

NEWSLETTER

GEOLOGICAL SOCIETY
OF
NEW ZEALAND



No. 19

JULY 1965

NEWSLETTER

GEOLOGICAL SOCIETY OF NEW ZEALAND

Member Body of the Royal Society of New Zealand

No. 19

July 1965

CONTENTS

	Page
The Mystery of the Missing Asterisk and other Notes on the History of the Society	1
Impressions of Geology in Modern China	9
The International Mineralogical Association	15
Geological Society of New Zealand. Notice of Annual General Meeting 1965	16
Geological Society of New Zealand Annual Report for the year ended 31st March 1965	17
Financial Statement	20 & 21
Eleventh Pacific Science Congress	22
Notes from the Geology Department, University of Canterbury	23
Notes from Auckland University Geology Department	25
Notes from Victoria University Geology Department	27
Obituary	28
Leon Bossard	
John Herbert Williamson	
Charles Taylor Trechmann	
Dr R.A. Keble (note)	
Personal Notes	31

GEOLOGICAL SOCIETY OF NEW ZEALAND
THE MYSTERY OF THE MISSING ASTERISK
AND OTHER NOTES ON THE HISTORY OF
THE SOCIETY

by B.W. Collins
(Founder and First Secretary)

Isolation

Geologists have always been argumentative types, prolific writers and (usually) willing listeners. They seem, among scientists, more than ordinarily interested in their colleagues' professional work. In other countries they organised themselves early into societies for mutual discussion and usually also publication: the Geological Society of London, founded more than 150 years ago, is one of the older existing scientific societies of the world.

In New Zealand, however, despite the isolation of those geologists based outside Wellington, there was no evidence of any desire for a national organisation of geologists until about a dozen years ago. The New Zealand Institute (for about 40 years headed by a geologist, Sir James Hector) apparently catered well for their needs. After the reorganisation of the New Zealand Institute in 1903 its first President was also a geologist, Captain F.W. Hutton. Many other geologists have been Presidents of the Institute and of its successor the Royal Society of New Zealand. In fact geologists have played, and still do play, important parts in the Royal Society. Many besides the two mentioned have held high office, and there is a high proportion of geologists on its Council and among its Fellows. Geologists can also claim five representatives among the noted New Zealand scientists who have been Presidents of the first 10 New Zealand Science Congresses (organised by the N.Z. Institute and the Royal Society of N.Z.), as follows:

3rd	Dunedin	1926	P. Marshall
5th	Dunedin	1935	R. Speight
6th	Wellington	1947	W.N. Benson
9th	Wellington	1960	R.S. Allan
10th	Christchurch	1962	G.A. Fleming

Cogitation

About 1953, geologists began to feel that they would benefit by a professional organised body, and informal discussions began to be held - on field trips, in Geological Survey field offices, in University precincts, and over glasses of beer in hotels and private homes. One event leading to this embryonic idea was undoubtedly the great success of the then recently inaugurated N.Z. Geological Survey staff conferences. The first of these had been held when field staff were called to Wellington at the end of May 1945 to farewell the retiring Director, Dr John Henderson. This was followed by a gathering in Greymouth in August 1946, and under the new Director, Mr Mont. Ongley, the staff conference became an annual event - sometimes in Wellington, sometimes at an N.Z.G.S. District Office, and when convenient in association with the approximately 3-yearly N.Z. Science Congresses. University geologists began to be invited to these conferences, and they much valued the contacts and opportunities for exchanging information and ideas that they offered. Another factor, no doubt, was the lean period through which the Royal Society (as a national institution) was then passing: the central organisation of the Royal Society (as opposed to its member bodies) was then facing new challenges. A third point, recorded in a historical note I wrote for the third issue of the Geological Society's Newsletter (pp. 3-4), was that it had become apparent that "almost the only groups of New Zealand scientists without a specialised society to look after their interests and present their views were the earth scientists and the physicists". (The physicists followed our example and became organised a year or two ago.)

Consideration

In the early informal stages of discussion, "there was a general feeling that no action should be taken that would weaken the Royal Society of New Zealand, which had for some 80 years been the premier scientific society in this country and had well served the interests of geologists" (Newsletter 3). However, the ball was started rolling by Dr H.W. Wellman, when, as Chairman of Section E (Geology) of the Eighth N.Z. Science Congress in Auckland in May 1954, he suggested to me that I should call a meeting of those interested in the formation of some sort of "organisation of geologists and other earth scientists". I had taken part in many earlier informal discussions, and accordingly thought it appropriate to call such a meeting in the type of surroundings in which much geological business is so smoothly transacted. The meeting was held in the top-

floor lounge of the Station Hotel, Auckland, on 21st May 1954 (the last day of the Congress), and was attended by about 50 geologists, geophysicists and pedologists. There were a few dissenting voices, but before closing time a motion "that those present consider the formation of a society of geologists in New Zealand would be desirable" was carried by 36 votes to 4. (Some abstained from voting, and others known to be in favour had left the meeting early.) An interim committee consisting of Dr R.S. Allan, and Messrs J. Bradley, J.W. Brodie, J.P. Fox and B.W. Collins (convenor) was set up to take further steps.

Negotiation

The interim committee co-opted Dr M. Gage and Messrs J.D. Campbell and D.D. Wilson (then all in Christchurch), and held several meetings and kept in touch with the members resident in Wellington. It is perhaps appropriate, for the record, to state here that some of the most fruitful of these meetings were held in the quaint basement bar of the historic Shades Hotel in Hereford Street, Christchurch (just opposite the first home of the Christchurch district office of the Geological Survey, and within a good stone's throw of the University Geology Department). At this spot many previous geological discussions had amicably taken place under the mellowing influence of the surroundings, and it is to be much regretted that the facilities of that address are available no longer. The "Shades" is itself a shade.

Following up suggestions made at the Auckland meeting the committee decided first to approach the Royal Society to see whether a Geological Section could be formed within it. Parts of the letter of enquiry are quoted in Trans. Roy. Soc. N.Z., vol. 82, pt 5, p. lxi (March 1955). A reply from the Secretary of the Royal Society, received in April 1955, stated:

"Member body status for National Scientific Societies was considered at some length but the opinion of members of the Council was averse to its adoption.... The question of the Royal Society being a composite body reorganised in accordance with representation from different scientific disciplines has been carefully considered and rejected....as being dangerous on account of the possibilities of disintegration.... The Council has, after much deliberation and examination of various methods of association, considered that... a system of very simple and free affiliation with a minimum of obligations and a maximum of good will would best serve the interests of New Zealand scientists".

Inauguration

With the ground thus cleared, it seemed that the way was open for the formation of a Geological Society, which could then, once established, seek affiliation with the Royal Society. The committee drew up a set of rules, and at the 11th N.Z.G.S. staff conference at Kaikoura in May 1955 I called another meeting of geologists. This was appropriately held in the convenient surroundings of the Adelphi Hotel on 14th May. There were present 36 persons, including representatives of the Geology Departments of the Auckland and Victoria University Colleges and the Auckland and Dominion Museums as well as the Geological Survey. Mr R.W. Willett was elected chairman of the meeting. After an extended discussion, in which a few contrary opinions were heard, a resolution to form a Geological Society of New Zealand was carried unanimously. It was decided also that those joining the Society within the next 6 months (to 30th November 1955) be considered foundation members, and that the initial annual subscription be 2/6d.

Foundation

It is interesting to note that most of the few (including a University Professor and a well known micropalaeontologist) who in the early stages opposed the formation of the Society, on the grounds that it was unnecessary and would only divert the attention of geologists from productive to unproductive work, have since become active members, serving on its committees and subcommittees.

The first officers and committee were: President, Mr R.W. Willett; Secretary, Mr B.W. Collins; Committee, Dr R.N. Brothers, Prof. R.H. Clark, Mr D. Kear, Mr G.C. Shaw and Mr B.L. Wood.

There was general agreement that the Society should not in any way compete with the Royal Society; that its main functions should be to serve as a channel for the expression of the views of New Zealand geologists, to organise an annual conference if possible, and to be responsible for the organisation of the Geology Section of the N.Z. Science Congresses sponsored by the Royal Society; and that in the meantime there should be no attempt to publish a regular scientific journal.

Reciprocation

It is of interest to recall that in 1956 the Society received the following letter from Professor L. Hawkes, President of the Geological Society of New Zealand:

"The Council...has learned through the medium of the first issue of your Newsletter of the recent formation of the Geological Society of New Zealand.

On behalf of the Council and Fellows of the Geological Society of London, I extend our greetings to your Society and our good wishes for its growth and prosperity.

We observe that a number of your founder-members are also Fellows of this Society and we regard this as a promise of close and happy relations between the two societies. We shall receive with interest and pleasure news of the activities of your members and shall welcome at our Rooms any of them who may be visiting this country." (Newsletter 2).

Consolidation

Membership in the Society grew rapidly in the early years, as follows: 14th May 1955 - 31; 30th November 1955 - 91 (foundation members); 31st December 1955 - 96; 30th April 1956 - 112; 31st December 1956 - 147; 31st December 1957 - 196. It now stands at 298.

The First A.G.M. was held on 12th May 1956 in the Gisborne Hotel, Gisborne, in conjunction with the 12th N.Z. G.S. staff conference. The second A.G.M. was held during the ANZAAS Meeting in Dunedin on 16th January 1957, and the third in the Reefton School on 14th May 1958, during the N.Z.G.S. staff conference.

An article by B.W. Collins entitled "Geology Down Under" published in GeoTimes (August 1958) resulted in several applications for membership from North American geologists and the presentation to the Society of several publications of the American Geological Institute.

The Society quickly interested itself in several projects - preservation of features of geological interest; circulation of a Newsletter with reports of meetings, notes and comments, reviews, letters, and personal items; the award of the McKay Hammer for outstanding geological research; the New Zealand fossil record system; and the question of stratigraphic nomenclature.

Successive Presidents have been: Mr R.W. Willett, Mr H.E. Fyfe, Dr J.T. Kingma, Prof. D.S. Coombs, Mr D. Kear, Mr J.W. Brodie, Dr R.P. Suggate and Mr J. Healy.

The first Secretary-Treasurer was succeeded by Mr L.E. Oborn, Mr G.C. Shaw, Dr W.A. Watters, Dr J.B. Waterhouse

and Mr D.R. Gregg (Secretaries); and Dr R.P. Suggate, Mr D.R. Gregg, Dr van der Sijp, Dr H.M. Pantin, Mr T.L. Grant-Taylor and Mr G. Warren (Treasurers).

The following have edited the Newsletter: Mr B.W. Collins, Mr L.E. Oborn and Dr W.A. Watters (assisted at times by others including Dr H.M. Pantin and Mr G.C. Shaw).

Appreciation

The Society makes one annual award - the McKay Hammer Award - for the most meritorious published contribution to the geology of New Zealand and its dependencies, including the Ross Dependency, Antarctica. A hammer formerly owned by Alexander McKay has been deposited by the Society with the N.Z. Geological Survey for safe keeping, and the award itself (a certificate and a "good quality geological hammer suitably inscribed") is made "to commemorate the outstanding ability....of Alexander McKay".

Winners of the Award have been:

1956	G.R. Stevens	(Hutt Valley geology)
1957	C.A. Fleming	(Pecten bulletin)
1958	M. Gage	(Waimakariri Pleistocene)
1959	H.W. Wellman	(N.Z. Cretaceous)
1960	D.S. Coombs	(Lower grade metamorphic rocks)
1961	N. de B. Hornibrook	(Oamaru foraminifera)
1962	G. Warren and B.M. Gunn	(Antarctic geology)
1963	B.L. Wood	(Otago schists)
1964	J.B. Waterhouse	(Permian brachiopods)

Consternation

In the fourth Newsletter (Aug. 1957) there appears a letter over the initials R.P.S., as follows:

"May I express my deepest concern over an error in your last Newsletter. The list of members contains my name, but no asterisk is placed beside it. Is the singular honour (That of being a foundation member) to be denied me?...May I respectfully request that an apology be made in the next issue of your Newsletter."

The editor (Mr L.E. Oborn at that time) replied thus:

"We hasten to assure Mr S--- that only the asterisk was denied him, not the foundation membership. The secretary denies that the omission is, in any way, responsible for Mr S---'s decision to return to England! (The missing

asterisk was found deeply buried on the previous Treasurer's desk and has been carefully returned to the Society's archives.)"

For the record it should be noted that officers of the Society concerned with the retrieval of the asterisk were: Secretary L.E. Oborn, Treasurer D.R. Gregg. The "previous Treasurer" was Mr R.P. S--- himself. The fault, of course, really lay with the previous Secretary and Newsletter editor, the present writer, who had recently left (with Mr S---) to take up a post in London. I would like hereby to record my gratitude to my successor in office for so ingeniously explaining an inexcusable editorial error!

Affiliation

In accordance with the expressions of opinion before and during the inaugural meeting of the Society, the Committee continued negotiations for affiliation with the Royal Society. It was pointed out to the Royal Society Council that nothing in the existing Act or Rules appeared to prevent a national specialised organisation being accepted as a member body, provided the conditions were complied with. The Annual Report for 1959-1960 records some progress, and at its half-yearly meeting on 27th November 1959 the Council of the Royal Society "approved the principle that national scientific bodies (e.g. the Geological Society of New Zealand) be entitled to apply to be Member Bodies in terms of the existing rules". On 19th May 1961 the Geological Society became the first specialised scientific society to become a member body of the Royal Society of New Zealand. For three years its representative (at first Mr J. W. Brodie, later Mr B.W. Collins) sat in solitary state on its Council, but in the last year he has been joined by the representatives of three other disciplinary societies - the N.Z. Institute of Chemistry, the N.Z. Ecological Society, and the N.Z. Society of Soil Science. Others have now made similar approaches. (Besides these specialist societies there are of course the nine regional branches.)

Cooperation

Thus the hopes of its founders have been realised; the Royal Society and the Geological Society have cooperated fully and amicably and have, it is believed, both benefited from the association. Far from declining in strength, the Royal Society has become more active and has never been in such a commanding and strong position in the New Zealand scientific world. It is perhaps not too much to assume that the foundation of the Geological Society and its persistence in pressing for affiliation has played some part in the recent revitalisation of the Royal Society.

Speculation

Now that the Society has celebrated (or should have celebrated) its 10th birthday (on 14th May 1965), it is perhaps time to take stock of the position, and ask where we are going.

The support it has received from New Zealand earth scientists has fully justified the hopes of its founders. Among its members it is pleased to have not only professional geologists of all types and sizes, but also a good sprinkling of geophysicists, pedologists, oceanographers and engineers, and last but not least those energetic and enthusiastic amateurs who collect minerals and fossils and take a more than casual interest in the landscape. Our overseas friends are also welcome, and we hope that they continue to feel they are getting their money's worth in spite of a rise in subscription.

Inspection of a few recent issues of the Newsletter will show what the Society has done and hopes to do. Its objects are clear and simple (and only slightly amplified from those adopted in Kaikoura in 1955). I think its future is assured: there is plenty more to do - from stimulating research in neglected fields, through projects such as the preservation of faulted terraces, to encouraging New Zealand geologists to make full use of the New Zealand fossil record system (I understand this is unique in the world), and to comply as far as possible with recognised standards and conventions of stratigraphic classification and nomenclature.

We are proud of our association with the Royal Society, and like to think that the opinions of New Zealand geologists (expressed both directly and through the Society's representative on the Royal Society Council) have been effective in strengthening this oldest and most respected of New Zealand's scientific societies. Many of our suggestions have been incorporated in the new Act now before Parliament. We look forward to a bright and productive future for both organisations.

29th June 1965

- B.W. Collins

IMPRESSIONS OF GEOLOGY IN MODERN CHINA

by J.A. Grant-Mackie

China today is a country rapidly moving from a peasant-based economy towards one based on full industrialisation. Factories and other industrial enterprises built or greatly extended within the last 15 years can be seen on all sides in the cities and, on a smaller scale generally, in the countryside as well. Government policy is to achieve this with as much reliance as possible upon local resources. In this situation, geological survey and research must play a vital role. I was very interested, therefore, to be able to see at first hand the way problems were being tackled by Chinese geologists. While attending the 1964 Peking Scientific Symposium I travelled by plane, train and car some 6,000 miles in China, visited 21 geological institutions of various sorts, and met more than 100 geologists with many of whom I was able to talk directly because they could speak English and there was consequently no need of an interpreter. (In fact, I was surprised at the large numbers of Chinese I met who could speak English, until I learned that most of the older scientists had spent some time overseas, often in English-speaking countries, and that in almost all schools now English is a compulsory foreign language which children begin learning at 7 years.

In 1949, when the present government became established over all mainland China, there were about 400 geologists. Today that figure has risen to about 50,000 field workers and 25,000 specialists. Graduation has been at the rate of 10,000 a year between 1958 and 1961, and 5,000 a year since then. The drop was explained as the result of students going to work in the countryside during the 1961-62 floods and drought which caused severe food shortage, and it is expected that the figure of 10,000 a year will be reached again soon.

The rapid expansion has meant that most geologists are quite young, the older ones with longer experience are spread thinly, and, as new institutes and laboratories are established, posts of responsibility go to much younger workers than they do here. Take, for example, the Institute of Vertebrate Palaeontology and Palaeoanthropology: it was set up in its present form in 1953 with a staff of 18; it now has 64 scientists and 84 other employees, and of these only 10 are over 30 years old; the director of its museum and research establishment at Choukoutien (referred to below) is in his late 20's. No doubt this situation leads to some failures and inefficiency through sheer inexperience.

ience, but it was not evident in the places visited.

Organisation. Scientific research is organised on a number of levels. The premier body is the Chinese Academy of Science (Academia Sinica) with its many institutes and laboratories, concerned primarily with fundamental research. Its President is a Vice-Premier of China (currently Kuo Mo-jo, a well-known philosopher) and it is responsible directly to the State Council (approximately, our Cabinet). In Academia Sinica are 3 geological bodies, namely the Institutes of Geology, of Vertebrate Palaeontology and Palaeoanthropology (both in Peking), and of Geology and Palaeontology (Nanking).

Geological mapping, survey and other more "applied" work is carried out by the Academy of Geological Sciences, which comes under the Ministry of Geology. The Minister is Professor Li Sze-Kuang, better known outside China as J.S. Lee, author of "The Geology of China" and well-known monographs on Chinese palaeontology (e.g. fusulines, 1926), and as a visiting lecturer in various English universities for a period up to 1920 and subsequently in 1937-38 and 1947-50. He is very much the Grand Old Man of Chinese geology who, apart from his early interest in palaeontology, was the first to record evidence of Pleistocene glaciations in China, then turned his attention to petrology, and is now interested in geotectonics. As well as his ministerial post, he is President of the Geological Society of China, Vice-President of Academia Sinica and President of the Federation of Scientific Workers of China - yet he still finds time to continue his structural studies! The Deputy Minister is a specialist in graptolites, Singwu C. Hsu, who also is still able to do some research.

The Academy of Geological Sciences administers 6 regional and 9 specialist research institutes, a museum and a library. The 15 research institutes have all been set up since 1956, and each has a staff of 100-200. The nature of the work undertaken can be seen from the list of specialist institutes:

- Institute of Geology
- Institute of Geology of Mineral Resources
- Institute for Utilization of Mineral Resources
- Institute of Geophysical Prospecting
- Institute of Hydrogeology and Engineering Geology
- Institute of Exploration Techniques
- Institute of Regional Geological Mapping

Some of these (e.g. the Institutes of Geophysical Pros-

pecting and of Exploration Techniques) are concerned with theoretical studies and experimental research to improve techniques and equipment, while the Institute of Geology of Mineral Deposits is partly concerned with studies of petrogenesis and metallogeny, so that there is a close combination of "pure" and "applied" research.

Geological research in the universities tends to be similar to that of Academia Sinica. There are geology departments in 3 universities (Peking, Nanking and Sian) and 3 university-level institutions solely devoted to training geologists (Peking, Changchin and Chengtu Geological Colleges). In addition, geology is taught as an ancillary subject in other departments in some universities (e.g. the Geography Department of Hangchow University has a staff of 40, of whom 3 teach geology).

Co-ordination of research is achieved by consultation between Academia Sinica and the various ministries. A government Commission for Science and Technology meets irregularly for co-ordination between disciplines.

Equipment. I went to China expecting to see laboratories equipped mainly with Russian, Czech, German and Japanese machines and also with older British and American equipment from before 1949. Perhaps the most unexpected feature during my visit was to see that something like 80 per cent of all the equipment was locally produced.

As part of the drive for self-reliance and industrialisation numerous factories for scientific equipment have been set up since 1958 (there were none at all before then!) and have achieved a generally high level of precision and workmanship. When we were being shown round the laboratories the performance of much of the equipment was discussed, and there seemed to be no attempt to gloss over defects or faults. The X-ray laboratory of the Geological Institute of Academia Sinica is entirely equipped with instruments built in Shanghai. We were shown powder photographs, and it was pointed out that they have not yet been able to prevent the low-angle rays of the powder camera from producing foggy lines. We saw many sorts of locally made microscopes, and while it was apparent that the general workmanship and finish are of a high standard we were told that the optics are still inferior to those of Japanese or German microscopes, although at least as good as British or American makes.

There seemed to be no shortage of money in any of the

institutes visited. I asked the Director of the Geological Institute, Professor Hou-Ta-feng, about his institute's budget. At present, the annual allocation is about one million Yuan (in terms of buying power, about one million pounds), although, he said, it was not always used. Annual estimates of financial requirements are submitted, but, in allotting the finance, the government sometimes adds items not requested and provides extra for them! Under these conditions, time and the availability of manpower and equipment are the only limiting factors in research.

Some Current Research. It would be an impossible task to try to list all aspects of current research. Nevertheless, it may be of interest to indicate what seem to be the more important fields and some of the significant advances.

It is appropriate to emphasise first that reconnaissance field mapping has been pushed to the extent that there are now few blank spots on the map. Geological maps on the scale of 1:3,000,000 were printed in 1952, with a second, much more complete, edition in 1959. A geotectonic map was published in 1962 "based on the principles of Argand and Shatsky, with the added idea of polycyclic tectonics", a theory much favoured in China at present. Structural geology is, in fact, at present receiving much attention, and important results in both the experimental and theoretical fields are being achieved, with much accent on types of folding, tectonic evolution, faulting, and experimental deformation.

Economic geology has been considerably stressed, naturally enough, and from the prospecting have come, on the one hand, discoveries of economically valuable minerals (the Chinese now claim that if necessary they could be self-sufficient in oil and other minerals), and on the other important contributions in the fields of mineral genesis and zonation.

Most attention in stratigraphy and palaeontology seems to be being paid to the Sinian (Precambrian) and Palaeozoic, and to Quaternary vertebrate (including human) palaeontology. Sinian stratigraphy and structure are receiving concentrated study, and this has turned up specimens of what are believed to have been land plants (oldest known elsewhere are upper Silurian). Palaeontological study is resulting in a series of important monographs on various invertebrate Palaeozoic groups, and in changes to earlier concepts of Northern Hemisphere palaeogeography. Important new finds of fossil man

have been made, not only at Choukoutien, the site of the original discovery of Peking Man in 1928, where excavations were re-commenced in 1950 after ceasing in 1937, but also in other regions, where contemporary relatives of Peking Man have been found (e.g. Sinanthropus lantianensis near Loantin, Shensi Province). The associated vertebrate faunas with these fossil men are also being closely studied.

Of interest is the fact that, like many other groups of geologists, including ourselves, the Chinese are at present engaged in drawing up a code of stratigraphic nomenclature. A Stratigraphic Commission is sitting and has not yet finalised its recommendations, but it favours the following set of time-rock units:

Group (rocks of the same Era)

System

Series

Stage

Member

"Formation" is used only in a less formal sense for units less easily related to the adjacent rocks. A number of formations may be united in a "group" (but the word is different in Chinese from that used above). This sort of terminology is certainly confusing to us, used to a much sharper differentiation between lithostratigraphic and biostratigraphic units.

In the field. One cannot hope to get an idea of Chinese geology from a few days in the field. Nevertheless, field excursions are a highlight of any visit to a new area, and the three days I was able to spend in looking at outcrops and wandering over hills and valleys were among the most pleasant of my stay there.

The most varied trip was to an area about 2 hours drive east of Peking. There, fine-grained laminated Ordovician limestones, overlain by Carboniferous coal measures, have been contorted into "box-folds" (squarish, rather than rounded, folds with an amplitude of some tens of metres, interpreted by the Chinese as gravity-induced crumplings off the limbs of a major up-warp). Lunch was held at a nearby hydro station (with food and dining-room staff transported from our Peking hotel); later we examined non-marine Jurassic strata and late-Quaternary fluvioglacial gravels containing striated pebbles.

Another, more leisurely day was spent at a health resort some 80 km outside Canton. Here a large number of hot springs (mainly of sulphate, bicarbonate and nitrate of K, Na and Ca)

issue along a NE-SW fault line in granite. After sampling the the springs we sauntered off into the bush-clad hills along the valley of a small stream, walked for 5-6 miles, and then returned to the sanitarium and to Canton.

An afternoon was spent at Choukoutien, the site of Peking Man. The cave where in 1928 the first remains had been found has been completely excavated, and a sequence of remains from Peking Man (mid-Pleistocene) up to Cro-Magnon Man (top Pleistocene) has been collected, each with the associated implements, fire-remains, and fossil plants, invertebrates, reptiles, and other mammals. In the immediate vicinity some 30 additional localities have been found, with cave deposits yielding remains representing horizons right up to sub-Recent (although Sin-anthropus occurs only at the original site.) All localities are in calcareous cave-breccia in hollows in fine-grained Ordovician limestone. Excavations have ceased now, at least temporarily, while the material is worked up, but the Institute of Vertebrate Palaeontology and Palaeoanthropology has set up a permanent museum and field research station there.

The other half day was spent somewhere outside Peking (NW of it? - I constantly found trouble in following the direction we travelled!) at Shiang Shan, "The Place of Eight Temples", where Li Sze-Kuang showed us around the region in which he had first found evidence of Pleistocene glaciation in China some 45 years previously - striated erratics and small cirques on scrub-covered hillsides from which one could see the tall buildings of Peking in the distance. That afternoon it rained on us all-- just like home! Afterwards Professor Li took us through a beautiful park to a small restaurant where he and his wife put on a reception. It was a rather typical gathering of the geological fraternity, and maotai (which, when they enter the space race, the Chinese will be able to use to fuel their rockets!) flowed freely to many "gambei" ("bottoms up"). We got back to our hotels and wondered why the lifts went round rather than up.

Conclusion. Geology in China is a rapidly advancing subject. It is recognised as of extreme importance in its contribution to the national economy, yet there is in reality no artificial barrier between "pure" and "applied" work, the reliance of one upon the other is recognised, and there is no unhealthy over-concentration, as far as I could see. Like all other Chinese I spoke with, the geologists are very proud of their achievements, but they constantly stress their inexperience, and as visitors are shown around some institution they are frequently asked for suggestions on possible improvements. This humility was rather a new experience for me, and one was forced to consider how genuine it was. In most places there

was little to criticise, although at the provincial geological museum in Canton, designed, I was told, to display local geology, palaeontology and economic deposits to the general public, especially school children, I found the displays dull and consisting of rows of specimens with few diagrams of any sort. I suggested to the director that these were not very interestingly presented, and also that a display of local building stones could be usefully added, and found him eager to consider the suggestions. Discussing this with other visitors it seemed that their experiences were generally similar, and I concluded that they do not carry self-reliance to the lengths of believing that they have all the answers and can learn nothing from visitors.

All in all, it was a wonderful month in a fascinating region. There were no problems of translation, travel or finance; accommodation is luxurious, food plentiful, and mementoes of one sort and another are cheap yet look sumptuously rich. I would very much like to see more of the country one day.

THE INTERNATIONAL MINERALOGICAL ASSOCIATION

The most recent meeting of the I.M.A. was held in conjunction with the International Geological Congress in New Delhi. Work of most of the various Commissions continues as follows:

Abstracts: Twenty countries, including New Zealand, are now supplying abstracts to Mineralogical Abstracts. There has been discussion from time to time on international ownership and direction of Min. Abstr., but it appears that the present system of joint financial responsibility by the Mineralogical Societies of America and London will continue.

Mineral Data: Subjects being discussed include standardization of crystallographic symbols in publications and the formation of an International Data File.

Ore Mineralogy: Determinative tables for ore minerals are being reviewed and reflectivity standards proposed.

New Minerals and Mineral Names: This very active Commission (Dr M. Fleischer, U.S.G.S., Secretary) continues to vet new mineral names, proposed changes in nomenclature, and standardization of nomenclature. In 1964, 31 proposals for new mineral names and 3 proposals to discredit mineral names were submitted to the Commission for approval before publication. One was rejected outright, and in several cases comments by members of the Commission led to substantial improvements in the descriptions.

The Commission also votes each year on all new mineral names and changes in nomenclature that have appeared in the previous year. For example, of 64 proposed new mineral names that appeared in 1962, 42 have been approved and 17 rejected by clear majorities. The voting on the other 5 was indecisive. The details may be found in Canadian Mineralogist, vol. 8, 1964, p. 124.

Some of the complex questions of nomenclature for rare-earth minerals, amphiboles and clay minerals are at present being considered by the Commission.

The next meeting of the I.M.A. will be at Cambridge, England, in early September, 1966. Proposed symposia are:

- a.) Crystal growth or bonding forces in mineral structures
- b.) Pyroxenes or amphiboles.

- D.S. Coombs,
N.Z. Representative, I.M.A.

GEOLOGICAL SOCIETY OF NEW ZEALAND

NOTICE OF MEETING

The Tenth Annual General Meeting of the Society will be held in the Wellington Branch, Royal Society of New Zealand, rooms at the Dominion Museum, Wellington, on Wednesday, 4th August 1965, at 8 p.m.

Agenda

1. Confirmation of Minutes of 1964 Annual Meeting.
2. Presentation and adoption of Annual Report and Balance Sheet.
3. Election of Officers and Committee.
4. Presentation of McKay Hammer for 1964.
5. Report of the Stratigraphic Code Subcommittee presented by Mr N. de B. Hornibrook.
6. General Business.

- D.R. Gregg,
Hon. Secretary,
C/o Canterbury Museum,
Christchurch.

GEOLOGICAL SOCIETY OF NEW ZEALAND

Annual Report for the Year ended 31st March 1965,
to be presented at the Tenth Annual General Meeting
at Wellington on 4th August 1965.

Committee: The committee elected at the Ninth Annual General Meeting held at Takaka on 14th May 1964 were:

President:	Mr J. Healy
Vice-President:	Prof. R.N. Brothers
Secretary:	Mr D.R. Gregg
Treasurer:	Mr Guyon Warren
Committee:	Dr P.F. Ballance
	Mr J.D. Campbell
	Dr F.F. Evison
	Dr M. Gage
	Mr B.N. Thompson
Auditor:	Mr D.J. Daly

Additional Committee members were:

Past-President:	Dr R.P. Suggate
Representative on	
RSNZ Council:	Mr B.W. Collins
Editor:	Dr W.A. Watters
Co-opted 2nd Nov-	
ember 1964:	Dr W.D. Sevon

The Committee met 8 times.

Membership: The number of members at 31st March 1965 was 298, a net gain of 19 since 31st March 1964. In accordance with Rule 3 (c) it was necessary to remove 6 names from the list of members.

Finance: The Society has overspent its income by a small amount during the year, the increase in subscription income being more than offset by a substantial rise in printing costs, principally because of the Stratigraphic Code questionnaire. The accumulated fund and present annual subscription remain adequate, however, for foreseeable needs.

General Meetings: Two General Meetings were held during the year. At Takaka, on 16th May 1964, Dr C.A. Fleming spoke on "The Future Constitution of the Royal Society of New Zealand", and at Auckland, on 16th February 1965, Mr J. Healy delivered his presidential address, "The Field of Volcanology in New Zealand".

Newsletter: The Society is indebted to the Editor, Dr W.A. Watters, for Newsletter No. 16, distributed in August 1964, and No. 17, distributed in June 1965.

Stratigraphic Code Subcommittee: Following a decision of the ninth Annual General Meeting, the Committee appointed a subcommittee to report on (1) the desire for and desirability of New Zealand adopting a stratigraphic code, (2) suggestions made to it for changes in the particular existing code that the subcommittee thinks the best, (3) the likelihood of general support for any such suggested changes, and (4) the desirability of, and means of, enforcing a code in New Zealand. Members of the subcommittee are: Mr N. de B. Hornibrook (Chairman), Mr B.W. Collins, and Drs M. Gage, D. Kear, P. Vella and J.B. Waterhouse. The subcommittee prepared a detailed questionnaire which was distributed to members with Newsletter No. 16. An interim report of the subcommittee was read to the General Meeting of 16th February 1965.

Stratigraphic Lexicon Addenda: Dr G.R. Stevens has undertaken to act as compiler-editor.

Rules and Bylaws: The Rules, as emended at the Ninth Annual General Meeting, and revised bylaws for the McKay Hammer Award, were printed and distributed with Newsletter No. 16.

Sections: The Auckland Section (Chairman, Mr M.R. Gregory; Secretary, Mr J.C. Schofield) held 9 meetings, as follows:

- "Rocks of Raoul Island" by Prof. R.N. Brothers
- "Geology of part of New Guinea" by J.M.A. Chappell
- "Earth Sciences in China" by J.A. Grant-Mackie
- "Geology of North Cape" by E.C. Leitch
- "Tectonic Problems" by Prof. A.R. Lillie
- "Advances in Antarctic Geology" by V.R. McGregor
- "Recent Advances on Tektites" by Dr Brian Mason
- "Geology of Motutapu and Rakino Islands" by W. Mayer
- "Olivine Nodules" by K. Rogers

The Christchurch Section (Joint Secretaries, Dr W.D. Sevon and Mr H.S. Gair) held 4 meetings:

- "Soils and Geology" by C.G. Vucetich
- "Geological Investigations made by the 1963-64 NZARP Expedition in Northern Victoria Land" by S.J. Carryer
- "The Digital Computer and Geology" by Dr W.D. Sevon
- "Some Aspects of the Geology of the Kaiwara District, North Canterbury" by P.A. Maxwell

In addition, members of the Christchurch section were invited to the Chalklin Lecture (by Prof. N.F. Barber), the Presidential Address (by Dr M. Gage), and a symposium on New Zealand Antarctic research, by the Canterbury Branch of the Royal Society of New Zealand.

Revision of Royal Society of New Zealand Act: The Committee considered the proposed new Act and Rules, and comments were submitted to the Council of the Royal Society.

International Association for Quaternary Research: The Committee has recommended to the Royal Society of N.Z. that it become an adhering body to INQUA when this becomes possible. The Royal Society Council received the recommendation favourably and is appointing a delegation to the 1965 meeting of INQUA in Denver, Colorado.

Royal Society of N.Z. Sectional Committee for Geology and Geophysics: The nominees of the Society, Drs F.F. Evison and M. Gage, were appointed to the Sectional Committee.

11th N.Z. Science Congress: The Society was a participating body in the Congress held in Auckland in February 1965. The Auckland section organised a social gathering.

Preservation of Geological Features: A Private Historic Reserve of 626 acres was gazetted in July 1964 to preserve the terraces of the Branch River displaced by the Wairau Fault. The Society is grateful to the owner Mr H.S.F. Houghton for his enlightened co-operation. Various Crown reserves at the Maruia River were gazetted in August 1964 as one consolidated Scenic Reserve to preserve the terraces displaced by the Alpine fault. Letters have been sent to various local authorities and Government Departments explaining the importance of these features.

McKay Hammer Award: The McKay Hammer for 1964 has been awarded to Dr J.B. Waterhouse for his publication "Permian Brachiopods of New Zealand" (N.Z. Geol. Surv. Paleont. Bull. 35).

Thanks: The Society is grateful to the Director, N.Z. Geological Survey, for his invitation to members to attend the 1964 Staff Conference at Takaka.

Deaths: With regret, we record the deaths of G.L. Adkin, L. Bossard, C.T. Trechmann and J.H. Williamson.

J. Healy, President
D.R. Gregg, Secretary

GEOLOGICAL SOCIETY OF

RECEIPTS AND PAYMENTS ACCOUNT

RECEIPTS:

Balance, 1/4/64 - Cash at Bank	£160. 7. 5
Subscriptions	150. 3. 0
Receipts for "Transactions"	13.15. 0
Interest	5.10. 4

329.15. 9

INCOME AND EXPENDITURE ACCOUNT

EXPENDITURE

Royal Society - Annual Contribution	24.14. 1
- Travelling Quota	9.10. 5
Audit Fee	2. 2. 0
Stationery and Postages	19. 2. 3
Newsletter 16	42. 2. 8
Provision for Newsletter 17	27. 0. 0
Questionnaire and Rules	22.11. 6
Loss on "Transactions"	12. 0
Sundry Expenses	8. 7. 6
	<u>156. 1. 6</u>

BALANCE SHEET

Subs. and "Trans." payments in advance	52.14. 6
Provision for Newsletter 17	27. 0. 0
<u>Accumulated Fund</u> - Balance at 1/4/64	131.10. 2
<u>Deduct</u> Excess of Expenditure over Income	<u>2.11. 2</u>
	128.19. 0
	<u>£208 13. 6</u>

Certificate:

I have audited the accounts and vouchers of the Geological Society of New Zealand for the year ended 31st March 1965, and in my opinion the Accounts and the Balance Sheet show a true position of the affairs of the Society at 31st March, 1965.

D.J. Daly A.R.A.N.Z.
Auditor.

Christchurch,
16th June, 1965.

NEW ZEALAND (INC.)

for Year ended 31/3/65.

PAYMENTS:

Royal Society - Annual Contribution	24.17. 5
- Travelling Quota	9.10. 5
- Cost of "Transactions"	<u>14.10. 0</u>

48.17.10

Stationery and Postages

19. 2. 3

Newsletters

42. 2. 8

Audit Fee

2. 2. 0

"Transactions" postage

4. 4. 6

Questionnaire and Rules

22.11. 6

Sundry Payments

8. 6. 7

Balance, 31/3/65 - Cash at Bank

182. 8. 5

329.15. 9

for Year ended 31/3/65.

INCOME:

Subscriptions	149. 0. 0
<u>Add</u> Bad Debts 1963/64 recovered	5.10. 0
	<u>154.10. 0</u>
<u>Deduct</u> Bad Debts 1963/65	<u>6.10. 0</u>

148. 0. 0

Interest

5.10. 4

Excess of Expenditure over Income

2.11. 2

156. 1. 6

at 31/3/65.

Cash at Bank of New South Wales, Christchurch
Subscriptions and "Trans." payments in arrears

182. 8. 5

26. 5. 1

£208.13. 6

Guyon Warren
Honorary Treasurer.

ELEVENTH PACIFIC SCIENCE CONGRESS

The 11th Pacific Science Congress will be held in Tokyo, Japan, from August 22 to September 10, 1966. A "Preliminary Announcement" was issued in February 1965, and copies of this are available from:

The Secretary-General,
Organising Committee,
11th Pacific Science Congress,
Science Council of Japan,
Ueno Park, TOKYO, Japan.

The following symposia of geological interest are planned:

Evolution, Distribution and Migration of Plants and Animals in the Pacific Area.

Land Classification

1. Presentation of Land Classification based on land forms, surface geology and soil, and other physical conditions.
2. Their bearing on land use, land conservation, and prevention from natural disasters.
3. Problems of land evaluation.

Upper Mantle Project.

Tsunami and Storm Surges.

Sea Level Changes and Crustal Movements of the Pacific during the Pliocene and post-Pliocene.

Antarctic Research.

Mineralogenetic Provinces and Epochs in the Pacific Belt.

Age and Nature of Orogenesis in and around the Pacific.

Tertiary Correlation and Climatic Changes in the Pacific Rim.

Pacific Palynology.

Physiographic Development in the Pacific Area.

NOTES FROM THE GEOLOGY DEPARTMENT,

UNIVERSITY OF CANTERBURY

Staff changes: Professor R.S. Allan, who has been Head of the Department since 1931, and has occupied the Chair since it was re-instituted in 1945, will retire at the end of January, 1966. His successor has not yet been appointed. Dr W.D. Sevon has returned to the United States after 4 years here to take a position with the Pennsylvania Geological Survey. His responsibilities for teaching sedimentology and operation of the Sedimentation Laboratory at Canterbury in conjunction with the N.Z. Geological Survey have been taken over by Dr Douglas W. Lewis, who also hails from the United States but gained his Ph.D. at McGill. Mr Simon MacDonald has left for Australia to work in mining geology for Australian Development Pty, initially at Tennant Creek, N.T. Mr J.K. Hill has been appointed to replace him, but will be concerned to a greater extent with the development of engineering geology at Canterbury (see later). Mr Hill is an Otago graduate who has worked in Australia and New Guinea for some years as engineering geologist with the Bureau of Mineral Resources. An additional new lectureship remains to be filled.

Accommodation: The geology block (not yet named) on the new site at Ilam is practically finished. The Department will not be able to occupy it in advance of the other science departments, but preparations are under way for the "big shift" expected to begin in November. Meanwhile, development is more or less at a standstill in the present cramped quarters.

Field Station: The Grants Committee acquired a house at Westport for the Department, and it has been furnished and equipped to accommodate up to 20 people, as a base of operations for geology class field trips and research. Arrangements may be made for its use by organised parties from other geology departments when it is not required by Canterbury.

Awards: Mr R.C. Gregg (Demonstrator) has won a fellowship at the University of Alberta, where he will proceed to study for a Ph.D. in September. Mrs Jocelyn K. Campbell (nee Adamson) won the Von Haast Prize in 1964 for her thesis work on structural relationships and Pleistocene history at Lake Rototiti, and another award of the Prize was made this year to Mr Philip Maxwell, who has recently joined the Palaeontology Section of the N.Z. Geological Survey in Lower Hutt. Mrs T.J. Seed became the first to gain Ph.D. in this Department for her work on the structure and origin of glauconites. Lee S. Clayton

has received the Ph.D. degree from the University of Illinois for his studies of glacial history and faulting in the Hope and Waiau valleys, North Canterbury, the field work for which was carried out while he was a Fulbright scholar attached to this Department.

Research: Graduate student research in progress or recently completed includes regional studies (embodying usually some special investigation) in the Hurunui, Kaiwara and Waiau districts (J.R.L. Read, P.B. Maxwell, R.C. Gregg respectively), Upper Matakaitaki (R.G. Adamson), Maruia (R.T. Farmer), Waihao (B.W. Riddolls) and Lower Buller Gorge (S.G. Nathan). S.J. Carryer studied moraines, fans and other Pleistocene features in the Rakaia Valley.

The results of Dr Sevon's work on beach sands is in course of publication. Dr Frost is investigating the mineralogy and structure of certain meteorites. He is developing also a series of mathematical models which he believes will assist in solving geological problems, and in applying the digital computer in structural geology. Dr Cockbain has been studying Devonian and Tertiary faunas and problems of quantitative stratigraphy.

Visitors to the Department since the last Notes include Professor W.H. Matthews of the University of British Columbia, who established his headquarters here for 6 months in 1964, Professor K. Rankama (Finland), Professor Schwarzbach (Cologne) and Dr S.A. Schumm (U.S.G.S., Denver), all of whom lectured here.

Degree in Engineering Geology: Beginning in 1966, it will be possible to enrol for the Degree of B.Sc. with Honours in Engineering Geology. The curriculum is a four-year course intended to produce fully qualified geologists who will also be acquainted with civil engineering principles and practice, and so be able to understand and discuss ideas and problems in engineering from the geological point of view. This may be the first introduction of this kind of interdisciplinary degree in any New Zealand or Australian university, although degrees in engineering geology are given in many American universities. The development is made possible by the keen interest and co-operation of the Department of Civil Engineering.

- M.G.,
23rd June, 1965.

NOTES FROM AUCKLAND UNIVERSITY GEOLOGY DEPARTMENT

The 1965 session has seen a further leap in student enrolments, with consequently increased pressure on space, equipment and collections. Numbers in the 1965 classes are as follows, with 1964 numbers in brackets:

Stage I 150 (120), Stage II 20 (19), Stage III Option
1 10 (8), Stage III Option 2 9 (11), Honours 18 (15),
Ph.D. 3 (3).

The post-graduate student research topics listed in Newsletter 16 (p. 22) are still continuing, and a number have been added, as follows:

L.R. Carter	Volcanic geology of part of the Karioi - Pirongia district.
W.L. Cornwell	Basement greywackes and overlying Tertiary volcanic rocks south-east of Tapu, Coromandel Peninsula.
C.H. Harvey	Ignimbrites, andesites, rhyolites and their derived clays at Whitianga - Tairua.
B.G. Jones	Palaeoecology of the Pakaurangi Point section (Waitemata Group).
P.C. Le Couteur	Geology of the area north of Whangaroa Harbour.
K.R. Martin	Hokonui stratigraphy (Triassic to lower Jurassic) of S.W. Kawhia.
C.H. Pharo	The Waitemata Group of Puketotara Peninsula, Kaipara Harbour.

During the year John Chappell finished his study of the Pleistocene of the west coast of south Auckland province, and departed for the Australian National University, Canberra; he will be doing field work in New Guinea for his Ph.D. Graham Mansergh finished his thesis on the Kerikeri basalts. Four members of the Department took part in the D.S.I.R. Antarctic programme (J.M.A. Chappell, G.D. Mansergh, M.R. Gregory and Dr P.F. Ballance) while Dr D.O. Zimmerman joined V.U.W.A.E. no. 9. During the year Mr J.A. Grant-Mackie attended the Peking Symposium.

Visitors in the past year have included Professors K. Runkama (Helsinki), W.R. Dickinson (Stanford), J.G.C. Anderson (Cardiff), P.K. Sutherland (Oklahoma), Marland P. Billings (Harvard) and F.J. Turner (Berkeley).

The Department was deeply involved in the 11th Science Congress in February this year, and also has many commitments for the International Symposium on Volcanology in November.

A major contribution to the Department has been the recent acquisition of a highly skilled and experienced analyst, Mr T.H. Wilson, who will be working in the geochemical laboratory set up last year. This has freed the other geochemical lab. for research student use, and with an increasing number of research students having Stage III chemistry as well as geology, it will be extremely useful.

A continuing programme of research in New Caledonia has been planned, as part of a wide project of south-west Pacific research financed by a grant from the Golden Kiwi Research Fund.

Dr D.O. Zimmerman has resigned from the Department to take up an appointment with the Mineral Development Corporation in Melbourne.

- P.F. Ballance

"Every city has on free display magnificent examples of granitisation and migmatization. ----- In London, for example, there are available great expanses pertinent to this address along Fleet Street, Victoria Street, Knightsbridge and Brompton Road - to name only a few of the better displays. The best samples known to me are provided by the pillars of St. Columba's Church, Pont Street, and by twelve columns disposed about the green in Parliament Square - these latter are known to my students, and rightly, as the Twelve Pillars of Wisdom. During the bombing of London I watched anxiously for the detachment of specimens of more portable size from the finer exhibits, but without success; indeed, I formed the opinion that the safest procedure in a London blitz was to clasp one of the prize columns to your bosom - neither you nor it would be so much as chipped."

- H.H. Read, "Meditations on Granite: Part 2", Proc. Geol. Assoc., vol. 55, 1944, p. 50.

NOTES FROM VICTORIA UNIVERSITY GEOLOGY DEPARTMENT

Professor Wellman, after attending the International Geological Congress at Delhi, has been examining active faults in Turkey, and at the time of writing he is in Russia attending a meeting of a UNESCO Committee on Seismology. Later he expects to travel through the Balkans to western Europe.

Three research students completed their Ph.D. this year: Dr J. Kennett, who is working temporarily at the Oceanographic Institute before going to the United States; Dr M.S. Srinivasan, who has now returned to Benaras, India; and Dr R.I. Walcott, who is now in Canada before proceeding to Britain to take up a post-doctoral fellowship.

Research students at present working for Ph.D. are Ian Devereux, of the Institute of Nuclear Sciences, who is doing work on O16/O18, and Bill Briggs, just arrived from the U.S.G.S., Washington, to work on Cenozoic ostracodes. M.Sc. students are at present working near Martinborough; in the Aorangi Range, Wairarapa; in the western side of the Ruahine Range; and at Keke-rengu, Marlborough. Others are working on foraminifera from Castlecliff and from the Wairarapa. In the Ruahine Range a new Monotis locality has been discovered by Derek Milne. Peter Wellman is in Hawaii mapping variations in magnetic intensities on the Pacific floor, his data to be written up in Wellington for an M.Sc. thesis.

Pedology and geophysics are being taught respectively by Mr C.G. Vucetich and Mr R.R. Dibble, who are now on the permanent staff. Mr R. Henderson, still continuing with his Ph.D. thesis on Cretaceous ammonites, has joined the staff as junior lecturer.

Dr T. Kotaka has accepted a position as assistant professor at his old university, Sendai, and will return to Japan at the end of this year. The staff join in offering him hearty congratulations and wishing him the best of luck.

Last season's Antarctic Expedition (V.U.W.A.E. 9) was carried out in two phases. The main part of the first phase was a survey of Black Island and Brown Peninsula by Warwick Prebble, Paul Vella, Jim Cole and Alex. Frame, joined on Black Island by Tony Ewart from the D.S.I.R. party. Robin Bell of the Physics Department and Alan Baker of the Zoology Department spent some time in the Dry Valleys, then joined the rest of the party on Brown Peninsula. The second phase was a visit to the Koettlitz area by Prebble, Bell and Baker, joined by Professor J. Bradley, Don Palmer and Fred Schafer. Observations were made on the volcanics, metamorphics in the Koettlitz, geomorphology, glacial and glacio-marine deposits, and local fauna and flora. Geophysical data on superficial deposits were gained by Mr Bell. Next year a trip, V.U.W.A.E. 10, led by Dr E. Ghent, is planned for Inexpressible Island.

- Paul Vella.

OBITUARY

Leon Bossard

Dr Leon Bossard, a foundation member of the Geological Society of New Zealand, died on 10th July 1964 in Auckland, at the age of 70. Of Swiss nationality, he acted as a consulting geologist, and for some years worked for the New Zealand Petroleum Company Ltd, in particular mapping in the rugged, heavily forested country of eastern Taranaki and at the headwaters of the Wanganui River. A number of Dr Bossard's collections of fossils made at this time are now in the Geological Survey at Lower Hutt.

Many members of the Society will remember meeting him during the 1963 Geological Survey staff conference at Whangarei.

From September 1942 until his death he was the delegate of the International Committee of the Red Cross in New Zealand, and during the war was responsible for looking after the interests of New Zealand prisoners of war and of German and Japanese prisoners held in this country.

He is survived by his wife and a son.

John Herbert Williamson

John Herbert Williamson was born in Lawrence, Central Otago, and was educated at Otago Boys' High School, Otago School of Mines, and Canterbury and Victoria universities. He served with the New Zealand Engineers in World War I, and in World War II was in India on loan from the N.Z. Army to the Royal Engineers. During the 1920's he was for a period Director of the Reefton School of Mines, and later he joined the staff of the New Zealand Geological Survey (1929-1933), working in the Rotorua-Taupo, Tongariro, Te Kuiti and Naseby subdivisions. After leaving the Survey, he wrote a bulletin (n.s. No. 39) on the Naseby subdivision, which was published in 1939.

After the second world war he spent two years as Chief Engineer of the Southland Catchment Board, and later, in 1950, he founded the well known engineering firm J.H. Williamson Ltd in Auckland.

He died in Auckland on April 8th 1965, aged 70, and is survived by his wife, two sons and a daughter.

Charles Taylor Trechmann

Charles Taylor Trechmann, D.Sc., F.G.S., died in Barbados, West Indies, on 18th February 1964, at the age of 79. He came from a well known family that owned the Warren Cement Works at Hartlepool. He studied chemistry at Newcastle, Basle and Paris, gained his D.Sc., and began his career as analytical chemist to the family business. When the cement works was purchased by I.C.I. half a century ago, Trechmann was able to retire, travel the world, and devote his time to his absorbing interest in geology and archaeology.

Coming to New Zealand in 1914, he spent about 9 weeks then following the British Association Meeting in Australia, and returned here in 1915 and 1916. He told me in 1949 that he had been interested in marine Triassic of Alpine facies, and when he heard that there was Alpine Trias in New Zealand, he came to have a look. He contacted P.G. Morgan (then Director of the Geological Survey), J. Allan Thomson and P. Marshall, collected from the chief localities for Hokonui fossils, and borrowed extensively from the Survey's collections. With Alexander McKay, then an old man, he discussed the age of the Kaihikuan (Permian in Hector's classification) and the existence of the Wairoa Gorge fossils which Trechmann and Thomson had rediscovered a few days before. "Of course you found them!" said McKay with fervour.

Trechmann's papers on the palaeontology of the New Zealand Trias (1918) and Jurassic (1923) marked a new era in the stratigraphy of the Hokonui System and were not superseded for 30 years, while his paper on the Maitai beds (1917) vindicated their classification as Palaeozoic by Hector and McKay. Other contributions were made on the glacial controversy (1917), on Cretaceous mollusca (1917) and on the Triassic fossil Atlantobellerophon (1930).

Annual expeditions to the West Indies became a pattern of Trechmann's life, and he maintained a close interest in local geology and archaeology near his home at Hudworth Tower, Castle Eden, Co. Durham. In 1956 he was awarded the R.H. Worth Prize of the Geological Society of London. Because of his theoretical interpretations of his West Indian observations, in particular his reference to ocean pressure as a cause of overdeepening and uplift, Trechmann

struck trouble with editors and referees in 1945, leading to the first of 3 privately printed works under the general title "The West Indies and the Mountain Uplift Problem". After the second (1948), Trechmann re-visited New Zealand to attend the 7th Pacific Science Congress in Auckland and Christchurch. He remained for 11 months, renewing his acquaintance with New Zealand geology and meeting a new generation of geologists who remember his acute observation, impatience with dogma, contempt for authority, and his evocative use of a furled umbrella in discussion. At the Survey he produced a Kansas Chonetes from his waistcoat pocket and presented it for the world brachiopod collection; while in the field with Professor C.E. Tilley he extracted a whetstone from another pocket and produced a polished surface, with liberal applications of spit, to settle on the spot an argument whether a rock was igneous or sedimentary. His dry wit and love of the incongruous could be both endearing and disconcerting: when Dr Marshall, his companion 30 years before, paid a formal call at his Auckland hotel, the hot tea was mischievously transferred to a saucer for calling, and when Marshall's conversation palled, Trechmann retired to bed without explanation. Later, in the Wellington Club, Dr Trechmann and I were Marshall's guests to dinner on two occasions. After the second, "Trecky" donned his hat (back to front) and twirled his umbrella in the lobby. "Second time eh? we've had a good meal at Marshall's expense", he remarked quizzically.

The results of Trechmann's 1949 visit appeared in a privately printed 35-page booklet, "New Zealand and my Forbidden Theory of Mountain Uplift" (1950) which will become a collector's piece for future geologists. Among the picturesque cavalcade of men who have contributed to progress in our science, C.T. Trechmann deserves a special place for his scholarship, character and individuality.

- C.A. Fleming

The death late in December 1963 of Dr R.A. Keble is also recorded. For many years Palaeontologist at the National Museum of Victoria, he is known in New Zealand especially for his work with the late Professor W.N. Benson on the Ordovician graptolites of North-west Nelson and the Chalky Inlet-Preservation Inlet area, Fiordland. (See also Mining and Geological Journal (Victoria), vol. 6, 1965, pp. 29-31).

PERSONAL NOTES

New Zealand geologists attending the ANZAAS meeting in Hobart in August are Dr P.F. BALLANCE, Prof. R.H. CLARK, Dr C.A. FLEMING and Mr B.N. THOMPSON.

Dr M. GAGE, Dr R.P. SUGGATE and Mr I.C. McKELLAR will leave New Zealand in August to attend the INQUA Conference on Pleistocene geology at Boulder, Colorado. Mr B.L. WOOD, who is at present working in the western United States on leave from the Geological Survey, will also be at the conference.

Mr G.C. SHAW has resigned from the N.Z. Geological Survey to take up the position of Curator of Display at the Western Australian Museum in Perth. The best wishes of the Society are extended to him and his family for the future.

Mr M.G. LAIRD, N.Z. Geological Survey, Greymouth, has been awarded a National Research Scholarship and will leave New Zealand shortly to study for a Ph.D. at Oxford University on sedimentology.

"In my own specimens from the Pyramid of Chephren and from Cleopatra's Needle, titanite is quite abundant While my specimen came from the facing of the Pyramid of Chephren, I am not the vandal. It was brought home in 1878 by a tourist (of the type described by Mark Twain), who had in his collection also fragments of the Strassburg cathedral, the Houses of Parliament, St. Pauls, the Forum, and various monuments in different countries."

-A. Johannsen "A Descriptive Petrography of the Igneous Rocks", vol. II, 1932, p. 230 (describing the famous monumental granite of Syene, near Assuan, Egypt).
