col to the north, was a peak on a ridge, which then ran on to Ama Dablam. The ridge from the col looked a feasible route and was a tempting climb. Starting from our newly built hut, Peter Mulgrew, Barry Bishop and I made a first attempt. The route was either on the ridge or on the right flank and was mostly on snow with short rather rotten rock passages. We were three on a rope and moving rather cautiously, since none of us were experienced Himalayan climbers. We ran out of time and retreated. Whilst I was at Base Camp another attempt was made which also failed through lack of time and poor weather.

So on November 18th on a perfect morning I tried again with Sherpa Ang Tsering Panch, the Sherpa who had helped me with sick parades on the march out. As a party of 2 and with the snow now more consolidated we made faster progress. The continuation of the climb was mostly confined to the ridge now and was continually interesting. Small rock steps, sharp snow ridge sections, great bulbous stacks of snow baring the ridge which had to be turned or climbed over, all presented problems to be overcome. Finally, there was a 50m chimney with rock on one side and ice on the other. The rope ran out when I was about two thirds of the way up. I made a very inadequate belay and brought up Ang Tsering who went on to the top of the chimney and took in the rope. I climbed up out of the chimney to find him just sitting on a outward sloping slab of rock covered with gravel, no sign of a belay! However, from there was

it clear we had made it and a 12m ice rib, led to a perfect summit, so sharp that only one of us could stand on it at a time.

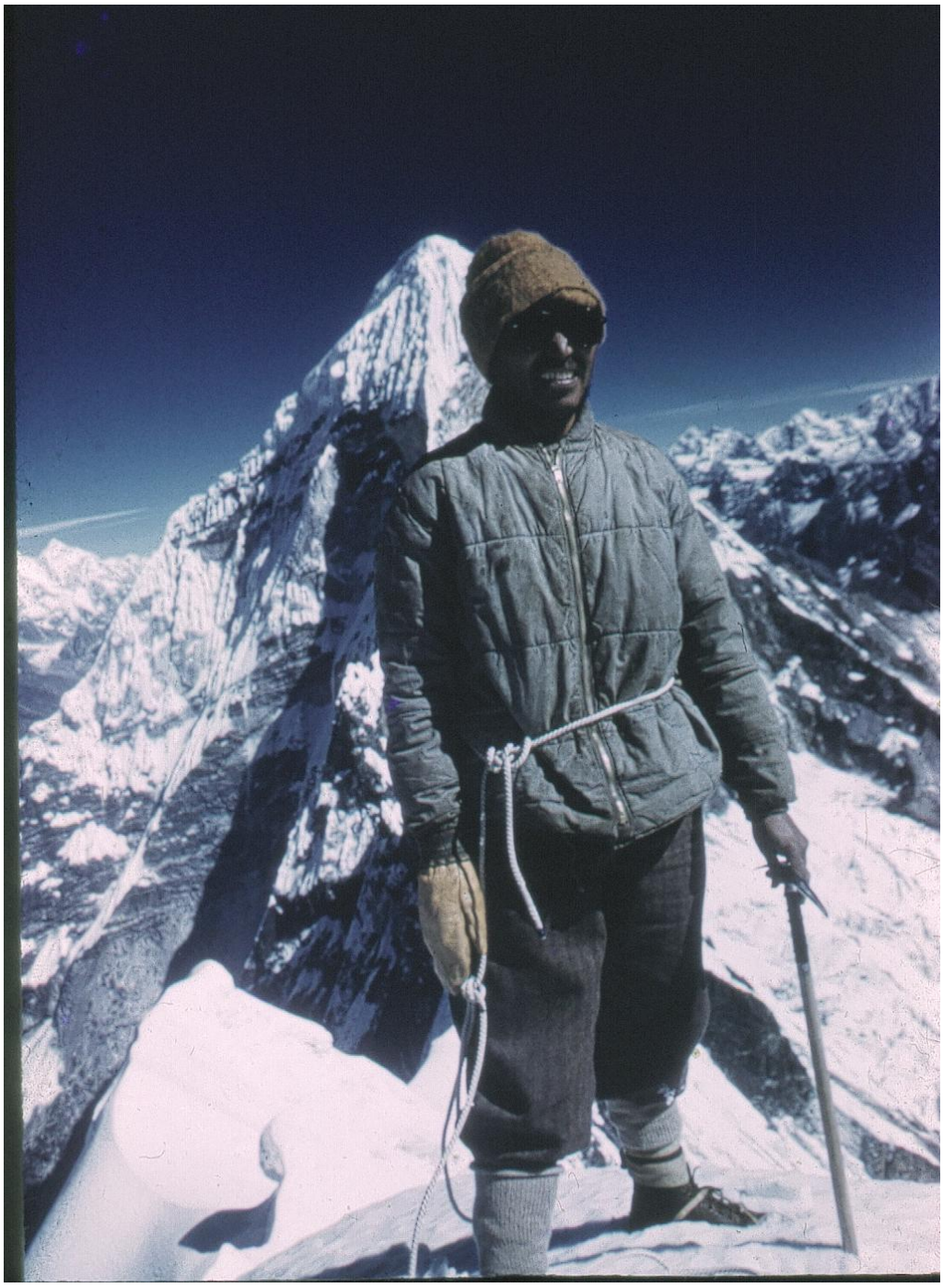


Fig 5.4 *Ang Testing summit of Puma Dablam (Ombigichen) Nov 13th 1960*

Fig 5.4 *Looking down from the summit. Our ridge in foreground. Mingbo col beyond and the Silver Hut a dot on the edge of the open crevasse on the Mingbo Glacier*

We climbed down carefully and without mishap to reach the Silver Hut in time for tea. After a short break we went on down to the Green Hut for the night. Since our peak was lower than Ama Dablam and certainly feminine in character, (it had repelled us twice and kept us guessing at to its intention about surrendering, until the very end,) we decided to call it, Puma Dablam, Daughter Dablam. It is now shown on the Nepali Everest 1:50,000map (2003) maps as Omigaichan with a height of 6340m (20,922ft). The National Geographic Mount Everest map (1988) 1:50,000 give 6,364m (21,000ft),

We planned to start serious physiology in the winter, that is from mid-December, when John West and Mike Ward would join us. Griff Pugh had started some work at our base camp at Mingbo itself, a small alp with a few stone huts at 4538m. In early December the Sherpas have one of their most important festivals, Mani Ram Du held at Thyangboche monastery. Before that there were a few days to spare so, at Norman Hardie's suggestion, I planned a trip from the

Silver Hut to go over the col just above the Hut, into the upper Hongu, down this valley then up to the Mera La, a pass that connects with the Hinuku Valley. Then down that valley and over another pass to get back into the Dudh Kosi at the village of Lukla, where there is now an airstrip (see Chapter 7). Finally back up the main trail to Namche Bazaar and to Thyangboche in time for the festival.

I took three Sherpas with me and supplies for six days. We had beautiful weather with clear sunny days and cold frosty nights. Our first day from the Silver Hut was over the col into the Hongu, down across frozen lakes and down off the snow into a valley with dwarf juniper, azalea and grass. Here we saw a fox run unconcernedly across our path. We camped at about 4900m at the highest pasturage. Sherpas from Lukla used to drive their yaks here for summer grazing, a trip that involves crossing two high passes, one of them, the Mera La, is 5640m. Our camp site was dominated by the long bulk of Chamlang (7300m), unclimbed at that time, and we watched the sunset turn its upper snows to orange, pink and flame as we huddled into our down jackets and sleeping bags round our camp fire. The next day we walked down valley then turned right and up to the Mera La. This proved to be an easy snow covered pass with yak tracks over it. From the pass we had breath taking views of the peaks that divide the Hinuku from the Dudh Kosi including Kangtega and the fine sharp Peak 43. Further left was the huge snow ramp leading up to Nau Lek, a perfect ski mountain I thought. Immediately left (south) of the col were the gentle snow slopes leading to Mera Peak (6470m). I was very tempted to try and climb it. It had been climbed just once, by Jimmy Roberts, in 1953 after he had brought oxygen supplies to the Everest Expedition. However I had this date at Thyangboche to keep and left it, regretfully. It has since become one of the most popular of trekking peaks and I was very pleased to climb it, 42 years later during a Medex Expedition 2003 with my son John and friends.

We descended snow then scree slopes and camped at the first pasturage in the Hinuku. It was wonderful to be the only Westerner with three Sherpas. They were all very different. Pemba Tensing was an experienced Sherpa in his mid or late thirties and had been on a number of large expeditions including the French 1954 Makalu Expedition. Phu Dorgie was the youngster and one of our two cook boys, very strong and always smiling. Da Tsering was the oldest and still wore his hair in the old style in a braid, either hanging down his back or more usually wound round his head. The other two tended to poke gentle fun at him but he took it all in good part. We carried quite large loads since we had our three/four man tent, sleeping and cooking gear and food for 5/6 days.

The next morning, leaving our packs in camp, Pemba Tensing and I went up valley to get a view of the approaches to Kantega, then unclimbed. The route up it looked feasible and three years later it was climbed by this route by Mike Gill and others. We then hurried back and with the other Sherpas, went down this beautiful, then uninhabited valley. In 1997 there was a devastating flood down this valley due to a natural dam burst and most of the yak pastures were washed away leaving fields of huge boulders. The result was that Sherpas no longer bring their yaks into this and the Hongu Valley for summer grazing. However, because of the popularity of Mera Peak many climbers visit it with Sherpa guides and a number of lodges have been built to cater for them. None of the Sherpas with me knew the valley and we missed the first possible pass over the wall to our right. Perhaps this was just as well since I found out, four years later, that this pass is not easy to find and requires some rock climbing or scrambling on the far side.

We descended to about 3000m and camped amid lush thick vegetation. The rhododendrons here were tree sized with twelve-inch hands of leaves and blossoms of a deep red. Next day we thankfully picked up the trail to the lower, yak pass. This, many years later, I found out to be the Zatwa La (4,600m) and is now served by a lodge on the Hinuku side. The path zigzagged up the valley side. In one place it traversed a smooth face and the Sherpas had fixed small tree trunks as a footway. As we climbed the rhododendrons became paler until at about 4000m the flowers were pure white. Above this were azalea and dwarf juniper with their evocative scents. Finally we topped the pass at about 4500m and we looked south over innumerable foothill to the hazy plains. Actually there were three ribs to cross and it was getting dark as we scuttled down the uppermost slopes of the Dudh Kosi Valley walls. We pressed on but night found us well short of the village of Lukla so, coming to a cave, we stopped for the night. The next morning we walked into Lukla and breakfasted on eggs we bought there.

Pemba Tensing and I then hurried on to reach Kumjung that night (usually a two or three day journey) so as to meet the rest of the expedition at Thyangboche the next day for the Mani Ram Du. On the "Main Road", the track up to Thyangboche monastery it was fascinating to see whole Sherpa families walking from far and wide, in some cases many days march to this most important festival at the foremost Gompa (temple) in Sherpa country. They were dressed in their finest traditional costumes, the men in their long Tibetan gowns gathered at the waist with one arm free and its sleeve down their backs. The women in long gowns with rainbow coloured hand woven aprons fore and aft and their dablams on the chest. Some of the older women had finely wrought, silver chain belts of a design suggesting chastity belts. I thought it was like a Sherpa version of Canterbury Tales. It was great to arrive at Thyangboche, meet the other expedition members and swap news. It had been a truly wonderful trip for me.

The whole Expedition assembled for this three-day festival, which happens every year around the beginning of December. The first two days are more serious with the Head Lama blessing the people and serious dances by the Lamas. Then more comic dances are interspersed and on the third day, it's more of a common people's celebration with dance and song. Too much chang (rice/millet beer) and rakshi (potato spirit, both home made of course) was drunk by both Sherpas and Climbers, the celebrations going on well past midnight.

After Mani Ram Du many of the climbers and Yeti Hunters left, some for good, others, including Ed to return in the spring for the Makalu climb. This left us, mainly scientists, to do our physiology over the winter. It is interesting how our expectations, our mind-set, determine our attitudes. Talking to Norman Hardy, who was leaving after being away from home for three months, this came home to me. He was yearning to get back to home and family and only fretting that he had a two week (wonderful) trek to Kathmandu ahead of him before getting a plane back to New Zealand. I, on the other hand, considered that the expedition had only just begun. Though it had been great, I thought the best was yet to come; a winter to spend at high altitude doing fascinating science, then a real major 8000m peak attempt. If I had been ordered home with the outgoing party I would have been devastated!

So about the second week in December we took up residence in the Silver Hut. The winter party included Barry Bishop, Wally Romanes, Mike Gill and me. We had been at altitude since September and were sufficiently acclimatized to stay at 5800m, (19,000ft). Griff Pugh and Sukhamay Lahiri had come out later and even later came John West and Mike Ward. These four joined us at various times during the next month. Sukhamay was a small, jolly physiologist

from Calcutta who had done his PhD in Oxford with Cunningham and Lloyd. He later settled in the USA and with me, took part in two further scientific expeditions (chapters 7). He and Griff had some difficulty acclimatizing to the altitude of the Silver Hut but by going down to Mingbo when they felt too bad and then returning, they both eventually were able to stay and work there. Mike and John were the last of the winter party to arrive. A crucial piece of equipment for a number of our projects was the Lloyd-Haldane apparatus. This was a beautiful thing of blown glass filled with mercury and coloured reagents, mentioned in the previous chapter. It is used to measure the carbon dioxide and oxygen in gas. Now, of course, these are measured by electronic analysers but then, only chemical analysis was available. We had brought two of these Lloyd-Haldanes but both had been smashed on the march out. We had sent an SOS message to John and Mike to bring two replacements and be sure to get them to us without breakage. They had done this and had carried one each in their own rucksacks all the way from Kathmandu. But for them, at least three of the most important projects would have failed completely.

On Christmas day we residents of the Silver Hut, welcomed the other members of the team for Christmas lunch. They had stayed the night of Christmas Eve at the Green Hut and on Christmas morning, which was clear, sunny but quite cold, they walked slowly up through the icefall and then up the slope of the glacier. We stood on the ridge below the Hut waiting for them and encouraged them with appropriate carols. We sang, "Dingdong merrily on high" and "Christians awake salute the happy morn" amongst others. Christmas dinner included freeze-dried roast mutton, roast potatoes, pees, corn (freeze dried). Then of course, tinned Christmas pudding (again) for sweet but this time with brandy butter made by Tom Nevison. Tom was an American physician working for NASA at the time. He had done much of the fitting out of the Hut but had been plagued with tummy trouble. He could not stay for the winter and left soon after Christmas to return in the spring.

John West and Mike Ward acclimatized quite quickly and were able to come up to the Silver Hut soon after Christmas after working at Mingbo on the various physiological projects. Life in the Silver Hut settled into a routine. I was interested in the fact that, although we could have been completely free of any time table we actually adopted quite a strict routine of getting up and meal times etc. We usually worked from about 8.30 to 5.00 with breaks for lunch and drinks. Then, we often would get out and take a ski run down the glacier before relaxing. In the evening we would write up the results of the day's experiments, read or write up diaries. We had some music from an early battery tape recorder (reel to reel). I had got hold of this and asked members to record their favourite music for the expedition. There were no pre-recorded tapes in those days. I recorded a number of tapes from records, of various types of music, mostly classical but some jazz as well. The only member to take up my suggestion was John West. He recorded just one work, Bach's 48 preludes and fugues! He also brought the heavy two volume score!

We usually had one or two Sherpas with us who cooked our meals. It was rather boring and lonely for them, so they changed round between Base Camp and the Silver Hut quite frequently, the relief Sherpa bringing up some fresh food, messages and mail. Water had to be made from ice dug out of the glacier cave just across the open crevasse by the Hut. The ice was melted in a tea urn on the Hut stove so we always had water "on tap" for drinks. We were aware that our appetites were poor and that we needed to push the calories to keep weight loss to a minimum. Drinks with plenty of sugar and full cream powered milk were one way to do this. We had a

plenty of food to choose from. In those days before domestic freezers were common, there was a great variety of freeze-dried foods. The most successful were the fruit and vegetables including, pees, runner beans, carrots, potatoes, apple rings, raspberries, apricots and plumbs. We also had freeze-dried meat, beef either sliced, steak or ground up. This was not so successful as it all tasted like cardboard. We found that the best way was to have it curried or with sweet-sour sauce. We also had a variety of tinned foods as well as rice and flour from which the Sherpas made chapattis and Mike Gill made bread. But we found that all these preserved foods began to taste insipid unless jazzed up with sauces. It seems as if altitude dulls the sense of taste. We longed for fresh foods and were fortunate that we could, at times, get supplies from the nearest villages of fresh vegetables including delicious small potatoes and eggs. However, in spite of all this, we all lost weight when living at the Silver Hut though we regained our appetites and put on weight when we went down to Mingbo. It seemed that somewhere between these two altitudes (4500 and 5800m) was the critical altitude above which weight could not be maintained, at least in Lowlanders. Sherpa, it seemed, did not loose weight at this altitude.

What about hygiene? Well, in digging out an ice cave in the side of the open crevasse beside the hut, we came across a hidden slot crevasse. So, a few meters down and right of the cave we dug into the side of this open crevasse and hit the same slot. We dug sideways following this and placing two planks across the 18-inch slot had ourselves a deep trench latrine, permanently frozen. As one spot filled up, we shovelled snow on top and dug along a bit further for the next site. Icicles formed from the roof and the light coming through the ice gave a very pretty effect. "I'm just off to the Grotto" became the euphemism.

The Physiology

The various projects mostly examined the way the body defended itself against the lowered oxygen pressure in the air around us due to the altitude. At the altitude of the Silver Hut, the barometric pressure was just half that at sea level. So the partial pressure of oxygen was also halved (since the percentage of oxygen, about 21%, remains constant). As oxygen passes into the lungs, across into the arterial blood and then to the tissues of the body, pressure is lost at each stage. However, the various processes of acclimatization tend to counter this effect. Probably the most important aspect of acclimatization is the increase in breathing that takes place in the first few days of altitude exposure. At sea level there is a big drop in oxygen pressure as the air passes into the air sacks of the lung due to oxygen being taken up and carbon dioxide put out into the lungs. This drop is reduced if the subject breathes more. At the Silver Hut, after we became acclimatized, we doubled the amount of air we breathed per minute at rest (and more than doubled it on exercise). The result is that the drop in oxygen pressure from outside to the lung was halved.

The increase in breathing is due to a change in the automatic chemical control of breathing and the response to both carbon dioxide and oxygen lack are increased. The study of this mechanism was the project that I was mainly responsible for, using the "Oxford" approach of Cunningham & Lloyd (Chapter 4). Each study took two to two and half hours and then I had to analyse the twelve or so gas samples in the Lloyd-Haldane apparatus. The samples were collected in "Barcroft" Tubes. These tubes, made of glass, had a tap at each end. Before the study, we evacuated them using a vacuum pump We had a simple gadget that continuously sampled the subject's "alveolar" gas, ie the gas from the end of each expiration. This reflects

the gas in the depths of the lung and is close to the oxygen and carbon dioxide level in the arterial blood. This blood then goes towards the brain and is sensed by the carotid bodies in the neck and the brain for the level of these gases. The result of this sensing controls the breathing rate and volume of the body. At each point of the study we opened a Barcroft tube and took a sample of gas. Now, of course, the gas would be analysed on line with electronic analysers. Finally I graphed the results and calculated the sensitivity of the subject to Oxygen and carbon dioxide. I showed that sensitivity to oxygen did not change with acclimatisation, but to carbon dioxide it did. One becomes more sensitive to carbon dioxide.

Another project, measuring the diffusing capacity of the lung for carbon monoxide, which John West carried out, measured the next step in the transport of oxygen, from the lung air sacks into the blood. This happens by simple diffusion. The membrane separating gas in the lung from blood in the capillaries is very thin and so the oxygen diffuses through with only a small loss of pressure. In certain lung diseases this wall is thickened so that the patient suffers from reduced oxygen supply to the body. The capacity of the lung to perform this function can be measured using a very low concentration of carbon monoxide. The This, he e question was is this function changed with acclimatisation? John found, it did not change with acclimatisation.

From arterial blood to the tissues, the drop in oxygen pressure depends upon the flow of blood; for the whole body, that is the cardiac output, the haemoglobin concentration and the oxygen dissociation curve. The latter is the way oxyhaemoglobin (haemoglobin combined with oxygen, changes to deoxygenated haemoglobin. John measure all these things both at rest and on exercise and found there was no change with acclimatisation. We measured all these variables and for cardiac output we did it both at rest and exercise.

The largest project was on the effect of exercise on breathing, heart rate, cardiac output. Griff Pugh was responsible for this but we all helped and this was one of the projects we continued at even higher altitudes on Makalu in the spring. This involved the subject cycling on our stationary bicycle at increasing workloads up to the maximum we could manage for at least 3 minutes. At altitude it felt even more exhausting than at sea level. At each exercise level we took timed collections of expired gas whose volumes were later measured and analysed for oxygen and carbon dioxide to work out the oxygen uptake per minute, as a measure of work rate. It was only too easy to make a mistake in these gas collections, a gas tap turned the wrong way could ruin a run and the whole exercise study would have to be repeated. Griff seemed to be most often the person to make these mistakes. A subject could only push himself to exhaustion once in a day, so a ruined study was quite a disaster!

I also did a study of the electro-cardiograph (ECG) at various altitudes and with and without oxygen. I showed that at altitude this changed in response to the oxygen lack (hypoxia) which causes the arterial pressure in the lungs to go up and this makes the right side of the heart (right ventricle) work harder and this is reflected in changes in the ECG.

We also did a project on mental performance using a measure of efficiency of card sorting into suits. Mike Gill was reasonable for this project. He used an apparatus built for us which tined the sorting process. He then had to check the accuracy of the sorting by hand. He showed that at altitude, the accuracy of sorting cards into suits was not impaired, but the time to make the decisions, was increased.

Tom Nevison had a portable instrument for measuring electro-encephalograms (EEG), which NASA had developed, and he used this on us. Although state of the art for its time (it used valves not transistors of course) it was primitive enough that the electrodes, instead of being plates on the surface of the scalp, had to be hypodermic needles inserted under the skin of the scalp – not a popular study for the subjects! We christened the machine Frankenstein.

Life at the Silver Hut

But it was not all work at the Silver Hut. We had been supplied with skis. These were the latest design, Head skis, and the first laminated plastic and steel design I believe. Originally we had "bear trap" and cable bindings. But during the expedition we were sent out the first "safety" bindings made by Marker. These still used cables but had a triangular toe piece, which, on falling sideways, would swivel and release. We had to fit these ourselves of course. We also had the latest ski boots by Hinki, nice leather (bendy) boots but with clips rather than laces! So, often at the end of a days work in the Hut, we would get out and take a run down the glacier, which was a great release of tension and any frustration. Even the tedious walk back, skis on shoulder, was relaxing with the wonderful mountain views all round.

We did not know what to expect of the weather. In the event, it was mainly beautiful, anti-cyclonic weather, sunny days and starry cold nights with little wind. For perhaps two or three days each month we had stormy days with cloud and wind which blew spin-drift snow about but little if any snow fall. But even on these days we got out to read the instruments in our little weather station that Barry Bishop was responsible for and we could, had it been necessary, have moved down to the Green Hut or even Mingbo.

We thought we should give ourselves a day off occasionally so we decided to "observe the Sabbath". On one Sunday we did a ski tour by carrying our skis up to the Col and skiing down the Hongu valley some way. Then, using skins, we climbed up onto a ridge and after lunch, clambered down over rocks to a glacier and then skinned up to a second col, south of the first one, which led us back into the Mingbo valley. The descent from this col was quite tricky but we then had a final ski run down and a trudge back to the Green Hut where Urkien and Mingma Tsering met us. Wally Romanes nobly went on back to the Silver Hut to make sure the stove was kept going to avoid freezing in the hut which would have destroyed the Haldane apparatus. The rest of us slept at the Green Hut.
On another Sunday in perfect weather, the two Mikes and I clambered down the ice cliff the Hut was on, to the lower part of the Glacier. We then used skins to traverse below the bergschrund to the foot of a nice looking little peak we later named "Rakpa" peak, after the little Tibetan terrier we had at the Silver Hut. The two Mikes then roped up and started to climb this peak whilst I skied back to the Hut and watched and photographed them. From our grandstand view we were treated to a fine display of steep snow climbing as they reached the top of this fluted peak. They found the snow to be in such good condition that they could front-point up using the novel twelve point crampons rather than cutting steps as was still standard practice.

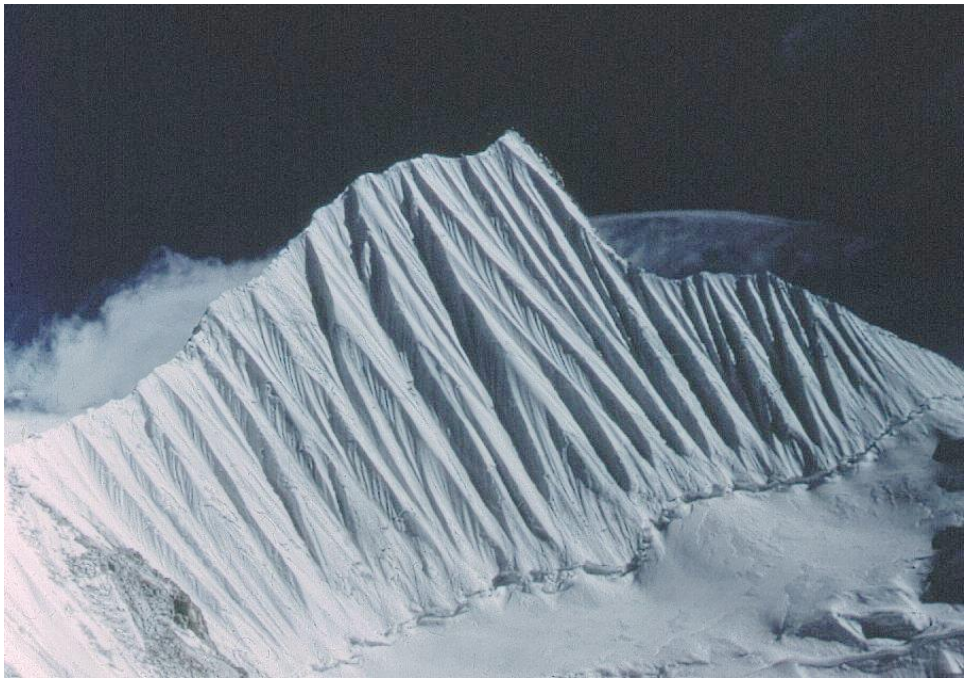


Fig 5.5 Rakpa peak from the Silver Hut

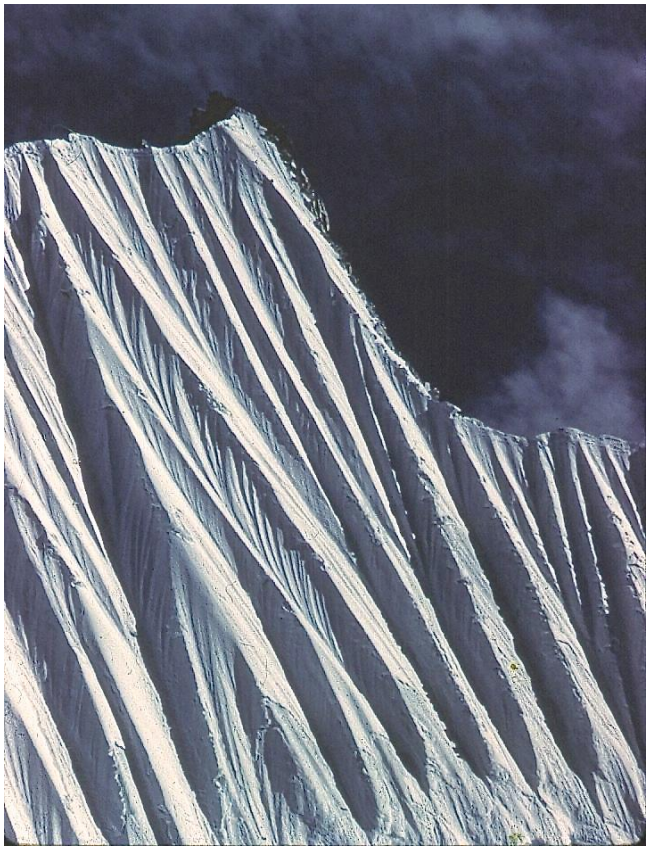


Fig 5.6 Mikes Ward and Gill tiny dots, high on Rakpa peak

They came back, after dark, tired but elated from this experience and began to consider if they could not use this technique and have a go at climbing Ama Dablam! This most formidable peak had looked quite impossible from the usual Southern view but having been looking at the

mountain from the East for weeks, one could see that the formidable top section did, in fact lie back at a more reasonable angle than appeared "en face" from the South. The approach to this top snow and ice section was over some difficult rock passages but both Mikes were good rock climbers.

Ama Dablam climbed!

By now, mid February, Griff and Sukhamay where up at the Silver Hut so we were a party of eight plus one or two Sherpas and it was getting crowded. So when Mike Ward proposed that he, Mike Gill, Wally and Barry go off and attempt Ama Dablam, Griff was happy to agree. In those days regulations about permission to climb lesser peaks were much less tight and we understood that we had permission to climb any of these in our area. Indeed members of the Expedition had already climbed Island Peak, Puma Dablam and Rakpa Peak with no objections raised. We considered Ama Dablam in the same light. After all it was under 7000m. So in mid February Wally started to scout the route up the SE ridge. Over the next three weeks various combinations of the four of them pushed the route up this ridge. They had the help of Sherpas up to their Camp 1 where the difficult rock climbing started and for some way beyond, where they fixed some ropes and a small wire ladder, but beyond their third camp, on the a small snow patch, they were unsupported. The rock climbing was of a very high standard for that time and it was still winter of course. They were fortunate that most of the climbing and their camps were on the sunny south side of the ridge and out of the wind for the most part. There was some high standard snow climbing above the rock and their final camp was a snow hole on the hanging glacier, the Dablam. It was a very fine feat of climbing, years ahead of its time and not repeated for 20 years. It has now become one of the post popular commercial expedition peaks with fixed ropes over the technical steps. But it is still a very fine climb.

Finally, on March 13th the four of them all summited and returned safely. Unfortunately, as they were clearing the mountain of all the ropes and camping gear, Gummi Dorji had an accident. A slab of rock he was standing on broke and he dropped a few feet, the slab hit his leg and broke his shinbone. We had sent two Sherpas to help with clearing of the mountain and one of them returned with a note giving us the news and asking for supplies of morphine, splints etc. The next day I went down to the Green hut and up to their Camp 1 in time to see them carrying Gummi down to that camp. It had been a very difficult rescue over hard exposed rock. It had snowed over night making the rocks slippery as well. The next day Gummi was carried down to Mingbo and fortunately the following day a plane came in and he was flown out to Kathmandu where he made a rapid recovery from his nasty compound fracture and rejoined the Expedition in the spring.

It was while the four climbers were nearing summit of Ama Dablam that we had the incident of the lost ski. Griff was skiing near the bottom of our "run" when one of his skis came off doing a jump turn. It careered down the slope to drop into a crevice. After lunch we went down with Sherpas, crampons, ice aces and ropes. I roped up and went down the crevice, held by Ang Temba. At first it was a matter of climbing down steep soft snow for some 10 feet. Then the crevice narrowed and the walls became hard ice. I spotted the ski about 30 feet lower down. I climbed down to it using a combination of step cutting and bridging. I sent the ski up on the rope, and then started up myself. About half way up, a whole lot of icicles I was leaning against broke off and I swung along the crevice and had to pull up on some ice stumps and climb quickly for a few feet before I could rest. I was utterly breathless and exhausted!

Spring and the wives and new climbers arrive

During the Ama Dablam climb, the spring party of new and returning climbers were trekking out from Kathmandu. With them were a number of wives of expedition members including Louise Hillary and Betty. She acted as Medical Officer for the party. She had one testing episode when Louise, who knew she was allergic to aspirin, took a tablet for a headache given by another member who assured her it was not an aspirin. She rapidly started to get allergic symptoms. Fortunately Betty was able to locate adrenaline and give her a quick injection as she was beginning to suffocate and all was well. It turned out the tablet was a combination that did indeed contain aspirin. They all arrived in the Khumbu just as the Ama Dablam party got down from their mountain.

It was wonderful to see Betty again and she had double marched (alone) to reach our Expedition house at Chagmitang to meet me on the evening of March 18th. The next day we had a call to a midwifery case in Pangboche, the next village up valley on the other bank of the Dhud Khosi. Betty and I went up to see the patient with Aila Sherpa. She was obviously very sick, having had a baby 7 days earlier who also was in a poor way. The diagnosis was a retained placenta and, under morphia, Betty did a manual removal. We returned for lunch at Changmitang and in the afternoon we had a conference at which Ed outlined plans for the next phase, the attempt on Makalu. In the evening we returned to Pangboche with Aila and Pemba Tensing to find both the Sherpani and baby had died. Betty and I carried on up to Mingbo where we spent the night.

Crisis over Ama Dablam climb

The next day was cloudy and we just went for a walk up to the shoulder of Ama Dablam and back to give Betty some acclimatization. On the next day a plane arrived from Kathmandu with Griff on board (he had flown out with Gumi 4 days before) and this plane was to take Louise and June Mulgrew back. Griff had the startling news that the authorities in Kathmandu on hearing about the ascent of Ama Dablam had taken the view that this was unauthorized and were saying the Expedition must immediately pack up and leave Nepal! Griff said the only course was for Ed to return on this plane and sort things out and that the other wives should leave as soon as another plane could take them out.

Fig 7.7, L to R Griff, Ed and myself on Griff's return from Kathmandu with news that we had been ordered to abandon the expedition!

This was catastrophic news. Opinions were divided on how serious it was. Were they bluffing or not? Ed returned to Kathmandu by the plane that had brought Griff out and we went ahead with the plans for getting all our expedition stuff over to the Barun valley in order to make a serious attempt on Makalu. Time was important since we had to get into position for a summit attempt before the end of May at the latest. We also hoped to continue some physiology on Makalu at a higher altitude than the Silver Hut.

We decided there was just time for Betty to get up to the Silver Hut before she went back on the next plane. So that same day we two with Tom Nevison went slowly up to the Green Hut. Betty went well considering she was unacclimatised to that altitude. We returned to Mingbo the next day and got news that negotiations were not going well in Kathmandu. The authorities were saying the expedition would have to leave immediately and it seemed likely that the girls would have to return very soon. So in order for Betty to see the Silver Hut we set off urgently for the Green Hut. The following day it was up the ice fall to the Silver Hut and after a couple of hours there, we returned down to the Green Hut for the night. The weather had been good and it was great that Betty had been able to see our winter home and even to ski down the Glacier on our way back. The next day a plane came in the afternoon and Betty, Louise and Lila Bishop plus luggage piled in. My heart was in my mouth as the plane took off straight towards a small hill at the end of the runway and made a dangerous left turn to dive through a slot into the Mingbo valley. I was relieved when it appeared again down valley and flew away to the West.

Ed had a tough time in Kathmandu, doing the rounds of the ministries and apologising for our Ama Dablam climb. In the end he was made to pay a fine and permission for the expedition to continue was given. He returned by plane after 10 days in Kathmandu and with considerable loss of acclimatization.

For the next three weeks we scientists continued with our physiology program while the climbers started to make the route from the Silver Hut over the Hongu basin and Barun Plateau to the Barun Glacier. The Sherpas began carrying the many loads over this high level route, for the attempt on Makalu.

The Silver Hut became quite crowded now with Griff, Sukhamay and Tom as well as the previous occupants all trying to work there. Those of us scientists who were going on to Makalu, John West, Mikes Ward and Gill and myself, were given a departure date of April 20th so we had to make sure we had completed our experiments by then. There was also a lot of coming and going of climbers. Sherpas too were to be seen passing the Silver Hut and going in a line up the fixed ropes of the col wall like ants on a jungle trail.

The weather was fine and beginning to warm up, as John and I set off on April 20th saying goodbye to Griff and the others who were staying to complete their programs. I had spent a total of 111 nights in the Silver Hut, Mike Gill was second at 110 nights in the record stakes! It was the end of an incredible, beautiful and never to be forgotten winter.

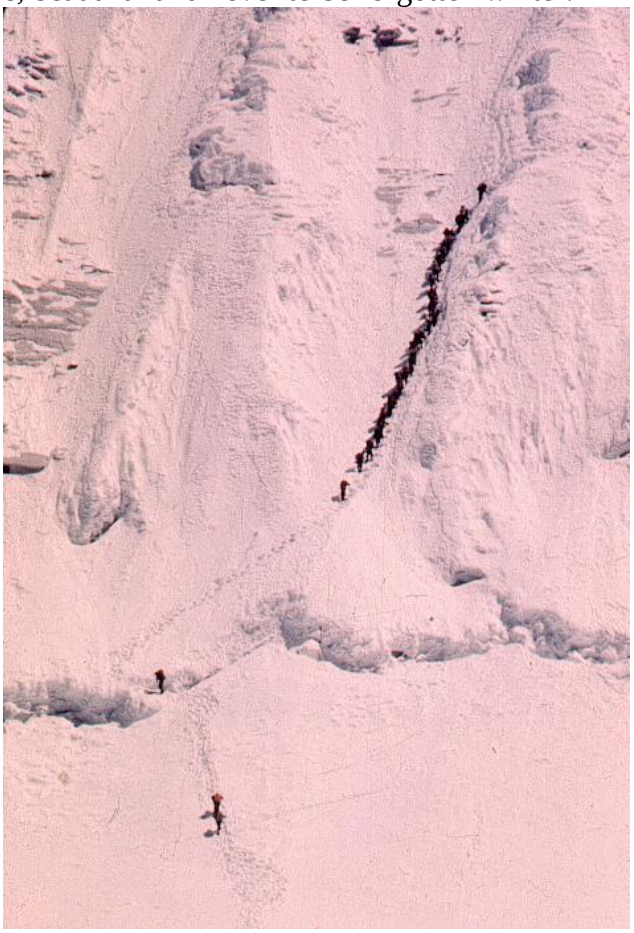


Fig 7.8 Sherpas ascending our Col Wall on their way to Makalu

CHAPTER 6

SILVER HUT EXPEDITION 3: Makalu

On a fine, clear, sunny morning John West and I left the Silver Hut for the Barun valley and Mt. Makalu, see map, fig 1. Makalu is 8,485 metres high, the fifth highest mountain in the world. It was first climbed by the French in 1954 and we planned to climb it by the same route. We donned crampons for the climb up to our col using the fixed rope as a handrail. At the top we met Ed and some Sherpas who took our crampons while we put skis on. We had a good run down the gentle slopes of the Hongu Glacier to about 200 yards short of the transit camp set up by climbers and Sherpas in the last few days. Though quite high at 5,300m, it was a pleasant site in the centre of the huge Hongu basin, just off the snow, with a mossy bank and a small stream nearby. We reached camp at midday and had a lazy afternoon.

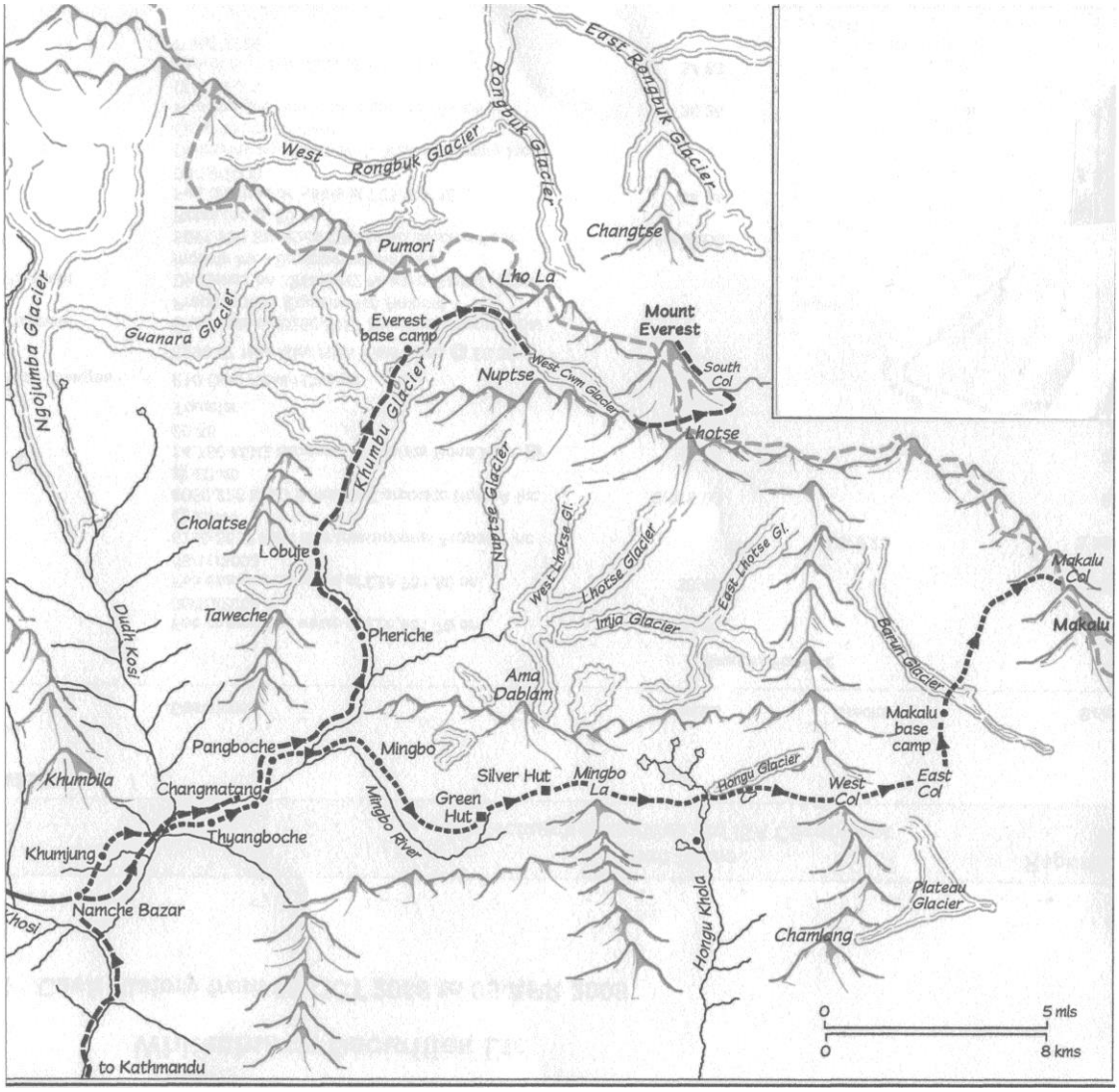


Fig 6.1 Map of the Khumbu, showing or route from the Silver Hut to Makalu.

After a rest day at the Hongu camp, we set off for a long day to reach Base Camp in the Barun Valley. We went with Ed Hillary, Tom Nevison and about twenty Sherpas for the first stage. We climbed up about 500m to the Barun Col West, which we reached with a short rock scramble. There were fine views looking back to Ama Dablam, Puma Dablam and "our" Col.

Now we were on the Barun Plateau at about 6,000m. John and I put our skis on, (which had been carried for us by Sherpas), and skied across the plateau using skins for the pull up to the East Col. Here we had fine views of Makalu across the Barun Valley. It looked so close in the clear air.

We had to carry our skis down on the far side: this was quite tricky as we were in our clumsy ski boots, carrying our skis and were now on our own. We put our skis back on when we reached snow below the rock. We had to be careful as we were on very steep snow. From here we had the best skiing of the day down towards our Base Camp. The snow ran out above the camp so we had a tedious moraine trudge, carrying our skis, for the last hour.

I think this was possibly the first time that skis had been used in the Nepal Himalayas to get from A to B. Mostly the terrain does not lend itself to ski touring and we might have thought better of it, had we not the luxury of having Sherpas to carry our skis and other equipment for us.

Base Camp (5,200m) was not a pleasant site. It was set in the moraine above the Barun Glacier and was extremely dusty. When any wind got up, as it frequently did, the dust was whipped into everything: hair, eyes, nose, clothes and food.

Ed realised that those of us who had spent longest in the Silver Hut, though we were very well acclimatised, had also suffered from some degree of altitude deterioration. This is a poorly understood condition, which affects climbers who remain at extreme altitude for any length of time. Above 8000m, for instance, climbers are seriously affected in a few days. The symptoms of altitude deterioration include general fatigue, loss of drive, poor appetite and weight loss. At less extreme altitude the same deterioration can occur, but it takes longer and it seemed that the altitude of the Silver Hut was high enough for us to have been affected.

So Ed suggested that, before we went up onto Makalu, the four of us scientists, namely John West, the two Mikes (Ward and Gill) and I, should go down the valley to a small yak pasture, Shershone, and have four days rest and recuperation at a lower altitude, about 4,500m, which we did.

Whilst there, and since we were all very tired of our preserved food, we tried, unsuccessfully, to trap some grouse-like birds. They were called Chukor partridges, on account of their call, *chuck-chuck-chuck-kor*. We talked a lot, read, lazed, slept and made plans for the physiology research we hoped to do on Makalu.

At the end of our "leave", the four of us made our way back up the Barun Valley, across the rock-covered glacier and up an icefall in a sort of ice corridor. This opened onto the mountain proper and to a rock knoll where Camp II had been placed. The next day we all went up an easy glacier to our Advanced Base Camp III at 6,300m. The camp commanded a wonderful view back to the way we had come from the Silver Hut, with the long summit ridge of Chamlang

dominating the panorama. Looking the other way was Makalu summit with our route going to Makalu Col.

Fig 6.2 Camp 6,300m: Advanced Base Camp III looking back to our route the Silver Hut. The peak with the long summit ridge is Chamlang 7,4319m. Barun Plateau Col East is just right of Chamlang. The Barun valley is in deep shadow beyond the tents.

Fig 6.3 Looking to Makalu summit from Camp 3

Fig 6.4 Route from Camp 3 to Makalu Summit

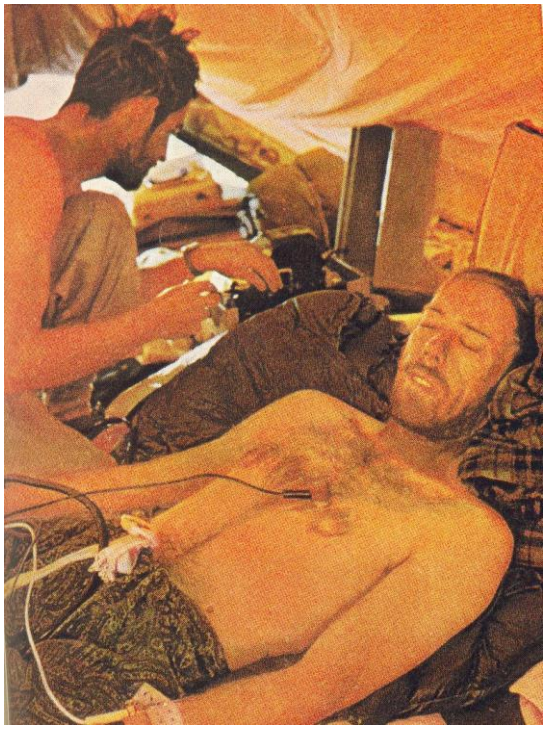


Fig 6.5 Me carrying out an ECG on Wally Romains at Base Camp

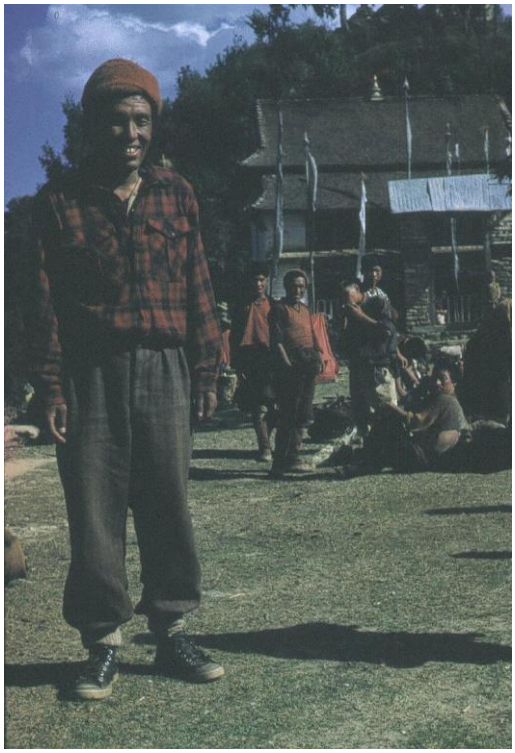
I spent a week at Camp III mostly doing physiology. This included ECGs (elector-cardiograms) on most expedition members and exercise tests on our main subjects, using our faithful stationary bike and alveolar gas samples.

On one day I went up to Camp IV, just ahead of a party of Sherpas, to re-cut the steps in the couloir just below the camp. I had to use about four swipes of the ice axe for each step and had to keep going so as not to hold up the laden Sherpas. I have never felt so breathless. The altitude was about 7,000m, the highest I had ever been. Ed, directing operations from Camp III, was also suffering, in his case, from bad headaches.

By May 7th we had almost completed our planned physiology work and the route had been pushed through to Makalu Col. The "heavy lift" of supplies for the summit bids, using all available Sherpas and led by Peter Mulgrew, (a New Zealand Naval Officer a climber close friend of Ed's) and Leigh Ortenburger (an American Climber, went off to stock Camp V on the Col. The other climbers and Ed went down to Camp II leaving John West and me to finish some final bits of work at Camp III.

By midday we were ready to leave for Camp II when I was called to see a Sherpa who was sick. Aila, one of our older Sherpas was complaining of a headache and feeling ill. I listened to his chest and found he had crackles at his lung bases. I thought he might have high altitude pulmonary edema (HAPE). This is a condition first described by Charles Houston was, an

American physician, and mountaineer, in a paper in the New England Journal of Medicine, published in August 1960. He described the condition in a single patient. Although it was published just as Betty and I left for Nepal. Somehow I had got a reprint of this short paper and so was on the look out for this condition. It is a potentially fatal form of acute mountain sickness. Sherpas are much less susceptible to the condition but Aila seemed to be an exception. The treatment is to get the patient to lower altitude as soon as possible. Oxygen is also very good but all the oxygen at Camp III had just gone higher up the mountain. So I told him to get his personal gear together and get ready to come, with John West and me down to Camp II.



The route down was quite easy but it was over a crevassed glacier so we roped up. I led and John brought up the rear. We had gone only about 50 yards, when Aila collapsed. So we took his rucksack and John nobly added it to the top of his pack.

The weather was not good. It was misty with snow flurries as we cautiously made our way down the glacier, with me probing, with my ice axe, any irregularities that might indicate a hidden crevasse.

Every 100 yards or so we had to stop, because Aila was coughing so much. At first he was spitting out frothy white sputum but later the sputum became blood-tinged, obvious on the white snow. Clearly he was suffering from HAPE. About two thirds of the way down to Camp II we got off the glacier so we could unrope.

Fig 6.7 Aila Sherpa back in Thyangboche

I left Aila with John while I ran down to the camp and got oxygen and a couple of Sherpas and returned to Aila. Whilst a Sherpa carried the oxygen set for him, Aila breathed the oxygen and with its help could walk without stopping down to the camp. Once there, I kept him on oxygen for about three hours by which time he declared he was OK without it.

The weather got worse later in the day and the camp was not a very comfortable one on its rocky hillock. Ed was still suffering with headaches and stayed in his tent while the rest of us were in the mess tent. We were about to start supper when we heard a sort of strangled cry from Ed's tent. Mike Ward went to see what was happening and called me. We found Ed unable to speak and with what was clearly a left facial and left-sided weakness. It was obvious that he had had a stroke. We were naturally shocked. There was little we could do except to give him oxygen (which probably was of questionable value) and then wait and see how things progressed. Mike and I took turns to stay up with him for the night.

By the next morning Ed was considerably improved and was able to talk, with slurred speech, and to stand up. We felt that altitude hypoxia was likely to have played a part in his condition

and that therefore he should get down as soon as possible and not come back up to any significant altitude again.

Mike was appointed leader and it fell to me to accompany Ed down. So about mid-morning we set off taking also the much-recovered Aila and a small group of Sherpas led by our Sirdar, Dawa Tensing, who was keen to stay with Ed. We made our way down to the Barun Glacier and across it to Base Camp. Ed was able to walk slowly with some support from a Sherpa.

In the years since 1961 there have been a number of cases of mountaineers having strokes at high altitude. They occur after some time at altitude, usually later in the expedition, so not associated with acute mountain sickness. They usually recover quickly with no residual problems. But in at least one case, the patient had a second stroke whilst still at high altitude.

The initial plan was to go on to the 1954 French Base Camp further down the valley and call for a helicopter to take Ed back to Kathmandu. But as Ed recovered further, he was very much against this and if he couldn't go back up Makalu, he wanted to get back to Solu Khumbu and supervise the building of a school in the village of Kumjung-Kundi,

He had wanted to do something to express his thanks to the Sherpas, who he recognised had been vital to the success of the 1953 Everest Expedition which had propelled him into his world celebrity status. As he and the yeti hunting party had come over the Tesi Lapcha Pass he had asked the Sirdar of his party, Urkein, "What will happen to you all in the future?" Urkein thought for a moment, and then replied, "In the mountains we are as strong as you – maybe stronger, but our children lack education. Our children have eyes but cannot read. What we need more than anything is a school in Kumjung village". (Hillary *View from the Summit p194).*

Thus was born the idea of raising money to build a school. Ed had worked on this project during the winter. He had collected money in the USA and New Zealand and purchased a prefabricated aluminium building, which was flown in by helicopter, in parts, to the site. Ed was naturally keen to be back in Solu Khumbu to supervise this building.

Mike Ward was at first inclined to evacuate Ed by helicopter, but I agreed with Ed that Kathmandu would be hot and he would attract a lot of unwelcome media attention. He would be just as well off convalescing in a nice grassy camp with the Sherpas and me to care for him. Even if he were to have a second stroke, there would be nothing that could be done in Kathmandu except tender loving care, which we could give him just as well.

The next day Peter Mulgrew came down to Base Camp. He, with Leigh Ortenburger, had led the heavy carry to Makalu Col the previous day in quite bad weather, but on hearing the news of Ed's stroke had hurried all the way down. Peter and Ed were old friends from Antarctic days and Peter felt he ought to be the one to accompany Ed now. I was very tempted to agree and get back on the mountain, but I knew that Mike Ward and the others would feel that, with five doctors to choose from, it ought to be a medic who stayed with Ed. Not that I could do anything more for Ed than Peter could, should he have another, more massive stroke.

So, after one rest day at Base Camp, during which Ed and Aila improved, we set off down the valley to the French Base Camp, from where they made the first assent of Makalu in 1954. The weather was not good with mist and some snow flurries, but Ed and Aila went quite well with

frequent stops at first. Lower down the going was better and, in gentle snowfall at about five pm, we reached “Hotel Makalu”, the French Base Camp. This was a pleasant grassy site. We considered it would be foolish for Ed to attempt to return to the Khumbu the way we had come, over such high passes. So after six days rest, Ed and I, with half a dozen Sherpas, returned to the Khumbu by a much longer, low-level route, taking two weeks to get back to the Dhud Khosi.

During the six days of rest and convalescence and the two-week trek, we had plenty of time for discussion and reminiscence. We were both rather depressed. I, because I had missed the chance to go high on Makalu and Ed, because a stroke at any age is a disaster but at 41 and for such an energetic man it was doubly so. On top of any personal reason to feel depressed, he naturally felt that he had let his team down by having to abandon the expedition just as they were going for the summit. Makalu had been climbed only once before by a French team, using oxygen. We were attempting it without oxygen.

Fig 6.8 John *West and Mike Ward assemble the exercise bike on Makalu Col 7,400m*

In my absence, John West, Mike Ward and Mike Gill assembled the stationary bike and carried through the physiology we had planned to get done on Makalu Col (7,400m), and carried through exercise tests on each other including VO_2max. Their measurements on the Makalu Col remained the highest measurements of this index of performance for the next 46 years, until 2007 when similar measurements were made an the South Col of Everest at 7,906m by the Caldwell Extreme Everest team.

Mike Gill gathered alveolar gas samples at this altitude and at a camp above, which were added, by Griff, to other data from Everest and Cho Oyu, to give a good account of the change in alveolar pressures of O_2 and CO_2 with altitude.

The news we got from the team high on the mountain was not good. The first attempt on the summit was beaten back by bad weather. Then during the second attempt, by Tom Nevison, Peter Mulgrew, and Sherpa Annallu, Peter collapsed, only about 120m below the summit, with severe chest pain and coughing blood. It seems he had had a pulmonary embolus.

The whole expedition now turned into a rescue mission. It was a long story involving heroic efforts by climbers and Sherpas over 6 days to get Peter down to the Col and a further 4 days to Camp III. Eventually they got him down alive but badly frost bitten. The full story of this saga can be found in "High in the Thin Cold Air", the book of the Expedition by Hillary and Doig, in Peter Mulgrew's personal account in his book, "No Place for Man" and in Mike Gil's book Mountain Midsummer.

With hindsight, and bearing in mind that Peter and I had considered swopping places, he to accompany Ed, and me to join the attempt on Makalu, how different things might have been had we decided to do so!

Ed and I were just about able to follow this unfolding saga using the small walky-talky radio we had. We could just make out the transmissions from one camp to another on some occasions, but were never able to transmit a signal ourselves: not that we could do anything about the situation even if we had managed a successful transmission.

We later heard that they had been able to contact Kathmandu via the Silver Hut and the radio we had there. They were able to arrange for a helicopter to come and pick up Peter in the Barun Valley. Mike Ward, who had had HAPE and HACE on Makalu Col, and Ang Tember Sherpa who had a broken ankle, together with John West, were also helicoptered out. Betty played an important part in answering the radio and arranging all this. She was also involved in looking after Peter in Shanta Bhawan Hospital after he was admitted there with his severe frostbite and a lung abscess.

On top of all this, the weather was bad most of the time Ed and I were trekking, with rain and mist almost every day. The country we were now travelling through should have been wonderful but the weather reduced the visibility to a few hundred yards and the tracks became slippery and muddy. Perhaps, because I am by nature optimistic and I seem to have a memory that tends to filter out less happy events, I have difficulty remembering this time in any detail.

However, Ed was by now recovered physically, which was good, and I was very fit after many months in the mountains. In fact one diary entry records the fact that I had, that day, descended below the 4000 m contour for the first time in eight months!

I do recall one memorable evening when we arrived at the first real village, Shedoa, and were able to buy fresh food for the first time. We had both lost weight at high altitude but now at lower altitude, our appetite had returned in full and we had a fantastic meal wonderfully prepared by Penuri, our Sherpa cook, of local potatoes, small and delicious, with greens and a whole chicken each.

My diary records so much bad weather. One entry, May 24th reads, "*A wet morning, off at 6.00am just above the mist briefly. They certainly look like monsoon clouds to me. A glimpse of the snows, then into the mist for the whole day. It must be a wonderful walk in fine weather".*

By the time we reached the Khumbu, Ed was fully recovered and "raring to go" in the building of the school house in Kumjung. Ed sent me up to the Silver Hut site to dismantle it with the help of three Sherpas including Mingma Tsering who was Ed's personal Sherpa and later became the head of the aid programme (now known as the Himalayan Trust), which developed out of the school house project.

I was now so fit and acclimatised that I was able to go from Changmitang up to the Silver Hut in one day arriving about 3.00pm, a trip that usually took two or three days. We began dismantling the hut the same day.

The Hut was quite a sight.

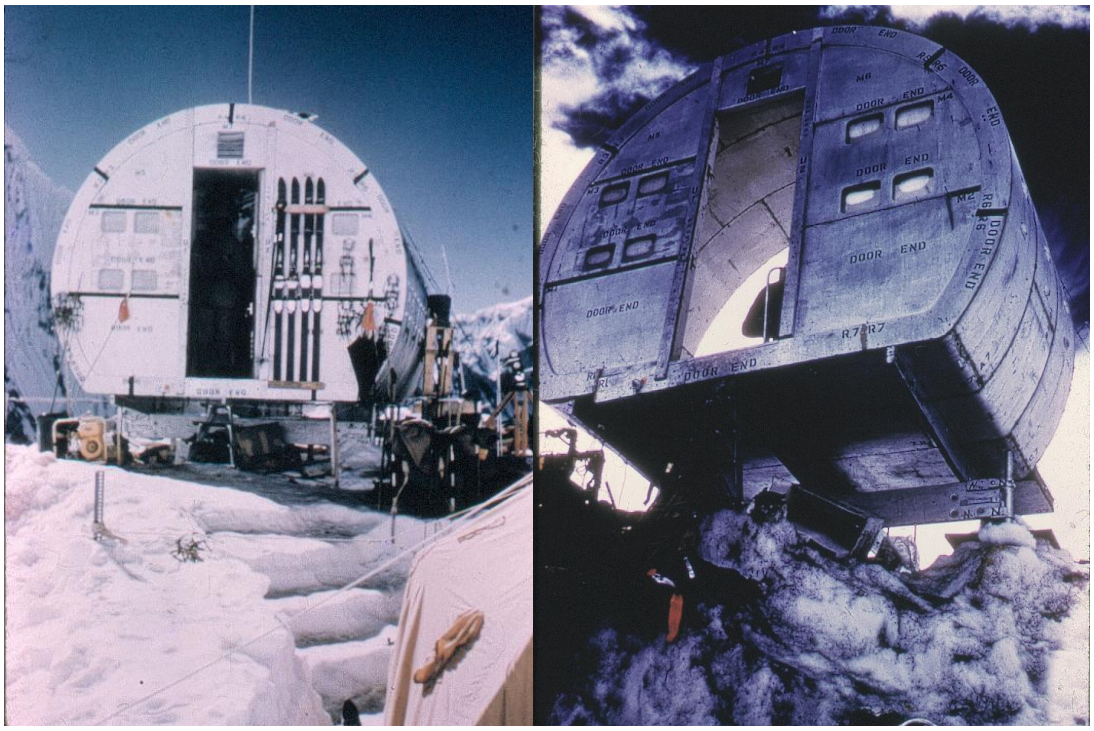


Fig 6.9 Silver Hut entrance Winter 1960-61

Fig 6.10 Entrance late spring '61 on ice plinth

The weather had been quite warm and the sun was now high in the sky, so that the snow had melted around the hut to such an extent that it stood, somewhat precariously, on an ice and snow plinth about eight feet high! It was quite a climb to get to the hut door.

Over the next three days, with the help of Mingma and two other Sherpas, we dismantled the hut and its fittings. During this time climbers and Sherpas were coming over the Col and passing near the Hut, on their way back from Makalu. I was reminded of Napoleon's army retreat from Moscow: they had had such a tough time on Makalu and were disappointed by their defeat. Some, like Mike Gill, had superficial frostbite and all were exhausted.

On the last evening, after the Hut had been successfully dismantled, I happened to look out of my tent up at the Col walls just in time to see a Sherpa fall from almost the top. He came rolling

and bouncing down, his load preceding him. The load bounced over the bergschrund at the bottom of the icy walls, then he disappeared into it with a flurry of snow. I leapt up, calling for Mingma, then thought, "Why the hurry? He's clearly done for." So I took the time to put on boots, crampons, gloves, snow goggles and find my ice axe. Then we trudged up towards the ice cliffs. As we approached the bergschrund, a snowy figured emerged over the lower lip and staggered towards us! I was amazed and delighted. In the bergschrund there was soft snow and he was uninjured except for a deep bruise on his buttock.

On June 2nd we were ready to leave, having stacked the Hut parts to be collected by Tensing Norkay later. Ed had given the Hut to the Mountaineering Institute at Darjeeling where Tensing was Chief Instructor. We set off with heavy loads for our rented house in Changmitang. There we were reunited with many members of the expedition and had a party.

Two days later I set off to trek back to Kathmandu with four other members. Others had either gone earlier or stayed to help with the school building. We were all in a hurry to get out and with a strong Sherpa crew, did double marches most of the way. Betty and my father trekked 2 days out from Kathmandu and met me at Dolighart. It was wonderful to see her and Dad again and to get to the Kathmandu valley and be greeted by my mother and many other friends.

Fig 6.11 My Mother, Father, me and Betty on my return from the Silver Hut Expedition

So ended my first major expedition. Looking back, 56 years later, it is still not easy to sum it up. I cannot do better than to quote the closing paragraph of an article I wrote for John West's scientific journal, High Altitude Medicine & Biology (Summer issue 2010):

"The Silver Hut Expedition was a very happy and, scientifically, a successful one. Many of the findings were not repeated for many years and none have been refuted. On the mountaineering side we were unsuccessful on Makalu due to a combination of weather and illness, but the ascent of Ama Dablam was considerable compensation. For many of us, the experience of being members of this unique expedition turned out to be career changing in a most positive way."

Betty and I retuned to England by P&O liner taking in Cairo, the Pyramids, and the Sphinx on the way, as the ship went slowly through the Suez Canal.

Members of the Silver Hut Expedition

Name	Role	Time in the field	Remarks	Nationality
Sir Edmund Hillary	Expedition leader	Autumn, spring	Had stroke on Makalu	New Zealand
Dr Griffith Pugh	Scientific leader	Late autumn, winter, spring	Remained in the Khumbu	British
Barnu Bannerjee	Assistant to Desmond Doig	Autumn, spring	Remained in the Khumbu	Indian
Pat Barcham	Climber	Autumn	On 2nd ascent Puma Dablam	New Zealand
Barry Bishop	Geologist and Photographer	Autumn, winter, spring	Remained in Khumbu, 1st ascent Ama Dablam	USA
Desmond Doig	Reporter, *The Statesman*, Calcutta	Autumn, spring	Remained in the Khumbu	British, resident in India
Michael Gill*	Medical student, climber	Autumn, winter, spring	On 1st Makalu summit attempt, 1st ascent Ama Dablam	New Zealand
Norman Hardie*	Climber	Autumn	Leader of working party to Khumbu	New Zealand
John Harrison	Climber	Spring	Rescue of Peter Mulgrew	New Zealand
Sukhamay Lahiri	Physiologist	Winter, spring	Remained in the Khumbu	Indian
George Lowe	Climber	Autumn		New Zealand
Jim Milledge*	Physiologist Club climber	Autumn, winter, spring	Returned with Edmund Hillary from Makalu	British
Capt. S.B. Matwani	Army doctor	Autumn, winter	Remained in Khumbu	Indian
Peter Mulgrew	Climber, Radio officer NZRN	Autumn, spring	Nearly died on Makalu	New Zealand

Tom Nevison*	NASA scientist	Autumn, spring	On 2nd Makalu summit attempt	USA
Leigh Ortenburger	Climber	Spring	Rescue of Peter Mulgrew	USA
Marlin Perkins	Animal expert	Autumn	Yeti hunter	USA
Walter Romanes	Climber, handyman	Autumn, winter, spring	On 1st Makalu summit attempt, and 1st ascent Ama Dablam	New Zealand
Larry Swan	Biologist	Autumn		USA
Michael Ward	Surgeon, medical officer, physiologist Climber	Winter, spring	On 1st ascent of Ama Dablam	British
John West*	Physiologist	Winter spring	Rescue of Peter Mulgrew	Australian

An asterisk after the name indicates that the member is known to be still alive (May 2017). The second column is the role played by the member on the expedition. Of course, members had other roles and occupations outside of the expedition. In the 'remarks' column, "stayed in Khumbu" means they did not go over to Makalu in the spring. The nationality is that at the time of the expedition.

Chapter 7

Return to UK and Vellore: our First Term

Return to UK 1961

Betty and I had a delightful trip back from Nepal and India by sea from Bombay (Mumbai). We arrived home in time to attend the Haldane Centenary Symposium organised by Brian Lloyd and Dan Cunningham at Oxford. Born in Scotland in 1860 as mentioned in Chapter 4, JS Haldane had been an important respiratory physiologist based in Oxford in the early years of the 20th century. He had led one of the first expeditions to high altitude to study acclimatisation: the 1911 Pikes Peak Expedition in the Rockies.

Fortunately for me they had not got round to holding this meeting until July 1961 so that I was able to report the results of our "Oxford" experiments to this international meeting of cardio-respiratory physiologists. This was my first presentation to any sort of scientific meeting and, with results hot off the press, very much in line with Haldane's work on control of breathing, it caused quite a stir!

Fig 7.1 Haldane Centenary Symposium Oxford July 1961

Back Row: L-R Dubois, Marshal, Caro, Cross Gee, Coxon, Briscoe, Spalding, Perkins, Bates, Hugh-Jones, Love, Cunningham, Cotes, Campbell, Lee, Defages.

5th Row: Shephard, Whitlow, Draper, Coleridge, Ernsting, Mott, Mills, Kellogg, Otis, Dike, Graham, Lloyd, Burgess.

4th Row: Mitchell, Edwards, Burrows, Huggett, Daws, Dill, Forster, Donald, McKerrow, Passmore, Harrow, Hemingway, Chiodi, Nashat, Joels, Raine, West.

3rd Row: Linderholm, Bishop, Comroe, Wade, Riley, Miles, Stewart, Robin, Dejours, Mendel, Patrick, Jukes, Landmesser, Leusen, Singh.

2nd Row: Scott M, de Burgh Daly, Cournand, Dantrebande, Neil, Haldane, Roughton, Loescheke, Mrs Loescheke, Grodins, Michel, ….. Rhan.
Front Row: Lind, Green, Asmussen Christiansen, Nielsen, Liljestrand, Douglas, Heymans, Noltie, Cowan, Lahiri, Brown. Gilson, Kao, Torrance.

Griff Pugh had managed to get me a grant from the Medical Research Council to enable me to spend four months with him writing up the results of the expedition. In the end the Silver Hut expedition members produced 20 papers in peer-reviewed journals, together with 16 other papers, articles and books. For most of us scientists it turned out to be a career-changing experience.

Betty and I had slowly come to the view that, after our time in Hong Kong, that we wanted to prepare for working in the third world in some capacity. After our visit to Nepal in 1958, we felt drawn to that country with its huge unmet medical needs. This idea was reinforced, especially for Betty, after her nine months working at the Mission Hospital, Shanta Bhawan, in Kathmandu. We both realised that, if we wanted to offer ourselves to work in hospitals, even in the third world, we needed first to get proper post-graduate training. This was why I had taken the job in Southampton Chest Hospital and obtained my membership of the Royal College of Physicians. We had also been in touch with Stuart Craig, the India Secretary of the London Missionary Society (LMS), my father's employers, to see whether they could possibly send us to join the United Mission to Nepal.

However, following my experience in the Silver Hut, and my discussions with Griff Pugh and especially with John West, I now felt I wanted to try for a career in academic medicine. Betty was disappointed but loyally acquiesced. I informed Stuart Craig and he was very understanding.

Christian Medical College & Hospital, Vellore
Vellore is a town in Tamil Nadu state in South India. It lies about halfway between Chennai (Madras) and Bangalore.

I started to look around for a lecturer job in one of the UK Medical Schools. Then, out of the blue, Stuart rang me and said there was an Indian Doctor from the Christian Medical College & Hospital in Vellore (CMC) visiting London and that he wished to meet us. We agreed to meet him under the clock at Victoria Station. There was this very distinguished, tall, grey-haired Indian gentleman waiting for us. Dr Jacob Chandi was a neurosurgeon and, after specialist training in the USA, had opened the first neurosurgical unit in India. He was at that time the Principal of CMC. He invited us to join the staff of CMC. They did not have a respiratory physician and were very short of anaesthetists, Betty's area of expertise. This seemed to us to be the right place for us both and we accepted his invitation.

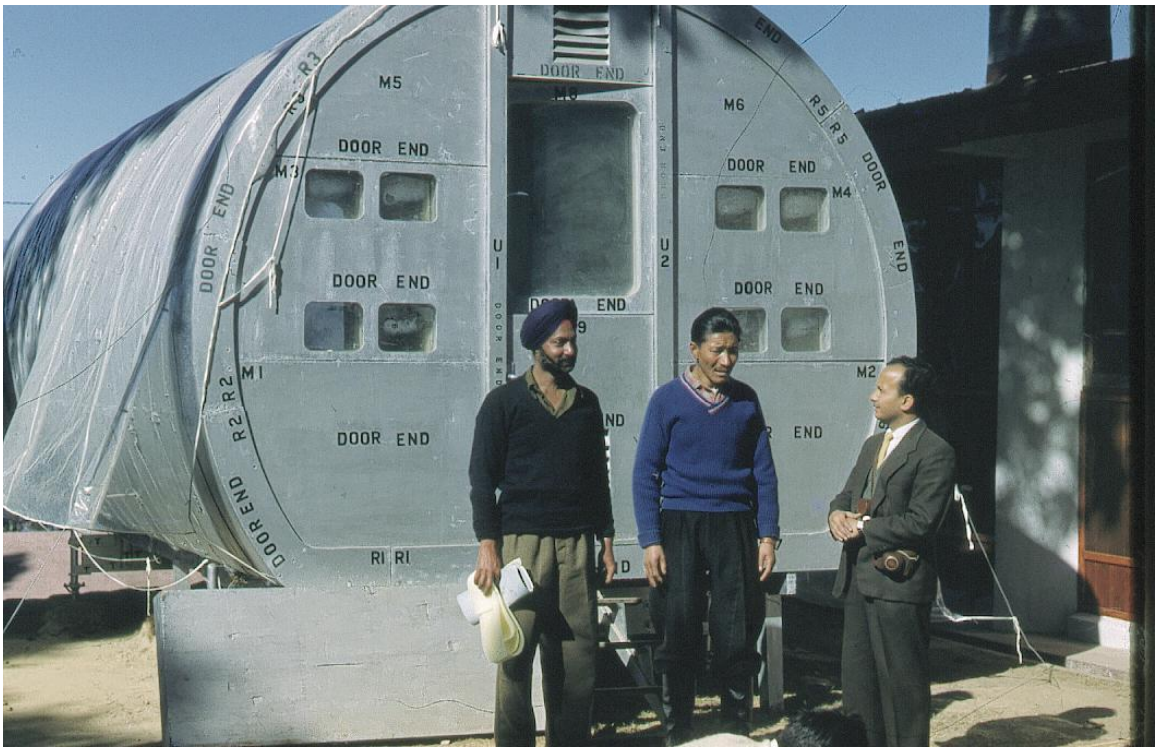
Foreign members of staff at Christian Medical College were supported by various missionary societies and the LMS supported us during our ten years there. So, first they sent us to have an introductory course at St Andrew's College, Selly Oak, Birmingham. We enjoyed our two terms there, winter and spring, where we were given practical and theoretical teaching.

Darjeeling conference on high altitude, 1961

In December 1961 I was invited to attend a conference on high altitude run by the Indian Army and Himalayan Mountaineering Institute (HMI) in Darjeeling, where Tensing Norgay was Chief Instructor. The Indian army had realised that the Chinese, having taken over Tibet, now presented a threat on their northern border. Furthermore, any Chinese troops stationed on their side of the border would be well acclimatised to the altitude of the Tibetan plateau, whereas any troops that the Indian army might be send rapidly up to the border would be both un-acclimatised and unfamiliar with the harsh environment. There were, at that time, very few people in the world interested in the medical and physiological problems of altitude, hence my invitation. Dr Sukhamay Lahiri from the Silver Hut Expedition, then working in Calcutta, was also invited.

Darjeeling is one of the "Hill Stations" beloved by the British Raj. In the hot weather the whole government of Bengal used to move from Calcutta to Darjeeling, where the altitude of around 2,000m made the climate delightfully cool. Now it was December and really cold at night but still very pleasant during the days, when we had sunshine and clear skies. One morning Sukhamay and I went up to Tiger Hill and had exceptional views of the sunrise on Kanchenjunga and Everest in the far distance. We had the view spot to ourselves, which was wonderful and, I gather, never possible now.

The conference was very interesting with much army brass and even the Foreign Minister, Krishna Menon, present. At one of the receptions I had a short talk with him. I suggested that they should form a crack army unit to develop mountain warfare techniques, which could then be rolled out to other infantry units. He brushed aside this suggestion: no, all the infantry must be able to fight in the mountains. Less than 3 years later, after provocation from India, China invaded India's northern border, routing the ill-prepared Indian troops, many of whom were suffering from acute mountain sickness, having been rushed up to altitude with no time to acclimatise.



Lahiri and I saw the Silver Hut there in the grounds of the HMI and I cherish a photo I took of Sukhamay, Tensing Norgay, and an Indian

climber, outside it.
Fig 7.1 The Silver Hut in Darjeeling. L to R: Brig Gyan Singh, Tensing Norgay, Sukhamay Lahiri

Also at the conference was JBS Haldane, the son of my hero, JS Haldane. He had also been at the Centenary conference at Oxford the previous July. He was a mathematician and biologist and probably better known than his father. A great bear of a man, he had the facility of rubbing colleagues, the press, and especially authority up the wrong way. In this he was even more abrasive than his father. He had been pushed out of various university posts in Britain as a result of this trait. He was a great admirer of Gandhi and he and his wife (also a scientist) sought sanctuary in the Statistical Institute in Calcutta. However, he had had a row with the authorities there and was now doing freelance research and teaching from his colonial-style bungalow.

After the Darjeeling conference, at his invitation, I visited him in Calcutta. He was dressed in Indian style white cotton shirt and dhoti and had a group of young men round him. He was conducting a study of house geckos (lizards) to establish whether geckos are territorial. He had found a way of capturing and marking the dozen or so geckos resident in his bungalow. Then his students, with clipboards, noted which geckos were in each room every few minutes. In this way, with no fancy equipment, he was able to answer the question! I thought it was a great example of making the best of a situation. He had lost his position, had no funding or equipment but was able to carry out real biological research and teach a worthwhile project to students.

To India and Christian Medical College
So it was that in March 1962 Betty and I found us again on a P&O liner on our way to India. We arrived in Vellore In April and met our senior missionary colleagues, Don and Rachel Patterson. Don was a radiologist at CMC.

A remarkable American lady, Dr Ida Scudder, started medical work there with just a couple of beds on the veranda of her father's bungalow in 1902. She had a particular vocation to help the women in India, who at that time were not allowed, by custom, to be treated by a male doctor and, of course, there were no female doctors. So she started first a nursing school and small hospital and later, a medical school for girls. The work increased and by 1947 she was joined by other missionary and church organisations and the school became a university-affiliated college for men and women.

Fig 7.2 Entrance to Christian Medical College, Vellore

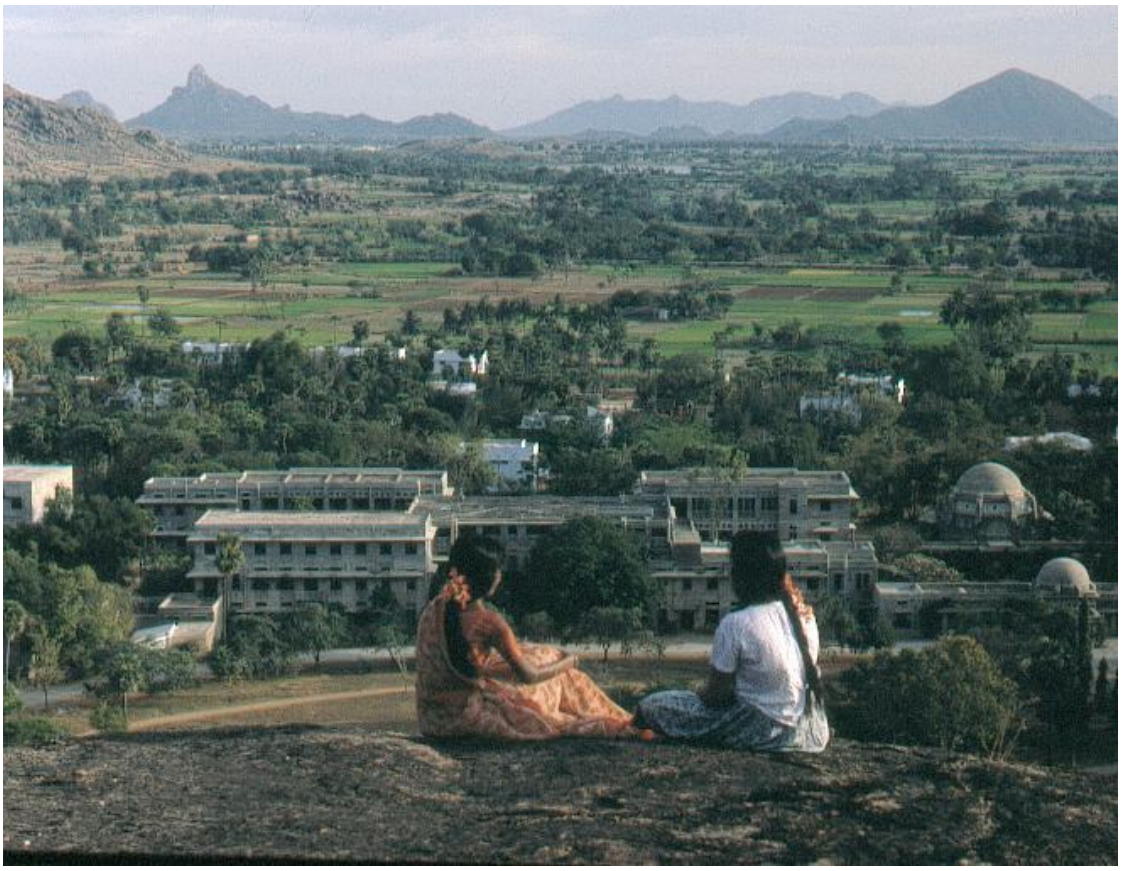


Fig 7.3 College Campus from College hill 1962. Two Medical Students

The Hospital and College

The hospital then had about 600 beds. It was in the centre of the town, and the college about four miles south, in the countryside, in a beautiful tree-filled campus. A special feature was that all the students and staff were resident on one or other of these two sites. We lived on the college campus in various houses during our ten happy years there.

CMC Vellore Hospital had the first cardio-thoracic surgical unit in India, started by an American surgeon, and, when we arrived, headed by American-trained Indian surgeon, Dr Gopinarth. I worked closely with this team. In those days, the early '60s, there was still a lot of rheumatic fever in India, which, in many patients, resulted in narrowing of one of the heart valves, (mitral valve stenosis). This could be relieved by closed heart surgery. We did a lot of these operations as well as lung surgery for tuberculosis (TB), and cancer. But we saw many other heart patients who could only be treated by open-heart surgery which Dr Gopinarth was keen to start to provide.

I had been at the Southampton Chest Hospital when the surgical team there had started this type of surgery in 1959 and, though not part of the team, I took an interest in the whole business of heart-lung bypass, both the gadgetry and the physiology. So I was able to be part of the team of surgeons, anaesthetists and technicians as we worked towards starting this highly sophisticated surgery. We had to make our own heart-lung machine and practised on dogs before attempting our first operation on a human patient. After the team became proficient at this work, I left the theatre team and worked more in the intensive care post-op ward. Most patents need ventilating post-op for a day or two and the machines we had were sophisticated American ones. They needed a high-pressure source of gas to power them, i.e. an oxygen or compressed air cylinder. I invented a much simpler machine, which could be run on a mixture of air and oxygen or just on an air compressor. If it went wrong, it could be fixed quite simply with a screwdriver and spanner.

One of the main aims of CMC was to train Indian men and women to become doctors and to practice good medicine, especially in rural settings. Many of these hospitals had been started by various Medical Missions but now had by then been inherited by the various dioceses of the Church of South India and were already being run by local Indian doctors but were usually short of medical staff.

Betty worked in the anaesthetic department and apart from giving anaesthetics in the main hospital and the eye hospital; she developed simple techniques of anaesthesia suitable for these small country hospitals. She taught these techniques to trainee doctors at Vellore and also made a number of trips to some of the mission hospitals to teach anaesthetic techniques to the local doctors or nurses.

Our first home was in the Quadruplex, a building near the rural hospital (see below) with two flats in one side of the common entrance and accommodation for junior doctors on the other side. We had the ground floor flat.

Amongst the staff families, resident on the campus, were quite a number of children. One day Betty threw a party for some of them. Parents came at the end of the party and took their children home. There were a brother and sister whose parents could not pick them up so I was to see them home. Crossing the field behind our flat, we were in single file through the hip high grass. The boy, aged about 7, was in front, followed by his younger sister. He had obviously forgotten that I was there, because, as we reached the far side of the field, he piped up, "Well, it was quite a good party, even though there wasn't any ice cream." We obviously had a lot to learn about running a children's party!

Betty was actually pregnant with our first child when we went to Vellore and Margaret was born the next year on Valentine's Day in the main hospital. Two years later John was born. As well as the main hospital, which are found in Western teaching hospitals, CMC also planned to develop patterns of medical service, which were relevant to the huge needs of rural India. So a small "rural hospital" was opened next to the college campus within walking distance of our house. Shortly before John was to be born, they opened a midwifery unit next to it. In order to encourage local women to come and have their babies there, rather than in their village huts, Betty decided she would have John in this unit. So it was that when she went into labour one evening, we three went down to the unit and as labour progressed quite quickly I stayed there with Margaret while the Indian midwife delivered Betty. John was fine as was Mum. It was now about 11.00 pm and the midwife and assistant announced they were off home. There was no one else about. It was expected that Granny or an aunt would, of course, accompany expectant mums from the village. So, nothing for it, at that time of night, but that I should stay and since there was no one to look after Margaret, she also stayed and we slept in the next-door room to Betty and the baby. Our houses had screened windows to keep out the mosquitoes but that was not the case in this village-type building and in the morning, Margaret and I were covered in bites.

Tuberculosis (TB) was common in India and one of the things I did was to start a TB clinic. New drugs had been discovered and shown to be effective. I had had experience of using them at Southampton but in England it was still believed that admission to a sanatorium, along with drugs, was the best treatment. In India, that was just not possible and trials were under way in Madras testing the need for sanatorium treatment. These showed that, providing the patients took the drugs regularly, they did just as well when treated at home as those admitted to sanatoriums for the first six months, and even continued at work (many of them were manual labourers). The trials also showed that there were no contacts infected with TB amongst those treated at home.

So we treated our TB patients at home. However, in order to be sure they took the drugs (which the Indian government supplied), we only enrolled patients from the local area and they had to come to the clinic to receive them. If they failed to show up, we had community nurses who visited them at home. Some years later this pattern of treatment became the World Health Organisation's policy for developing countries.

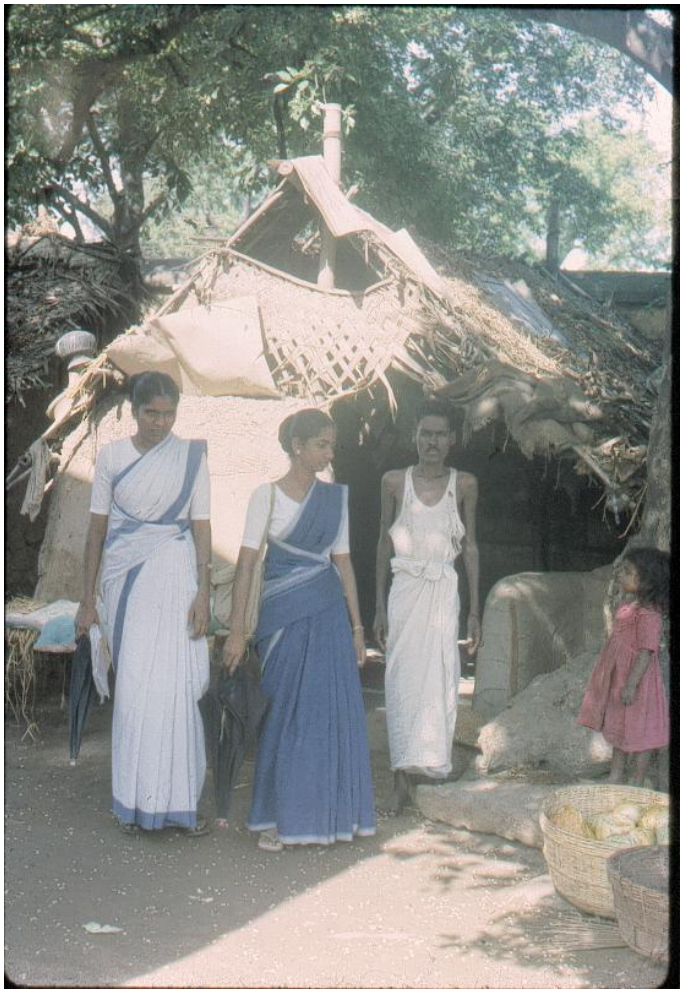


Fig 7.4 *Community nurses visiting a TB patient in Vellore town 1964*

Fig 7.5 Medical students being taught at the bedside 1964

For a year or so I took charge of one of the 3 general medical "firms" (teams of doctors, consisting of juniors, middle grade (registrars) and seniors (consultants) Each firm together, looked after a number of patients, did out-patients and were on call for emergency admissions on one day a week. Throughout my time at Vellore I was involved in teaching both post-graduates and under-graduate medical students.

The Second Schoolhouse Expedition 1964

After the Silver Hut Expedition, I assumed "that was it" as far as high altitude research was concerned. So I was surprised and pleased to get a letter from Sukhamay Lahiri asking me if I would be interested in joining him in an expedition to study the differences between Sherpas and lowlanders like us in response to altitude.

Ed Hillary had continued the aid programme for Sherpas, which he had initiated at the end of the Silver Hut expedition, by building more schools in Sherpa villages, where he was invited to help. He had led an expedition of New Zealanders to the Khumbu in 1963, known as the First Schoolhouse Expedition, to do just that, and was proposing a second expedition in 1964.

Sukhamay had negotiated with Ed to join him on the second expedition with a physiological "wing" to carry out this study. Sukhamay was now on the staff of Presidency College, Calcutta and had obtained a grant from the Indian Council for Medical Research. I managed to get leave from CMC for three months and so it was that in the post-monsoon season, mid-September, I found myself with Sukhamay and a number of New Zealand climbers, including Ed Hillary, trekking out from the Kathmandu Valley for Solu Khumbu. The Chinese were busy building the

“Friendship Highway” to link Kathmandu with Lhasa and our path criss-crossed this road for the first two days of our trek.
We had a good 14-day trek. Ed had just published a book on the First Schoolhouse Expedition. He called it, “Schoolhouse in the Clouds”. A good title, I thought, but one of his fellow Kiwis said, “You missed a trick there Ed, you should have called it ‘Higher Education’!”

We made our Base Camp at Lukla in the Dhud Kosi Valley (2,900m). One of the projects for this expedition was to build an airstrip and Ed had identified this alp as a possible site. To build it meant breaking down the terraces and returning the site to its original 10° slope. Sherpas and Sherpanis did the manual work. To flatten the surface of the landing strip they linked arms on each other’s shoulders as in their traditional dances and stamped up and down the strip singing their dance songs!

This airstrip has served the Sherpa community well over the last 50 years. It remained a grass/dirt strip for many years but now has been given a black top, control tower and terminal building. I hear that it is the second busiest airfield in Nepal. It also serves the many tourists making the Everest Base Camp trek. Landing at it is very dramatic, as the wooded hill and mountains rise up steeply from its upper end, so that pilots are committed to a landing after a certain point. There is no going round again. I was not involved in its building but saw some of it when we came back to Base Camp during our time there. Other projects included two schoolhouses and a bridge over the Dhud Kosi below Namche Bazar.

Fig 7.6 Looking east, down to the site of our camp. Then across the Inukhu Valley, in shadow, to the Mera La (pass) with Peak 41 to the left and Mera peak to the right.

Fig 7.7 Our lab tent, Haber Sherpa, exercising.

Fig 7.8

Breakfast with Sukhamey Lahiri at Lung Samba camp -10 ^{0}C

Sukhamey and I established our physiology camp just over a pass on the ridge between the Dhud Kosi and the Inukhu Khola Valleys at an altitude 4,880m. (Fig 7.6) The camp was on a small level patch of ground in a boulder field commanding fine views of the Inukhu Valley and the mountains beyond. After establishing the camp and acclimatising, we found we could make the journey from Lukla in one day. Of course the accommodation was not as deluxe as the Silver Hut. Our lab was a tent, (fig 7.7) as were our sleeping quarters. This being the post-monsoon season, as time went on it became very cold at night and we would wake up to find our sleeping bags with a rim of frost from our frozen breath. The weather was mostly good with clear sunny days and clear crisp nights.

We carried out the same sort of studies as we had done in the Silver Hut but this time comparing Sherpas with ourselves; lowlanders. We had four Sherpas with us most of the time who were our subjects and for lowlanders, besides the two of us; we had visits from other lowlanders, who were fellow members of the expedition.

We repeated the "Oxford" type of study on the control of breathing, measuring the hypoxic (oxygen deprivation) and CO_2 ventilatory responses. We found, to our surprise, that while the CO_2 response was the same between Lowlanders and Sherpas, but the hypoxic (lack of oxygen) response was much less in Sherpas. I learnt later that this was also the case in Andean highlanders.

We found the same results between, when we looked at the effects of breathing with added or reduced oxygen mixtures when exercising. This made big differences to our ventilation but had little effect in Sherpas. However, a number of studies since have cast doubt on this finding and it may be that with only four Sherpa subjects, we happened to have an unrepresentative sample. However, other studies have found the same results as we did.

We also studied the acid-base balance in the blood and cerebro-spinal fluid in our two groups and made measurements of the alveolar to arterial oxygen difference. We showed that this difference was significantly less in Sherpas, especially on exercise. This indicated that Sherpas had higher diffusing capacity in their lungs, an important advantage especially at high altitude, which helps to explain their phenomenal performance at altitude. This finding has been confirmed by later studies on larger numbers of Sherpas and Tibetans.

As with the Silver Hut expedition, we gave ourselves the day off on Sundays and, if the weather was good, we might go climbing. One Sunday we explored a snow peak along the ridge to the north. After an up-and-down section along the ridge we went up a snow couloir to a second ridge, which ran along some way to the summit.

Two weeks later, Sukhamey, Sherpa Penuri and I set out to complete the climb. Having got to our last high point we followed the ridge, which was excitingly narrow in places, to a perfect snow-domed summit at about 5,500m. It was a perfect day and we had fine views of peaks to the north including the dramatic south face of Peak 41 and Kangtega. We called the peak 'Nima Khangstsi'. In Sherpa, Nima means Sunday and Knagstsi is one of the words for a peak.

Often in the evenings we would go up the ridge and look down to the Dhud Kosi and across to the mountains beyond, Kariolung and Numbur. On some evening the valleys would fill with clouds but we would be above them.

Fig 7.9 Dhud Kosi Valley filled with cloud. Numbur and Kariolang beyond.

We completed our work and went down to join the rest of the party at Lukla. After going up the valley to Namche and Kumjung we were able to return to Kathmandu by air from the new airstrip at Lukla.

Life at Christian Medical College & Hospital (CMC)

Back in Vellore, our life, though very different from that in Britain, was very pleasant. We were a large international group, and as mentioned, all senior staff and students were resident on either the college or hospital campuses. Salaries for the Indian staff were not generous and we ex-patriots were supported by missionary societies on the basis of need rather than status. That is, we were paid an "allowance" dependent upon the cost of living in the country we were working in. All of us had more or less the same income whether we were senior or junior doctors, nurses, paramedics, teachers, or pastors. This allowance was adequate but not over-generous. Fortunately, Betty was very good at making the most of what we had. One time our Mission Secretary visited us and Betty produced a dish of cold pressed tongue. This was a dish she had learned from an American friend. Our servant, Vellu, bought the raw tongue in the market very cheaply. Then Betty or Vellu scrapped it and boiled it with saltpetre and various herbs and spices then pressed it for some hours. Our guest was surprised to be served this dish, knowing our meagre income and assuming it was expensive, imported, tinned tongue!

Our housing was provided by CMC and we lived on the College campus in a succession of houses according to our needs. Our missionary society supplied a means of transport for me. During our first, five-year term, they supplied us with a scooter for getting to the hospital from the college. We could get the whole family on this for short trips.

Fig 7.10 Whole family aboard!

I drove, with Betty on the pillion, John standing between my knees and Margaret on Betty's lap or when bigger, on the spare wheel behind Betty! During our second term of four years they supplied us with a car, an Indian-made Triumph Herald.

There was a large enough group of staff children to have a primary school on the college campus to which Margaret and John went. Betty worked in the anaesthetic department part-time as her family commitments allowed. She sometimes worked in the eye hospital giving anaesthetics especially to children (adults would usually have a local anaesthetic).

Our social life was very full with many friends and groups amongst staff and students. With no TV or theatres and limited cinemas, we had a lot of DIY entertainments. These took the form of plays, musicals, skits etc. I enjoyed singing in the college chapel choir. There were annual student and staff entertainments, which were often very imaginative.
Nurses, I remember, put on one skit. It was an interview for candidates wishing to enter the nursing college. "Why do you want to become a nurse?" asks the Nurse tutor. Candidate, "Because I want to do away with suffering humanity!" comes the answer, delivered in a broad Indian accent.

In the hot weather, in May, we usually went up to the Hills, either to Kodikanal in the Palni Hills or to the Nilgiri Hills. During our first term we would meet my parents at Kodi along with other missionaries from various parts of South India. There for two years my mother directed Gilbert and Sullivan operettas with my father and me in the chorus. In the Nilgiris we stayed at a beautiful tea estate, Korakundah, in a very remote corner of this plateau at 6-8,000ft. The tea grown there is one of the highest teas in the world. I used to go there for a consultation at their estate hospital twice a year. The estate doctor would collect problem cases for me to see and advise about. They put a bungalow at our disposal with a cook. There were small rainbow trout in the streams and lakes and the manager taught me to fish and tie my own flies. Our cook (employed by the tea estate) would make a very nice fish pie from my catch.

In 1995, after we had left, the estate became organic and now its tea is highly prized especially in Germany. It even has its own web page.

So our first term at Vellore drew to a close in April 1967.

Chapter 8

USA, Second Term in Vellore, Return to UK, Work, Retirement

After our first term in Vellore, we were to have a year's furlough. During this time it was usual for professionals to do a refresher course in their field. I was fortunate in that I had had a lot of continuing medical education in Vellore, but I felt that I lacked formal training in research. So I got in touch with Dr John Severinghaus, an academic anaesthetist in San Francisco who was one of the few scientists in the world interested in high altitude medical research at that time. He arranged for me to have a research fellowship with the American Thoracic Society for which I was very grateful.

The USA 1967-68

I found out that the steamship company, P&O, ran a scheduled service every month from London to Los Angeles, via Bombay, Colombo, Perth, Sydney, Auckland, Fiji, Honolulu, Vancouver and San Francisco. We picked up the ship at Bombay and, with tickets to San Francisco, were able to "slip ship" in New Zealand, and catch the next ship a month later for no extra cost. Margaret was now four and John two.

We had a very pleasant time on board and calling at all the places on the way. I got off at Sydney and did a lecture tour speaking at Friends of Vellore meetings, medical groups and church groups, about Vellore. I adapted my talk according to the audience. It was, of course, mainly about Vellore, but sprinkled with slides of the Himalayas and included a bit of altitude physiology.

I visited Sydney, Melbourne, Hobart, Canberra and Brisbane. Meanwhile, Betty and the children went on to Christchurch, New Zealand and stayed with a Vellore friend there. I flew to join them and we had a trip around the South Island in a rented car. I did more speaking at similar groups there too before we went across to the North Island and motored up to Auckland to stay with Ed and Louise Hillary.

On some nights of our trip we camped, though Wally Romanes (from the Silver Hut), put us up in a mountain hut he was building on Mt. Ruapehu for one night. He and I climbed to the summit the next day in rather indifferent weather.

Ed and Louise Hillary were very kind and looked after us at their home in Auckland until our ship arrived to take us on. So across the Pacific we sailed, stopping at all these exotic ports with a swim and I attempted surfing at Waikiki, a beach in Honolulu.

Fig 8.1 Our family with Ed and Louise Hillary at their home in Auckland.
Lt to Rt: Ed, Margaret, Louise, Betty John and myself.

We arrived in San Francisco in July 1967 and after a long wait to get through customs and immigration, we found no one to meet us. So we took a taxi to the Cardio-Vascular Research Institute (CVRI) where John Severinghaus worked and I walked into his lab. He was very surprised to see me. Apparently my last airmail letter giving him date and time of our arrival had never reached him! However he rose to the occasion, phoned his wife Eleanor and they insisted we come and stay with them until we could find our own accommodation.

They soon found a place for us to stay, housesitting for a faculty member who was away in Europe. This was a very nice house in Mill Valley looking out to Mount Tamalpias. It came with a resident 18-year-old niece of the owners! Subsequently, we found and moved into a student cabin on a Southern Baptist Seminary campus, also in Mill Valley. All these places were in Marin County, across the Golden Gate Bridge from San Francisco. So my daily commute was a lovely drive across this bridge and through Golden Gate Park to the CVRI that overlooked the park.

The 'hippy' movement, centring on the Haight-Ashbury district and the Golden Gate Park, was at its height that year, 1967-8, and was just below the CVRI where I worked. That first summer was all love and "flower power" but by the next year the drug cartels and others had moved in and it was turning sour. My two Canadian teenage nephews, exploring the scene later that year, were relieved of their wallets at knifepoint by a couple of black teenagers in that district.

As a Fellow of the CVRI, I spent my time learning research techniques and trying to answer the question as to where exactly in the lung the leak of fluid took place, when an animal was made

hypoxic. This was to try and understand the mechanism of high altitude pulmonary oedema (HAPE), a sometimes lethal form of mountain sickness (see my case of HAPE, in a Sherpa on Makalu, Chapter 6). In this project I was not successful, though none have succeeded since.

The whole atmosphere of the CVRI was very exciting with many charismatic team leaders. Besides my own chief, John Severinghaus, there was Julius Comroe, the head of the Institute, whose book, "The Lung" got me (and John West) fired up about lung function and respiratory physiology. There was John Clements who was one of the co-discoverers of lung surfactant and others at the cutting edge of cardio-respiratory physiology. They were all very approachable and the easy exchange of views and news with them and fellow Fellows made for a dynamic atmosphere of learning.

Apart from my own research project, I helped with John Severinhaus' team projects, which included continuing studies of the control of breathing at altitude. Thus I went with him and Shame Cotev another Fellow, to the Barcroft Laboratory on White Mountain at an altitude of 3,800m

Also with Soren Sorensen, a fellow Fellow, I went to Cero de Pasco, a mining town at 4,300m in the Peruvian Andes. We travelled up there by truck from Lima, which is at sea level, in one day, and of course had moderate mountain sickness the next day. Amongst other projects we studied the cerebral circulation of some of the high altitude residents. We showed that they had lower than normal blood flow to the brain, even when breathing oxygen, due to the increased viscosity of their blood with its high red blood cell count. This may account for some of the symptoms of chronic mountain sickness.

We had got to know one of the mining engineers there, who was French. After we had finished our research he invited us to come down on the Amazon side of the Andes to a patch of the Amazon jungle, which he and his friend, had been allocated. There they planned to raise pigs, feeding them on food grown on their land. We camped there in luxuriant, beautiful jungle surroundings which was just bliss after quite hard working and living at altitude. He had built a cabin and had chickens. We dined on these and jungle produce such as heart of palm, gathered from the jungle, which is delicious.

Margaret and John were four and two when we arrived in the USA, so looking after them was a fairly full-time job for Betty.

Interestingly, during our year in the States, with the widespread introduction of the Boeing 707 jet airliner, flying became cheaper than sea travel. So, after a very happy year, we returned to England by air. We had four months furlough staying in Selly Oak, not far from Betty's parents in Kidderminster. They were sorry to see us leave for Vellore for our second term of four years and we more or less promised that this would be our last term at Vellore.

Fig 8.2 *John Severinghaus and me at the Barcroft Laboratory on White Mountain*

Vellore Second Term

During this second term we lived in a larger house, which was where the Webbs had lived. John Webb, professor of paediatrics, was now director of the whole institution, but his wife had gone home with their children as they were now teenagers and were at school in England. So we hosted John in what became our house. This meant we did a lot of entertaining which we enjoyed but was more work' especially for Betty. I continued with much the same work as before, except for a year or so when headed up a general medical "firm" i.e. a team. This involved more general medicine and more teaching of medical students.

Ciba Symposium 1971

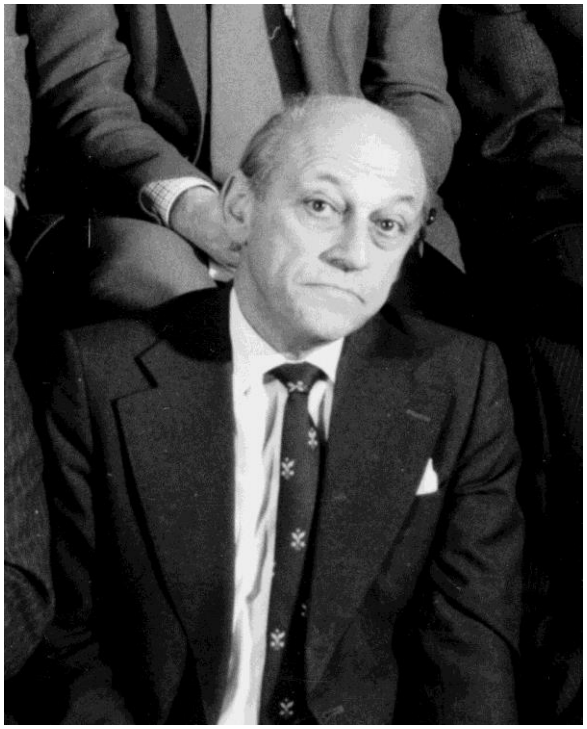
In February 1971, I was invited to attend a Ciba symposium on high altitude physiology in London. Ciba was a pharmaceutical company, which used to run these symposia on various rather esoteric topics. This one may have been the first conference purely on high altitude physiology and medicine, as not many people in the world were interested in the subject at that time. Attendance was only by invitation and numbers were deliberately kept small to encourage discussion. The total number of participants was only about 25, drawn from South America (mainly Peru), the USA, including Severinghaus, and UK, including Griff Pugh.

There, in the evening between the two days of the symposium, at a social function, I met John Nunn. John was a Birmingham medical graduate and had just returned from the Colonial Medical Service in Malaya. We had met when I was a houseman and Betty a senior house officer in the General Hospital, Birmingham. John became an anaesthetic registrar at the

General and taught Betty the then new anaesthetic techniques of muscle relaxants and controlled ventilation; techniques which she was able to use subsequently in Hong Kong (Chapter 3) and later in Kathmandu and Vellore. Now, John was professor of anaesthetics in Leeds and had been appointed to head up a division of anaesthetics in the newly built Medical Research Council's Clinical Research Centre (CRC) at Northwick Park Hospital, Harrow. This brand new Hospital and CRC was to open later that year. I mentioned to him that Betty and I would be returning to UK the next year. He said I should keep in touch with him.

Return to UK, Northwick Park Hospital

In the summer of 1972 we returned to England and settled in a rented house in Ware, Hertfordshire. I got in touch with John Nunn, now working at Northwick Park and in January '73 I was appointed by the MRC as a member of his team. It was a very exciting time at this new venture.



Unlike other new hospitals of the time, which were old hospitals moved to new premises, this was a brand new venture with a completely new staff of young, keen consultants wishing to combine clinical and research work.

A year later I applied for and got one of the two last planned physician posts at Northwick Park Hospital. These were advertised as joint appointments under the MRC and NHS, 50:50 jobs. Half my time was to look after patients, particularly with chest diseases, as a general physician with a special interest in chest disease; and half to do research. My salary was paid half by MRC and half by the NHS. For me this represented a dream job description and I was fortunate to be able to keep this contract until I retired, 23 years later, in 1995 on my 65th birthday.

Fig 8.3 Dr John F. Nunn, head of the division of anaesthetics at the MRC Clinical Research Centre, Northwick Park Hospital 1972-1991.

During these years we lived in Rickmansworth, an easy commute to the hospital in Harrow. Betty worked part-time at Northwick Park and at St Vincent's, a small orthopaedic hospital in Northwood Hills.

In 1974, when I was appointed to the consultant post of general physician with special interest in respiratory medicine (chest physician), I was the only such physician. As the hospital become more established and busier, more consultants were appointed and a second respiratory consultant, Mark Harries, was appointed. He proved to be an excellent partner in running our respiratory medicine department and a good friend. However, he did have a capacity to ruffle the feathers of management and other consultants and one of my jobs was to follow and smooth them down again! Tragically, after I retired, Mark contracted a melanoma (cancer) and died.

An extra job I was given was as "clinical tutor" with responsibility for the post-graduate education of our medical junior doctors. Later I became Chairman of the Medical Staff Committee.

About this time the MRC decided to close the Clinical Research Institute and its staff had to find other jobs. As I had this 50:50 contract I was fireproof, and the MRC continued to pay their share of my salary until I retired some five years later and I was able to continue to spend half my time on my own research.

Finally, for the last three-and-a-half years before retirement, I became the first Medical Director, a post created by one of the many re-organisations the NHS went through, and so I became more involved with hospital management. This was an interesting new experience and enjoyable in that it involved not only "keeping the show on the road" i.e. helping to run the hospital efficiently and within budget, but we had the opportunity to do three new things:

1. We brought in St Marks, a small specialist hospital for colo-rectal disease, recognised as a "centre of excellence", that had to move from its isolated and dilapidated site in London. Apart from the management of this merger, I had the task of integrating the two consultant bodies, quite a delicate job!
2. As mentioned, in 1990 the MRC decided to close their Clinical Research Centre. So, with the enterprise of a charismatic research vet, Colin Green, we opened the "Northwick Park Institute of Medical Research" in the MRC vacated area of the Hospital. This area included the Animal House, which, when it was built in 1971, was the largest in Europe. It opened as I retired. I am glad to say that, 23 years later, this venture is still thriving as an independent research institute financed entirely from the research grants of groups wishing to work there.
3. We negotiated to become a teaching hospital, part of St Mary's Medical School and so part of Imperial College London. Medical students from St Marys and The Royal Free Hospital came to Northwick Park for clinical teaching.

So for me it was it was an interesting and quite enjoyable experience. Though I would put it in the category of "not to be missed but not to be repeated"!. A tricky part of the job was that, to a degree, one was responsibility of the behaviour and practice of fellow consultants, without any power to discipline or sack them. Fortunately there was only one who gave me a problem in this respect. He was a physician who spent more time and energy on his private practice than on his NHS work and was also inclined to be rude to patients and "difficult" with fellow consultant colleagues. I did "tick him off" and it had some effect.

Jaonli 1991

Jaonli is a mountain in the Indian Himalaya in an area called Garhwal. It is 6,600m and was first climbed from the north by an Indian Army team in 1977 led by Lt Col D.K. Khullar.
Mike Banks, a well knows climber and ex-Royal Marine had led a party to attempt to climb it from the south but had failed. In 1991 he hoped to have a second attempt. I was invited together with a friend of mine, Mike Westmacott who had been on the '53 Everest expedition and with whom, and his wife Sally, I had climbed and skied quite a lot. Altogether, we were a party of six, all of us over 60, except Paddy O'Leary, who was only 59. So Mike had the bright

idea of asking Sage to sponsor us. Saga is a travel firm specialising in active holidays for the older traveller. It was a natural pairing. They agreed, on condition that we supplied them with articles (and photos) for their house magazine and were very generous in their sponsorship.

Our team consisted of Mike Banks, Mike Westmacott, Richard Brooks, two Irish members, Joss Lynam, the grand old man of Irish climbing and Paddy O'Leary. Paddy was in charge of the Irish outdoor pursuits centre and was the member with who I seemed to get paired up with. He was a delightful companion and we got well together. After a very pleasant 5 days trek from the road head, through pleasant countryside we reached our base camp at about 4,000m. From here, we had a view up the glacier to our peak and its two ridges reaching down to the left and right of the glacier. We made a route up through the glacier, weaving our way past crevices and towers to gain the upper smooth nevè, where we established our advanced base camp. From here we explored the route up the left hand (western) ridge.

Fig 8.4 The Jaonli team. Back row, Richard Brooks, Mike Banks, Me.
Front row, Paddy O'Connor, Mike Westmacott, Joss Lynam
Jaonli at head of the glacier. Our attempted ridge on left.

Paddy and I established a camp on this ridge and the next day explored along the snow-covered ridge towards the summit pyramid. Meanwhile other members were exploring the alternative route up the other, western ridge.

On the second day from our advanced base camp, Paddy and I reached a point where our ridge narrowed and the snow was of uncertain consistency. The top one foot of snow did not seem to be adherent to the snow below, so that we thought it could easily slide off down the

very steep slope we were on. We were less than had a mile from the summit but, bearing in mind that we were both married with children, we decided that discretion was the better part of valour and we retreated. Meanwhile, other members had explored the other ridge but also did not find a feasible route to the summit.

After retreating we were back at our advanced base camp on the nevè. We had wondered more that once if we were safe from crevices but reassured ourselves on that score. However, at about 3.00am we were awoken by a strange surging to and fro of the us and whole tent. I feared at first that we were falling down a crevice, then that we were being hit by the wind from a nearby avalanche, but that didn't seem right. Then, my tent mate, Paddy said," Earthquake. He had been in one before. An, indeed that was what it was. And we found out later that it was a big one cantered in the valley just north on the far side of Janoli. The shaking stopped after about 30 seconds. There was a short silence following by the sound of avalanches from the cirque of mountains round us. The next morning we looked to see and had difficulty in locating the various points in the surrounding cornices that were missing, having avalanched

The following day Paddy and I went up to our higher camp on the ridge and then, the next day on up our ridge only find this whale back ridge was now cut by an enormous slice, 50 feet deep with a steep slope on the near and a vertical one the far side! The only way around this obstacle was a traverse into a wide gully on the right, threatened by large cornices at the top of the gully. It looked as if these might come roaring down the gully at any time. Again, we decided that retreat was wise. We retreated! Mikes Banks and Westmacott had also given up on the Eastern ridge so when we all got back to base we decided to head for home.

That was the end of our attempt on Janoli. As we returned through the villages we saw the devastation caused by the quake. The single-story houses were roofed with heavy slabs of stone and many villages, we heard, had died in their sleep as these crashed on to them in the night.

Return to Delhi

When we got back to Delhi we picked up our accumulated mail, we had not contact with home since we had left Delhi. There was a letter from my Father informing me of Betty's death. This had occurred on the day after she had a minor operation in Northwick Park Hospital. It was, of course, devastating news. She had been so fit and healthy and had been windsurfing only a few days before. Margaret and John (then aged 28 and 26), with my father's help had to deal with the immediate consequences of this tragedy.

When I returned, and after the funeral, I went back to my job at Northwick Park Hospital. In December 1993 I married Betty's friend Pat Howell. She, like Betty, had been brought up in Kidderminster and had gone to the same school, though some years after her. But the two families attended the same church (Baxter Church where Betty and I had been married). So when she came to Rickmansworth in 1975, she got in touch with Betty and became a family

friend. She often baby-sat for the children. As mentioned earlier, I retired on my 65th birthday in August 1995.

Other highlights of my medical and climbing careers have included expeditions to Kongur, Kilimanjaro, Mt. Kenya, Mt Damavand (Iran) and Everest.

Kongur 1981

Kongur a mountain in Xinjiang (that part of China to the north of Tibet), was, when we went there, one of the highest unclimbed peaks at 7,724m. Mike Ward and Chris Bonington were fortunate enough to get permission for us to go there in 1981. The Chinese, who had taken back Xinjiang as part of China, had kept it "off limits" to Westerners. Chris and Mike made a reconnaissance in 1980 and the next year we put together a team consisting of four climbers (Chris, Peter Boardman, Al Rouse and Joe Tasker) and four scientists (Mike Ward, Edward Williams, Charles Clark, and myself). Also in the team was David Wilson from the Hong Kong civil service, who was a Mandarin speaker, came partly as our own translator, if necessary He also has some climbing experience. He later became Governor of Hong Kong and now sits in the House of Lords as Lord Wilson! Finally we had Jim Curran, a climber artist and photographer, as cameraman.

We were very fortunate in that China was just opening up to the west and the firm of Jardine Matherson, a Hong Kong trading company with long China connections and great enterprise was keen to get back into China. They readily acted as our sponsors and a number of their folk came out with us and spent a few days at our Base Camp and climbed an easy snow peak near by. This was also a good acclimatisation day for us. I have never been on such a well supplied ex[edition. Amongst other, parts of their business, they represented White Horse Whisky in China so supplied us with generous quantities of this! And during the time we were there they sent us a dozen bottles of Champagne, which arrived on the day when the climbers arrived back at Base Camp after their successful climb. Only one bottle was broken

Just getting there was very enjoyable. We had a few days in Hong Kong as guests of our sponsors. Then we had a few days in Beijing, a flight to Kashgar and up the Karakorum Highway by duck, (an amphibious vehicle) to the Karakol Lakes (3,600m). After a couple of days acclimatising there, we trekked up to our Base Camp in two easy days using, yaks, camels and a few porters. This was my first experience of these Bacterin Camels, with two humps. A standard porter load is 30 Kgs, a yak, 60 Kgs but these camels take 120Kgs! They have long legs and an easily ford streams and even rivers, as they did on the way to Base Camp.

Fig 8.5 Loaded camels, crossing Koksel River on way to Base Camp

We had a very pleasant Base Camp beside the Koksel Glacier at about 4,000m. The climbers managed to make the ascent on their second attempt although with considerable difficulty, involving a four-night bivouac due to a storm, before they were able to climb the last 500m of difficult rock.

Fig 8.6 Successful climbing team on Kongur summit July 1981, first ascent.

On the descent from the summit Pete Boardman was nearly killed when abseiling. The abseil rope dislodged a rock, which caught him a glancing blow on the head, and he slid down the rope. Fortunately his glove caught in the abseil karabiner and stopped him from sliding off the rope to his death!

Fig 8.7 Kongur Summit, two climbers, Boardman and Tasker, returning from the ascent

Meanwhile we four scientists got on with our science. Our science consisted of comparing us scientists, average mortals, with these four very experienced and outstanding high altitude climbers. We found that to a degree their physiology had moved towards that of Sherpas. (See "Kongur the Elusive Summit" Bonington) We studied the climbers when they returned to Base Camp between trips pushing out the route and ourselves when they were higher up the mountain. But we also made one or two-three day drips on our own. David Wilson and I climbed a couple of 5,000m peaks, one of which was named, Serala and I made a very enjoyable day trip to Base camp (solo) using skis to get there and back. I also had some skiing on slopes near Base Camp. It was a very happy expedition

Everest,

Also in 1981, John West, now settled in San Diego, California, invited me to go on a post monsoon Everest expedition that he was leading. I was fortunate that my fellow respiratory Physician, Mark Harris was happy to cover for me with the help of an Anaesthetist, Gareth Jones who had done some respiratory medicine. This left only 10 days after I returned from Kongur. It was called the American Medical Research Expedition to Everest, AMREE, and like the Silver Hut Expedition 20 years earlier, it aimed to combine altitude research with the ascent of an 8,000m peak. I was very pleased to be invited as the only non-North American. I was also pleased to go on an Everest expedition, al last, and to go through the icefall and into the Western Cwm. We did some research at Base Camp but mainly we worked at advance BC in

the Western Cwm, where I spent three weeks, sharing a tent with John. For our lab we had an "off the shelf" tent called a "Weather Port" which served very well (see photo).

Fig 8.4 Looking down the Western Cwm with a small avalanche coming off the West shoulder of Everest. Our lab, the Weather Port, on the right

The most eye-catching part of the science was that one of the climbing scientists, Chris Pizzo, measured the barometric pressure on the summit of Everest (248mmHg) for the first time, and took alveolar gas samples, which were brought back and analysed in the USA.
We repeated many of the studies we had done in the Silver Hut, especially on exercise. But we also did sleep studies. An important study was by Lahiri on sleep and control of ventilation. Sleep at altitude is disturbed. In particular a pattern of breathing develops called "periodic breathing" (fig 8.5). This consists of a few breaths, starting with small breaths, then increasing breath sizes, then smaller again and a pause – no breaths for 8-10 seconds. Then the cycle repeats and this may go on for hours. For a tent companion, it can be quite unnerving! It probably contributes to the feeling that sleep, at altitude, has not been refreshing.

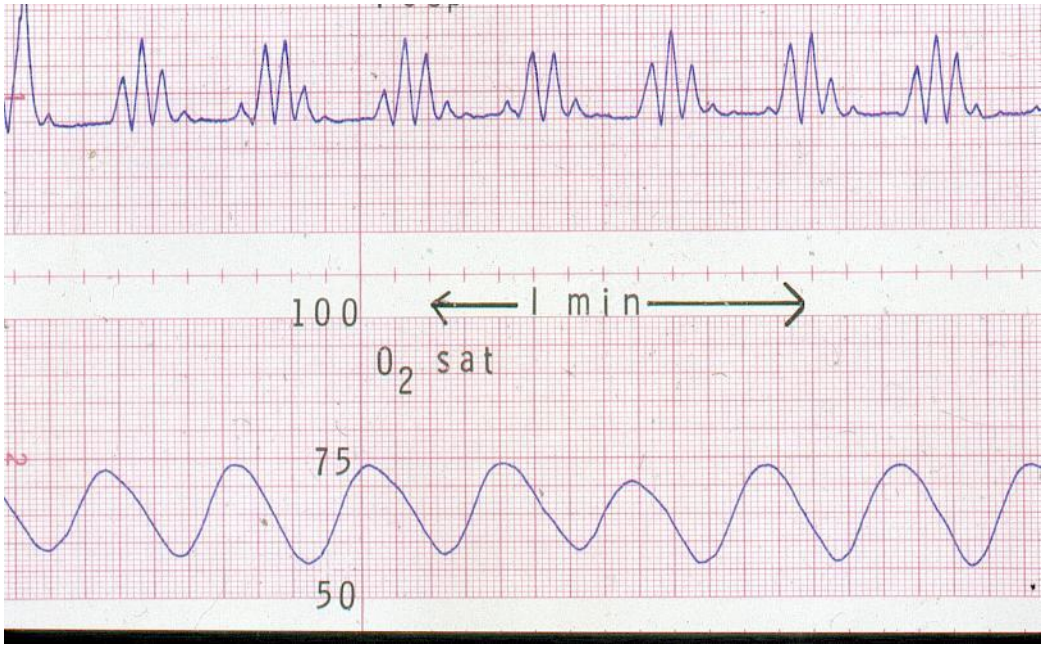


Fig 8.5 Sleep record, in the Western Cwm (6,300m) on Everest, showing periodic breathing. Upper trace shows the chest movement. The lower trace is the oxygen level in the arterial blood. At sea this level would be around 98%.

The above trace was from one of the climbers. Sherpas show far less periodic breathing. We think this is possibly because they have lower hypoxic ventilatory responses, as we had shown in 1964.

Other expeditions,

In the 1980s I had two very good trips with the Royal Navy and Royal Marines Mountaineering cub, first in Kenya when we climbed that very pleasant mountain and then in Bolivia when I was about to climb two peaks of, one of 6,300m and the other about 5,800m with a very pleasant Naval sick berth attendant. This was after we had had a week doing some altitude research on mountain sickness. We were entirely unsupported here (no Sherpas). He was wonderfully organised and we honed down our time for having breakfast and getting away to only 20 minutes from the alarm going off. This was wonderful for me as I hate waiting around for fellow climbers or skiers to get ready for off – a weakness I know.

After Retirement

On retirement, on my sixty fifth birthday in August 1995, I have been able to continue my interest in high altitude medicine and physiology and since retiring I have been on numerous expeditions to the great ranges, sometimes just for fun but more often with research projects included.

Our children grew up, went to school and university and made their own lives. Daughter Margaret lives in Yorkshire and has two boys, Evan and Joel, now 18 and 16. She is a teacher. John is now a paediatrician, working in Auckland, New Zealand, and is married to Denise and they have a son, Matthew, born in 2016.

With Mike Ward and John West, friends from the Silver Hut Expedition, we published what has become the standard textbook in altitude medicine and physiology in 1989.

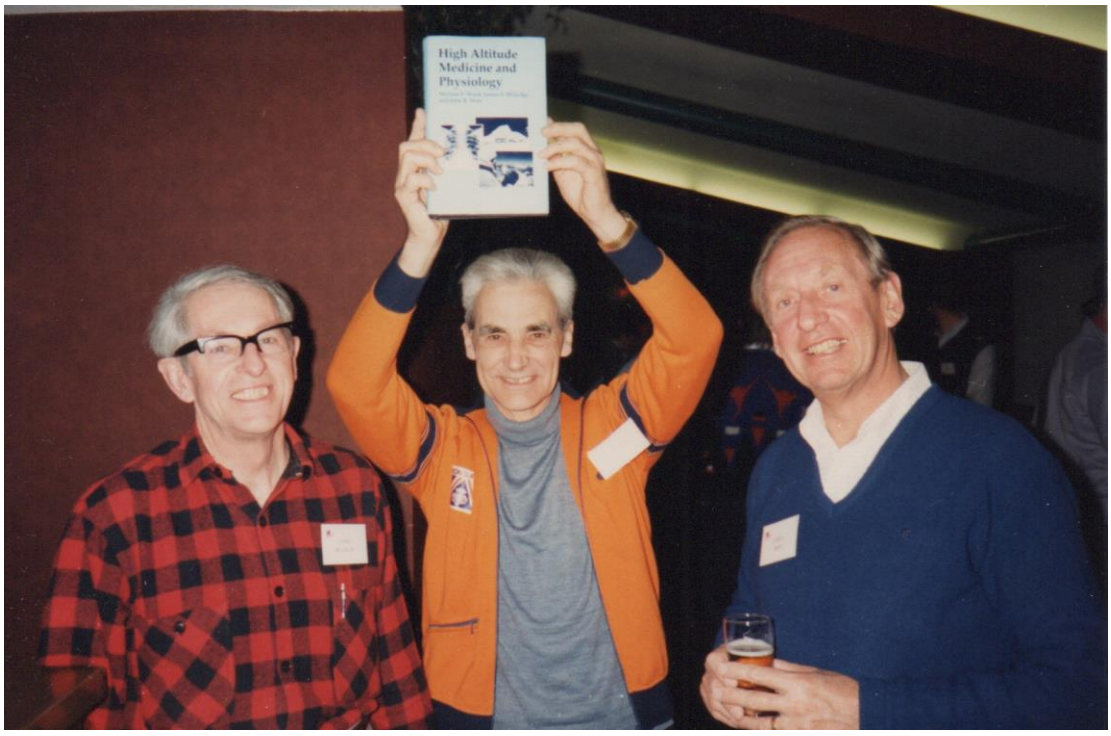


Fig 8.6 Milledge, Mike Ward, John West with the first edition of "High Altitude Medicine & Physiology" 1989.

We have published further editions at five or six year intervals. The fifth edition came out in 2012.

I continue to lecture to a variety of groups, including medical students and on the diploma in mountain medicine course that David Hillenbrandt and I started in 2002. I occasionally write papers on the subject and am involved with various groups doing research in this field. Conferences on hypoxia and mountain medicine are a great way to keep up with numerous colleagues from many nations. Interest in mountain medicine and physiology has increased A lot since the Ciba Symposium of 1971 with up to 600 delegates now attending these international gatherings.

Fig 8.7. Me lecturing to the Extreme Everest 10th anniversary conference at the Royal Geographic society, London, 2017 Photo Sue Ward

It has been a wonderful interest to keep me occupied in retirement. I am very conscious that I have had much more than my fair share of good fortune (apart from Betty's death). Perhaps the greatest good fortune has been my family and the many friends I have made and enjoyed along the way.

Acknowledgements

I must acknowledge the help and support of a number of people who have helped in this modest enterprise. First, to Harriet Tuckey, a friend, made during the years that she was writing her wonderful biography ("First On Everest") of my friend and teacher, Griffith Pugh, her father. She read and commented on most of the chapters. To Erica Neustadt, who did the same for some chapters. My cousin Jill Inskip did the same, especially for the earlier chapters dealing with our shared childhood. Finally, my grateful thanks, to my wife, Pat Howell, for her patience and support during these years of writing.