

“The Major”



“The Major”

Lt. Col. Hugh Powell Gough Clews

by

Noel R Gough



25 Dec 1890 – 22 Aug 1980

British Army
Sherwood Foresters
1909 - 1911

Royal Australian Survey Corps
1912 - 1949

Snowy Mountains Authority
Senior Surveyor
1950 - 1958

“The Major”

published by

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“The Major”



**“The Major” At Scammels Lookout
SMA Photo**

Foreword

By John Cavill

Snowy Mountains Surveyor, 1950 - 1960

When Hitler invaded Poland in 1939 he changed the direction of my life, which was not important in the grand scheme of things, but was important to me. I was working as a copywriter in a small advertising agency in Sydney and trying to build a career as a freelance journalist. Twelve months later I find that I am a gunner in a regiment of artillery learning the fundamentals of surveying as applied to field artillery. In time, the routine of artillery survey became monotonous, and I applied for a transfer to the Survey Corps.

In June 1941, I met for the first time, Major Hugh Powell Gough Clews, O.C. of 2nd Field Survey Corps. He was quite unlike any other officer I had ever met. He was informal, friendly and rather small in stature. He had a fairly strong Yorkshire accent that could be unintelligible when punctuated by a loose bottom denture that flopped up and down as he spoke. He seemed uncomfortable, sitting at a desk, as indeed he was. It is customary for a seated officer, not wearing a hat, to return a salute by momentarily sitting to attention. When I saluted him he sat bolt upright almost swallowed his false teeth and grunted. Obviously, he was not used to being saluted. After that, the interview went well and he was happy to accept the transfer. He left it to his Adjutant Captain Tom Keig, a rather handsome man who looked not unlike Clark Gable, to complete the paper work. Clews always kept someone between himself and the boring administrative stuff.

Just before I left he asked my advice on a problem that was worrying him. He wanted to invite the Officer Commanding the local squadron of the WAAF, together with some of her girls to a regimental dance but was not sure how to address the woman officer. He asked if he should write Dear Sir or Dear Madam. I suggested Dear Madam and went away wondering what I was letting myself in for.

I served under Clews in 2 Coy for more than four years. I discovered that behind his eccentric manner was an alert and competent thinker, a clear sighted person who could get people to do exactly what he wanted them to do, without appearing to try. He also had a vast knowledge of military mapping, gained over some twenty-five years in the craft, and was a very good bushman. Apart from everything else he was absolutely loyal to his troops. In return they were loyal to him. They loved him as though he were a fond father. These were the qualities that he brought to his second career when he joined the Snowy Mountains Authority

When the war ended 2 Coy was broken up. Clews had already been promoted to the position of Deputy Assistant Director of Military Survey, Eastern Command, at Victoria Barracks in Sydney. Late in 1945, I was posted to 5 Fld Svy Coy at Chatswood in Sydney, under the command of

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Major H.F. Eggeling: the same Major "Bert" Eggeling who was to become, in 1949, the Chief Surveyor and creator of the Survey Branch of the Snowy Mountains Authority. Clews joined the SMA in January 1950; I followed in April the same year

It is unfortunate that, because of some confusion over the title "Major", a myth has grown up (outside Snowy circles) that Clews was in charge of all the surveys on the Snowy. The existence of that myth does great injustice to the other "Major"; the one that designed, set up and ran the branch through the most difficult first four years of its existence: Major Bert Eggeling. To dispel the myth will in no way underrate the value of Clews to the S.M.A, nor to diminish the affection accorded to him by those who worked with him.

Regards

John Cavill

“The Major”

Preface

This biography has been produced to acknowledge the remarkable contribution made by H.P.G.Clews towards the development of mapping in Australia from 1912 to 1958. The writings of the “Major” have been reprinted especially his autobiography titled “Me”, and an extract from his diary written during his Snowy Mountains Hydro-electric Authority surveying experiences. This man has become a legend as an Army surveyor associated with mapping in every Australian State and the ACT, his service in France during World War 1, his NSW mapping exploits including a comprehensive survey in 1933 of extremely difficult, rugged terrain in uninhabited country some 95 km north west of Sydney in the Wollemi Wilderness. This survey prompted him to write a moving account “The Bad Bit across the River” (unpublished) describing this quite historic survey.

Any history of the Australian Alps including the Kosciuszko National Park and in fact, the entire Snowy Mountains Scheme would be incomplete without some detailed reference to “The Major”.

Without doubt, “The Major” would be the most widely known person working on the Snowy Mountains Scheme during the 1950s, with the only possible exception being the first Snowy Mountains Hydro-electric Authority Commissioner, Sir William Hudson. As he surveyed in the most remote parts of the scheme in such places as Lob's Hole in the deep and rugged canyons of the Yarrangobilly, Tooma and Tumut Rivers and the equally precipitous gorges of the Swampy Plain, Geehi and Murray Rivers, workers from the many other Snowy divisions spread out over this vast scheme had all heard stories or had actually met “The Major”. He was certainly highly regarded for his remarkable stamina, devotion to his work and his extremely high level of fitness for one in his sixties. When I first met “The Major” in 1950 at the SMA Tumut Pond camp, Kiandra, with an age gap of forty years I can sadly recall my complete lack of fitness, accentuated by the higher altitude, wondering at this man's courageous approach to his quite often dangerous work.

He became affectionately known as “The Major” by the three to four hundred who served under him as Officer in Charge, 2nd Field Survey Company, Royal Australian Survey Corps from 1940 to 1944. This title was to stay with him for the rest of his life.

After retirement from the Army with the rank of Lt.Colonel in 1950, he joined the Snowy Mountains Authority when it was first formed serving an arduous but invaluable eight years with the Authority. Surveyors Ian Foxall and John Cavill worked with “The Major” during this time, Ian for four years from 1954 and John for nine from 1949. These two gentlemen and one of the “Major's” friends, Carl Aggio, provided reminiscences of some events in “The Major's” life with the Authority well worth recording for all time. This story also relates much of the work carried out by the Royal Australian Survey Corps for the Snowy Mountains Authority, a story that has been

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somewhat neglected in the written history of the Snowy Scheme during 1946 - 1949, a huge contribution towards the eventual determinations of the feasibility of water diversion from the headwaters of the Snowy River into the Murray River.

“The Major” died on 22nd August, 1980, was cremated and his ashes scattered at the site of the cottage which he built and occupied at Indi from 1958 to 1978. This cottage located in the remote bush of the Kosciuszko National Park, accessible from the Alpine Way via Major Clews Fire Trail some 30 km from Khancoban, was maintained for many years by the Army Survey Coy based at Bandiana, Vic. In November 1996, the Kosciuszko National Parks and Wildlife Service produced a document written by Alistair Grinbergs, entitled “Architectural Condition Assessment of Major Clews Cottage” to establish guide lines for the continuing preservation of the Cottage. Members of the Land Rover Owners Club, NSW and the Range Rover Club of Australia, NSW Ltd, have recently accepted the voluntary role as caretakers for the cottage, a scheme organised by the Kosciusko Huts Association, Canberra. Preliminary works have already been completed including some urgent repairs and restoration in accordance with the guidelines set out in the Architectural Condition Assessment. Negotiations have been completed with the KNPWS to conduct a Conservation Management Plan covering the cottage and surrounding lease area originally occupied by the Major. This study was completed in November 2002

Considerable research into the whereabouts of the Major’s surveyors field books covering his time with the Snowy Mountains Authority including surveying carried out in NSW during his army service. Snowy Mountains Authority archival records¹ have revealed that a meeting² was held on 6th March 1970 between the SMA and the NSW Lands Department to discuss the future handover of survey records at the completion of the Snowy Scheme. The documents to be deposited in the records section of the survey co-ordination branch included precise levelling data, trigonometric station data, mapping 4 inch to 1 mile, 1 inch to 1 mile, general area map 2 inch to 1 mile, negatives of Cadastral 1:25000 series and a set of contact prints. On 28th October 1970 the transfer of all agreed SMA survey records were transferred to the Under Secretary for Lands by the acting head of SMA Survey Branch³ and officially accepted by N L Fletcher, Surveyor General, Department of Lands Sydney on 5th November 1970. It can be assumed that all SMA field books would be included in this transfer. However, no trace of these documents can be found in the records sections of the Lands Department, Sydney or Land Information Centre, Bathurst NSW. From evidence given by other Snowy Scheme surveyors, the field books could contain notes of historic significance to supplement this publication.

Note 1. SMA Records File 70/141 Doc 2 16 March 1970. Meeting between SMA and Dept. of Lands Sydney.

Note 2. SMA records File 70/141 Doc 12.

Note 3. Those present; Lands Dept. N L Fletcher Surveyor General, H Rassaby, Asst Dir. of Mapping, J Maltby, OiC Survey Co-ordination, L Anderson, Chief Trig. Surveyor, J Hutchinson OiC Computer Section. SMA; D T Walsh Act Head of Survey Branch, P D Williams Field Investigation Officer.

"The Major"



Hugh Powell Gough Clews 1903.
Portrait taken by W J W Stocks, Stamford & Uppingham, UK.

"The Major"



**Sergeant H.P.G. Clews, Royal Australian Engineers.
Enlisted in Adelaide 30 July 1911. Photo H Clews**

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Acknowledgements

“Survey of the Snowy” by H F Eggeling, reproduced with the kind permission of The Australian Surveyor March 1990 Vol 35 No 1.

“Snow Fell on the Southern Alps” by H P G Clews, Bulletin NSW Survey Ex-Servicemen’s Association Vol 17 June 1952.

The Life Story of Lt. Col. H.P.G. Clews “The Major” or “Clewsie” To His Friends. “The Major from Snowy River”, “The Wake” and “Hudson’s SOS to Clews”, reminisces by Surveyors Ian Foxall, John Cavill and Carl Aggio. Special Edition Bulletin No 81, January 1995, NSW Survey Ex-Servicemen’s Association.

Bulletin for New South Wales Vol. 17 June 1952 Bulletin for New South Wales 10th Anniversary Issue Xmas 1956 Survey Ex-Servicemen's Association, Sydney.

Cover Sketch, Major Clews. “4WD Tracks of the High Country” by Craig Lewis and Cathy Savage, 2001. P 163.

Interviews; John Cavill, Harold Clews, Nick Barlee, Peter Mouat, Noel Fletcher, Clem Sargent, John Hillier, Roger Mouat, Kon Martynow Jozef Tezak, Milaslav (Jacky) Tsarevitch, Frank Meljnek, Andy Galbraith, Harry Kilby.

Dianne Carroll, High Country Heritage.

The staff of the Kosciuszko National Parks and Wildlife Service and many residents of Khancoban and district.

National Archives of Australia Photographic records section.

Survey Ex-Servicemen's Association of New South Wales
Royal Australian Engineers, School of Military Engineering, Moorebank
NSW

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Publications by H P G Clews.

"Strzelecki's Ascent of Mount Kosciusko 1840" Published by Australia Felix Literary Club, 153 Sydney Road Brunswick Victoria..

"The Bad Bit Across the River" An account of survey experiences in the Wollemi Wilderness, NSW 1934. (Unpublished)

"Memories of 2 Australian Field Survey Company 1940-1944." Memories of his term as Officer in Charge of 2 Coy. Booklet published 1966.

"Childers" An account of 2 Coy RAS surveying duties in the Childers Qld., area. Circa 1944.

"Me" Autobiography. Published in Survey Ex-Servicemen's Association of NSW, Bulletin # 81 January 1995. Manuscript kindly donated to the Association by Carl Aggio.

"Them was the Days; Bikes and Plane Tables" by H P G Clews Published in Survey Ex-Servicemen's Association of NSW, Bulletin # 42, April 1963

Report (1937) by Major H P G Clews (Australian Army Survey Corps) on major triangulation in NSW with diagrams and particulars of trigonometrical stations embraced by part of the main chain. Copy held by NSW Government Land Information Centre, Bathurst NSW.

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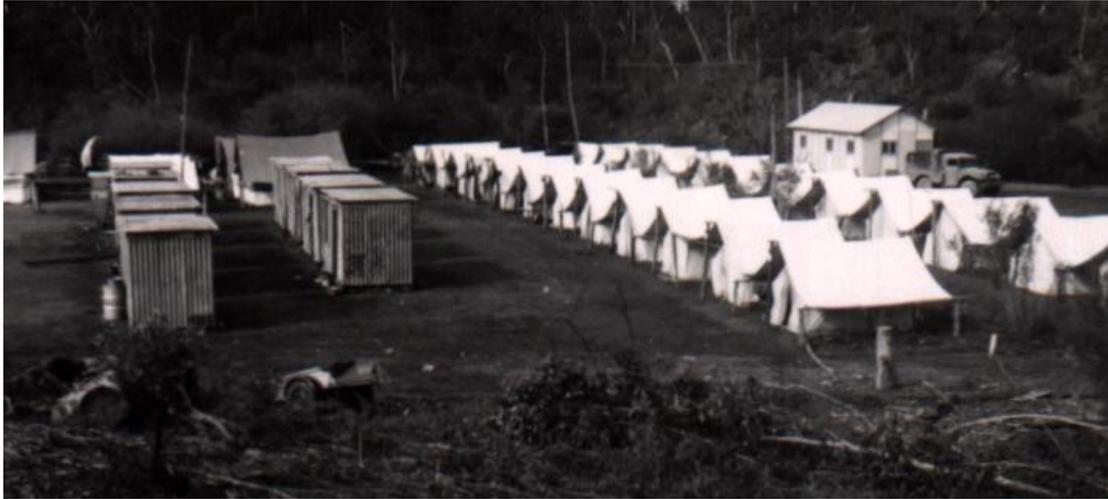


SMA Survey Conference Jindabyne 1953.
Photo NAA A11016 490



The Major and his cottage early 1970s.
H Clews Photo

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Lob's Hole Camp 1952. General view of the camp.
J Tezak



Tumut Pond camp 1950.
L-R Jack Smith, Driver. “The Major”, Did Gadsby
SMA Photographer, SMA Photo.

"The Major"

Hugh Powell Gough Clews (The Major) 25 December 1890 - 22 August 1980

The Major was born in England on December 25, 1890 at Rotherham, South Yorkshire, England, the son of William Henry Clews, restaurateur, and his wife Helen Powell, (nee Gough). After a basic education, Hugh, aged 18, undertook a two-year surveyors apprenticeship. He was articled, at a cost to his parents of thirty pounds, to John Bourne, an elderly and somewhat conservative surveyor in Parkgate near Rotherham. After two years, and, with hindsight, considered his master a poor choice. Except for a bit of dumpy levelling and chain survey of proposed road alterations, using a Gunter chain and tape measures, he had little experience of survey, but considerable insight into road maintenance, control of house building, etc.. Late in his articles he joined the English Survey Association as a pupil but after leaving, lost touch with them during the next few years. He stayed on a few months after completing his articles but doesn't recollect receiving any payment for his services

At 5ft 6¼ in.(168.3cm),The Major was considered too short for the Royal Engineers, so he enlisted in the 2nd Battalion, Sherwood Foresters on 7th July 1909. He had had military experience first in the school cadets at Workshop College and then with a territorial regiment while serving his articles. During 1910 he held the rank of "Acting Army Schoolmaster" teaching English to the children living on the Sherwood Foresters base.

Leaving the British Army on 27th October 1911, he migrated to Western Australia joining a German ship the "Konigen Louise" in Amsterdam, arriving in Fremantle in December 1911. He soon got a job in a bush clearing gang out from Kellerberrin, 176 km east of Perth, at 15 shillings a week which was soon doubled as his boss discovered he could really use an axe.

Seeing a Perth newspaper advertisement for men with military and survey experience to join the army, the Major applied and was accepted. This meant travelling by boat to Adelaide where on 1st August 1912 he formally enlisted in the Royal Australian Engineers with the rank of Sergeant. He was employed as a mapmaker in Adelaide, Ballarat and then Melbourne. On 1st July 1915, the army amalgamated all survey work of the Royal Australian Engineers (RAE) into the Australian Survey Corps. The Major remained in this group mainly in Western Australia and Victoria. On 1st December 1916 he was promoted to CSM and on 14th November 1917 to WO11, then WO1 on 1st August 1922 and Lieutenant on 9th November 1933.

When World War 1 broke out in 1914 The Major and many of his colleagues sought permission to join the A.I.F. but were refused on the grounds they were training soldiers in essential mapping work. However, on 28th December 1917, he was accepted by the A.I.F recruiting office at Blackboy, WA, completing some extra training in Melbourne.

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On 10 January 1918 The Major married Alice May Reeves with Anglican Rites at the Holy Trinity Church, Balaclava, Melbourne, before embarking for England on 2nd February 1918 on the "Wiltshire". Clews, with his colleagues Tom Vance and Harry Rossiter, disembarked at Southampton on 20th April and marched into Parkhouse, Tidworth depot and later to the Ordnance Depot, Southampton.

On 15th June 1918 the Major sailed for France and marched into the Australian General Base Depot at Montreuil Sur-Mer, 30 km south of Boulogne Sur-Mer. He then joined the Depot Field Survey Company, Royal Engineers, Topographical Section on 18th June at Feuquieres En Vimeu 20 km west of Abbeville, carrying out minor triangulation work. Moved south to Foucarmont, 50 km west of Amiens. Trig work using army bicycles carrying 2 or 3 long poles, some 2 ft lengths of iron pipe and a piece of calico, a tomahawk, plane table tripod, pair of binoculars – quite a bicycle load. This group was still at Foucarmont when war ended in November 1918

He returned to England on 12th April 1919 and sailed for Australia on 8th May 1919 aboard the "Devanha" disembarking in Sydney on 23rd June 1919. He was discharged from the AIF on 16th July 1919 and was re-engaged the following day into the Australian Survey Company

Back home he reverted to the Permanent Military Forces in July and in 1920 was posted to NSW where he carried out topographical surveys and established survey control for mapping. He was commissioned as a Lieutenant in 1933, and as Captain in 1936. In 1940 he was promoted to Major to form and train the 2 nd Field Survey Company with strength of about 200 men.

Survey work took The Major to many different locations throughout Australia including Strathfield, Katoomba, Newnes Junction, Wollemi, Newcastle, Kyogle, Childers, Ingham, Fraser Island, Chatswood and Kosciuszko. In June 1944 he reluctantly gave up fieldwork for staff duties in Sydney. He first visited the Snowy Mountains area in 1948 surveying for the original Technical Investigation Committee. Placed on the Retired List on 29 July 1949 as an honorary Lieutenant Colonel, he established a home in the bush at Bell in the Blue Mountains NSW. It could be considered that his decision to live in Bell was strongly influenced by his survey work some seventeen years earlier of the surrounding Wollemi National Park. This survey is the subject of his unpublished book "Bad Bit Across the River", a detailed description of surveying in extremely difficult terrain. Then, aged 60, he accepted a very attractive offer of a five-year contract to work for the Snowy Mountains Authority as Senior Surveyor. This offer was made by his old army colleague Bert Eggeling, Chief Surveyor, Snowy Mountains Authority.

Seemingly bottomless gorges, wild river torrents and almost impenetrable undergrowth tested fully Clewsie's initiative, courage and leadership as he found on foot and under primitive conditions access into the key construction sites. Such investigation work suited him. Under a battered ex-Army hat this white-haired man of action, his walking feats and

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reconnaissance surveys anticipated roads, hydrologists, surveyors, blasting teams and death defying tunnellers. Clewsie wished only for a simple life but for eight strenuous years he was always one of the first men in always miles from anywhere. Guthega, Geehi, Lobs Hole, Dry Dam, Kings Cross, Three Mile, Tumut Pond, Indi, Scammels Spur and Cowombat Flat have become familiar to many Australians because of The Major, his love of this type of work and his remarkable bushmanship, Clews, right hand upon the Scammels Lookout signpost amongst the eucalypts says it all. To the Major belongs, uniquely, eight years of investigatory work which established him staunchly and affectionately in the hearts of the staff of the SMA.

The Major was to achieve legendary status not only with his former colleagues but also with highly skilled refugees and displaced persons. Intent on creating in the Australian bush a new world achievement to offset and salve the horrors of war-torn Europe many of these German, Czech, Latvian, Polish, Yugoslav and Hungarian surveyors, chainmen and foresters were to have unique, often startling, assimilation experiences as they matched themselves against this wiry old man and real leader whom some said “Was of the mountains”.

The Major retired on 11th February 1958, aged 67 to a forty-acre (16.2 Ha) tree covered lease at Indi some 30 km from Khancoban under the shadow of Kosciuszko Clewsie built himself a small hut of timber frame with stone fireplace and chimney adjacent to Back Creek some 300 metres south of the existing Clews Cottage. He soon discovered that this hut, now a ruin and clearly visible, was just too far from the road (Old Alpine Way) and the meteorology station he visited daily to record the weather readings for transmission to Cooma.

He then commenced the building of his permanent two roomed cottage of rammed earth pise, planted ornamental trees, cultivated prize geraniums, pelargoniums, dahlias and roses and encouraged tame birds and kangaroos to share his retreat. Eccentric but not reclusive he knew Kipling almost by heart, loved Sibelius, read his “Illustrated London News” and quietly drank his Lowndes Rum and Schweppes Dry. He followed with particular interest debates on Strzelecki and Kosciuszko and contributed a carefully written Strzelecki’s Ascent of Mount Kosciuszko 1840 (1970) published by The Australia Felix Literary Club, 153 Sydney Road Brunswick, Melbourne. His old friends, especially, were more than welcome. He reported rainfall and weather conditions to Cooma by two-way radio each morning and had supplies delivered once a week. For many years Carl Aggio, a SMA friend, accompanied by army friends, drove from Sydney to Khancoban and brought The Major back to lead the Royal Australian Survey Corps in the Anzac Day March, a task he performed on many occasions.

The Major, renowned for his whitest and best starched shirts, regaled colleagues with morale boosting stories of Corps and the Snowy. His close friends included the esteemed Paddy Pallin. It was during this second retirement that Clewsie became a regular visitor to the School of Survey at nearby Bonegilla attending many functions there - a living legend to the

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younger members of the Corps. The “Clews Bowl” a magnificent Indonesian silver punch bowl is a prime piece of mess silver. By 1978 arthritis in the knees forced The Major into a caravan at Khancoban where friends kept a watchful eye on him until, eventually, his son Harold transferred him to Frankston. He died quietly on 22 August 1980.

On 15 September 1980 Survey Corps and S.M.A. colleagues, with several members of the NSW Survey Ex-servicemen’s Association, braved atrocious conditions along the Geehi track to scatter his ashes at Indi. A beehive cairn of Snowy Mountains granite, designed by Brigadier Laurence Fitzgerald, OBE, meticulously constructed by the Snowy Mountains Authority, bearing a plaque inscribed to The Major was unveiled at Indi on 5 April 1981 in memory of a colourful, legendary and remarkable military surveyor who helped shape contemporary Australia.”

Snippets of The Major in action contributed by various Snowy Mountains Authority fellow workers and associates provide the reader with a clearer picture of his unique style;

Few will know that the Major’s career with the Snowy nearly ended before it got properly started! Snowy surveyor John Cavill recalls that the episode happened like this:

Early in 1950 The Major had set up a base camp in the high country south of Kiandra. He was carrying out a reconnaissance for a trig chain to control a topographic survey of the Tumut River, a river that was destined eventually to embrace several dams and power stations. During one of his rare trips in a motor vehicle (he usually preferred to walk) he became embroiled in a confrontation with a freshly graduated young Resident Engineer over how many personnel should travel in the front cabin of a Land Rover.

In fairness to the engineer it must be admitted that he did not know The Major and it has to be conceded that “Clewsie” in working rig was not a very impressive sight. He is more likely to be taken for an untidy labourer than a retired Lieutenant Colonel from the Survey Corps in charge of a task vitally important to the Scheme. The confrontation became rather heated and The Major never impressed by what he considered stupid regulations and being annoyed at being told what to do by a fresh-faced boy less than half his age, decided that enough was enough. He walked back to his camp, wrote out his resignation, caught a lift to Cooma and took the train back to his retirement camp at Bell in the Blue Mountains. Bert Eggeling, the Snowy Chief Surveyor, was horrified at this development. He took personal charge of the “resurrection” of The Major but it took four days to find him, winkle him out of his hideaway and persuade him to return. After this there were no more confrontations. The Major’s fame spread and all, even the Commissioner, treated him with great respect.

John Cavill recalls “It needs to be said, however, that it was only Clewsie’s great respect and admiration for Bert Eggeling that persuaded him to return. The Snowy nearly lost him. What a loss that would have been!”

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Most people relating one of The Major's more interesting adventures would invariably emphasise the story with “And the Major's teeth were clicking and clacking wildly at the time”. This embellishment really provided the story with a stamp of authenticity.

Upper Murray farmer Kevin Esler knew “The Major” and recalled that on one occasion he purchased two cases of Lowndes Jamaican Rum for him. A publican in Corryong noted that the Major was his only customer for Lowndes Rum and was quite astounded at his sales figures over the years. The Major's habit of feeding the kangaroos with stale bread supplied from the SMA Khancoban mess increased the numbers to such an extent that he was forced to build a substantial fence for his own protection. It was also known that bowerbirds would fly into the kitchen and steal the spoons from the table. The Major told him that a stamp to commemorate Strzelecki was issued in Russia and he had asked Kevin to collect one for him during his visit overseas. The stamp was duly delivered to Indi.

There were three children from his marriage, Jessie was born on 14th October 1918, married Gordon Wall in Adelaide. Gordon owned a music shop and achieved international fame for his extensive record collection of the very popular singer/film star of the 40s and 50s, Bing Crosby. Joyce born on 29th April 1920 married Sid Richardson in Albury, a Veterinary Surgeon for the Kiewa Butter Co-op.

Harold born on 12th December 1924 at Dean Avenue, Hawthorn, Melbourne, in one of the very first subdivisions of the area, Deans Estate. After a few years the family moved to Watsons Bay, Sydney overlooking the Pilots Station. In 1938, they moved to the suburb of Woollahra where Harold attended Scots College. The next move saw them all in Perth with the exception of The Major who was posted to Kyogle, NSW and Childers, Qld. Moving back to Melbourne, Harold attended Dookie Agricultural College in Victoria and later, in 1945, was employed by the department of agriculture on cotton research.

In 1946 Harold worked with Arnie Ford, dairy farmer in the Kiewa Valley and played football for the local Dederang “Aussie Rules” football team. He also worked for Haberfield's Dairy delivering milk products to Tallangatta butter factory in Old Tallangatta. Harold recalls that he purchased a farm in the area of Hamilton Valley, located close to the existing Lavington Sports Club, about 6 km from Albury. It was purchased in 1950 and sold in 1966. Harold's mother Alice May, lived on the farm during this time. Alice died in Melbourne, 1973 aged 82.

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Worksop College Uppingham.

Photo sent from London to the Major by H & S Barlee, Khancoban, on 31 July 1970

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"ME"

by **H.P.G. Clews**

I was born in England on December 25, 1890 at Rotherham, South Yorkshire. My father came from the Cotswolds while my mother came from South Wales, Monmouth. Although I always claim to be a Yorkshire man, except for the early days of my life, I did not live there.

My first memories are of Kilnhurst farm, which my father was working some seven or eight years later. But this was soon given up and we moved to the south of England to Stroud. My brother and I, with my sister who was 10 years older, were sent to a relative probably an aunt - who lived in Cheltenham, while the farm was disposed of and my parents took over a hotel in Stroud.

Memories of Cheltenham include my first play "Pinafore" and the start of the American Spanish War with the blowing up of the Maine in Havana Harbour. This was shown by screens and a big flash and bang on a stage. Motion pictures were not in evidence at the time. Also, I remember being taken on a walk to see the commencement of the Thames River at a big spring.

We were soon taken to Stroud of which I have few memories and our next move was to Painswick, another pub. Looking back, I think my father was failing all the time. Don't remember much of Painswick, except being taken to the top of a high hill near the place. Also I found out what "a few" meant. My brother and I asked to get some fruit off a tree in the garden and were told we could "take a few". We decided a few were seven. Why, I don't know, but "a few" to this day means seven to me.

Next move was to Gloucester, but this wasn't a pub but some kind of a restaurant. Remembrances are of a big fire on the other side of the street not far away. Also, I remember seeing a long line of horse-drawn Red Cross ambulances being driven down the street to embark for South Africa.

Last move was to Coventry and this was a disaster. Then, I think my mother's brother, who was a very successful grocer in Rotherham, came to our assistance and we moved to a good hotel in Uppingham. There was a large public school there and parents visiting the school made use of the hotel for accommodation. I have many memories of Uppingham, but will only mention highlights.

The end of the Boer War was one that came to my notice while on a walk on a Sunday night. Have no recollection of Queen Victoria's death but remember the postponement of the coronation of King Edward VII because he developed appendicitis.

Also motorcars first came on the roads, but very primitive. My father, with the ostler, used to take a wagonette and pair to tow broken down ones into

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town, but I don't know where they went to there. I remember he used to toot the horn while being towed so everyone could come and see a car being pulled by horses. Also had my first car ride. My father took me with him when he was driven to Birmingham. Don't remember much of it except that there were trams there pulled by small steam engines.

Then come my first memories of my age when I was sent to school at Worksop College. This was not completely built and was the last Woodward School built. It held about 170 of us when I was there and did not alter much until I left. I understand it now holds about 450.

I was just 12 when I started and was there for four years. As I had no regular education before starting, except some from my sister, I was put in the lowest class and next term the second lowest, but the third term I was jumped up to the upper school form IV, jumping the Third and "Remove" Forms.

I still remember being in a crowd of boys changing classes, when a boy asked, "which was the boy who'd been jumped up". I must have been pointed out to him and.. "he doesn't look much does he?" He was quite right too! But I made normal progress and passed my senior Oxford local in three years. I have since had the opinion that it is not necessary for a child to have formal education until he is at least 10 years of age.

So I was now, at 16 years of age, articled to a surveyor in Parkgate near Rotherham. I was only there for two years and, with hindsight, consider it a poor pick. Mr. Bourne was elderly and somewhat conservative. Except for a bit of dumpy levelling and chain survey of proposed road alterations, using a Gunter chain and tape measures, I had little experience of survey, but quite a lot of insight into road maintenance, control of house building, etc. We had some 30 to 40 men of various types on our payroll and after a few weeks I seemed to be in charge of the pay arrangements. Pay ranged from 18 shillings per week for street sweepers to 30 or 35 shillings for the foreman, steamroller driver and two other workers in charge of sewage pumping and gas works.

Drawings of all buildings in our urban district had to be passed by the Council after Mr. Bourne approved of them. They then required five examinations while building. Not sure now, but foundations, drainage, alignment and dampness freedom. There were no cavity walls in those days. My parents paid 30 Pounds to Mr. Bourne for my articles - two years - and I think 15 shillings a week to board and lodge me. Late in my articles I joined the English Survey Association as a pupil but lost touch with them during the next few years after leaving. I stayed on a few months after completing my articles but don't recollect receiving any cash for it.

So I rejoined my family who were now in a small pub at Sleaford in Lincolnshire. Then started looking for a job. I'm afraid I was very impatient, as are most young people, and at last decided to join the Army. However, the Engineers, of which the Survey Company was a part, had a height limit

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of 5' 7". I was half an inch short, so joined up with an Infantry Regiment on 7th July 1909. I had had military experience first in the school cadet corps at Worksop and then with a territorial regiment while serving articles. Had camps with both of them and was a cyclist scout in the later one - Yorkshire. Except when at school - no bicycles allowed - I had done a fair amount of cycling, including all night trips to Sleaford while serving articles.

Before proceeding with my Army career, it will help if I explain the English Army procedures in between the Boer and the 1914 Wars. Most of the English Infantry regiments were county regiments with the majority being from one county. But the technical corps, guards, etc. were recruited from anywhere available. A regiment in peacetime consisted of four or perhaps five battalions. Two were regular battalions one was stationed near home and one abroad in India or elsewhere. The 3rd battalion was a militia battalion that called men up for six months training. The 4th and subsequent battalions were territorial battalions who generally had a two weeks' camp per annum and recruit and other training locally.

I took the King's Shilling in Sleaford and was sent to Nottingham to enlist and next day to the depot of the Nottingham and Derbyshire Regiment – the Sherwood Foresters at Derby. There I had the recruit training of the Regular Army and later was sent to the 2nd Battalion then in Ireland at Fermoy, where I was placed in B Company which was stationed in huts away from the Battalion, but had to join them for normal battalion parades, etc. A battalion of the Durham Light Infantry lay between B Company and the Battalion. There I completed my recruit training and became a full member of the company with whom I did a month's company training. My father died soon after this and I returned to Sleaford for his funeral. I was selected to attend six month's course of training as an acting army schoolmaster at Aldershot.

All these movements necessitated a trip across the Irish Channel between Rosslane and Fishguard. The first trip with recruits joining the regiment was very disagreeable as it was rough and we were kept below decks. But on the train to Fermoy and passing through Waterford saw flags at half-mast and learnt that King Edward VII had died. So I had six months at Aldershot attached to a battalion of Leicestershire Regiment in, I think, Talavera Barracks. There were some 40 men from many different regiments at the school. Eventually I passed the course and, with another of my regiment, a L/Cpl. Salt who had been with me during the course, was sent back to my regiment which was now stationed at Plymouth in England (after having our annual musketry course which we had missed). I was in the Garrison School at the Crown Hill Barracks, which were some miles out of Plymouth. Hours there would probably astonish Australian teachers. Garrison children, 9 - 12 and 12.30 - 2.30: then troops, 3 - 5.30, then more troops, 6 - 8 The troops were after the education certificates required for promotion, while for the children it was normal primary education. The children were family members of the married men of the regiments attached to it. Was also lent to the Garrison School at Plymouth - Garrison Artillery I think - I had a crowd of West Irishmen who couldn't speak English well. All big, burly fellows as usual on heavy artillery, but easy to get along with.

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As I didn't care for teaching, besides not being too good at it, in spite of what my certificates said, I tried to transfer to the Engineers Survey. But my height being against me, accepted the Army Service Corps instead. Was sent back to Aldershot for mounted foot drill with A.S.C. and then on to Edinburgh where I became a junior clerk. Not very keen on it, but gained an insight into methods of "passing the buck". Had one interesting job there. The Agadir, Morocco, incident occurred when Germany put a warship in Agadir Harbour. Much military disturbance occurred and I had the job for a few days of charting the positions of trains carrying ammunition to the forts of the Forth Defences which were not fully supplied. The trouble was soon settled and I decided to buy out of the Army and emigrate to Australia.

This I did and after being transported from a north England port to Amsterdam, joined the Konigen Louise, a German ship. But the ship next went to Southampton so don't even now understand why I had to go to Amsterdam to join her. Then normal routes, Gibraltar, Genoa, then Suez, Port Said and Colombo on way to Fremantle where I disembarked, having decided in England that West Australia was best place to be in Australia. Landed there early December 1910. Got a job straight away in a bush clearing gang out from Kellerberrin, 15 shillings a week and keep, which soon rose to 30 shillings as the boss found I really could use an axe. Though I learnt a good deal from him, I moved away at times to a farm and another clearing gang.

Then I saw an advertisement in a paper for men with military and survey experience. Put in for it and was accepted. Of course had to go back to Perth where I was put on a boat for Adelaide. An ex-soldier from the Duke of Cornwall's Light Infantry joined me there, named Arthur Clements. We were enlisted at Adelaide on 30th July, 1911, as sergeants in the Royal Australian Engineers.

Were attached to the Intelligence Corps and met there some of the English Engineers Survey Company from Southampton. This was the crowd I originally wanted to join. Anyhow, they taught us our job and I admit I knew very little about it. Had never seen a plane table. But they started us off and eventually started mapping by plane table. Slow for a start, but improved as I went along. We were expected to do about a square mile per day, as we were working on one mile to the inch, a week's work looked very small.

In Adelaide I mapped three Field Sheets: one on the hills and two along the coastline: also a few small jobs. We were making preparations to get more country ready for mapping when we were all moved over to Melbourne, but were stopped at Ballarat to do another small job - manoeuvres training map. Was then sent on to Melbourne where we met our first survey officer, Lieut. Quinlan. We changed plane tabling control from the Cadastral work of the Lands Department to Triangulation which Lt. Quinlan, with of the Southampton men, Jack Lynch and two or three chainmen and an army horse transport wagon was carrying on in front of us. As far as I remember, we totalled about 10 sergeants, etc., four who had enlisted with me and six

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Southampton men from England. Many of these had been working in N.S.W. and Victoria. The Army pulled us all together to stabilise the work making it similar everywhere and also they were preparing to make up the Survey Corps separate from the Engineers, which was done about one year after the commencement of the first World War, the Survey Corps being formed by 1st July, 1915.

In Victoria my sheets were, as far as I remember, southeast of Werribee. This covered the Flying Corps preliminary camp which consisted of a Hangar (or big marquee) and a few tents. Then to Steiglitz, generally hilly but not bad. Then western country Winchelsea and further out. Some of this was on two miles to one inch scale. I started using bicycles in Adelaide and used them all the time in Victoria, although some sheets were too rough except for getting to work. After the plans of the western area, I struck a very rough sheet in the Heidelberg River area. There were a few other smaller bits, north and northwest of Melbourne, but I don't remember them very clearly.

Soon after the formation of the Corps, we were sent back to our States but this time I was sent to W.A. along with four or five others and also a new officer, Tom Vance, a licensed surveyor who I worked with for many years. He had had one year in New Guinea and was working on the Trans Australia Railway when he joined us in W.A. He and Rossiter were engaged in control work for the plane tablers. My sheets as far as I remember were one at Waneroo, mainly coastal sand ridges and flats behind them. I think I then did two more sheets down the coast finishing up well south of Fremantle. Had Garden Island, a long scrubby island, and a smaller one north of it, Carnac Island. These of course required boats for access. Then one or two sheets on the frontal slopes of the ranges as well as at least one on the coastal flats.

Then to Albany - I only did one sheet there away to the east - Two People Bay. Then to Northam on preliminary triangulation work, establishing and building Trig Stations which Vance later observed. Afterwards I mapped one and a half sheets, big ones but still at one mile to one inch. And at one time I did a sheet on the road to Toodjay - mainly bush. I might have done other bits before we got away to the War.

At the start of the 1st World War many of us asked permission to join the A. I. F. but these were refused as were all applications until very late in 1917. As most of us were training soldiers (English, etc.) and several had had active service, one would have supposed we would be welcomed but the authorities decided we must keep on with our mapping, etc. Subsequent applications were equally refused.

I was on a few days leave and in the Perth Library when Rossiter found me and told me we could go. So we went to Blackboy Camp and enlisted in the A.I.F. Both of us were W.O.'s 11 (CSMs) but had to drop to sergeant to enlist. Were then sent to Melbourne (by boat) and spent a few weeks there during which I got married. Left by train for Sydney shortly after and joined a boat there, the “Wiltshire”, I think. Landed at Suez and trained across Egypt to Cairo, where we boated to Taranto in Italy and then across Europe by train

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to Le Havre and to A. I. F. Camp - given leave for a week or so and then sent to Southampton, who finally sent us to the English Depot Survey Battalion in France. We were then given a triangulation job a bit south - the three of us together, Vance, Rossiter and myself. Our party consisted of a chauffeur and a Ford car, a cook and an odd man whom I guess was intended to be a batman to Vance. We continued this triangulation until the War ended. We learnt this by a notice in the local post office window. I did some triangulation stations but was mainly on the computations. We were then recalled to the British Survey and allotted to a Survey School for young engineer officers, all English returning to the Survey Depot. We were given leave and returning to France found the British had moved to the coast, but we found them. Then returned to the Australian base camp at Tidworth in England via the embarkation port at Le Havre. After a short leave returned to Australia where I was paid off from the A. I. F. in July 1918. Reported to our own Survey HQ in Victoria Barracks and after a few weeks of odd jobs, etc. we were sent back to W.A. to finish off the work we were doing before we joined the A. I. F. Vance and Rossiter went on to complete the triangulation north of the railway. I settled in a pub at York and proceeded to finish off odd bits of topography left by self, Rossiter and others when we left. Then got back in camps and started a new area running mainly over the York Perth Road. Soon after starting, Vance and Rossiter pulled me out at 2 a.m. one night to go and arrange the transfer of gear from Vance to me, who was left in charge to finish in W.A. I picked up a chainman and a horse and sulky as they left for Queensland, with me to follow when I had completed the remaining work in W.A.

I went over to Victoria on leave to see my second daughter, the first one had been born while I was in France. I'm afraid I wasn't very good to my wife. While there, Jack Lynch, now O.C. Survey Corps, asked me if my chainman, Ted Johnson would make a topographer. I'd been showing him some of it, at least as much as I could on a camp surrounded by trees. So I gave a possible affirmative answer, and I had a new corporal topographer. He had served in the War in the infantry. I got another chainman so we were three and we finished off what we had to do and were ready to go to Queensland by Christmas 1920. It required hard work, and at one time I was walking 100 miles per week, 80 of it pacing traverse through timber country.

Got a railway ticket to Queensland, about a yard long, but after a brief leave in Melbourne, Bertie Davis, who was in charge of work in N.S.W. asked me to join him and help with triangulation he was doing. I accepted so my ticket was changed to N S W. My first job there was to rescue Davis' Camp from south of Newcastle and get fixed at Tea Gardens. This place was accessible by car and, ferry boat across Port Stephens. Then Davis came in by road with an old Ford car, which I soon learned to drive. In N.S.W. at that time were Roseblade and Johnson on topography near Wollongong, and Davis and self with two chainmen at Tea Gardens. Eventually we finished our work at Tea Gardens and moved to Limeburners Creek on the main north road to the west of us. Camp went by water to Karuah where I picked them up and moved to Limeburners. in the Ford. Later on we moved to East Maitland where Davis rented a house and had his family with him, and my family came up from Melbourne to my boarding house. I had a period for

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some time of unsatisfactory accommodation. I worked at the triangulations and some levelling with Davis until the "big retrenchment" on the Permanent Forces, which reduced N.S.W. military Survey to self and Johnson and one chainman. Davis and Roseblade left the Corps. Just before the retrenchment, we received two out of six enlistments of new topographers and were trying to train them when they were discharged. Roberts from Queensland joined us so I was in charge of two topographers and a chainman. Did some topography at first, but soon had to get back in triangulation and levelling to keep the country ready for topographers. I was permitted to draw from Ordnance the car which had been returned by Lt. Davis and triangulated the Singleton and Cessnock areas and Newcastle which had earlier been mapped by the Southampton men.

The period from just after retrenchment until the commence of the 30's was completely uninteresting with nothing happening. I did some triangulating and reconnaissance levelling and also a little topography when not otherwise employed. I moved from East Maitland to Windsor, where my family joined me. At Windsor was my first experience of air photos, a small area near Wiseman's Ferry of small photos with no regular runs. I used them while topographing a small area south of Wiseman's Ferry. Some triangulation and control traverses were also handled from Windsor.

Was then allotted two or three areas south of Wollongong and moved down to Nowra. Triangulation and topography and much air photo work First Principal Point Traverses. Johnson on topography from Wollongong and Roberts from Mittagong. Then work allotted west of Newcastle so moved to Bathurst. Much interesting work there, mainly triangulation and levelling, then pulled back to Katoomba. Camped in the drill hall there, Roberts in house in town, Johnson and Carter in Bathurst. Carter was sent to me very early 30's. Controlling triangulation and minor triangulation. Also first Australian least squares adjustment of chain triangulation was commissioned in 1932. Trans Mercator Projection came in, worked out computation forms for it and the scale of plane tabling was increased to four inch to one mile.

The period of the late 20's and early 30's was a time of much technical advance in mapping, including improved triangulation technical methods and also first systematic use of air photos in lieu of detail plane tabling. The 30's, until the outbreak of World War 2 was noted for the increased strength of the Survey Corps. My share in this was two licensed surveyors about 1935 and then as Vance took over Survey Corps from Lynch his Queensland team - three or four persons. Then two more juniors as topographers and one or two others. Result being at beginning of 1939 War I had a strength of some 12 people or more who, as soon as War was declared, were taken to other units. The A.I.F. company, under Fitzgerald, took several and when the local companies were formed they took more, also the depots. I formed and trained the 2nd Field Survey Company in 1940. After losing Rossiter and Roberts to the Field Depots, only Carter remained. Strength of Company was about 200 all told. I was then in the rank of Major, having advanced in the usual four year steps. Commissioned as Lieutenant in 1932, Captain in 1936 and Major, 1940. I had hoped to get a command in the A. I. F. but my

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age, approaching 50th birthday, was against this. So Carter and I managed to get a fairly efficient company operating in a year but Carter had the heaviest job in training commercial artists to precise methods in the drafting rooms.

In the late 30's I had moved from Katoomba to Newcastle and as my strength increased, to a building in a suburb of Newcastle. When the company was being formed I moved to Strathfield to a large building: was there for a year or so and then moved into the field at Kyogle and later to Childers in Central Queensland, this making the fifth State I had worked in. Work was mainly mapping from air photos, though Plane Tabling had to be used when photos were not available. Triangulation and computing were also carried out. Some interesting work at times, mapping Fraser Island, Plane Tabling, and the Gulf country by oblique air photos. Sent a section away to New Guinea. Later moved to Ingham where Bert Eggeling's No.5 (or earlier 1) had been stationed. Then I had to leave the company, being transferred to a staff job in NSW.

Leaving the company to Major Rolf and travelling to Sydney I found the Survey Office with two or three people in it, one of them a WRAF, but no officer in charge. Had difficulty in finding accommodation but Bertie Roseblade who was in charge of the map depot in one of the suburbs arranged for my accommodation in his depot. I was now deputy assistant surveyor general in charge of all military surveying in N.S.W., but found nothing much to do at first. Received a few queries from the field companies which required consultation with the Mitchell Library. Then the War ended and I had to find Army quarters for Roseblade's Map Depot which was in rented premises. Also had to move out of my office which, although in a very old portion of the Barracks would be required in peace time. Obtained a hut near the main gate, but not strong enough for Roseblade's maps. Then to some disused artillery gun quarters which were strong enough but had a sloped floor. We could adjust the shelving so put about 10 tons of maps in there. Destroyed a few tons at Botany Paper Mills and arranged for small quantities to be held at my office for distribution and sales. I think I organised everything alright but the auditors insisted on recounting after I had finished. Then settled down to map sales and distribution and various queries from State departments who seemed to know me very well. Also put Eggeling's company into Chatswood drill hall to which I had moved Roseblade's map depot earlier as his depot was now out of action. Eggeling's was a Queensland company but was sent to N. S. W. for demobilisation. Had no trouble there after rescuing a few who got into trouble with the military police through not knowing local rules. I had moved with Roseblade into Chatswood drill hall so had an officers' mess to feed in. But soon I was replaced as D.A.S.C. Survey by Major Eggeling and was not given much to do so I turned to and contoured much of the Kosciusko map which Carter was doing a fair drawing. I think some others were there. Had my first trip to the Snowy Mountains to obtain a little more information at Tom Groggin. Had another trip down later when Lindsay Lockwood had replaced Eggeling, who had taken over the Army Survey School in Victoria at Balgownie. I decided it was time to retire too and retired on 31 st July, 1949, as a Lieutenant Colonel after 37 years in Survey

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Corps. This was about five months earlier than compulsory retirement age of 60.

I went to a hut I had built in the Blue Mountains, a mile or two from Bell. Spent a few months improving it when Bert Eggeling turned up. He had retired from the Army and was senior surveyor with the Snowy Mountains Authority. He wanted me join him as he was short of surveyors and they were hard to get so soon after the War. I said I would give him five years and he was content. This was early in December 1949.

After Christmas I went to Sydney and joined the Snowy Mountains Authority on 4th January 1950. Was kept in Sydney for a short time while equipment was gathered for me - “gathered” I understood as purchasing. I was away later in January and reported to Cooma, the S.M. H.E.A. headquarters. Sent to Adaminaby and next day to Tumut Pond via Three Mile Camp. Then to “The Pond” and erected tents for self and a chainman I had been given. Not much of a chainman, either.

Then I started gathering groups of New Australians (or “Balts” as they were originally called). No instructions from Cooma and I placed them on jobs I thought might be useful. But I was a topographical and trigonometrical surveyor and not an engineering one. Spent some time explaining the country we were going to work in and odd jobs. Had to sort out from the New Australians the real ones who had been performing survey work in Europe from those who had picked up bits of survey on the voyage here. The Snowy got some good surveyors and also some good chainmen when they settled in. They were all classified as chainmen on the Snowy work sheets.

Normally, before any construction scheme is started, a period of investigation, perhaps lasting five, or even more, years is put in hand. This would comprise survey - general and detailed hydrology, stream gauging and flood incidences, etc. also meteorological conditions, rainfall and droughts, snowfalls, etc. Also geology with its concomitant drilling at selected points to prove or disprove the geologists' ideas from surface mapping.

Practically none of these investigations had been made before the S.M.H.E.A. commenced operations and this meant very heavy pressure on all investigation personnel to endeavour to keep in front of any construction works. Australia in general was badly mapped. New Australian surveyors, on being allocated preliminary investigation work generally comment “but can't we get this off the map?” It is then necessary to explain that there are no maps. After the formation of the Army brought in a few Southampton “mapping” experts and reinforced these with local surveyors who blithely started to map Australia with less than a dozen men. The first World War interrupted this effort and afterwards the Survey Corps shared in the general strength reductions.

During the 30's however, discussion and propaganda was in evidence towards hastening the mapping of Australia. The second War postponed this

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but resulted in a very large increase in the area mapped though much of this was emergency mapping. After this last war the Commonwealth started a national mapping service and at least two major States followed suit. At the time the S.M.A. commenced operations, little had been done in the mountain areas. The Army and the Public Works Department of N.S.W. had been called in to assist in the preliminary investigations which led to the constitution of the S.M.A. The Army completing the Kosciusko one mile map and also the Berridale but neither were available in published form although copies of the original field sheets were available. Levelling and some co-ordinating had been done by the Public Works and one of their surveyors, Mr. Kenny, was working in the area when I started at Tumut Pond.

Other maps available were the 4-mile to 1" Army Strategic Maps but these were only an emergency map produced under war conditions by "blowing-up" the 1/1,000,000 International Series of which a few sheets had been compiled by the Department of Interior prior to the War. A very important map available, on which nearly all the preliminary work of the S.M.A. was based, was the Snow Lease map. This was produced during the later stages of the War and afterwards to enable the snow leases in the Snowy Mountains area to be located in relation to access, rivers, etc. It was at a peculiar scale of 3 inches to one mile, was plentifully supplied with spot heights, but not contoured and was complete and reasonably accurate with tracks and rivers.

So much for the mapping position and it can be seen that the S.M.A. would be urgently committed to completely map the area in which they were interested in the control to do this they were fortunate. The N.S.W. triangulation was of the highest order when done and although old, could not be much improved with modern methods. Also the Army Geodetic Section had used some of the N.S.W. triangulation to run chains of triangulation which now extended from Spencers Gulf in South Australia to Central Queensland. But they had not adjusted the triangulation stations not used to conform with the new values they gave the stations they did use, these required adjustment and here was a catch. To define a point on the earth's surface, it is necessary to know the shape of the earth and this shape is stated by giving the length of the two axis. The Army and Victoria had different shapes for the earth. Also, in the early 30's, the Army had adopted the trans-Mercator system of co-ordinates which was very much in fashion at the time and the Lands Department of Victoria and N.S.W. did the same, at least to some extent, for N.S.W. still had a system of spheroidal co-ordinates based on local origins in the counties. The Transmercator system ran across Australia in 50 degree zones and here was another catch.

The area in which the S.M.A. was interested lay athwart two zones. It took a few months before the sensible decision to use the Transmercator Grid, but with the S.M.A. meridian, or origin, being the Army boundary meridian, this ran close to Cabramurra triangulation station.

I stayed with the S.M.A. until the late 1950's when I resigned and built an elaborate humpy at Indi using rammed earth. This was occupied by me in

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1960 and except for maintenance of traffic, etc., little other work done by me until I finally left the Snowy early in 1970.



Jozef Tezak, Chainman, visiting “The Major” at Indi 1975 with his daughters Bregiti, Andrea and Martina.
Photo J Tezak

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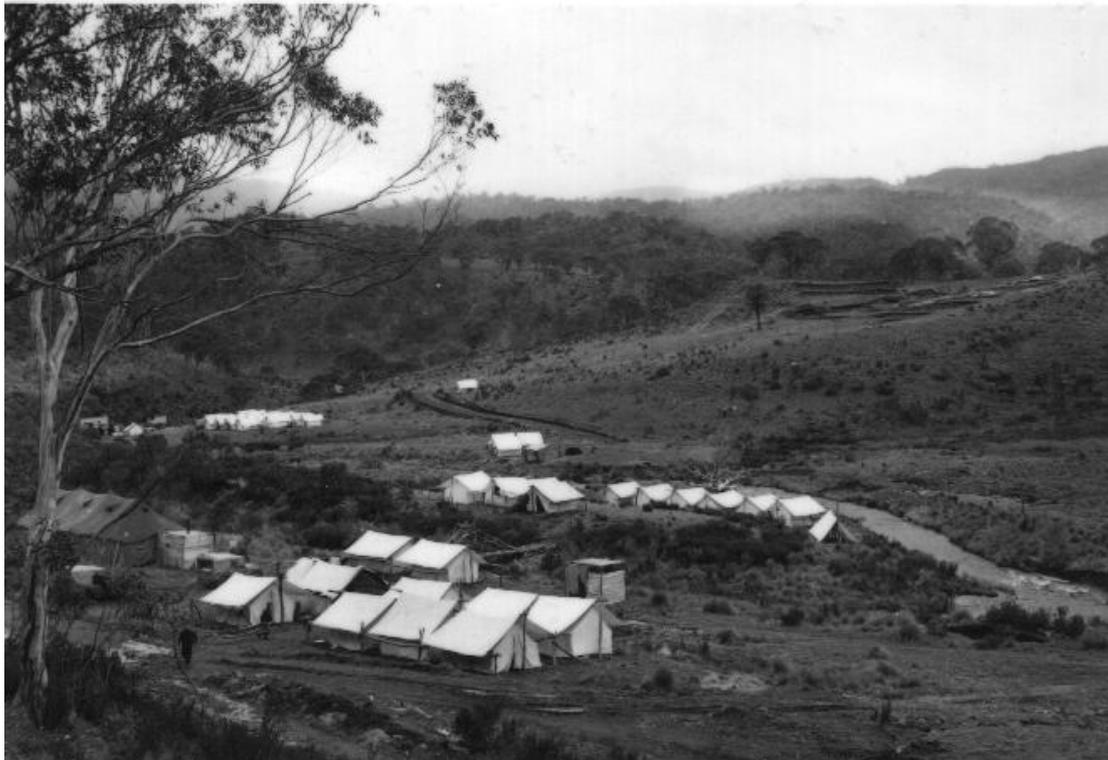


Major Clews retirement ceremony Khancoban 1959.
Associate Commissioner T A Lang making the presentation.
SMA Photo



SMA Gatehouse on Alpine Way, Indi. Major Clews operated from here
during construction of his cottage some 300m to left of photo. H.Clews
Photo

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Major Clews Survey camp at Tumut Pond. 1949.

Clear Creek in foreground. Diamond Drillers camp in left background.

Note: large army type tent was used as general office, English classes and recreation purposes. Top right background shows earthworks for main Tumut Pond barrack camp. This area now submerged beneath the waters of Tumut Pond Dam.

SMA Photo

“Snow Fell On The Southern Alps”

From the Diary of Lt. Colonel H.P.G. Clews

June 1952

Left Lobs Hole, 1670 feet above sea level in a Land Rover for the camp at Dry Dam. 4900 feet. A week's survey work for me and chainman is projected. Ten and a half miles (and twenty creek crossings) in one and a half hours is good going here. We are now on the Monaro Highway and the driver has easy going to Kiandra. There has been light snow, but only fragments of the big winter drifts remain. Up the Snowy Mts. Hydro Electric Authority's road we reach Kings Cross, six miles out. The Authority's radio station here, keeps H.Q. in touch with its various camps and working parties. Height ASL 5300 feet. A good view of snow covered peaks – “for them as likes views and snow covered peaks”. Our concern is not with the views. The driver launches the Rover on the river of mud that passes for a road to the Basalt Plateau. We come to grief. We unhitch the trailer; the

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Rover barely scrambles up the rise. Passing a long rope back, the trailer is hauled to the top.

We reach the camp at 2.30 pm. Forty four miles in seven hours. The hut is wet. The fireplace is wet. The wood is wet and scarce. We are wet, hungry and muddy. The billy boils exceedingly slow. The driver left the trailer with us then drove off in the Rover. We erected two tents. Herb, the chainman, got the stove going and produced a warming meal. At 8 pm we were in bed and asleep. There's not much night life around here.

At 7 am I set off for Tumut 1 power station site. Herb looking after the camp. A mile of rough walking brought me to the camp occupied last summer by a surveyor named Ghent. I walked down a bulldozed road. It is quite marvellous where the bulldozers can get and the operators are as game as they are made. At the Surge Tank camp, a party of American drillers was just having breakfast it being a Sunday morning

On to our old camp at Tumut 1. Passed some Australian drillers getting a drill into position. Saw our old friend John Cavill casting a fly for trout. Delivered some mail for one of my parties in this camp. Another half mile along the track to a party of New Australians, pay and mail for them. Climbing a spur back past the American camp, I eventually made Dry Dam camp in time for tea. A feed, a smoke and to bed.

Daybreak. Two inches of snow. Gathered wood for the fire. A wasted day.

Next morning seven inches of snow lay on the ground. Falling snow is pretty seen through a plate glass window from a warm room. It looks different from a windowless hut in a howling wind. The firewood position was as acute as the cold. At midday one of the river party came in with about four inches of snow on his hatless head. “Good God man”, said Herb, “Isn't your head cold? Go outside and clean it off”. Four o'clock in the afternoon and we cleared six inches of snow from the tent fly. That night the ridgepole broke under the weight, and I had to yell for Herb to assist me out from under a couple of hundredweight of snow. Herb's tent stood sturdily and he said, self-righteously, “Mine's alright, you'd better go and sleep in there”.

Then Herb's tent collapsed. The snow piled up and up. We took refuge in the hut and managed to get a fire going. A trap was sprung for unwary players when the warmth of the room caused a chunk of snow to slide from the roof just as one of us emerged from the doorway. The snow being eighteen inches thick, it occasioned quite an unpleasant shock.

The “Sno-Cat” patrol called in just before lunch, but we were able to report OK, and it passed on. By the way a “Sno-Cat” is a light clumsy vehicle with special treads. It cannot move, without damaging itself, in less than a foot of snow. More snow squalls. Nothing done today. Next day, bright and sunny. I managed to get off the plateau to do a spot of investigating. I had high hopes that the snow had not extended to the river, and I might get on with the survey work I intended to do. Every few steps I would go through the snow to my knees. This kind of walking is a bit exhausting.

“The Major”

I saw two foxes hunting for quail under the snow. I arrived at Saddle Camp perspiring but my feet and legs were cold and wet. The camp huts here were on slides and could be moved from site to site. A sheet of iron gave some protection to the small fire but lumps of snow fell at awkward moments from the tall mountain ash trees. I pushed on for a half mile to where I could see over the edge as far as the river. There was snow all the way down. It would be impossible to walk away from the track. Back to the camp where I had a cup of tea, sandwiches and the fire to myself. The “Sno-Cat” passed through with supplies for the lower camp. The supplies had to be man packed down the last 1200 feet

Our old friend Cavill appeared with a “Braw Scots laddie” who seemed quite at home in the snow. We were informed that the “Sno-Cat” had broken down and Cavill and Coy were walking out to Kings Cross- to catch the Courier to Cooma- and out of all this damned snow.

The drilling engineer (Claude Creelman) and I decided to go with him. We were followed by two ‘dozer mechanics. The ‘dozers had chewed the track into a stew of mud and snow. We struggled up to the plateau. The weather had shut down. The visibility was bad. The snow swirled around. It would be interesting crossing the semi open country. We halted for consideration. Cavill suggested the short cut. We were game, but it would be difficult and perhaps the bulldozer track would be hard. We would follow that, we had to get to Kings Cross before the courier passed. Eventually we reached the hut and got the fire going with a drop of kerosene (Shades of all good Bushmen rise in protest). The rest of the party went on, and Herb and I settled down after an exhausting but wasted day. Its no use trying to proceed with more survey work until the snow cleared. Next morning I set out for Lobs Hole via Kings Cross. I met two pay clerks, one on skis. They were going to Tumut 1 power station to pay. They seemed surprised when I asked if they intended to return that night. I smiled a sorrowful smile. I wonder what happened to them. At the Cross I got a lift to Lobs Hole. Reading the paper that night in the pleasant atmosphere of Lobs Hole, I looked for the story of the snow conditions. There were columns about the ravages of Bush Fires, but only one obscure reference – “Snow Fell on the Southern Alps”

The Major from Snowy River

“He hails from Snowy River, up by Kosciusko’s side; where the hills are twice as steep and twice as rough” (Banjo P.)

At 62 years of age, the Major was asked to undertake one of the most demanding jobs in the Snowy. For 8 years, until his second retirement, he took control of the field operations in the vanguard of the Authority’s forces in some of the most inhospitable country in Australia, in extremes of

“The Major”

temperature and weather conditions, and with very limited access in the early years. Under these conditions he established tented camp- for up to 10 survey parties comprising 90% overseas personnel, whose bushmanship was often as limited as their English. As well as planning and directing their technical work, he constructed scores of miles of packhorse tracks which were the only arteries of access for the surveyors, drillers, hydrographers, geologists and investigation engineers all of whom would look to the Major for his advice and guidance in how to exist in this most forbidding country while carrying out their own duties.

The Major never had a day off sick and always kept himself in pretty good nick. His fitness was well tested one day in the early 1950s while camping at Cabramurra. His camp site some 2000 feet above the Tumut River was their base for investigation work along a section of the river from the Tumut Pond dam site to the Tumut 1 power station site. On the day in question, the Major set out early to take one of the his survey parties down to the power station site where he instructed them on the survey requirements. He then climbed back to his camp by midday where he had arranged a meeting with a team of geologists who had set out that morning from Cooma.

The Major a tiger for punishment, after lunch guided the geologists down to the river for inspection of the dam site some three miles upstream from the power station site. He remained with them for the rest of the day before climbing back to camp by sundown. The Major's camp was “Home” to him and his survey parties for months on end and also a staging camp for many other Snowy personnel and visitors who would stay for 1 to 7 days while working in the area. The messing arrangements were complex to say the least. The Major had no cook so everyone “did” for themselves on the central fireplace in the large galvanized iron shed which was erected as the main camp hall. The major provided their tents, horses, fire, hot water, ablutions and after that you were on your own. From months of experience, the Major, of necessity, ran a “shop” containing essentials which visitors or his survey parties forgot to bring or ran out of. These articles were located in 3 or 4 open boxes in the corner of the shed and restocked once a month when Harry Butler would venture to the nearest town and buy all the necessities. In this shop there were no price lists on the items and purchasers simply took what they needed and deposited in an open box nearby what they thought the item they took was worth. At the end of the day or week, the Major would gather the money and put it away to give Harry for the next shopping day in town. Nobody ever knew how much the Major lost (or gained) in this operation, not even him, as there was never a reconciliation done on his non existent books. The bottom line to this unique system was that it WORKED.

“The Major”

The Wake

The camp which the Major called Indi, is situated about 8 kilometres from Khancoban on Back Creek at a point 800m or so from its junction with the Swampy Plain River.

From time to time the Major would set out on a reconnaissance to locate a new track, choose a new trig site or just to look around, enjoy the solitude and have an undisturbed “think”. He usually went along, carrying his standard survival kit which consisted of a small jar of butter, some dry bread, a slab of cheese and, of course, the ubiquitous pipe, tobacco and matches. Mostly these treks would last a day but no one was unduly disturbed if he failed to return by nightfall. He would always return early the next morning.

But there came one morning when he did not return. Neither did he return the next morning, nor the next. It was the summer of 1954, the weather was good, and the days were long. He had set out to follow Back Creek to its source, climb to Scammel’s Spur, skirt around the Geehi Walls and follow a ridge back to camp. Such a journey should not have taken a bushman of his calibre any more than two days at the most.

Panic took over. Search parties were sent out, radio bulletins reported on the progress of the search and the Commissioner asked that he be kept in touch with developments. A deep gloom-settled over the camp. Men who had served with him since the early days of the Scheme were quite distressed. The old man was gone. There could be no other explanation for such a long absence. Most of the men were out searching, leaving only the horse boss and one or two others to guard the camp.

The horse boss was particularly distressed as he had been with the Major since the beginning. However it occurred to him and a couple of his mates that since the Major would never return he would not need the cache of Lowndes Jamaican Rum which lay in his tent. That being so obviously the case, it was logical to celebrate the Major’s wake with his own rum.

The reminiscences of happier times, the rum and the tears were flowing freely when, around mid-afternoon, Major Clews himself walked into the tent. He had bypassed the searchers and come in unaided. What he said has not been recorded for posterity. The camp was deserted except for the Major and the mourners, so there were no independent witnesses.

However rumour has it that he was not pleased to have walked in on his own wake, particularly since it was his rum that was easing the pain.

“The Major”

Hudson’s S.O.S. to Clews

The Authority’s road from Cabramurra to T1 Underground Power Station was a first class expensive headache but a masterpiece of roadway engineering. This roadway, in very steep sidling country, fell 2000 ft. in 4 miles (maximum grade of 1 in 8) and was built to a standard to take “The Mighty Antar”, a 120 ton 64 wheel road train especially constructed to transport the transformers into the Power Station. At £1 M (1956 prices) per mile, including one section of tunnelling, it was a costly investment, which the Authority wished to maximise.

Hence when T2 Underground Power Station was finally located, some 5 miles downstream of the T1 site, Hudson wanted the existing roadway extended the 5 miles along the river. The Authority’s Road Branch engineers however said it wasn’t practical as the canyon-like sides of the river became too steep and the siting of a road too expensive.

Before giving in to his experts, the Commissioner still had one last trump card to play, and asked the Major, who knew the country so well, whether he could find a route down the river. Somewhat nonplussed and bemused at this request, the Major carried out some more investigations before sending his half page report to the Commissioner. In it he regretted that in his opinion the only solution he could find would include two high level bridges running nearly parallel to the river, the cost of which he would not dare to estimate.

It was only on receipt of Clewsie’s recommendation that Hudson allowed an alternate access road to be initiated to the T2 Power Station site. (Goat Ridge Road)

Alexander Olechnik

Supervising Chainman 1st Grade Alexander Olechnik recalls his experiences with the Snowy survey section and his contact with the Major.

“I have arrived to Australia on 28th December 1950, on a migrant Ship "Nelly", Port Sydney, and was taken to Migrant Camp at Bathurst. My parents and brother were already in Australia and I went to Sydney to spend a New Year with them. I already could speak and write English and I was called on 3rd January to the Employment office at Bathurst and asked if I knew where the Snowy Mountains were—I replied that I didn’t. Then the young man told me about the beginning of the gigantic Scheme and also that we need many men to work in the mountains and asked me if I would like to go to work there... he was very honest and fair and told me that the living conditions will be very rough but the pay is good...I replied that I didn't come to Australia to waste my time in camps and I like the challenge to do something good for my young and new country...I was then asked if I could organise a group of 30 men to go to Cooma with me -

“The Major”

I agreed and collected 28 from my old shipmates...They were by nationality; Belarus (myself), Estonians, Hungarians, Polish and Italians and all of us arrived at Cooma early in the morning on 17th January 1951.

At Sydney (on the way from Bathurst) we were given some money by the Immigration or Employment officials and at Cooma Railway Station's refreshment Room, I have bought my very first bottle of McWilliams wine and was told that it was "plonk"- the word that I have never heard before... The price was five shillings and sixpence, (56 cents). First we were taken to the Camp at Jindabyne and then sent to different Survey Groups in the area... My first posting was to the New Zealand Surveyor, Ben Williams, at Munyang camp on the bank of the Snowy River near the junction of the Munyang River. Early in spring 1952 we were ordered to pack up and go to Geehi. We arrived at Geehi and erected our tents on the bank of the Swampy Plain River. I loved Major Clews, a real and honest to goodness bushman.”

Alex was initially engaged as a chainman at a wage of ten pounds one shilling and sixpence with one pound twelve shillings and sixpence camping allowance. (\$20.15 and \$3.25)

Jozef Tezak



Commencing work for the Snowy Mountains Authority on December 8 1949, Jozef was given his first appointment as a chainman with Major Clews survey party at Lobb's Hole, surveying the road from Lobb's Hole to Tumut Pond. Jozef was also involved with the construction of 80 km of horse trails providing access to Snowy construction camps scattered throughout the mountains. Arriving in Australia on 21, November 1949 as a displaced person from Slovenia Jozef had managed to escape from an Italian prison camp and the Slovenia army to become one of the early pioneers of the Snowy Scheme.

Jozef recalls an experience at Guthega in November 1950 where, with little warning, the weather turned very nasty with heavy rain and snow accompanied by a “White Out” reducing visibility to a few metres. The survey party working on triangulation between Mount Kosciuszko and Guthega, consisted of surveyor Dusan Spremic, chainmen Jackie Tsarevitch, Tony Glavica, Joe Dickinson and Jozef. The Guthega camp was a

“The Major”

good two and a half hours walk from the nearest access point at Smiggins Hole carrying all the supplies in backpacks. The weather had managed to cut them off for about five days when Bert Eggeling, Snowy Chief Surveyor, made radio contact with the Major telling him that two bulldozers were on the way with fresh supplies, one towing a trailer and one blazing the trail through the bush. The Major’s standard ration for the men being one loaf of bread, two tins of bully beef and one nip of Lowndes rum per day.

After his work in the Tumut and Guthega areas, Jozef transferred to the Major’s survey camp at Indi where, in addition to his surveying duties on the western side of the Snowy Mountains, using his carpentry skills he helped construct the substantial timber framed iron clad office hut. He always regarded the Major with the greatest respect considering him to be real gentleman and a highly skilled bushman.



Munyang, January 1951. L-R Joe Bukowski, Ben Williams, Alex Olechnik.

"The Major"



Building the trig station, Guthega 1950.

L-R Jackie Tsarevitch, Tony Glavica, Joe Dickinson and Jozef Tezak

The Early Surveyors

The original surveyors followed the rough track into Tumut Pond from Kiandra constructed by the early gold miners. The men with Major Clews found evidence of an old Chinese village along the bank of the Tumut River. It was obvious that these early miners had actually diverted the river to make their task much easier. Major Clews' small party of men descended over this rough steep track into the Tumut River gorge, struggling up and down the steep hillsides and crossing and recrossing the river many times. Three hours it would take them to climb the surrounding hill, about one hour to complete their work and then roughly two hours struggle to return to camp.

In those early days there were many gates across the old bush track down into the gorge. The frequent traffic of men and vehicles transporting materials and equipment meant the gates would be left open. This did not endear the men to the local stockmen. Once the Major's camp was established, he built a remarkable bush bridge in the style of the Harbour Bridge, across Clear Creek. The Major moved his camp to Dry Dam and also established a second camp called Saddle Camp near the existing township of Cabramurra.

“The Major”



Extremely Hazardous crossing of Clear Creek, Tumut Pond. The Major fell from the boat at this location with the rope becoming entangled around his neck. He also lost his most famous hat.

The tents were actually on the exact spot where the service station and petrol bowsers are now located.

One of the very first surveyors into the area was Jack Kenny, originally with the Public Works Department of NSW, who, with Major Clews, worked in 1947 for the technical committee set up to investigate the Snowy Scheme. Jack established the level at Lobb's Hole as well as the level above the Eucumbene to Tumut tunnel line. At that time the survey level at Adaminaby was used as a starting point for some of the work. The Adaminaby level was marked on the bottom step of the hotel in Old Adaminaby and probably had many more checks than was considered necessary. There are very few pubs sporting a survey mark on their front step. When the Major was camped at Tumut Pond, Jack Kenny used to join his camp occasionally. The Major's men could see Jack coming over the ridge before he tackled the steep descent to the camp. In this way they had ample warning to organise things so Jack would not become involved in the cooking. “The world's worst cook, that's Jack Kenny alright”, said one of the men. “When Jack was cook he would take no less than a dozen eggs, fresh and beautiful they were, but when Jack had finished with them they were a charred mess”.

It is considered by some that Kenny's Knob was named after Jack as well as Kenny's Creek and Kenny's Hill. However, it has been established beyond doubt that a Latvian surveyor in Major Clew's group, Artur Kenne, originally had Kenny's Knob named after him. Artur recalls that the Major entered the details of his action into his field book to officially recognise the event. Artur is now living in the Latvian Retirement Settlement in Kew, Melbourne.

“The Major”

Brian Heal

Engineering Surveyor and officer in charge of Three Mile Camp recalls;

“At Tumut Pond in December 1949, the Major, who was at that time getting a little sick of the perceived lack of support for the field workers, had an incident with a rubber dinghy and a rope that somehow got tangled around his neck forcing him to conduct a closer survey of the bed of Clear Creek.

“His quite distinctive hat (nobody can remember seeing the Major in the field without his scout type hat) was washed away. He decided to put in a claim for a new hat and retired to his tent until the headgear arrived. The claim was rejected so he came to me and borrowed transport to Cooma, got a rail pass and went to Sydney for some overdue leave. It was sometime before someone realised that he had requested a one way rail ticket. After some discussion, I believe that a telegram was sent offering to replace the hat and hoping that he was enjoying his short leave. He came back”.

This account of the Majors’ fall into the creek is supported by those chainmen who witnessed the whole remarkable episode.

Tony Glavica

Tony also started with the Snowy Mountains Authority on December 8, 1949 arriving at Jindabyne from the Bonegilla Migrant Camp near Wodonga. He was selected to come to Australia after a visual inspection in a line up of fellow applicants in an Austrian refugee camp. He joined Major Clews survey group as a chainman at Tumut Pond and later to Lobb’s Hole for the winter then in the spring of 1951 transferred to Guthega. Tony stayed with survey section until 1959 but stayed on the Snowy Scheme for a total of 22 years.

Another lucky escape for the Major and his chainmen happened on the very steep access road from Tumut Pond Camp to Kings Cross. The work for the day required some axe work to provide a clear survey track through the undergrowth. The Major raised the question, “Have we a driver for the Land Rover today?” None of the party were drivers except for the 17 year old Col Dickinson, a country lad from Tumut who immediately volunteered for the job. The group set out up the remarkably steep and hazardous dozer track, the Major and surveyor Dusan Spremic sitting in the front with the chainmen Jozef Tezak, Tony Glavica, Stan Kajpust and Albert Kalvis in the back of this 1949 model canvass topped vehicle. Col attempted to change down a gear when some distance up the track, missed the gear and the grossly overloaded vehicle started to run backwards at some ever increasing speed. Careering backwards it hit a group of small gum trees then turned over hitting a rather large tree. It was absolutely incredible that no one was seriously hurt as the recently sharpened axes for the days work were stored loosely on the floor. The Major and his pipe finished upside down but unhurt. He never liked riding in a vehicle — would rather walk.

“The Major”

Some other observations by Tony — “Always keep your eye on the Major when working in the scrub — he disappears very quickly”. Walking along a track at Tumut Pond, Tony and the Major came across a large snake. The Major said “Don’t worry, he will go his way and we will go ours” with that the snake shot between their legs.

Tony recalls that the Major was his “greatest boss ever”, fastest walker and a gentleman who could converse on a wide range of subjects. Often purchasing large amounts of Lowndes rum for him in Tumut he remembers that the Major had the rum bottle on the shelf above the fireplace with a glass and bottle of Schweppes Ginger ale and the words to his visitors, “Pour yourself a drink and put two shillings on the shelf”.

Frank Meljnek

Joining the Snowy Mountains Authority Hydrology section, Khancoban in 1956, Frank met the Major the next year. From then until the Major left for Melbourne with his son Harold in 1978 for further medical treatment, Frank spent many hours looking after the Major, purchasing and delivering his groceries from Corryong, conducting his banking needs and buying the odd bottle of Lowndes. Frank recalls that Lowndes rum seemed to go out of production in the seventies so the Major changed temporarily to Bacardi but settled for Morgan Rum. Due to this shortage of his favourite brand, the army survey arranged a delivery of some Lowndes rum from Newcastle to Bandiana army camp and then by helicopter to his Indi cottage.

Frank and his fellow hydrology workmate from Khancoban, local farmer Nick Barlee, would deliver the rations and mail every Friday. The Major had a daily radio schedule to the Snowy Control Centre providing weather details this also provided a daily check of his health and well-being. The Major actually owned a Holden “Ute” he purchased in Corryong. He confined his driving to the short daily trip from his cottage to the weather station, some 300 metres away on the old Alpine Way and to collect his firewood.

Frank, Nick, Peter and Roger Mouat and other local farmers often assisted the Major with some of the heavy jobs associated with the construction of the Major’s cottage. The time came when the Major could not manage living alone at Indi indicating a reluctant shift from his magnificent bush retreat to the Khancoban Caravan Park. The residents of Khancoban looked after him with great care during his stay in town.

“The Major”



The Major looking towards No 1 dam site Tumut Pond 1950

“The Major”

Reminisces by Snowy surveyor Kon Martynow.

“Surveying with the Major”

During the years 1950 to 1973 we worked on different jobs, first mapping, then preparing large scale maps of various structures, then pegging out excavations and finally on construction, we were sometimes required to hand over a job to another surveyor and go to do a surveying job outside the Snowy Mountains area, that was at the time called “work for other organisations”. To my mind come times when Frank Johnston and Geoff Nash were working in other states. Frank was also once sent to Cambodia.

But from 1965 it was mainly Dani Theron and I who did a lot of photo-control work for mappings in Queensland and Victoria (in Gibbo River and Mitta-Mitta areas). In 1968 and 1969 my chainmen worked with me in the Shoalhaven and Kangaroo River area, where we did first preliminary investigation and finished pegging at structures such as Power Pumping Stations, pipelines, canals and several dams, then in the second half of 1969 SMEC took over from us, and I returned to Talbingo Power Station. My final years with the SMA were as busy as the first ones, but living in barracks and eating in staff messes was a lot easier than living in flying camps, under canvas winter and summer, and getting either wet in frequent rain showers or getting stuck in mud and snow, plus having to cook and wash up late in the evening after working all day in the bush. One of my last jobs was measuring dam deflections on all completed dam walls – earth, rock or concrete as they move a few millimetres horizontally and vertically. These movements are regularly measured to a high degree of accuracy with special instruments and by specific methods. At the beginning of 1973 I also had the privilege to peg out the streets and services in the new permanent town of Cabramurra, as well as permanent water supply for Khancoban and Work Depots in Khancoban and Talbingo.

They were busy years 1950 – 1973, 22 years in all, the first few being the hardest. I met Major Clews at his Clear Creek Camp in February 1950, and always liked this old man who worked hard and long hours and expected all his surveyors and chairmen to do the same. He used to say: “A wooden floor in a tent or barracks is not for us, it spoils men, makes them unfit for work in the bush.”

He was well liked by all men for his ability to help us migrants adjust not only to the life in the bush, but to life in Australia in general. We have also learned a lot of English from the Major. I must say that in the first years along the Tumut River and later along the Geehi River, horses were indispensable as they delivered food, equipment, mail, etc, to all camps in the bush long before roads were built. The Major had several horsemen who cared for the animals, packed saddle-bags, took the animals along narrow tracks and across rivers. The Major always made sure that the horses had oats and chaff. In his camps the horses had their own enclosures, called horse-yards. But I have never seen the Major riding a horse, he preferred walking in the bush, rode in a Land Rover only if he had to, and never on horseback.

“The Major”

In these notes on Major Clews it is fitting that I include a few words about Harry Butler. Harry was younger than the Major, but he also came to the Snowy in 1950, like Major Clews and Major Bert Eggeling our first Chief Surveyor, from the Australian Army Survey Corps. Prior to his discharge from the Army, Harry was a Sergeant Major.

Harry brought food and other supplies from Adaminaby, Tumut or Corryong to the Major's camps – Clear Creek, Eight Mile Camp (also called Dry Dam Camp), Lobs Hole and Indi, from where the supplies were delivered to bush camps by packhorses. His contribution was great, for he had to drive from Lobs hole along a narrow and rough track that was about 15 km long and crossed (forded) numerous creeks about a dozen times before he reached the highway. The large rocks in the creek's bed were loose and moved in the swift current. Harry and everybody else who travelled in his vehicle were often called upon to take off their outer garments and step into the ice-cold water to move some rocks from under the vehicle.

When the Major and Harry moved to Indi Camp on the western side of the mountains in 1953, Harry's task was much easier. Like everybody in the camp, Harry enjoyed a drink of Lowndes rum after a day's work, but never before 6pm in the summer and 5pm in the winter. The Major ordered and paid for the rum and a big wooden crate of ginger ale bottles, everyone filled his own glass to his own taste. The payment was expected at an approximate rate for 2 fingers of rum (a nip) and as much as desired ale, one had to put 2 shillings (20 cents) into an open wooden cigar box that stood on an empty table somewhere in the office. That box was always open and sometimes contained a considerable amount of money, yet that box was as safe as if the money were in a deposit box of the Bank of England.

The Major got on very well with everybody, but he disliked administration personnel and officialdom. His desk in camp was seemingly littered with books, letters, mathematical tables, computations, but it was not disorderly for he knew where everything was. He subscribed to and always read the Illustrated London News and the Sydney Morning Herald. From about 1955, the Major started talking about retirement from the SMA, he was about 65 years old. We asked the old man which city he was moving to, and he answered: “You are sitting very close to my place of residence. I like no place better than this Indi Camp.” He also mentioned to me once that he had a hut in the Blue Mountains, near a place called Bell, after he had left the Army in 1949.

After retiring for the second time, he built a hut in Indi, planting trees and grew miniature roses and geraniums in a simple glasshouse he had built himself. He had many friends who visited him, mostly people who knew him from his Army and Snowy days. It would be completely wrong to think the Major was a hermit, for even as he lived in seclusion he liked the company of people and was happy to see men he knew and liked. And another point, although he liked rum and drank a nip or two every day, he was never drunk, and I have never seen him drinking more than 4-5 nips.

“The Major”

The same could be said about Harry Butler also. As Harry was younger than the Major, Harry continued working for the SMA after Major's retirement at first as a radio operator and then as a hydrology-man (taking creek-level measurements and doing meteorological observations to Khancoban). Harry was not married and lived first in Army and later in Snowy camps. Harry died after an illness in August 1968. Major Clews, many surveyors, geologists, hydrologists and other SMA peopled attended Harry's funeral service in Cooma. I attended his interment also.

It may be of interest to some, who would like to know the reason for Major's long and healthy life. This could be summed up as a life of moderation in everything – food, drink, exercise and mental attitude. He stressed the importance of fresh air and a life of purpose. He always ate sparingly, roughly such as - two pieces of toast in the morning, a cup of tea and a biscuit in midmorning, two slices of bread with a slice of cold meat or cheese at lunch, a cup of tea and a biscuit at midafternoon, and a simple dinner cooked in an open fireplace, cooked by himself or together with Harry Butler. In Indi camp office we could observe that in the afternoon around 5:00 pm while most of us would have a nip of rum with ginger ale, Harry would get two middle-sized potatoes, two middle-sized carrots and two onions, peel or scrub them and then put them all into a billy can, with water just covering the vegetables, hang the billy from a wire hook above a fire.

Then a little later Harry would take two steaks out of the kerosene 'fridge and skilfully put them into special wired frames and place them above hot coals. After Harry took the vegetables off the fire, he would get two metal plates and put a potato, a carrot and an onion on each. When the steak was grilled to Harry's satisfaction, he would add a steak each to the vegetables and say: "Major, I think the steaks are ready." Then both of them would get a knife and fork each and eat their simple meal. Both Harry and the Major liked good meat – T-bone and topside steak were their preference. Others and I have observed that cooking procedure many times, first at Lobs Hole and then at Indi. They then went to bed early, usually around 9:00 pm in the summer and about an hour earlier in the winter. The Major and Harry usually had a mug of tea before they left to go to their tents. In the morning they rose early, before the other men in camp. Major would light a fire in the office building and boil the billy. When we surveyors would come to the office at about 6:20 am, the Major would offer us a mug of hot tea. Then we would go to the batching mess next door. At 7:00 am work would start, with survey field parties leaving camp in their Land Rovers not later than 7:30 am.

That procedure seldom varied from Monday one week to Friday next week, as we almost all worked 12 days straight, with two days off every fortnight.

Without exaggeration, it could be said that nothing could or was built without the surveyors first having mapped, located and pegged out on the ground anything that had to be built. As it was with everything – roads, tracks, townships, camps, boundaries, houses, water and sewer lines,

“The Major”

streets, power stations, dams, spillways, turbines, generators, switching stations, transmission lines, bridges, tunnels and everything else that was built. Of course it is a fact that all other occupations and special work skills of others were also important, but the surveyors were always the first to go and do investigations before others could design and build these structures that are now the Snowy Scheme.

Apart from being the first to be at any location that would be the place of a dam or power station, the surveyors were there also during the construction, checking out the position and level of almost every large or small pour of concrete, every bolt in the pipeline anchor blocks and transmission towers and at every 100 feet of tunnel.

And when it was all built the surveyors were often asked to take measurements for the preparation of WAE drawings (Works as executed). Our checking of dam deflections was mentioned above and here I must add also measurements taken by surveyors to check dam siltation (measurement of sedimentation) after water storage commenced.

I am mighty proud to have been one of the Snowy Surveyors and am also very proud to have been one who learned much from and worked for many years under the direction of Major Clews.

Kon Martynow.



Clews Bowl.

By Colonel N R J (John) Hillier, Director of Survey (Ret)

The Clews Silver Bowl

HPG Clews attended the 50th Anniversary of the Corps in Melbourne in July 1965, as one of several founding members (coming down from his cottage at Indi). The School of Military Survey was re-located from

“The Major”

Balcombe Camp on the Mornington Peninsula, Victoria, between Dec 65 – Jan 66, to the former Army Camp at Bonegilla, Victoria, then, since December 1947, used by Department of Immigration as the “Bonegilla Migrant Reception and Training Centre”. (The migration program was running down, and several blocks were unoccupied and as a consequence to the introduction of National Service, the Army required additional camps for M.S.M. training).

The school was located in the former “Block 12”, then known as “B” Block as a self-contained unit. One of the requirements, which had been provided by the Army Canteen Services at Balcombe for all units, was the provision of a Unit Canteen for the other ranks. As a tribute to his service to the Corps, the chief instructor, Harry Hall, named the canteen “The Clews Club”. He was adopted by the school and invited as a privileged guest of honour to Corps functions from 1966 onwards. Members of the school and students would visit him regularly and made “tapes” of his recollections on different occasions – (one of these was WO Tony Bridge, an ordnance corps admin WO. (The school admin officer). He also gave talks to students at different times.

With the move to Bonegilla, the school officers and the sergeants’ messes became the Corps Messes – after some disputation between the Chief Instructor of the school and the Commanding Officer of the army, which had assumed a de facto ownership of their roles; contrary to the accepted army practice (presumably arbitrated by the Director of Survey). As a result, an effort was made to accrue a collection of “Corps Silver” for use in the officers’ mess on formal “dining in” occasions – and especially after Clem Sargent succeeded Harry Hall as CO/CI; and Bob Skitch became President of the Officers’ Mess Committee (P.M.C.) in the early 1970s.

Defense Co-operation with Indonesia

Survey & Mapping

In 1968, the Head of the Indonesian Army Service, Colonel Pranoto Asmoro, sought assistance from Australia and the UK for undertaking mapping in Kalimantan. Subsequently agreed by the respective governments “Operation Mandav” a topographic mapping project in West Kalimantan was undertaken in 1970 based on Pontianak with control survey, aero triangulation by Australia, aerial photographs by the Royal Air Force, and heighting by the Royal Engineers (Survey Service) under the command of Major Clem Sargent. The success of this project led to further requests for assistance in the mapping of the whole of Sumatra (operation coding 1-5) over the period 1971 – 1975, assistance in training of Indonesian personnel in Australia and the provision of a Survey Corps Technical Adviser in Jakarta at the Indonesian Headquarters. The latter was agreed in 1973 and John Hillier took up the two-year appointment in March 1973. At that time, Clem and Bob were both at Bonegilla as CO/CI and survey instruction respectively. It was at that time that Bob Skitch as PMC of the Corps Officers’ Mess on the basis of the success of the co-operative program in

“The Major”

1970, 71, 72 and the accumulation in the Silver Fund, suggested that some form of Indonesian Silver should be commissioned (partly because of lower cost and the craftsmanship of the Indonesian silversmiths).

In the event “Clewsie” made a substantive generous contribution and Wendy Skitch suggested that “it” be a punch bowl with some cups, in due course designated “The Clews Bowl”. A request was made to Corps members seeking donations so that something worthwhile could be made – as a worthwhile tribute to “Clewsie”. I was tasked with the production in Indonesia. (I had met Pranoto Asmoro in Singapore in 1968, 69 and visited Jakarta in 1968 when negotiations were initiated, and was on the staff of the District Survey office in Canberra when the final conference was held in Melbourne in 1969, that led to the agreement for the mapping support to Indonesia under Frank Buckland as Director).

After settling into my new job, and gaining the trust of the Indonesian opposite numbers, I was asked to make recommendations for re-structuring the organisation which involved visiting their units in a number of locations, one of which was at Jogjakorta, where the silversmiths were mainly located. I had not had the chance to learn Bahasa Indonesia sufficiently well to be fluent enough to negotiate the tricky business of explaining what was required at my first clumsy attempt. One of my counterparts in Jakarta spoke fluent English, had been trained in England and had also visited Bendigo to assess the Australian map production methods (as a Lt Col and was promoted Colonel whilst there, outranking the Australian CO who was a Lt Col. He helped immeasurably in developing the design, shape, proportion and the Indonesian motif of mythical Wayangs and the like. After this, the sketches of the design were sent to Bob Skitch at Bonegilla to get approval and the OK to go ahead.

In the meantime, I had been doing my proper job, which included acting as the Projects Liaison Officer for the 1973-field season of work in North Sumatra based out of Medon on the East Coast – which was time consuming, so that the Clews Bowl slipped down the list of priorities.

In any event, my Indonesian friend, Praptoharsono negotiated a right price (Indonesian); a lot better than a tourist price (Australian) with a reliable silversmith and the go-ahead agreement was arranged as a fixed price when fortunately the exchange rate on the Indonesian Rupiah was steady in those days (even though inflation in Australia was not good). We may have got a sample to see how the Indonesian figures would look – just in case.

Clem Sargent retired at the end of 1974 and my two years was shortened to take his place at Bonegilla – before the bowl was finally completed (as I was going to bring it back in March 75). The bowl was also intended as an object of some magnificence to indicate the success of the co-operative program between the Royal Australian Survey Corps and the Indonesian Army Corps Topografi (Santop Jawatson Topografi). I was replaced by Eddie Anderson in December and at the beginning of the 1975 project – Gading V; with the same Australian unit resuming, the bowl was collected and handed over to Peter Bailes Brownsword, the Operations Officer, who

“The Major”

arranged with Alex Laing, his OC, and an obliging RAAF crew for it to be sent back to Australia “safe hand” as important survey equipment (bowl). It was on-forwarded to Bonegilla and arrived in time for the Corps’ 60th birthday celebration (1 July 1975) at which “Clewsie” was the principal guest of honour.

Jim Stedman became Director that year in July when John Nolan retired and was in the UK at an ABCA Conference and a Commonwealth Survey Officer Conference. When he arrived in February 1978, he made arrangements for two cups to be made at Jogjakorta – which may have started the practice of adding to the initial half dozen.

As Director, I was the principal Corps representative at the ceremony held at “The Hut” in 1981 to celebrate the dedication of the commemorative plaque erected by the SMEC representatives from Khancoban. Arrangements were also initiated at that time to co-ordinate the geodesic co-ordinates of the cairn using the geociever Doppler satellite position fixing equipment that the Corps was equipped with at that time, by staff and students from the school, so that it could become part of the National Geodetic Survey System. The bowl was to have been finished in December, so I could bring it back, so he delivered it to Jakarta on my last day there. In the event my wife waited in the hotel room while I sorted out all the final things needed to be done for our departure. Disaster struck. When we opened it, the bowl was not as it should have been, so my replacement Eddie Anderson, with the help of Pranato had to take it over so that it could be done “properly” which was some time later in 1975. So my wife saved the day in some way.

“The Major”

**Royal Australian Survey Corps Museum,
Bonegilla School of Military Survey.**

Official Opening by HPG Clews, 1 July, 1975.

Clem Sargent has been a dedicated military historian since he first joined the Army in 1946. On appointment as CO/Chief Instructor of the School of Military Survey, he initiated the first endeavours to establish a Historical Collection of the corps activities; so that new recruits in particular could become aware of the history and heritage of their “new” corps, as part of their corps Indoctrination Training. This was done on a part-time basis using “volunteers” instruction staff and “students awaiting course” and established in one of the buildings 60ft x 18ft in the HQ Block which had been used as an “all-purpose” meeting room.

When I replaced Clem in late December 1974, I continued this practice and by acquiring bedside carpet mats, spare tables and display boards and the like. By 30 June 1975 we had a reasonable representative start to what was to become “The Corps Museum”. 1 July 1975 was the 60th Anniversary of the Corps, so “Clewsie” cutting a purple ribbon and doing the honours officially opened the new museum. We had obtained a plane table field sheet that he had “signed off” on 1 July 1915 had it framed with an antique frame which was “presented” to him so that he was then able to place it in the Corps Museum for safekeeping in perpetuity

“The Major”

“The Clews Memorial Dedication”

The following report is reprinted from the “National Bulletin # 81, Survey Ex-Servicemen’s Association of NSW”, December 1981.

About seventy old comrades and friends of the late Lieutenant Colonel H.P.G. Clews - The Major, gathered at Indi near Khancoban on Sunday 5th April 1981 for the unveiling and dedication of a memorial to this fine soldier and surveyor. The dedication began with the Lord’s Prayer led by Lt Col E.P. Constantine. Brig L. Fitzgerald, OBE, then spoke the Requiem and Harold Clews, the Major’s only son, unveiled the plaque, following on an expression of his gratitude to the Snowy Mountains Authority and the Survey Associations for combining to make the memorial possible. Col N.R.J. Hillier, Director of Survey, read the Dedication. There were also two short addresses in appreciation of Clewsie and his work.

Noel Fletcher, past Surveyor General of New South Wales and President of the Survey Ex Servicemen’s Association of NSW spoke on the Major’s part in 2 Coy and the formation of the Association and in particular of the feeling which members of Clewsie’s old Company and the Association had for him. Mr. Dennis Raymond, Manager of the Civil Works Branch of the Snowy Mountains Authority at Khancoban spoke on Clewsie in the SMA and of the spirit which he and other early members of the Authority had established. The Memorial is a beehive shaped cairn of Snowy Mountains granite, meticulously constructed.

On the side which will be approached by most travellers in the area is a bronze plaque with the inscription;

IN MEMORY OF
LIEUTENANT COLONEL H.P.G.CLEWS
“THE MAJOR”
ROYAL AUSTRALIAN SURVEY CORPS
1912-1948
SNOWY MOUNTAINS AUTHORITY
1950-1958

Among the old friends of the Major present were Noel Fletcher, Bert Brooks, Charlie and Mrs. Prince from the NSW Ex-servicemen’s Association; Colonel John Hillier, Lt Col Clem Sargent and Ken Seaton from the Canberra Ex Survey Association with them the last serving member of 2 Coy, Major Bruce Daniels, RMO at the Royal Military College, Duntroon. With Lt Col Peter Constantine was Major Jim Corless from the School of Survey at Bonegilla.

Snowy Mountains Authority friends included Dennis Raymond and Jack Mulligan, Barry McKelvey of the National Parks and Wildlife Service and a large group of Khancoban residents. Special mention must be made of Brigadier Laurence Fitzgerald, OBE, who organised the casting of the

“The Major”

Plaque, and arranged the ceremony. He travelled from Melbourne to be present. After the ceremony the visitors dined with the SMA in their hostel at Khancoban before beginning the long run home.



Memorial Cairn adjacent to Major Clew's Cottage
November 2001

"The Major"



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**The Major with Sandra Cullam, Khancoban, admiring his flowers at Indi
Craig Smith Photo**

“The Major”



Indi Office Hut, Flag raising ceremony 1953. Radio hut in background left of office. L—R Jozef Tezak, Joe Dickinson, Jock Murray, Milan Powse, Harry Butler and Karl Blum.

“The Major”



Clews Cottage, 1973, showing the new extensions.
Later demolished.
Photo H Clews

Surveying for the Planning and Construction of the Snowy Mountains Hydro-electric Scheme.

Survey on the Snowy.

By H F Eggeling, Chief Surveyor, SMA 1949-1954

Major Clews (Clewsie) was regional surveyor on numerous areas of the SMHEA. He controlled some forty men, surveyors, chainmen and horsemen in some of the most isolated areas of the Snowy Mountains. He was originally at Tumut Pond and in charge of all the initial investigations including work at Guthega and Munyang.

Clewsie often went on "walkabout" reconnaissance for new potential sites for the overall scheme. On these trips all he took for food was a small screw-top jar with butter, some crusts of bread and possibly, a lump of cheese in his pocket. When he felt like a little nourishment he would dip a crust in the melted butter and could survive on this for several days sleeping on the ground where he finished for the day. Although I sometimes suspected that he might have been lost and at times we were ready to send out search parties. However, he always denied that he could ever be lost and none of us dared argue with him. Eventually Clewsie became the Regional Surveyor at Indi near Khancoban on the Murray side development. He retired there and was so highly thought of by the Commissioner that he was granted a lease of some thirty-odd acres where he became renowned as a nurseryman. He remained here until his death and a memorial cairn has been erected at the site of his dwelling in his memory.

During the surveying of the Tumut Pond dam and area, we had to find suitable means of crossing the river inasmuch as it was necessary for personnel to be on both sides of the dam-site gorge. There were no existing bridges, so we built our own swinging bridges. The time of year was such that there was constant flooding and flash floods. We had several bridges washed away so other ideas were needed. It was not possible to manage a raft due to the flooding conditions as described so we devised a method which was the use of an inflatable rubber raft with rope pulls on either side of the river. A man could be ferried across with his equipment by means of the other members of the team pulling from either side of the river.

Perhaps one of the many amusing stories told of Clewsie was the time when he, himself, finished up in the river. Whether the ropes had been pulled too quickly, or there was a sudden burst in the fast-flowing river, who knows, but he was thrown from the raft into the river, but luckily managed to keep hold of either a rope or the raft. However, the harder the men pulled, the more the rope began to choke him. Being mostly new Australians, they probably did not fully understand his vernacular and the harder he screamed, the harder they pulled. He was in fear, not of drowning, of being choked to death. Some of the men managed to keep him "choked" to the side of the raft and pull the whole affair to one side. I was always rather

"The Major"

glad I merely "heard" the story later and was not there at the time to receive firsthand his comments about the "Rescue". Clewsie was rarely seen without pipe in mouth, which seemed to chatter between his poorly fitting false teeth - understanding him, even if ones own English was perfect, was NOT an easy job.

During the early days, many of the regional engineers were young graduates put in charge of local controls for safety in their particular regions. Some of these men were anathema to Clewsie. The bane of his life was the restrictions on where one could go, or could not go, with jeeps (Ed. Land Rovers) and how many people could, or could not, sit in the front seats. After having first forged through on horseback. Clewsie was not particularly sympathetic to "rules and regulations". If a jeep could crawl through the almost non-existent road, the question of whether one, two, or four people were sitting anywhere in the jeep was of little interest -to get there was the point. Clewsie was once stopped by a young engineer who ordered him to put some of the men out of the front of the jeep. This ultimately resulted in his becoming so irate that he immediately walked off the job and went walkabout after submitting a raging letter of resignation. It took me four days to locate him. I had considerable trouble in persuading the powers-that-be to disregard the letter and help find ways to persuade the young engineers to be a little less dogmatic in their enforcement of regulations.

At the same time, however, these young men did not have an easy job either. Apart from the job of engineering, they had the complex problems of establishing larger and larger camps from which the work progressed. There was need, without question, for discipline among the men. This was rough country, isolated and with no modern conveniences. Combined with the still new "living together" atmosphere of the various Europeans, fights all too easily broke out. There were several sad and unpleasant instances and even a couple of deaths. Most of these fights could be traced to abuse of alcohol. After all, there was little entertainment for these men in the isolation of the mountains. After a period of time, it was decided to ban alcohol from the camps and it was the lot of the engineers to maintain this rule - not an enviable job. Clewsie was, at this time, supplying several survey parties in "flying" camps with what they could carry and be supplied with by horseback. Most of the men were new Australians and seemed to be able to survive on a staple diet of potatoes, which proved very convenient for Clewsie. Orders were placed via the local regional wireless station. Clewsie ordered bulk supplies from the Tumut Co-op over the radio system, which of course was open to scrutiny by the regional engineers. He always included several sacks of potatoes and insisted that his "medicine" be included in the sacks. This "medicine" consisted of Lowndes Rum. For all the years of roadblocks to check for alcohol, the "medicine" was never discovered. Perhaps this begs the question as to whether a blind eye was turned. It was many an official, both Government and Authority, who benefited on a cold visit to the area by a small nip from Clewsie's supply.

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It might be of interest to mention that in these camps there were so few facilities that each man was responsible for his own food. Thus, Clewsie would order for them all keeping running accounts of who owed him how much. Working with Clewsie was Harry Butler. Harry had been a Sergeant Major and had seen active service with the Tank Corps. Harry was with me during the work for the Technical Investigation Committee prior to the establishment of the SMHEA. It was, therefore, invaluable to have his assistance again once the Snowy Scheme got under way. We had for the Technical Committee work, around forty odd men from the Army Survey Corps.

There are still many stories left to tell by the men who participated in the excitement of this grand project. I myself left the SMHEA in 1954 with many regrets, but at the same time proud to have served the country and to have been chosen to lead these fine and special men in such a vital project for the future development of Australia. Despite the differences evident with the training and backgrounds of all of us, we managed to create a cohesive group of professional surveyors and draftsmen who were able to produce the necessary information for the Investigation Committee and develop further the information required for the ongoing construction of this grand project.

Sir William Hudson was a man of vision as well as a humane and far-sighted man. I remain grateful for the opportunity to have worked with him.

H F Eggeling

Survey of the Snowy

by Lt Col. (Ret.) Clem Sargent

In 1946 when the Federal Government offered assistance to the Governments of New South Wales and Victoria to determine the feasibility of diverting the headwaters of the Snowy River into the Murray River, it found that the Army was the only Federal body with the manpower, equipment and organisation capable of undertaking the preliminary investigations to assess the feasibility of the scheme.

Consequently in July of that year the Australian Survey Corps was asked to undertake two initial surveys. The first at Khancoban, which could be started immediately, was to survey a proposed tunnel outlet into the Swampy Plain River; the second was to establish levels on the Snowy watershed on the eastern side of the range to determine the possibility of diverting the waters of the Snowy by channels and dams, and providing water power for a subsidiary hydroelectric scheme at the higher level. The second survey could not be started until the thaw in the high country.

Carto Coy was ordered to commence compilation of the Kosciusko 1 mile sheet from aerial photography using the best available existing control; 3 Coy in Melbourne under Captain Barney Herbert were directed to establish levels and gradients between Yarrawonga on the Murray and Urana in NSW, and 5 Coy, commanded by Major Bert Eggeling, at Chatswood in NSW, were committed to the surveys at Khancoban and Jindabyne.

In August 1946 the first 5 Coy team under W01 Dick Connors established itself in the old slab school-house at Khancoban and started work. Tache traverses were run along ridges surrounding the tunnel portal and tied into control by resections. Using the resections as control the drainage and ridge pattern were plotted from air photos and enlarged onto a plane table sheet on which about 4 square miles of 10 foot contours at 1:10,000 around the proposed tunnel portal were plotted by Sgt Ted Laker. At the same time Dick Connors with another party located the tunnel crossing of the Geehi Gorge and ran levels up and down the stream for about 2 miles. This party worked in the river, and were supported by a team from the base camp at Khancoban which man-packed rations in every three or four days. Sprs George Harvey (Aumuller) and Mathers were among the team

The second team, under W02 Spencer Snow arrived in Jindabyne in October 1946 and set up camp by the bridge over the Crackenback, or Thredbo River, near the "Creel". Its first task was to level from a benchmark on the road above the camp to the top of Kosciusko. Apart from Spencer Snow this party consisted entirely of Interim Army recruits, Sprs Bert Howlett, Vic Wilson, Brownie Jordan, Frank Nolan and Clem Sargent. The levelling stopped at Charlotte Pass because snow covered the remaining high ground, and it was not completed until 1947. Some reinforcements were sent down from Chatswood and the team continued working to

“The Major”

strengthen control of the base compilation until returning to Sydney just before Christmas.

Members of the party would well remember the resection at Rennex Gap carried out in a snow-storm on the 12th December.

Spencer Snow, now W01, returned to the same camp site at the end of January 1947 and work continued on topo control and heighting for investigation purposes throughout the main range area, with an enlarged party now including Sgts Tut Turrell, John Hutchinson, Ted Laker and Sprs

Herb Wilson, Frank James, Bill Levings and Dave Rees.



Illustration 1: Bert Eggeling and E F Rowntree, March 1950.

Photo NAA A11016/372

In March pack and saddle horses were hired in Adaminaby and accompanied by Vince Russell and Harold Mansfield of Adaminaby, a party of Spencer Snow, Bert Howlett, Clem Sargent and Dave Rees rode into the Grey Mare Range and the Rolling Grounds for six weeks to establish control and carry out further investigational surveys, joining up on occasions with parties who came north across the Snowy to Whites River Hut. These parties were involved in determining heights of possible pondage areas and particularly, bottom heights of the Geehi River.

Work on the eastern side was completed before Easter 1947 and after a short break in Sydney the team returned to the old school at Khancoban and on horseback, once again supplied from Adaminaby by Harold Mansfield, started work on trig on the western side of the Kosciusko sheet to strengthen mapping control. W02 Harry Butler joined the party there along with Sprs Bedford and Gilbert.

This party was forced to pull out at the onset of winter snow and was the last major team to work in the area. However, with so much of the 1 mile map sheets in an advanced state it was decided to complete the Berridale map and in early 1948 Captain Alan Roberts, Sgts Ted Laker, Jim Long and John Hutchinson went to Berridale to provide additional control for this sheet It was during this field trip that Ted Laker built an oversize plane table to take

"The Major"

a full compilation sheet, to aid heighting by clino. It became affectionately known as "The Banner" and was carried over many square miles of the Berridale sheet. After this trip most of the senior NCOs marched out of the unit and the rest of the sheet was heighted in two field trips by Cap Alan Roberts, Cpl Clem Sargent and Spr Ken Lyon, and later Capt Roberts, Cpl Sargent and Spr Jim Williams.

During the 1948 field trips an attempt was made to obtain heights on Hannel's Spur, leading from Kosciusko north west down to Swampy Plains. The plan involved Major Clews walking down the spur with barometers and Cpl Sargent and Spr Williams taking horses, hired from the Chalet, down through Dead Horse Gap and Tom Groggin to rendezvous with the Major at the bottom of Hannel's Spur. The night before the team was to set off was spent at Perisher Hut and in the morning they rose to find that a heavy fall of snow had taken place, completely covering the ground. The task had to be cancelled but not before the Major had to be strongly dissuaded by Alan Roberts and Major Lindsay Lockwood from attempting the walk without a supporting party. This is believed to be the last field work undertaken in the Corps by Major Clews.

It was not until many years later that the Kosciusko and Berridale sheets were published, soon to be superseded by maps produced by the Snowy Mountains Authority, an organisation which was helped into existence by the work of R.A. Survey.

However, it is ironical to record that at the inaugural ceremony to open the Snowy Mountains Scheme at Adaminaby in October 1949 no invitation was extended to a Survey Corps representative to attend until the General Officer Commanding E Command, Lt Gen Berryman took up the matter with the NSW Government and as a result Major Lindsay Lockwood was present at the ceremony. Again, however, no official recognition was ever given of the contribution by the Survey Corps to the development of the scheme.

The Corps did not completely sever its connections with the Snowy Scheme in 1948. Following his resignation from the post of first Chief Instructor of the School of Survey in 1950, Major Bert Eggeling took up the post of Chief Surveyor of the Snowy Scheme, and he was joined by WO Harry Butler and S Sgt Ernie Baseden, both members of the School staff, and after a short, premature retirement at Bell, the "Major" commenced another career of surveying on the Snowy Scheme to become as great a legend there as he had been in the Survey Corps.

The work on the Snowy River was a major contribution by the Corps to Australian post-war development. It was carried out by a handful of experienced field men supported by inexperienced Interim Army personnel.

Clem Sargent

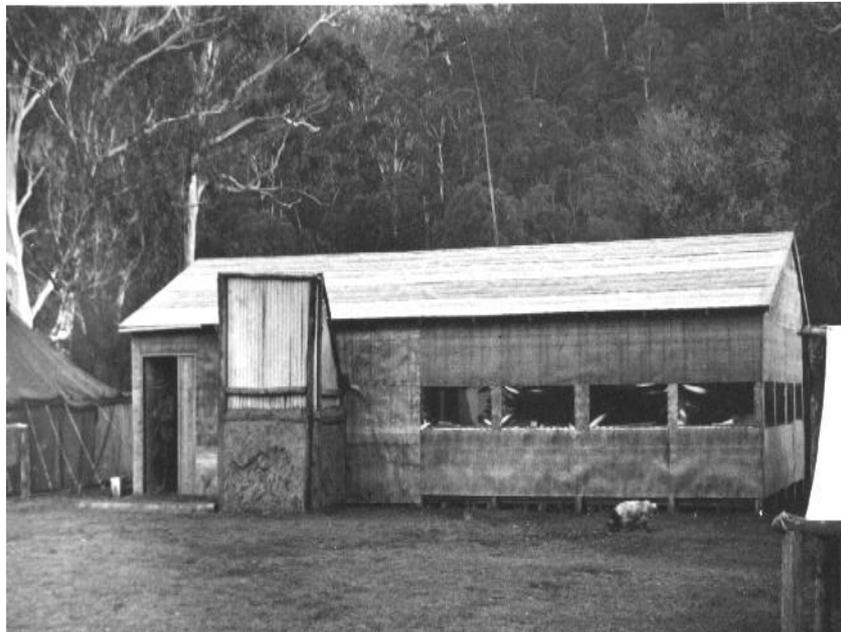
“The Major”



Indi Camp 1955.

Milosov (Jacky) Tsarevitch second from left, Kon Martynow on right and Stan Kajpust on his left. This was the only survey camp with a water tap.

SMA Photo



Lobs Hole drawing Office, 1951.

Building clad with “Malthoid” paper, using transparent drawing paper as glass windows.

SMA Photo

"The Major"



Construction of "Harbour Bridge" across Clear Creek Tumut Pond 1950. Tumut Pond Office tent with kitchen in background. This tent served as office for surveyors, timekeepers, draftsmen and as the mess room. Major Clews- 2nd from left, supervising the project.



Tumut River at Lob's Hole, Joe Dickinson, Left, with Jozef Tezak. 1950

“The Major”

SURVEYORS AND CHAINMEN

SNOWY MOUNTAINS SCHEME 1946 TO 1974

Including Royal Australian Army Survey Corps

Abramovich W	Diachenko Nick	Jenkins E J
Aggio Carlo	Dickinson Joe	Johnstone Frank
Aggio Vic	Dudas Imre	Jones Kent
Aherne Bob	Dunn Clarrie H/Boss	Jones Terry
Armitage F W	Ebbling Kurt	Jordan Kevin
Axakov Igor	Eggeling Major H F (Bert)	Judge Harry
Baethke Hal	Elphick	Juzic Vlado
Ball Jack	Farrelly Bernie	Kajpust Stan
Bankov George	Finocchiaro Sammy	Kalvis Albert
Barac J	Foxall Ian	Keeble Arthur
Baseden Ernie	Freeman Rod	Kenne Arturs
Bates J	Freibergs Jack	Kenny Jack
Bedford	Gavrilovic Dusan	Kirsch Henry J R
Bedrac Jozef	Georg Fred	Klima Jan
Bennett George	Ghent Gordon	Klimt R
Berak Drago	Gilbert	Knauer Heinz
Bluhm Karl	Glavica A	Kobal Ivan
Bobrovsky A	Godman R	Koch Giovanni
Boettger Herbert	Gogala Misha	Kriesner E
Borroni Giulio	Gorman N Horse	Krisjanis A
Bugarski Zivko	Boss	Lahres Bernard
Bukowski Joe	Gospic Nicola	Laker Ted
Butler Harry	Grey Jack	Leppert Klaus
Cameron Bill	Grunevald J	Lewis Gordon
Campbell-Walls	Guske W	Lock John
Brooke	Guyasko J	Low Guy de
Cavill J A L John	Hansen	Lyon Ken
Cernovinski Stan	Harley Eric	MacNamara Alan
Cherny S	Harris Geoffrey	Makeev Kiril
Clegg D	Harvey George	Makeev Mike
Clews H P G Major	Heal Brian	Martens Heinz
Connors Dick	Hendy-Pooley George	Martynow K
Cousins George	Herbert Barney	Martynow Vic
Croft Joe	Hetheron H	Matezewski Les
Crookshanks	Hillan Dave	Mathers
Crossett Des	Hochman Brett	Matuszewski Zygmunt
Crossley Bert	Horn Alex	McCarthy V J
Crowther J	Howlett Bert	McClure Dick
Curdie Jim	Hutchinson John	McDairmead T
Cvetkov	Illes Peter	McEwen E C
Czajka W	Irving G C	McGregor, Merv H/Boss
Deleraine C	Jakubec Adam	McKinley Noel
Di Giammatteo		Merkel Peter
Alesio		

"The Major"

Miller Trevor	Povse Milan	Taylor Alec
Mlejnek Frank	Psenner Herbert	Tezak Jozef
Morava	Radovini Erminio	Theron Dani
Mouat Peter	Rebane George	Tighe V J
Mouat Roger H/Boss	Rees Dave	Tsarevich Milaslav
Mueller~Bill	Ribeny Frank	Turrell Harold
Murray J S	Ricardus Peter	Ujima W
Nairn H E	Richards A	Ukmar Joe
Nash Geoff	Richmond J T C	Van Saane G
Norris jack	Roberts Alan	Vatoff Nick
Novi H	Robertson J	Vidic Franc
Oeding K J	Rolan Frank	Visoski
Oldfield Don	Rorris J	Vlasoff N
Olechnik Alex	Ryder Ray	Voss Henry
Onyshko J	Sablatura	Wassermann Wally
Ostoja B	Sabulis Leon	Watters N L
Ovington Jim	Sandr Vic	Werner Henry
Pachette R	Sargent Clem	Whitehead, John
Pantic Alek	Scales Steve H/Boss	H/Boss
Parslow J	Seidel Paul	Whye Peter
Parxyzs F	Shilling Ross	Williams Ben
Paterick Max H/Boss	Siemeniuk Illarion	Williams Jim
Paterson Murray	Smith Warwick	Williams Peter
Paterson Ray	Snow Spencer	Wilson Herb
Pavlovic Fred	Spremic Dusan	Wilson Vic
Pender Ted	Stefanski E	Wommelsdorff H
Pendergast Ivan	Strahlendorf	Wysocki Edward
H/Boss	Strasser Dr Georg	Zec Dom
Pieff G	Svehla Miroslav	
Poulter Jim	Tame V	

“The Major”



Major Clew's Cottage
November 2001



The Major in the Snowy Mountains
Photo H Clews

“THE BAD BIT ACROSS THE RIVER”

By

Lieutenant Colonel H.P.G. Clews

If you fly in a straight line in a north-westerly direction from the centre of Sydney for about 60 miles, you would find yourself in the middle of a stretch of country least known, least inhabited and with a rougher terrain than most other places in Australia.

The boundaries of this country can be roughly stated as bounded on the east and north by the Colo River, on the west by the private railway from Newnes Junction (the Western Railway) to the old Newnes Shale Mine and on the south by Bells Line of Road. These boundaries are only approximate as indicating where movement into the area becomes difficult. Actually on the east the uninhabited country continues some 25 miles across the Colo River and the Putty Road to settlements in the St. Albans area. To the north the country is also uninhabited across the country lately used by the army for manoeuvres, to the Putty and Howes Valley settlements. On the west and south little habitation can be found for many miles. Until mapped by the Army from air photos in the early 1930's, this country was practically unknown. There was however one Cadastral position surveyed on a basalt outcrop area at Mount Cameron. It would be interesting to have the Lands story of this survey. Also the Colo River had been traversed in quite early days with a view to siting the railway from Sydney to the west up the valley instead of the mountain route finally adopted. This survey would also make an interesting story.

It is the intention now to describe the difficulties encountered by myself and party in getting into this country. Inter alia, it is surprising that this area appears to be outside the ambit of all the walking clubs. I first encountered the difficulties of this area when obtaining control for the St. Albans map which included a few miles to the west of the Colo River. Please remember that air photos were not in use at this time, and all information as to terrain was by the old method of walk in and look about. From the Putty Road at the New Yard we worked along the main spur to the west towards the Colo River, and surprisingly found the spur rose to the river. Put in three control points Parr Spur, Parr West and Island. From the last two we had our first look into the Colo Gorge, but no way down from this side could be found, although the other side appeared to be passable.

So one day Roberts took our vehicle to Mount Tootie to the north of Bell's Line of Road near Bilpin, and self and Fegan (my survey hand) wandered down the ridge towards the junction of the Wollangambe Greek with the Colo River. I think we got into the river that night, but may have taken another day. Anyway we camped on the river one night, first of many times I slept in the river ravine. Next morning we walked up the river inspecting the eastern Cliffs for a possible route up. Most of the creeks seemed to come over the cliffs in a waterfall, but one did not, and while it did not look good it seemed the best bet so far, In walking up the river we had noted vestiges of the disused pack track for the old railway survey.

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So up the creek we went and kept on going. Bit of climbing and had to keep in the creek bed and get wet, but no impassable cliff and eventually came out in the saddle between Island Trig and Par West Trig. We knew the way now - or thought we did. Of course the short cut across the creek to the ridge was not known at the time, so we had to go around via Parr West. Now about 1½ miles from New Yard the main ridge splits into 4 minor spurs. I dashed down the left hand one - no good - then back and for some reason left number two and went down number three. Also no good. By this time it was getting dark, so made a fire and went to sleep. Up before sunrise, back to number two and were at the car at the New Yard in half an hour to find Roberts asleep in the back of the vehicle with his feet on the tucker box outside. So ended my first trip into the Colo Gorge.

I had selected from the eastern side two high points on the western side as control points. No intention of taking the instrument (a 5" TS Micro in 2 boxes about 100 lbs.) across, but would intersect from stations this side. But I required beacons even if only minor ones. The lower one was now no trouble. In from New Yard to river first day, up other side and put up beacon mad clear few trees and back to river second day, and out to New Yard third day. Two men and myself. Lot of time required for two or three hours work but that was how it had to be. Only incident was coming back from the point. It was getting dark and Fegan shot out in front. After nearly sliding over a cliff, he was pulled back by us and was content to remain in rear rest of way. The next point was not so simple - this was the one we eventually called "Savage". After constructing Grassy Hill Trig we later on went in from it making towards the river. First night got to a point overlooking the river and camped in a cave. Afterwards, we always referred to this as the "flour" cave. The sandy floor was extremely fine sand, which was impossible to get out of our blankets and great care had to be taken to keep it out of the tucker. Next day, down towards the river. First minor creek ended in a cliff - no good. Starting to climb back it occurred to us to try and work sideways along a steep slope with cliffs above and beneath us. This hunch paid off, the next creek was one we could get down, and we landed in the river. But about ½ mile above where we wanted to go in the other side up a creek. So down the river we went. Very bad going but better than going up the river as floods had caused the vegetation to point downstream. That night we camped opposite the creek we wanted and at the end of a spur on our side - good camping place. Falling rocks and debris were prevalent in the river but not down a spur. Next day spent the whole time trying to find a way through the cliffs, and were a very disappointed and weary team when we returned at night to the same camping place. Decided we would have to get out end try elsewhere. At first light I studied the opposite side, and decided that if we went up a small creek just after the junction of the main creek, and got on a scree ledge between the upper and lower cliffs we could perhaps work our way round to the top of the waterfall which had blocked us the day before. O.K. we'd give it a go. And we won. Once on top of the waterfall it was just a steep climb to our point. It was timbered heavier than I hoped, but we did the best we could all day and camped there that night. I would liked to have put in another day up there, but tucker was running short, so next day we started back. It took one whole day to climb down into the river and up the other side, and there we were back in our "flour" cave. And the final day out to the car and home to Windsor. I was informed when I poked my nose in the door that "my family and I were going camping at the beach".

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Six days for 4 or 5 hours work. Conditions getting worse. For the time being that finished my experiences of the country that by this time I thought of as "the bad bit across the river". After completing the control for St. Albans I handed it over to the plane tablers - Roberts and Johnson. In one of their trips in from the New Yard Fegan got pneumonia and although straightway brought out to Windsor Hospital unfortunately died a few days later. It was the custom for a plane tabler to be accompanied by a survey hand in bad country. I had had a row with Melbourne over refusing to take responsibility for plane tablers in that class of country unless accompanied. The Plane Tablers decided that they could not handle the country across the river, and although not very happy about it could not altogether blame them. But this led to my next two experiences of "the bad bit across the river". Melbourne wanted to publish leaving a blank space. I opposed this, pointing out that it would be a bad advertisement for our surveyors if we stated that an area was too rough for them to map. Anyway St. Albans was held in abeyance for some years.

My next encounter "the bad bit across the river" was much later. By this time I was working in the Nowra area. Thinking over the unmapped area in St Albans, I had the idea that I could probably get at it from the other side i.e. the Lithgow-Lidsdale side. At that time I had no knowledge of the country on the other side except from the Lands Department County Maps. So one January Glanville and I, and I think there was a third member in the party, found ourselves at Lidsdale looking for a horse team. We located a team together with two men - both named Bird. So an imposing cavalcade set off up the ranges, five mounted men plus a few pack horses. Up to the Newnes Railway and crossed it and down the horse track to Mount Cameron. Lunch at the appropriately named Dinner Creek, and then on across the "Natural Bridge" - a very low saddle and onto the plateau the other side. Here we ran into bush fires but it was travelling slowly and the good horsemen pushed their horses through the front and the rest of us followed.

Now we were in burnt out country all ash and charcoal. At Mount Cameron it was all black and burnt but found a camp site alongside a creek. Unloaded the horses, which immediately started back much faster than they had come. We laid a tent fly flat on the burnt ground, made a rule that boots had to be taken off at the edge of the fly and settled down for the night.

Next day we investigated forwards to the east of Mount Cameron and out of the burnt country. Found a much better camp place with good water under the only feature we knew, Tambo Limb - a very sharp pointed knob. Didn't get much further and next day when the horsemen came out we moved to the new camp. It must be remembered that there were no air photos, and the Lands Department maps made a bad mistake by putting Main Creek as the main drainage area, whereas all the inside water ran into the Wollangambe, although of course this was not known until much later.

So the first full day of investigation forward got us exactly nowhere, in and out of creeks and gullies but no main ridge. The second day produced the same result, and the name "Limit Hill" on the final map shows what a short distance we moved towards the Colo River. Actually we were on the main ridge to Maiden, but the forward ridge was disguised by leaving the Limit Hill halfway up the approach spur. By this time I realised that my idea of getting any work done in my "bad bit

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across the river" was hopeless, and so abandoned the scheme. Did a little more investigation, while waiting for the horses to get us out, but of course no good. So back to Lidsdale, picked up vehicle and back to Nowra, stopping to shave and clean up at a very poor creek along the way. A decided win for the "bad bit across the river".

My next attempt was again much later - I think during my early days in Bathurst, where the centre of the Topo work had moved. I decided that I'd go in to Maiden and continue up the ridge and see where I came out. I still had no photos, but was beginning to have suspicions about the extent of this Main Creek of the Lands Department. So this time Glanville deposited self, Tom Harris and a man I only remember as Pearce at New Yard. We started into the river while Glanville was to go round to the forestry centre on the Newnes Railway and wait for us.

We went in OK except that I had a blistered heel - too much riding in vehicles. We camped on the short cut before reaching the Island saddle. Late after tea Tom Harris was telling an interminable story about some horses that got away, when he broke off and said "and I'll tell you quite confidentially that it is raining". And it was. So we had a very uncomfortable night, and early next morning moved into a cave under the saddle. And it rained all that day and next night, clearing up early the day after. As soon as we were sure that the rain had ceased we went down into the river. It was in flood but falling. From the flood marks it can rise some 30 or 40 feet, but this was the first time I'd seen it in flood. We camped without moving about much as it was obviously impossible to cross. Had some trouble finding reasonably dry ground.

Next day we first went down the river to the Wollangambe Creek junction. A lot of water coming down it and the river was very wide but not quite so rapid as further upstream. Then went upstream to the Angorawa Creek junction on our side. No possibility of crossing the river anywhere, and the creek also stopped us going farther upstream. So we camped that night realizing that unless we could cross next day the trip would have to be abandoned. I lay awake for some time trying to estimate how many cubic feet of water I could displace with a waterproof sheet on a rough framework, and finally thought it might be done. Next day we made a boat, but when Pearce got in it sank. So we made two and lashed them together with a stick amidships. Now Harris had a good length of sash cord which I think he had included in case of cliff climbing. We tied this to the boats, Pearce balanced between the two with frying pans for paddles in each hand and set off. Quite good for a few yards, but as soon as he met the rapid Current he whirled away and our cord led to him had to be pulled in quickly. With his back to us he continued paddling harder than ever but suddenly realised he was back where he started. So that idea was no good.

After another night we first went upstream again to see if the river, which was falling slowly, had exposed a possible crossing but no good and back we came to start back out. I haven't much recollection of the trip out, but we must have camped somewhere along the way and of course had to walk right out to Upper Colo. And we were short of tucker. Before starting we had a discussion whether to eat our last tin of bully beef before we started the climb, or after, and before won. And also a tin of bully beef is not much to eat among 3 men. On reaching the top and stopping for a 'blow' I heard one of the men remark "Thank God we're in a place where we

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can see two stars at once without lying on our backs". At Upper Colo we got more tucker, and I could ring up the forestry people on the Newnes Railway and ask these to find Glanville and send him back. They very kindly did this and after a considerable wait the truck turned up and we returned to our respective homes. "The bad bit across the river" had won again.

It was considerably later that I became involved in this incredible piece of country. I had work to do from Bathurst and Orange but eventually word came through that Wallerawang and Katoomba were added to our mapping list, and better still that all of Katoomba on the eastern half of Wallerawang would be air photographed. I hastily made sure that the eastern half of Wallerawang would extend to the blank space in the St. Albans map. Anyway the river would give the flyers a firm finishing point. For some time I was concerned with obtaining control for the new work, and nibbling into the edges of the inaccessible piece. Bald trig of course looked well over it, but no outstanding trig possibilities inside the area. I put a station in the pine forest which we called Cockatoo Hill. But we lost that when the pines grew. Also we found a hill; Galah Mountain which was a double hill a couple of hundred yards apart and one had a few feet of basalt on top of the sandstone. A few intersected natural points were fixed Tambo Limb and a bare knob we called Rock Hill.

The photos gave us the first idea of the drainage of the area, and it was noted that all creeks flowing into the Colo River north of the Wollambe Creek ended before reaching Mount Cameron and all creeks reaching the Newnes Railway were Wollongambe waters. So it was determined that for the first trip we would take the vehicle into Mount Cameron and work along the northern edge to Savage, come west until we cleared any cliffs and cross the ridges to Maiden and return to Mount Cameron.

Tom Harris who was a survey hand at the time volunteered to take his car - a four cylinder Chev, into Mount Cameron, which he did and afterwards wrote an article on the trip which was published in the NRMA Journal.

It was decided that the four of us going in - self, Glanville, Harris and another - would each carry his own tucker, blankets and personal gear and a small bit of my technical gear. This technical gear I kept as light as possible to a 4 inch Aneroid Barometer, an optical rangefinder, a clinometer, a 4 inch compass, a stereoscope and the air photos. I do not think that any one carried more than 10 lbs of my gear. The individual tucker carried was interesting and Glanville with reluctance abandoned his heavy supply of spuds, tho' I noticed that he still produced odd ones during the trip. I relied as usual on boiled bacon and beans.

There was a rather curious aftermath to this question of how long it was possible to stay out. When working with the Snowy Mountains Authority much later in my life I was introduced to the Duke of Edinburgh. He was most interested to find out how long it was possible to work away from supplies. My opinion that 10 days would be the limit. He had just come down from New Guinea, and said "That is what they told me in New Guinea". So one day we went in to Mount Cameron. We had a long rope and a pulley so that the two vehicles could assist each other. But little trouble was experienced. Harris got his car up the rise out of the natural bridge, and with aid of the rope got our vehicle up. Chief trouble was narrow track necessitating

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continuing chopping of trees out of the way. But the first day saw us in camp at Mount Cameron.

Next day it was packs up and away. Went north of Tambo Limb and got into country heavily timbered with much scrub, but not steep. After lunch we left the new man to clear an area for the night camp and get firewood in, while the rest of us went north. There was an interesting set of cliffs over looking the Colo which here had turned westwards. We found the cliffs and obtained information. They were the most outstanding cliffs I'd seen in the mountains. Back at our night camp we found our tree man had not only cleared the area but had surrounded it with a barricade of bushes and branches about 1 to 5 feet high. It made quite a cosy corner in the bush and we later used the same method which was given the name of a 'Boma' - I don't know why. It was winter conditions and cold nights, and the one blanket we carried meant sleeping fairly close to the fire. Next day was a somewhat monotonous push through mainly thick bush until we came out in the vicinity of a rocky knob Mount Barrakee. So the same procedure as previous day ensued. Next day we went on down the ridge now somewhat more open and rocky and left two of our party with the non-technical gear while Glanville and I went down until we could overlook our old friend the Colo River some 2,000 feet below us. More control work and then back to waiting party, and packs up and south across the creek. This was the same creek that we had trouble with when first approaching 'Savage' from the Putty Road, But here while steep it was not rocky. Halfway up a creek west of Savage we made our third night camp. Following day first up to Savage - from the west this time (quite simple then back up the ridge until we thought it reasonable to cross the creek southwards. After crossing the creek - another branch of the Tambo Creek we wandered for a day or two among mixed up ridges, with occasional rocky patches and an undue amount of "clothes prop farms". This was the name we had given to the region of young trees very close together. They were hard to walk through as the gear you were carrying kept trying to go round the opposite side of the tree. At other times with horses I had found that it was just possible to ride a horse through - at the cost of bruises and tears. It was impossible to get a packhorse through.

I don't think we got to Maiden as I think we found ourselves on the wrong ridge but we obtained information at a few points - plus of course barometric heights. Two nights camp incidents may be noted. One night we were all making damper. My way - not very bushmanlike - was to use a frying pan with an enamel plate over it, not very good for pan or plate but easy to do. The others rolled the dough into a lump and after digging a small hole away from the main fire filled it with ashes and put the damper in. Apparently Harris walked on Glanville's but apologised. Next day Glanville stopped eating his lunch and looked closely at his damper said; "I'm eating Toms bloody boot nails".

The other remembered incident was on the last night before reaching the car. We had camped beside a wet slope, water running down it less than $\frac{1}{4}$ inch thick, so dug a hole so that we could dip the billies. Later at night Glanville decides to put the billy on for a final cup of tea, and stalks away into the dark. Then we hear "Where's this hole you people dug?" Splash! All right I've found it". Next night we were at the car after six nights in the bush. I'd allowed for a possible eight but we were all tired and bushworn and were glad to get out next day after a wrestle to get the vehicles up the pine forest side of the natural bridge And so home after eight days. But we had a win over "the bad bit across the river".

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Now although we worked through from the railway to the river there remained over half of the area we had not been in. From the photos we now knew what was there but heights and some identification were still required. Just below Bald Mountain we found an old track which wandered in for a few miles. This gave us some information and also we could look into the area from a few of the high points from Bald around to Mount Irvine. But there still remained the kernel of the whole problem area. A large stretch of very rough country between what were later named the Bungleboori and Nayook Creeks. And there only appeared to be one way into it, a very low saddle in a ravine, the ravine being probably the same old geological fault that caused the natural bridge.

Before proceeding with the story of the last trip in, here is an interlude. A light plane flying from Mudgee to Sydney was forced down in this area and the pilot was lucky enough to pick one of the upper flatter gullies to land in. As there was often quite a space of gently sloping grass between the creek and the bush, he managed OK. Walked out and then started to worry about rescuing the plane. I met him at Victoria Barracks, and the problem was set out to me. "How far are you in?" "About ten to fifteen miles". I realised that ten miles would put the plane in an area he could not have landed in. "How long did it take you to walk out?" I asked. "About three hours". "Oh so you'll only be three or so miles in, you should be able to get a vehicle in pretty close by the track under Bald Mountain". I never did hear if he rescued that plane.

So we had what was to be our final trip in. Only three of us I think, self, Glanville and Harris. Took the vehicle to the back of the pine forest until we were on the edge of the ravine in which our approach saddle was situated. Then packs up and down the side of the ravine for a few hundred feet and were not far from the very flat saddle. Up the other side of the ravine and we were in the unknown country. Worked along the ridges to the east quite all right and as it began to darken, went down a creek looking for a cave to make our temporary depot in. Also it didn't look too favourable a night to be sleeping under the stars - or in this case threatening clouds. We were heading for some isolated rocks we could see on the north side of the creek and down a bit, when I was stopped by a small cliff about fifteen feet or so stretching across the creek, going round it to get down I found a really beautiful cave in the cliff, the best I've ever seen and I've camped in a lot of caves while in the Blue Mountains area. It was 40 to 50 feet wide and about 10 or 12 feet deep at deepest point, good level coarse sand floor and the small creek running over the edge one end, so that the billy could be filled without leaving cave. And when we lit a fire we found another advantage. The smoke did not come in at all, but drifted along the front and out. So we settled in for the night very contented.

Our first objective next day was Rock Hill a very high bare hill which had previously been seen easily from anywhere in the area and even from as far as The Six Brothers on the Putty Road. After obtaining information there, on down the ridges returning to base late in the afternoon. Next day our wanderings took us south of the cave to the swampy valley we named afterwards "The Valley of the Swamps" and then about and back to our cave.

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During this trip we encountered and investigated the problem of the lazy V profiles. Many of the creeks looked 'odd' on the air photos, but as use of these was relatively new, it was difficult to say what was implied. When investigated it was found that many of the rocky creeks instead of having a bottom profile of a V or U shape had a profile similar to a V tilted at an angle of 45 degrees with the upper limb lengthened. They were impossible to cross without ropes although the upper limb often overlapped the lower limb so that it would not be necessary to go into the creek at all if crossing from an upper to a lower limb. We managed to go into one of these creeks at a point where the profile was more normal, and went down the creek for a short distance until stopped by deep water across from wall to wall. It was an eerie shadowy place and I don't think anyone was really comfortable in it. Anyhow we now knew what those creeks looked like.

After a few hours more investigation we returned to vehicle and out of the area next day. The job was now complete. A few day trips in at odd places to tidy up. There was one place I have always regretted not visiting. At a point on the southern edge about five or six miles north of Bell, was an object on the air photos which looked like a meteorite crater. But it did drain through a break in the walls. Remained now the contouring and plotting. For the first time I think air photos were plotted in run traverses and the run traverses joined together by control points to make up the map detail. Portions of this were reduced by photostat to the 1/31680 scale we were working on and traced onto the field sheets. The contouring was then sketched into the drainage systems. And so finally the St. Albans sheet was published complete with "the bad bit across the river". And also the Wallerawang sheet with a large area of similar country.

Final Anecdote. After completing the map the field sheets were taken to the hands Department and names for the main features requested. "Oh yes" said the officer I contacted, "but this creek does not go there" pointing to Main Creek that had given us so much trouble earlier. "What authority have you for it?" I asked. Some minutes of fumbling with old records then "Oh so and so in 1848" "Well" I said, "What are you going to take so and so' s in 1848 or air photos in 1932?". "We'll have to accept the air photos". Finality.

PUBLISHED IN "THE OPEN ROAD" - NRMA -

(ISSUE OF 13th AUGUST, 1931)

Our surveying party of four, in lorry and car, recently found it necessary to ascend Mt. Cameron, on the edge of the Colo River. Leaving Newnes Junction we proceeded through "Eight-mile Forest" and then "Twelve Mile Forest" over a very rough bush track, until we came to a natural rock bridge, and then commenced the six-mile ascent to the summit of Mt. Cameron. At the beginning it was necessary to pull the lorry for 100 yards by a block and tackle, but after two hours made the top.

The mountain itself is 2,300 feet above sea level, and the only habitation is a small house belonging to Mr. Shepherd, of Lithgow, who has a cattle and horse run there. At the top we left the vehicles, and proceeded on foot spending eight days surveying the river. In many places one side of the track fell away to a 15-foot drop, and the country was heavily timbered and particularly rough. Colo River,

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which is little known, is 100 ft. deep in parts and over 200 ft. across. On the return journey it was again necessary to use the block and tackle on the lorry in places. The car got through both times under its own power.

This is claimed to be the first time a motor vehicle has been through this section of the country which, although only 107 miles from Sydney, I consider to be the roughest country I have been in N.S.W. The trip was certainly not a pleasure jaunt.

T. Harris (Concord)

MOUNT CAMERON

This was the only Cadastral Survey in the rough area. and was surveyed by Mr. Surveyor E.A. Harris in November 1890. He had some trouble in fixing his position, and on the County plan the Survey is out of position. Mr. Harris was not quite sure of the Parish he was in and states tentatively that it was Govett South.

He had bearings to Tambo Limb a few miles to his East, but probably this only fixed the hill to his survey. He also had bearings to Tayas Pic which is near Rylestone, and also to Rock Hill (not then co-ordinated) and to Bald Hill, this latter being uncertain.

The Surveyor described the country as volcanic and well grassed. Most of the Hawkesbury Sandstone was at the geological period overlain with basalt although this now remains in very few of the higher hills.

Information supplied by the Lands Department.

TRIAL SURVEY - PENRITH TO DUBBO-COLO VALLEY SECTION

A petition signed by 491 persons in the Penrith Kurrajong fruit growing areas was forwarded to the Minister for Railways on 20th March 1883 asking that the trial survey of a railway line from Penrith to Dubbo proceed as early as possible with a view to early construction of the line for the carriage of fruit etc, both to Sydney and to the West.

Apparently the Minister on his own authority instructed Surveyor Townsend to make this Trial Survey and prepare estimates for construction.

Survey was carried out in 1883-84, as papers dealing with Railway Costs show on 1.11.84 - Cost of Trial Survey - Colo Valley £3794.19.11. Townsend was a railway surveyor with previous experience in India. He sent in a number of plans - long sections and cross sections (?) and locality maps. These are in three rolls, the long section plan being about 40 ft long. It crosses the River several times and provides for bridges or viaducts over every creek (for double line) and also some 21 miles of tunnelling and gallery tunnels for single line. Apparently he had some difference of opinion with the Engineer in Chief and although he sent in his plans there are no records of field books or reports in the archives as he left the Railways and went to Water Conservation Branch soon after completion of plans.

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He appeared before a Select Committee composed of Government members to enquire into Construction of the Line in 1894. He stated he had made an estimate some six to eight years before and allowing for all bridges to be double line and tunnels single line the amount was £2,695,000 (apparently for the section Penrith to Mudgee) and £3,500,000 to Dubbo. Whitton (Engineer in Chief) estimated £6,148,000 for a double line over the whole distance to Dubbo (from existing line). Townsend supported the Colo Valley location on account of the limiting grade being only 1 in 100 whereas the other locations went down as low as 1 in 30 over long distances. He considered that the Colo Line would pay for itself in something over 20 years. It was also stated that the distance from Sydney to Mudgee via the Mountains was 143 miles but via the Colo Valley was only 137 miles.

From reading the report it was gathered that Townsend was a rather unwilling witness still 'standing on his dignity'.

THE NEWNES PRIVATE RAILWAY

Newnes Railway was first opened on 27.11.1906 to old Newnes Junction but was altered to present on 16.10.1910. At this time Newnes was trading in coke to the smelters at Cobar. Its use was apparently intermittent as it closed down in 1912 and was re-opened in 1914, and could have run till 1923-24. It was re-opened again at the request of the Government in 1932 for the purpose of obtaining petrol from the shale but this was later found to be uneconomic and the line was closed again for keeps about 1933-34.

It is understood that the locomotives used on this line were geared like a car in order to negotiate the steep grades. The line was well constructed but the rails were chained in contradiction to the usual Australian method of spiking.

Forestry Department (Resources Branch) have plans of State Forest No. 748 which notes the first plantings were made in 1923 at the Eight Mile. The only access to the Forest was along the Railway Line there being no roads out then, later plantings extend for some 8 to 10 miles along the Line. These are shown on the Wallerawang Sheet. Plantings generally are confined to basalt 'blows' in this area.

THE MAJOR

"The Major"



Sketch draw by Major Clews in 1932.
 Clews Cave adjacent to Clews Ridge marked = ●
 WOLLEMI NATIONAL PARK CMA MAP 1ST EDITION.

“The Major”



The Major at Anzac Day March, Sydney 1975



SNOWY MOUNTAINS AUTHORITY LOGO USED THROUGHOUT
THE CONSTRUCTION PERIOD 1949—1974

“The Major”

“It is the opinion of many, that The Major’s contribution to the Snowy Scheme cannot be overestimated, and that during his eight year period, in the twilight of his working career, he contributed at least as much for his country as during his army service.”