

NEWSLETTER

GEOLOGICAL SOCIETY
OF
NEW ZEALAND



No. 21

OCTOBER 1966

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Member Body of the Royal Society of New Zealand

No. 21

October 1966

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ELEVENTH ANNUAL GENERAL MEETING

The Eleventh Annual General Meeting of the Society was held in the R.S.A. Hall, Oamaru, on the evening of 17 May 1966. About 80 members attended and Professor R.N. Brothers, the retiring President, was in the chair. Professor Brothers announced that the Society would be holding its first conference, in Hamilton, in May 1967. Dr R.W. Willett, Director of the N.Z. Geological Survey, has offered his full co-operation.

The following committee was elected, no ballots being necessary:

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| President: | Mr N. de B. Hornibrook (N.Z.G.S., Lower Hutt) |
| Vice-President: | Professor J. Bradley (Victoria University) |
| Secretary: | Mr D.R. Gregg (Canterbury Museum, Rolleston Ave., Christchurch 1.) |
| Treasurer: | Mr Guyon Warren (N.Z. Geological Survey, P.O. Box 1471, Christchurch) |
| Committee: | Mr R.A. Garrick (Geophysics Division, D.S.I.R., Wellington) Mr W.F. Heinz (Christchurch) Dr J.T. Kingma (N.Z.G.S., Christchurch) Mr J.C. Schofield (N.Z.G.S., Papatoetoe) Dr I.G. Speden (N.Z.G.S., Lower Hutt) |
| Auditor: | Mr D.J. Daly (Nelson) |

The Committee has subsequently reappointed as editor:

Dr W.A. Watters (N.Z. Geological Survey, P.O. Box 30368, Lower Hutt)

and as representative on the Member Bodies' Committee of the R.S.N.Z. :

Mr B.W. Collins (Information Service, D.S.I.R., Wellington)

Professor Brothers will serve on the Committee as immediate past-President.

The presentation of the 1965 McKay Hammer to Dr Ewart was delayed as he was away working at the Australian National University, Canberra. The presentation will be made at the 1967 meeting.

The rule changes consequent on the passing of the R.S.N.Z. Act 1965, as circulated in Newsletter 20, were passed.

The motion on the adoption of a stratigraphic code which the Society recommends as a guide was circulated in Newsletter 20, and this was adopted with only slight changes. Copies of a suitably amended International Code are being prepared and will be supplied to members at a small charge.

The classification of scientific editors in the D.S.I.R. had been raised by Dr P. Vella and Professor Bradley at the 1965 Annual Meeting. At the 1966 Meeting the following resolution was adopted.

That the Society expresses its concern to the Director-General of the Department of Scientific and Industrial Research regarding the recent reclassification within the editors' and journalists' occupational group, of editors within D.S.I.R. who were formerly classified as scientists. It is stressed that the high standard of many of the Department's publications is in a large measure due to the fact that the editors have been trained as scientists

and have had practical experience in their fields. Contributors to both the Bulletin series and the Journals have come to value highly the services of editors who are able to provide both critical and constructive evaluation of the scientific material submitted for publication. The meeting views with concern any change in the classification of editors which might discourage scientists from filling such positions because of a change of status and salary prospects which they might be unwilling to accept.

OBITUARY: ROBIN S. ALLAN

Robin Sutcliffe Allan, Professor Emeritus of Geology at Canterbury, died on 5th July, 1966, following a brief illness, and after he had enjoyed only a few months of his retirement. A member of a noted tribe, "the Allans of Taieri", and a second cousin to J. Allan Thomson, he was educated at Otago Boys' High School and obtained his Masters degree with Honours at Otago under W.N. Benson, winning the 1851 Exhibition Scholarship. Returning from Cambridge with the Ph.D. degree, he was appointed Lecturer in Charge of Geology and Geography at Canterbury College in 1931, and made Professor of Geology in 1945. In 1947 he was awarded the D.Sc. degree by the University of New Zealand. Perhaps most familiar to the geological community for his studies of brachiopods and Devonian corals and his advocacy of sound principle and careful practice in stratigraphy, Professor Allan's name was widely known in the world of science at large through his connection with the Royal Society of New Zealand as past President, Councillor and Fellow, through his work for the Canterbury Museum, and also as a member of the former New Zealand University Senate. An eloquent speaker and a master of style in scientific writing, he leaves us many fine models and examples to follow in the art of scientific communication. A kindly and modest man above else, Robin Allan will be fondly remembered by many generations of his students for his unfailing interest in their welfare, his compassion in their difficulties, and for the effectiveness of his teaching methods which demanded accuracy and thoroughness, stimulated criticism, and encouraged independent and disciplined reasoning. The picture left in the mind of his students and associates is of a dignified and cultured person who was at the same time friendly, genial and always approachable. They will recall his meticulous care in collecting and labelling, his skill and patience in preparation of specimens, his intolerance of identifications based on poor material, and a monumental knowledge of the literature extending well beyond the boundaries of his special field of interest. Never didactic, his contributions to scientific discussions could always be expected to show a penetrative insight into the problem and to reflect his deep interest in the methodology and philosophy of science. The collecting and cultivation of alpine plants was perhaps foremost among his outside recreations in recent years, and was to have been continued with even greater vigour in his retirement. Another strong interest was in the biographies of scientists, a valuable collection of books on this subject having been presented to the University Library. We have suffered sadly by his passing.

M.G.

RESEARCH IN THE UNIVERSITY GEOLOGY DEPARTMENTS

A very large amount of geological information, much of it unpublished, is contained in theses held by the four universities, and the following lists have been compiled to publicise the areas involved. It is stressed that only those theses actually stated by the four geology departments to be held at the universities are included in the lists. These comprise A.O.S.M., B.Sc. Hons., M.Sc., Ph.D. and D.Sc. theses, but no indication of the type of thesis is given, except that for Otago a separate listing has been made of A.O.S.M. theses, many of which have an engineering or mining bias. The essential reason for the lists is to draw attention to information which is available and which may not otherwise be widely known.

An asterisk before an author's name indicates that the work has been published even if only in part. Interdisciplinary theses are not included. Where possible the appropriate NZMS 1 sheet district or districts are given in brackets after each thesis, and a simple geographical index has been prepared as an appendix to the lists.

Acknowledgements are due to Professor R.N. Brothers, University of Auckland, who kindly arranged for the compilation and typing of the lists. The Editor will be pleased if any errors or omissions noted by readers are brought to his attention.

UNIVERSITY OF AUCKLAND

- * Allen, L.R., 1947: Geology of Whangarei Heads Area. [N24/N25]
- Arlidge, E.Z., 1955: The Geology of Hukitere Peninsula, North Kaipara Harbour. [N28]
- * Barrett, P.J., 1962: The Te Kuiti Group in the Waitomo-Te Anga area: a study of structures, sedimentation, and palaeogeography of calcareous sediments. [N73/N74/N82/N83]
- Barron, R.H., 1957: The Geology of the Bream Tail - Central Kaipara region. [N28]
- * Battey, M.H., 1945: The geology of the Tuakau-Mercer area, comprising parts of Opoheke, Maramarua, and Onewhero Survey Districts. [N47/N48]
- * Black, P.M., 1964: Igneous and metamorphic rocks from Tokatoka, Northland. [N27]
- * Branch, W.J., 1927: Geology of the Bombay-Happy Valley district. [N47/N48]
- * Brothers, R.N., 1948: The geology of the North-west portion of Waitemata County, Auckland. [N37/N38]
- * Brown, D.A., 1937: The geology of the Clevedon area, Auckland. [N42/N43]
- Chappell, J.M.A., 1964: The Quaternary geology of the South-west Auckland-North Taranaki coastal region.
- Clark, R.H., 1948: The evolution of drainage of the area between the South Kaipara and Waitemata Harbours. [N37/N38/N41/N42]
- Clarke, L.N., 1959: The stratigraphy of the Mesozoic rocks of the Hauturu area, South-west Auckland. [N73]
- Day, J.R., 1948: The geology of the Lower Waikato-Manukau area, Franklin County, Auckland. [N47/N51]

- Dow, D.B., 1955: The geology of the Waikaretu valley and environs. [N55]
- * Firth, C.W., 1928: The geology of the N.W. portion of Manukau County. [N42]
- * Fleming, C.A., 1951: The geology of Wanganui subdivision (comprising sheets N137 (Waverley) and N138 (Wanganui) of the Provisional 1 mile series).
- * Gilbert, M.J., 1919: Geology of the Waikato Heads district and the Kaawa unconformity. [N51]
- * Grant-Mackie, J.A., 1958: The stratigraphy and palaeontology of rocks of the Hokonui System, Awakino-Mahoenui area, South-west Auckland. [N91]
- Gregory, M.R., 1966: Rocks of the Waitemata Group, Whangaparaoa Peninsula, Northland. [N38]
- * Halcrow, H.M., 1953: Geology of Waiheke Island. [N38/N39/N42/N43]
- Harrington, H.J., 1944: The geology of South-west Hokianga County. [N14]
- Hayter, I.B., 1954: The geology of the southern, and part of the central portion of Great Barrier Island. [N30/N36]
- Healy, J., 1935: Geology of Hunua-Ramarama area, Franklin County, Auckland. [N47/N48]
- * Hopgood, A.M., 1956: The stratigraphy and structure of the basement and Tertiary rocks in the Cape Rodney-Kawau district. [N29/N34]
- Hopkins, J., 1966: The Te Kuiti Group in the West Piopio area. [N82]
- Hughes, W.S., 1966: Igneous rocks from the Northern Wairoa district. [N23]
- Laird, M.G., 1962: The geology of the Whatawhata district, Auckland. [N65]
- * Laws, C.R., 1924: The geology of the Papakura-Hunua district. [N47/N48]
- Leitch, E.C., 1966: The geology of the North Cape area, northernmost New Zealand. [N2]
- * Lowry, D.C., 1962: The geology of the Kiritehere district. [N82]
- * Macdonald, H.A.H., 1951: A petrological study of the Jurassic conglomerates at Kawhia. [N73]
- McDonald, R.C., 1951: The geology of the southern shores of Doubtless Bay, Mangonui County. [N7]
- McGregor, V.R., 1963: The geology of part of Lilybank Station, South Canterbury, New Zealand. [S90]
- Mansergh, G.D., 1965: A study of the Kerikeri Volcanics north of Whangarei. [N16/N20]
- * Mason, A.P., 1948: The geology of the central portion of Hokianga County. [N14]
- Mayer, W., 1965: The geology of the islands of Motutapu, Rakino and the Noisies group, in the Hauraki Gulf, near Auckland. [N38]
- Milligan, E.N., 1959: The geology of North Hokianga district. [N14]
- Olsen, O.P., 1950: The geology of the Maungatautari area, South-east of Cambridge. [N66]

- Paltridge, I.N., 1958: The geology of the North-east part of Whakatane County. [N78]
- Player, R.A., 1958: The geology of North Kawhia. [N73]
- Pohlen, I.J., 1934: The geology of the middle portion of the Waitemata County. [N37/N38/N41/N42]
- * Purser, B.H., 1952: The geology of the Waikato Heads. [N51]
- Rodgers, K.A., 1966: Ultrabasic and basic nodules from the basalts of the Auckland Province.
- Seagar, S.B., 1966: The geology of Ponui Island and the eastern part of Manukau County. [N43]
- * Searle, E.J., 1932: The geology of the Southern Waitakeres and the West Auckland area. [N41/N42]
- * ———— 1961: Studies in the Auckland volcanic field. [N42]
- Skinner, D.N.B., 1962: The geology of Moehau-Cape Colville district, Coromandel Peninsula. [N35/N39]
- Smale, D., 1962: The geology of the Coromandel-Colville area. [N35/N39/N40]
- Tarvydas, R.K., 1966: The geology of the Waipu district, North Auckland. [N24]
- Thompson, B.N., 1966: The geology of the Maroa district. [N85/N94]
- * Turner, F.J., 1925: Geology of the Takapuna-Silverdale district. [N38/N42]
- Ward, W.T., 1960: Geology of the Glen Murray and Rotongaro districts with particular reference to the volcanic ashbeds. [N55/N56]
- Wong, P.C.N., 1946: Some aspects of the Post-Tertiary volcanic phenomena at Auckland. [N42]

Postgraduate Students Currently Enrolled

- Black, P.M. Geology of Cuvier Island and Paritu, Coromandel. [N36/N35/N39]
- Carter, L. Geology of Puketotara peninsula, Kaipara Harbour. [N28/N33]
- Cooper, R.S. Geology of the Berghan Point area, Doubtless Bay, Northland. [N7]
- Cornwell, W.L. Geology of the Tapu area, Thames. [N44]
- Elliot, J.D. Stratigraphy and petrology of the Ocean Beach-Tutukaka area, Northland. [N20]
- Fortune, W.B. Geology of the Angiangi Range, Dargaville. [N23]
- Grant-Mackie, J.A. Stratigraphic and evolutionary studies of Monotis in New Zealand.
- Harvey, C.C. Rhyolites of the Whitianga area. [N44]
- Jamieson, G.A. Geology of the Piopio-Aria district, King Country. [N82/N83/N91]
- Jeune, R.F. Ash showers of south-west Auckland.
- Jones, B. Stratigraphy and paleontology of Pakaurangi Point, Kaipara Harbour. [N28].

- Le Couteur, P.C. Geology of the western shore of Whangaroa Harbour, Northland. [N8/N11]
- Maehl, H.W.R. Geology of the Whangaroa-Marble Bay area, Northland. [N8/N11]
- Martin, K.R. Mesozoic stratigraphy of Te Maika-Albatross Point, Kawhia. [N73]
- Maxwell, M. Tangihua and associated rocks between Herekino and Whangape Harbours, Northland. [N9/N13]
- Mehaffy, B.L. Tertiary stratigraphy, South-west Auckland.
- Nelson, C.S. Petrography and microfacial variations in Te Kuiti Group, South Auckland.
- Pharo, C.H. Geology of Lepredour, Puen and adjacent islands, New Caledonia.
- Rodgers, K.A. Ultrabasic and basic rocks of North Cape, New Zealand and the Yate area, New Caledonia. [N2]
- Seeley, J.B. Mba basalts near Lautoka, Fiji.
- Skinner, D.N.B. Igneous succession, hydrothermal alteration and metallogenesis in Coromandel Peninsula. [N35/N36/N39/N40/N43/N44]

VICTORIA UNIVERSITY OF WELLINGTON

- Allen, A.D., 1962: Stratigraphy and structure of the Middle Awatere valley, and contributions to Antarctic geology. [S35]
- Bloom, M.L., 1951: Geology along the South-east flank of the Rimutaka mountains. [N165]
- Brathwaite, R.L., 1964: Structure and petrology of the Boulder Lake area, Nelson. [S8]
- Brodie, J.W., 1949: Geology of the southern portion of Wellington. [N164]
- Bruce, J.G., 1960: Geology of the Nelson city area. [S14/S20]
- Cameron, A.A., 1966: Foraminifera from the type section of the Castlecliffian and Okehuian stages. [N137]
- Campbell, D., 1951: Geology of an area east of Masterton, Wairarapa. [N158]
- Challis, G.A., 1960: Structure and petrology of Mount Lookout, Awatere valley. [S35/S42]
- Cole, J., 1965: Tarawera Volcanic Complex. [N77]
- Cooper, R.A., 1962: Geology of the Upper Takaka-Riwaka district, North-west Nelson. [S13/S14]
- Couper, R.A., 1948: Geology of the Makau and Ruakokopatuna Valleys, E. Wairarapa. [N165]
- Cowie, J.D., 1961: Aokautere ash in the Manawatu district, N.Z. and its significance to soils. [N149 etc]
- Dibble, R.R., 1955: A reconnaissance gravity survey and geological interpretation of the northern half of the South Island of N.Z.
- Eade, J.V., 1963: Geology of the Adams area, S. Wairarapa. [N166]
- Gibson, G.W., 1963: Some Miocene stratigraphy and paleontology - the Tongaporutuan Stage. With appendix: 5 supporting papers on the Victoria Valley region, Antarctica.

- Gow, A.J., 1965: Petrographic and stratigraphic studies of ironsands and associated andesitic sediments near Hawera, S. Taranaki. [N129]
- Grant-Taylor, T.L., 1949: Geology of Whiteman's valley. [N161]
- * Hall, W.D.M., 1964: Geology of Coverham and Upper Waima valley, Marlborough. [S35]
- * Haskell, T.R., 1964: Spores, pollen and microplankton from N.Z. Cretaceous strata, and contributions to Antarctic geology.
- * Heine, R.W., 1960: Gravimetric survey in the Wairarapa.
- * Kennett, J.P., 1965: The Kapitean Stage (Upper Miocene) of N.Z.
- Kite, R.L., 1952: Geomorphic history of the Lower Wairarapa valley, N.Z. [N161/N165]
- Kustanovich, S., 1964: Geology of the Tinui valley, Castlepoint region, North-east Wairarapa. [N159]
- Laing, A.C.M., 1964: Geology of the Waipatiki area. [N150]
- Leamy, M.L., 1955: Geology of the Paekakariki area. [N160]
- Le Fort, J.H., 1961: Petrology of the Rameka creek area, North-west Nelson. [S8]
- Lewis, J.F., 1960: The Tauhara volcano. [N94]
- * Malahoff, A., 1962: Geology and gravimetric studies of the Tophouse district, S. Nelson. [S26/S33]
- * Martin, R.C., 1963: Ignimbrite studies in the Taupo volcanic zone. [N75/N84/N85/N93/N94]
- McBeath, D.M., 1950: Geology of an area North-east of Martinborough, East Wairarapa. [N162]
- McGill, P.C., 1956: Geology of the Gladstone-Poroporo district. [N162]
- * McKelvey, B.C., 1960: Geological investigations in South Victoria Land, Antarctica.
- McLean, D.B.G., 1953: Geology of the Haurangi-Stoney Creek area, South-east Wairarapa. [N165]
- Moore, W.R., 1957: Geology of the Raukohore area, Raukumara peninsula, N.Z. [N62]
- O'Byrne, T.N., 1963: Geology of Pongaroa, Akitio County. [N158]
- * Orbell, G.E., 1961: Geology of the Mauriceville area. [N158]
- * O'Shea, B.E., 1957: Contributions to the geology of Mount Ruapehu. [N122]
- Pick, M.C., 1955: Geology of the Whareama area. [N159]
- Quennell, A.M., 1938: Physiography and structure of the Porirua district. [N160]
- Rishworth, D.E.H., 1953: Geology of Wakapuni-Pahaoa, East Wairarapa. [N166]
- Rodley, D.R., 1961: Geology and paleoecology of Nukumaruan strata. [N165]
- * Skwarko, S.K., 1960: Mount Arthur region. [S13]
- * Srinivasan, M.S., 1965: Studies in late Eocene and early Oligocene Foraminifera of N.Z.
- * Stevens, G.R., 1955: Late Tertiary and Quaternary geologic history of the Hutt Valley. [N160/N161/N164]

- * Te Punga, M.T., 1954: Late Tertiary and Quaternary geological history of West Wellington. [N160/164]
- * Van den Heuvel, H.B., 1959: Geology of the Te Wharau-Flat Point area, East Wairarapa. [N162/N166]
- * Vella, P., 1949: Geology of an area South-east of Martinborough. [N166]
- * Vella, P., 1963: Studies in Middle and Late Tertiary Foraminifera from New Zealand.
- Walcott, R.I., 1965: Structure and Petrology of the Red Hill complex, Nelson. [S27]
- * Waterhouse, J.B., 1954: Geology of the White Rocks-Tora area, South-east Wairarapa. [N168]
- * Webb, P.N., 1960: Geological investigations in South Victoria Land, Antarctica.
- * Webby, B.D., 1958: Geology of the Porirua district. [N160]
- * Wellman, H.W., 1956: Papers on N.Z. Geology
- * Willis, I.A.G., 1962: Geology of Baton River. [S19]

Postgraduate Students Currently Enrolled

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| Bates, T.E. | Geology of the Northern Part of the Aorangi Range [N165] |
| Beu, A.G. | Studies on the Molluscan Family Cymatiidae. |
| Briggs, W.M., Jr. | Ostracoda from the Southern Part of the North Island. |
| Cooper, R.A. | Stratigraphy and Paleontology of Ordovician and Silurian Rocks of New Zealand. |
| Devereux, I. | Oxygen Isotope Studies of some New Zealand Metamorphic Rocks and Paleotemperature Studies of the New Zealand Tertiary. |
| Dewhurst, R.H. | Taxonomy and Ecology of Recent Foraminifera of Porirua Harbour. [N160] |
| Dibble, R.R. | Geophysical Studies of North Island Volcanoes. |
| Duncan, A.R. | The Petrology and Petrochemistry of the Bay of Plenty Andesite Volcanoes. |
| Henderson, R.A. | Study in Cretaceous Mollusca. |
| Hunt, T.M. | A Gravity Survey of the Lower Awatere Valley. [S29] |
| Johnston, M.R. | The Geology of the Tinui Sheet. [N159] |
| Milne, J.D.G. | The Geology and Soils of the Apiti District. [N139/N144] |
| Neef, G. | Geology of the Eketahuna Subdivision. [N153] |

UNIVERSITY OF CANTERBURY

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| Adamson, J.K., 1964: | Alpine-Wairau and Waimea fault system in the Lake Rotiti area. [S33] |
| Adamson, R.G., 1965: | Stratigraphy and structure in the northern part of the area between Glenroy and Matakita rivers, South Nelson, New Zealand. [S32/S33/S39/S40] |

- * Andrews, P.B., 1960: Sedimentary history of the lowermost Otstian horizon in North Canterbury, New Zealand.
- Campbell, I.B., 1961: The palaeoecology of the Waiau Stage in North Canterbury, New Zealand.
- Carrier, S.J., 1965: The Quaternary geology on the northern flank of Mount Hutt Range, Rakaia River, Canterbury. [S73/S74]
- Collins, B.W., 1939: The geology of the eastern Omihi district, North Canterbury, New Zealand. [S69/S69]
- * Cox, P.T., 1923: Geology of Rakaia Gorge district. [S74/S82]
- Falloon, A.S., 1954: The geology of the Culverden Basin, North Canterbury, New Zealand. [S54/S61]
- * Gair, H.S., 1949: Geology of the Pareora District. [S111/S119]
- * Gage, M., 1952: Papers presented in Geology.
- * Gregg, D.R., 1950: Geology of the Lower Waipara Gorge district. [S68]
- Gregg, R.C., 1965: Pre-Quaternary Geology of an area around Waiau, North Canterbury. [S55]
- Hamilton, D., 1950: Geology of the Waikari Valley and its northern ridges, North Canterbury. [S61]
- Maling, P.B., 1933: The geology of the Kakahu district, South Canterbury, New Zealand. [S102]
- * Mason, B.H., 1939: The geology of the Mt Grey district, North Canterbury, New Zealand. [S68]
- Maxwell, P.A., 1964: Structural geology and pre-Quaternary stratigraphy of the Kaiwara district, North Canterbury, New Zealand. [S62]
- Phillips, T.D., 1963: The Tertiary geology of the area around Inangahua Junction (Nelson). [S31/S32]
- Read, J.R.L., 1964: The geology of the Hurunui River valley between Lake Sumner and the Mandamus River, North Canterbury. [S53/S54/S60/S61]
- Schofield, J.C., 1951: The geology of the McDonald Downs and Waikari district, North Canterbury. [S61/S68]
- Scott, G.H., 1957: The distribution of fossil foraminiferal populations.
- * Seed, D.P., 1964: The mineralogy and environment of some New Zealand glauconites.
- Smart, G.M., 1954: The geology of the Mt Cass District, North Canterbury, New Zealand. [S68]
- * Speight, J.G., 1961: Pleistocene historical geomorphology of the area about Lake Pukaki, New Zealand. [S100]
- Sparrow, C.L., 1948: The loess deposits of Banks Peninsula. [S84/S85/S94/S95]
- * Suggate, R.P., 1960: Papers in geology.
- Taylor, S.R., 1950: Geology of the Stonyhurst district, North Canterbury. [S62]
- * Taylor, S.R., 1953: Geochemistry of some New Zealand igneous and metamorphic rocks.

- Warren, G., 1955: The geology of part of the Okuku Survey District, North Canterbury, New Zealand. [S60/S67]
- * Young, D.J., 1962: Stratigraphy and petrography of the loess deposits of a portion of Waitaki Subdivision, North Otago, New Zealand. [S127]

Postgraduate Students Currently Enrolled

- Farmer, R.T.M. Geology of the pre-Tertiary rocks to the east of Maruia. [S46/S47]
- Gair, H.S. Mesozoic sedimentation and peneplanation in New Zealand.
- Liggett, K.A. The geology of Maewo Island, New Hebrides.
- Nathan, S.N. Stratigraphy, structure, and igneous petrology in the Lower Buller Valley. [S31]
- Riddolla, B.W. Geology of the Lower Waihao Valley, South Canterbury. [S128]

UNIVERSITY OF OTAGO

GEOLOGY

- * Amies, A.C., 1946: Geology of Maruenua district, North Otago. [S127]
- Barry, J.M., 1966: Structural analysis in the middle Shotover Valley, North-west Otago. [S123]
- * Bishop, D.G., 1962: The geology of the Clinton district. [S170/S171/S178/S179]
- * Brown, E.H., 1962: The geology of the Mt Stoker area. [S154]
- Campbell, J.D., 1951: Geology of part of Taringatura survey district, Southland. [S159]
- Carter, R.M., 1963: The geology of Komako, Pohangina county. [N144]
- Cavaney, R.J., 1966: The geology of the Green Valley-Morrisons Area, North Otago. [S146]
- * Coombs, D.S. 1947: The geology of the northern part of the Taringatura survey district. [S159]
- Croxford, N.J.W., 1954: The geology of the Pareora district. [S111/S119]
- Daniel, I.L., 1961: Wanganui strata in the Brighton-Abbotsford area. [S163/S164]
- Dickey, J.S., Jr., 1966: A study of the mineral breccia member of the Deborah volcanic formation at Kakanui, New Zealand. [S136]
- Dodds, L.R., 1963: The geology of the Budle district, north-east Central Otago. [S145]
- * Grindley, G.W., 1948: Reconnaissance geology of the Eglinton and East Branch Valleys, Western Southland. [S131]
- * Gunn, B.M., 1956: The geology of the Franz Joseph-Fox Glacier region, south Westland. [S71/S79]
- * Gunn, B.M., 1962: Differentiation in Ferrar Dolerites, Antarctica.

- Harper, C.T., 1961: The geology of a section through the central Takitimu Mountains, Southland, N.Z. [S159]
- Hurst, J.A., 1927: Geology and petrology of Upper Waitati Valley. (The geology of the Silver Stream Valley - 1928). [S164]
- * Lauder, W.R., 1953: Geology of the Acheron outlier. [S74]
- McCraw, J.D., 1947: The geology of the Northern Takitimu Mountains, Western Southland, N.Z. [S150]
- McKellar, I.C., 1947: The general geology and features of the conglomerates of part of the North-west Hokonui Hills. [S160]
- McNamara, M.J., 1960: Geology of Maungatua. [S163]
- * Mackie, J.B., 1932: The geology of the Glenomaru survey district. [S179/S184]
- Meder, A.E., 1963: Some aspects of the geology of the Mossburn district, Southland, New Zealand. [S150/S159]
- Norrie, H.T., 1947: The geology of the Lumsden area, North Hokonui survey district. [S160]
- * Paterson, O.D., 1938: The geology of the Lower Shag Valley, North-east Otago, N.Z. [S146/S155]
- Robinson, P., 1958: The structural and metamorphic geology of the Brighton-Taieri Mouth area, east Otago, New Zealand. [S163/S172]
- Ryburn, R.J., 1964: A strip of Kaihikuan sediments between the Otematata and Otamatapaio rivers, North Otago. [S117]
- Sang Lyen, A., 1962: The geology of part of Swinburn survey district, North Otago. [S135]
- Shu Yeoh Khoo, 1964: Greywacke structure and petrography around Benmore Dam, North Otago. [S117]
- * Speden, I.G., 1956: The geology of the Catlins district, south-east Otago. [S184]
- Travis, C.A., 1964: The geology of the Slip Hill area east of Middlemarch, Otago. [S154]
- * Turner, F.J., 1931: The metamorphic and intrusive rocks of South Westland.
- * Watters, W.A., 1948: Geology of the East Hokonui Hills. [S169]
- * Wild, L.J., 1911: The geology of the Bluff. [S182]
- Williams, G.J., 1928: Geology of the Seacliff district. [S155]
- * Williams, X.K., 1964: Applications of analytical chemistry to geochemistry.
- * Wood, B.L., 1949: The geology of the Waipahi district. [S170]

ENGINEERING (A.O.S.M.)

- Buckenham, M.H., 1960: Beneficiation of manganese ores with particular reference to the treatment of a low grade ore from Vitu Levu, Fiji.
- Gordon, F.R., 1959: Diatomaceous earth near Middlemarch, Otago. [S154]

- Hagan, P.M., 1961: Economic consideration of the development of low grade deposits at the gold mines of Calgoorlie.
- Ho, Cheong Fook, 1961: Flotation of cassiterite with fatty acid collectors.
- Hogg, W.J., 1958: Proposal for the proving and exploitation of the Buller Gorge uranium field. [S31]
- Hutchinson, G.H., 1958: Tunnelling practice on the Rimutaka deviation. [N161]
- Laing, A.C.M., 1958: Reconnaissance geology of the northern section of the Bowen basin and Styx basin. [S144/S145]
- Martin, S.M.F., 1958: A review of opencut practice and trends.
- Nicholson, D.S., 1959: Medium-weight aggregates.
- Oborn, L.E., 1955: The hydrogeology of the Canterbury Plains between the Rakaia and Ashley Rivers.
- Prout, R.S., 1960: A summary of current rock drilling practice with recommended changes at the Electrolytic Zinc Co. A'asia Ltd. Read-Roseberry Mines, Roseberry, Tasmania, June 1950.
- Wodzicki, A., 1958: Geochemical prospecting for uranium in the Buller Gorge. [S31]

Postgraduate Students Currently Enrolled

- Campbell, J.K., Structural study of low grade metamorphic transition area, south of Taieri Mouth, Otago. [172]
- Grady, A.E. A structural and petrological study of schist and greywackes in the Blackstone Hill region, near Otarehua, Central Otago, [S126/S135]
- Landis, C.A. Structure and metamorphism of Upper Permian rocks of the New Zealand Geosyncline.
- Lowery, J.H. Ore mineralogy of the Waitahuna River copper lode. [S162]
- Mossman, D.J. Petrology of basic and ultrabasic rocks, Green Hills, Bluff Peninsula. [S181/S182]
- Ryburn, R.J. Kaihikuan rocks of the Waitaki Valley. [S117/S126/S127]

Geographical index to University geology theses

Note: Difficulty was experienced in giving the appropriate one-mile sheet district for a few theses, particularly where the areas are close to sheet boundaries or corners. It is hoped, however, that there are few errors.

Thesis areas at present being studied (September 1966) are not included in the following index.

- A = University of Auckland
 V = Victoria University of Wellington
 C = University of Canterbury
 O = University of Otago
 AOSM = University of Otago (AOSM Thesis)

| | | | | | | | | |
|-----|------------|---|------|--------------|---|------|----------------|------|
| N2 | Leitch | A | N47 | Batthey | A | N158 | Campbell | V |
| N7 | McDonald | A | | Branch | A | | O'Byrne | V |
| N14 | Harrington | A | | Day | A | | Orbell | V |
| | Mason | A | | Healy | A | N159 | Kustanowich | V |
| | Milligan | A | | Laws | A | | Pick | V |
| N16 | Mansergh | A | N48 | Batthey | A | N160 | Leamy | V |
| N20 | Mansergh | A | | Branch | A | | Quennell | V |
| N23 | Hughes | A | | Healy | A | | Stevens | V |
| N24 | Allen | A | | Laws | A | | Te Punga | V |
| | Tarvydas | A | N51 | Day | A | | Webby | V |
| N25 | Allen | A | | Gilbert | A | N161 | Grant-Taylor | V |
| N27 | Black | A | | Purser | A | | Hutchinson | AOSM |
| N28 | Arlidge | A | N55 | Dow | A | | Kite | V |
| | Barron | A | | Ward | A | | Stevens | V |
| N29 | Hopgood | A | N56 | Ward | A | N162 | McBeath | V |
| N30 | Hayter | A | N62 | Moore | V | | McGill | V |
| N34 | Hopgood | A | N65 | Laird | A | | Van den Heuvel | V |
| N35 | Skinner | A | N66 | Olsen | A | N164 | Brodie | V |
| | Smale | A | N73 | Barrett | A | | Stevens | V |
| N36 | Hayter | A | | Clarke | A | | Te Punga | V |
| N37 | Brothers | A | | Macdonald | A | N165 | Bloom | V |
| | Clark | A | | Player | A | | Couper | V |
| | Pohlen | A | N74 | Barrett | A | | Kite | V |
| N38 | Brothers | A | N75 | Martin | V | | McLean | V |
| | Clark | A | N77 | Cole | V | | Rodley | V |
| | Gregory | A | N78 | Paltridge | A | N166 | Eade | V |
| | Halcrow | A | N82 | Barrett | A | | Rishworth | V |
| | Mayer | A | | Hopkins | A | | Van den Heuvel | V |
| | Pohlen | A | | Lowry | A | | Vella | V |
| | Turner | A | N83 | Barrett | A | N168 | Waterhouse | V |
| N39 | Halcrow | A | N84 | Martin | V | S8 | Brathwaite | V |
| | Skinner | A | N85 | Martin | V | | Le Fort | V |
| | Smale | A | | Thompson | A | S13 | Cooper | V |
| N40 | Smale | A | N91 | Grant-Mackie | A | | Skwarko | V |
| N41 | Clark | A | N93 | Martin | V | S14 | Bruce | V |
| | Pohlen | A | N94 | Lewis | V | | Cooper | V |
| | Searle | A | | Martin | V | S19 | Willis | V |
| N42 | Brown | A | | Thompson | A | S20 | Bruce | V |
| | Clark | A | N122 | O'Shea | V | S26 | Malahoff | V |
| | Firth | A | N129 | Gow | V | S27 | Walcott | V |
| | Halcrow | A | N137 | Fleming | A | S31 | Hogg | AOSM |
| | Pohlen | A | | Cameron | V | | Phillips | C |
| | Searle | A | N138 | Fleming | A | | Wodzicki | AOSM |
| | Turner | A | N144 | Carter | O | S32 | R.G.Adamson | C |
| | Wong | A | N149 | Cowie | V | | Phillips | C |
| N43 | Brown | A | N150 | Laing | V | S33 | J.K.Adamson | C |
| | Halcrow | A | | | | | R.G.Adamson | C |
| | Seagar | A | | | | | Malahoff | V |

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|-----|-------------|---|------|----------|------|------|--------------|------|
| S35 | Allen | V | S79 | Gunn | O | S150 | McGraw | O |
| | Challis | V | S82 | Cox | C | | Meder | O |
| | Hall | V | | | | S154 | Brown | O |
| S39 | R.G.Adamson | C | S84 | Sparrow | C | | Gordon | AOSM |
| S40 | R.G.Adamson | C | S85 | Sparrow | C | | Travis | O |
| S42 | Challis | V | S90 | McGregor | A | S155 | Paterson | O |
| S53 | Read | C | S94 | Sparrow | C | | G.J.Williams | O |
| S54 | Falloon | C | S95 | Sparrow | C | S159 | Campbell | O |
| | Read | C | S100 | Speight | C | | Coombs | O |
| S55 | R.C.Gregg | C | S102 | Maling | C | | Harper | O |
| S60 | Read | C | S111 | Croxford | O | | Meder | O |
| | Warren | C | | Gair | C | S160 | McKellar | O |
| S61 | Falloon | C | S117 | Ryburn | O | | Norrie | O |
| | Hamilton | C | | Shu | O | S163 | Daniel | O |
| | Read | C | | | | | McNamara | O |
| | Schofield | C | S119 | Croxford | O | | Robinson | O |
| | | | | Gair | C | S164 | Daniel | O |
| S62 | Maxwell | C | S123 | Barry | O | | Hurst | O |
| | Taylor | C | | | | S169 | Watters | O |
| S67 | Warren | C | S127 | Amies | O | S170 | Bishop | O |
| S68 | Collins | C | | Young | C | | Wood | O |
| | D.R.Gregg | C | S131 | Grindley | O | S171 | Bishop | O |
| | Mason | C | S135 | Sang | O | S172 | Robinson | O |
| | Schofield | C | S136 | Dickey | O | S178 | Bishop | O |
| | Smart | C | | | | S179 | Bishop | O |
| S69 | Collins | C | S144 | Laing | AOSM | | Mackie | O |
| S71 | Gunn | O | S145 | Dodds | O | | Wild | O |
| S73 | Carryer | C | | Laing | AOSM | S182 | Wild | O |
| S74 | Carryer | C | S146 | Cavaney | O | S184 | Mackie | O |
| | Cox | C | | Paterson | O | | Speden | O |
| | Lauder | O | | | | | | |

A Matter of Priority

Perhaps we have tended to be rather smug about several "New Zealand Firsts" in the study of geology. For instance, Alexander McKay is often quoted as the first person to consciously register horizontal displacement along a fault.

My belief in this was shaken by a recent visitor to New Zealand, Dr Raphael Freund of the Hebrew University of Jerusalem, who with equal chauvinism pointed out to me that it was one of his countrymen who first conceived the idea of lateral movement and, moreover, published it, as follows (in translation):

"... and the mount of Olives shall cleave in the midst thereof toward the east and toward the west, and there shall be a very great valley; and half of the mountain shall remove toward the north, and half of it toward the south". (Zechariah 14:4).

G.J.L.

FIELDWORK IN ARCTIC ALASKA

Whilst most New Zealand geologists will have studied some aspects of Antarctic geology, and many will have first-hand experience of the rocks and working conditions there, the other polar region may be less well known. Since leaving New Zealand in 1964, I have been fortunate to take part in three geological surveys of Arctic Alaska, and the following account attempts to draw a thumbnail sketch of the geology of this vast area and survey conditions there.

Alaska, six times as large as New Zealand, lies about one quarter within the Arctic Circle. The major physiographic feature of this northern region is the west-trending Brooks Range, which, at the eastern end, has peaks exceeding nine thousand feet in height supporting ice fields and valley glaciers. In the western part of the Brooks Range elevations are mainly below five thousand feet and the scenery in summer is very reminiscent of the foothills of the Southern Alps, in, say, the Mount Somers and Lake Heron district. Most of the high country is bare rock and scree, but the valleys contain a typical tundra flora of tussock grasses, mosses, lichens and dwarf deciduous trees, mainly willow. In the short spring season of late May and June, carpets of Alpine flowers appear, including *Dryas*, *Primula* and *Saxifrage*, while later, in the summer, meadows of wild lupins turn many lower mountain slopes into carpets of blue.

Between the Brooks Range and the Arctic Ocean is the coastal plain of northern Alaska, a dreary, mainly flat, lake-pocked area of tundra, drained by such rivers as the Utokok, Colville, Sagavanirktok and the Canning. Here breed the teeming millions of mosquitoes which plague man and other animals all summer long.

Geologically, as well as physiographically, the Brooks Range is the extension of the Canadian Rockies and similarly it exposes a sequence of mainly shelf sediments ranging in age from Devonian to Cretaceous, resting unconformably on a poorly exposed Lower Palaeozoic greywacke and argillite succession. In the west are basic and ultrabasic igneous complexes while near the Canadian border the Palaeozoic rocks have been intruded by small granite bodies. Uplift to the south in Neocomian time resulted in conglomerate and flysch deposition in a rapidly subsiding basin further north. These earth movements culminated during the Tertiary with northward overthrusting and long-distance gravitational sliding. Locally, the Upper Palaeozoic and Mesozoic rocks are stacked in a pile of gravity slide sheets, each exposing the Devonian to Cretaceous succession but represented by different facies. Reconstruction of the palaeogeography is therefore made particularly difficult, necessitating the relocation of slices in their original position, before the facies distribution can be assessed. The northward sliding folded the Cretaceous rocks in front of the range into broad synclines separated by long, sinuous, tight anticlines. The synclines give the appearance of jostling each other and have a pattern not unlike the Miocene or Pliocene synclines of the Gisborne area in New Zealand.

Most geological field work is currently being undertaken in the northern part of the Brooks Range and on the coastal plain, the two comprising the Arctic Slope of Alaska. The U.S. Geological Survey is concerned with mapping the structure and stratigraphy as an end itself, whereas the several oil company field parties are studying the geology with the principal view to assessing the oil prospects beneath the coastal plain. However, both conduct their surveys in much the same way.

In mid-June the countless lakes of the Arctic Slope are thawing, and a survey party is able to fly in from Fairbanks or the Eskimo village of Kotzebue, landing either on skis on the ice or on floats, depending on the condition and the amount of lake ice. Airplanes most commonly used for this "bush flying" are

the DeHavilland Beaver, Cessna 180, and the amphibious Grumman Widgeon. In late winter, prior to the arrival of the party, a DC3 or C46 on skis will have made jumps of pressure appliance fuel and aviation gasoline at selected lakes for the party's helicopter. Both fuels come in five-gallon cans, packed in wooden boxes which, during the course of the survey, are used for such things as chairs, sample boxes, cupboards, shelves, tables and lavatory seat and windbreak. (If fuel were to be bought in 40 gallon drums instead, it would cause serious inconvenience to a geological party!)

The personnel of such a survey party as this will usually consist of three geologists, two assistants, a cook, a helicopter pilot and a helicopter mechanic. In camp each has his own 8' x 7' one-man-tent. The preferred camp site is on a shingle beach beside a lake, but in the absence of a beach, hummocky, boggy tundra must suffice. Establishment of a camp is not complete until a garbage pit, a permafrost larder, and a toilet are dug, the short-wave radio aerial erected, and "gas-box" furniture constructed. Then field work can begin.

The most important single piece of equipment on a survey is the helicopter. For capability and operating economy (fuel consumption about 14 U.S. gallons per hour) the most widely used helicopter in Alaska is the Bell G2. This is a three seat bubble on a long, tubular framework, able to transport a geologist and assistant to work in the morning at sixty miles per hour and set them down at up to 5,000' at the start of a traverse. Before helicopters became widely used in Alaska, the U.S. Geological Survey carried out several surveys using Weasel tracked vehicles, but their slowness and need of continual repairs allowed only a small area to be covered during a summer season. By contrast, reconnaissance mapping on aerial photographs and using a helicopter, a survey can cover an area of ten thousand square miles in the same amount of time.

The usual daily procedure is for two geologists with assistants to traverse on foot while the third geologist uses the helicopter to examine isolated outcrops and to extend the work already done by traversing. Back in camp in the evening, data is transferred from aerial photographs to maps, stratigraphic sections are computed and drawn and plans made for the following days work.

Sometime during the evening, relaxing after dinner in a group around the pressure stove, conversation will inevitably turn to how bad the mosquitoes were that day and who saw the largest grizzly bear. The former can be kept at bay with insect repellent; this at least stops them from stinging, although a swirling cloud of frustrated mosquitoes around one's head can still make a day unpleasant. On the other hand, there is no general agreement about how to cope with bears. The pioneer Arctic Slope geologist Ernest Leffingwell wrote in 1919 that "they are fierce and will usually attack man", although this has not been the experience of geologists working in more recent times. However, that there have been deaths caused by bears is certain, and it is the knowledge of these few occasions which quickens the pulse when a grizzly is sighted. Running away, blowing a whistle, lying down or even running toward an encountered bear are among the variety of recommended practices. However, for peace of mind, hardly a geologist in Alaska works in the field without a gun, and on several occasions the Colt .45 automatic (holstered next to my Brunton compass) has been fingered nervously when I have spotted a bear.

The Arctic fauna is spectacular in its variation. Of the larger mammals, moose are common in river valleys where dwarf willow offer some cover, while wolves, foxes, wolverines and Dall Sheep are usually seen during the course of a summer. The sight of a migrating herd of several thousand caribou approaching camp is one never to be forgotten. There are about thirty species of breeding birds that are common, ranging from warblers and flycatchers to the soaring Golden Eagle. For anglers and gourmets the Lake Trout, easily taken in early

summer when the ice is melting, compare in size to the behemoths of the Rotorua district.

Throughout the summer, temperatures only occasionally drop below freezing point and light snowfalls rarely cover the ground for more than a day or two. More serious are the fogs which creep in from the Arctic Ocean and which prevent helicopter flying. By mid-September these become frequent and heavier snowfalls herald the coming of winter. Geological parties then strike camp; the U.S. Geological Survey returns to Menlo Park, California, and oil companies to California, Colorado or Oklahoma. During the winter when the mercury has inched its way down to fifty or sixty below zero in Alaska, reports are being written and plans laid for another summer on the Arctic Slope.

A survey in Alaska can probably not compare with the rigours of Antarctica. Nevertheless, when stranded on a traverse in sudden swirling fog, or riding a bucking helicopter through the mountains in a thirty knot wind, or just when struggling with insomnia beneath the midnight sun, I find myself thinking back nostalgically to the tree-shaded streams of Gisborne or the Wairarapa where the biggest threat to the progress of a survey was to tarry too long over tea with a friendly farmer!

Michael Ridd

MONOTIS AND HAMMER RAMPANT

Members may be interested to hear of the origin of the crest which appeared unannounced on the cover of Newsletter No.15 (February 1964) and on subsequent issues.

In October 1962, the committee decided that the Society should have letter paper with a printed heading. I went to see Bascands Ltd, a firm of Christchurch printers, and met Mr J. Koster, their designer. He offered to prepare an emblem for use on the letter paper and I provided him with a hammer (Dr Suggate's if I remember correctly, certainly not McKay's), some photographs of Monotis richmondiana, and a block of sandstone containing specimens of Monotis collected from the Awakino Gorge during the Geological Survey Staff Conference at New Plymouth in 1959. Under the critical guidance of the staff of the Christchurch District Office of the Geological Survey, Mr Koster prepared a two-colour design incorporating a stylized Monotis and a geological hammer.

The price for printing in two colours seemed more than the Society could bear at that time, and I inquired about the price of printing the letterhead in one colour. Mr Brian Bascand, the General Manager of Bascands, replied: "We realise that you may be working within a limited budget for expense on such an item as this, and we are proposing to proceed, at our own expense, with the printing of the letterheads as originally designed in 2 colours, instead of a single colour as is now proposed, but at the cost of the single colour letterheads. The reduction in cost we are prepared to meet in this instance as we are most anxious to sustain the quality of this item." This generous offer resulted in the Society paying £11 for the design and printing rather than the original quotation of £20.17.0.

Those members who have been honoured or embarrassed by receiving a letter from the Secretary will have seen the design in its two-colour form. Others will have seen it in its penny-plain version on the cover of the Newsletter.

D.R.G.

NOTES FROM THE GEOLOGY DEPARTMENT, UNIVERSITY OF OTAGO

Dr A. REAY arrived in January to take up a Lectureship. His particular field of research is the petrochemistry of basic and ultrabasic rocks. Before coming to Otago he worked as research assistant to Professor E.A. Vincent, University of Manchester. Prior to this he carried out three years post-graduate research under Dr P.G. Harris, Leeds University. The topic of his research was partial fusion of peridotite.

Dr W.A. HODGSON is on refresher leave and is currently at the Department of Sedimentology, University of Reading.

Mr J.B. WRIGHT has been appointed Senior Lecturer in Charge, Geology Department, Ahmadu Bello University, Zaria, Northern Nigeria. On arrival at Otago four years ago he quickly extended the use of reflected light techniques in ore microscopy. As well as ably supervising several research students, he contributed to New Zealand mineralogy notably by work on iron sands and Moke Creek copper deposits. His interests have developed to include wider aspects of N.Z. petrography and tectonics. Mr Wright has added stimulus to the life of the department both academically and socially and his departure is regretted by us all. We wish him well in his new position.

Mr C.A. LANDIS has been appointed Assistant Lecturer. He succeeds Mr A.E. GRADY who has taken up a Demonstratorship in the Geology Department, Australian National University, Canberra.

Mr D.J. MOSSMAN, formerly of Dalhousie University, Nova Scotia, is working towards a Ph.D. His research topic is the structure and petrology of the basic and ultrabasic rocks of Bluff Peninsula. Before coming to New Zealand he spent three years with a mineral exploration company in Zambia.

Mr A.F. COOPER, formerly of the University of Sheffield, has arrived to take up a Teaching Fellowship in Geology. He is especially interested in metamorphic petrology.

Mr P.C. RICKWOOD spent three weeks on Carnley Volcano, Adams Island, Auckland group, during the summer as a member of the Dominion Museum - D.S.I.R. Expedition. He has now left for the University of Cape Town.

Messrs R.J. CAVANEY and R.J. RYBURN were members of the New Zealand Antarctic field parties during the 1965-66 season, engaged in work in the Aviator, Campbell and Priestley Glaciers, and at Darwin and Buckley Islands, respectively.

Mr J.H. LOWERY has returned to the department and is working on the mineralogy and genesis of the Waitahuna copper ore body for his Master's thesis.

A thesis recently submitted is

"Manganese Oxides and Associated Minerals from the Akatore-Taiari Mouth District, Otago" by Hun Hock Khoo (B.Sc. Hons.)

Professor J.F.G. Wilkinson, University of New England, Armidale, spent two months in the department late in 1965. His time here was most profitably spent and he re-appraised many problems of Dunedin volcanic petrochemistry. With Professor Coombs he re-collected many analysed rocks and samples more for analysis. It is hoped that he and Professor Coombs will soon be able to bring to fruition in fully documented form the petrogenetic studies initiated by the late Professor W.N. Benson.

Professor A. Volborth, University of Nevada, spent some time in the department in 1965 and gave a series of lecture-demonstrations on instrumental methods of analytical geochemistry with particular reference to X-ray fluorescence.

J.D. Campbell.

NOTES FROM DEPARTMENT OF GEOLOGY, UNIVERSITY OF CANTERBURY

Since these notes last appeared the changes in the Department have been almost total - new buildings, almost completely new staff, new Head, new curriculum. Some bewilderment on the part of students might be excusable.

The new building at Ilam was occupied for the first time early in last November, the Geology Department being the first science department to move to the new site. The Christchurch District Office of the N.Z. Geological Survey followed shortly afterwards and is now settled in its quarters on the top floor of the Geology building. Several months were to elapse before all services in the building were working properly, and meanwhile work was affected to some extent by noise, dust (mud sometimes), power and water supply interruptions, telephone failures, invasions by workmen and unnecessary visits by the Riccarton Fire Brigade (we had to turn out to meet them every time) while work continued on the adjoining buildings and grounds. The sciences complex of buildings is now finished and occupied except for the Sciences Library, temporarily housed in a room intended for museum purposes in the Geology building.

After years of cramped space in the old building, the immediate reaction was great pleasure at the vastly improved working conditions for staff and students, though it soon became apparent that work space for technicians and general storage room were underprovided. Apart from this, the department seems to have been generally well served by the architects. Though the most important planning decisions were made seven years ago, there have been few blunders. Fortunately, in view of changes of staff and policy, the advanced teaching and research laboratories were planned with the least possible specialization of function, and the consequent flexibility has proved invaluable. It is now possible to claim that the department is at last adequately housed (but for technicians) and well-equipped.

Staff interests combine to cover adequately the main divisions of geology and applied geology, and the Department enjoys the special advantage of having daily contact with the Christchurch staff of the Geological Survey. There is a new note of optimism and enthusiasm after a year of disorganization and staffing difficulties made worse because the shipping strike delayed the arrival of new members.

Dr M. GAGE became Head in February upon the retirement of Professor R.S. Allan. The saddest thing to record is the death of Professor Allan in July following a brief illness. It had been expected that his extensive knowledge of palaeontology and New Zealand stratigraphy would still be available to us, and that his kindly and genial presence in the Department would still be enjoyed for many years. Professor Allan had been arranging materials with a view to resuming research on the brachiopods. His passing was a sad loss to us all.

Dr A.E. COCKBAIN left at the beginning of the year to join the Geological Survey of Western Australia as Senior Palaeontologist. Dr M.J. FROST also resigned, and has returned to England where he now has a post at the British Museum (Natural History) and is continuing his study of meteorites. The teaching staff at present is as follows: Dr M. Gage (Head); Dr J.D. Bradshaw, Miss A. Cameron, Mr J.K. Hill, Dr D.G. Jenkins, Dr D.W. Lewis, Dr D. Shelley, and Dr W. Oldershaw. Mr D.J. Jones is senior technician.

Visitors this year include Professor Don. Chapman (University of New Hampshire), Professor R.F. Flint (Yale), Professor D.V. Harris (Colorado State University), Dr Raphael Freund (Hebrew University of Jerusalem, visitor to New Zealand Geological Survey), and Professor H.W. Wellman (Victoria University of Wellington). Dr Harris helped to set a glaciological programme at Franz Josef and Fox glaciers. Mr Frank Schulte is a Fulbright scholar from University of North Dakota, and has been studying stream processes in Cass River.

Students who have completed (or are completing) Masters theses this year (Messrs R. Adamson, R. Farmer, K. Liggett, S. Nathan, and B. Riddolls) make up the last group who can graduate M.Sc. under the old regulations, and the occasion calls for some brief comment. In a sense, it marks the end of an era and of a worthy tradition. It was never the policy of Professor Allan to persuade students to enrol either for the B.Sc.(Hons) course in Geology or for the Ph.D. degree. On the contrary, he encouraged them to look upon Master of Science with Honours as a worthwhile reward for two years of post-graduate study following the B.Sc. degree, and he was justified in this attitude by the successes of New Zealand graduates with this degree in geology both within New Zealand and overseas, often in competition with Ph.D.s, and by the substantial number who subsequently attained the D.Sc. degree. The situation has now changed. Professor Allan was one of a few who fought a losing battle against the proposal that the M.Sc. degree might be awarded to Ph.D. candidates at Canterbury who fail to reach doctoral standard, feeling that it was unnecessary and unfair to those who already hold the M.Sc. degree. The provision is now embodied in the University regulations.

Research for the Ph.D. degree is being undertaken by Mr H.S. Gair (New Zealand Jurassic-Cretaceous succession) and Miss A. Cameron (Bortonian faunas).

M.G.

NOTES FROM VICTORIA UNIVERSITY GEOLOGY DEPARTMENT

Comings and Goings

Dr P. VELLA is spending a year on sabbatical leave at Reading University. He is working on cycles of sedimentation in the Headon Beds (Eocene) on the Isle of Wight, and on Lutetian Foraminifera from the New Forest area. Professor WELLMAN is, at the time of writing these notes, in Tokyo attending the Pacific Science Congress. Dr Jim COLE completed his Ph.D. in May and is now at the University of Oregon before returning to England. Jim KENNETT left for the University of Southern California in July, and S. PIASIN and S. BUNOPAS of the Thai Geological Survey returned home at the end of 1965 after completing their B.Sc. Hons. degrees. Peter WELLMAN returned in July from a year at the University of Hawaii.

New Staff Member

Dr A.J. WRIGHT joined the department in February of this year to take up a lectureship in palaeontology.

V.U.W.A.E. 11

This season's Antarctic Expedition will be led by Professor Wellman and Dr D. Christoffel of the Physics Department, and will study the Quaternary geological history of the dry valleys bordering McMurdo Sound. Besides the leaders, members are I. Calheam, A. Duncan, V. Neal and F. Smith.

Visitors

Professor Blackett and Professor Carey visited the department between 26th and 29th September and gave several lectures and seminars on continental drift and paleomagnetism.

Research

Post-graduate research has been expanded this year by the arrival of 4 more Ph.D. students, bringing the total to eight. Commencing this year are: Andrew DUNCAN, who graduated at the University of Cape Town and is studying the andesite volcanoes of Edgecumbe, White Island and Whale Island; Alan BEU, who is reviewing the molluscan family Cymatiidae; Mike JOHNSTON, mapping the Tinui Sheet (N.159) and an area near Mount Arthur; and Roger COOPER, who is on leave from the N.Z. Geological Survey to work on Ordovician rocks and fossils of New Zealand. In addition, to the above, Bill BRIGGS is working on Cretaceous ostracods, Ian DEVEREUX on oxygen isotope palaeotemperatures, Bob HENDERSON on Cretaceous ammonites, and Ray DIBBLE on geophysical studies of North Island volcanoes.

M.Sc. students are Trevor HUNT, working on a gravity survey of the Lower Awatere district; Peter WELLMAN on a magnetic survey of part of the Necker Ridge (mid-Pacific); Derek MILNE on the geology and soils of the Aputi area, near Taihape; and Terry BATES on the geology of the north-west part of the Aorangi Range, Wairarapa.

R.A.C.

NOTES FROM GEOLOGY DEPARTMENT, UNIVERSITY OF AUCKLAND

With a rising student population and additions to the teaching staff accommodation is at a premium and it is now necessary for all honours students and some junior members of the staff to be accommodated in three separate buildings away from the main site. Practical classes for first year students are now repeated six times each week, and this year, for the first time, it has been found necessary to repeat practical classes for second year students.

Student numbers for 1966 are as follows: (enrolments for 1965 in parenthesis)
Stage I 160 (153); Stage II 23 (19); Stage IIIa 6 (10); Stage IIIb 12 (9);
Honours 12 (18); Ph.D. 5 (3).

Staff

Dr P.F. BALLANCE left in November for a year's sabbatical leave to be spent in the United Kingdom. Dr G.W. GIBSON, a graduate of Victoria University, who for the past 2½ years has been working in New Plymouth for an oil company, is a most welcomed addition to the staff. Mr C.S. NELSON, a further Victoria graduate, has been appointed Junior Lecturer and replaces Mr E.C. LEITCH who has accepted a Teaching Fellowship at the University of New England, Armidale. Mr M.R. GREGORY leaves in November 1966 to take up a scholarship at Dalhousie University, Halifax, Canada.

New Caledonia

The research programme in New Caledonia, which is partly financed by a grant from the Golden Kiwi Research Fund, continued in October and November of 1965 with visits to the island by several staff members and a research student. Professors LILLIE and BROTHERS, with Miss P. BLACK, have been working on metamorphic rocks in the northern part of the island, while following Mr J. GRANT-MACKIE's "grand tour". A M.Sc. student, Mr C. PHARO, commenced work on Triassic rocks on the west coast north of Noumea. Ultrabasic rocks in the southern part of the island are being studied by Mr K. RODGERS for part of his Ph.D. thesis. Further visits will be paid to New Caledonia in October 1966.

Visitors

During the year a number of overseas geologists visited the department and some gave brief lecture courses to advanced students. These included Prof. Millinge, Harvard University; Prof. K. Rankama, Helsinki University; Prof. C. Anderson, University College of Cardiff; Prof. W. Dickinson, Stanford University; Prof. W. Parsons, Wayne State University, Michigan; Prof. E. Spencer, University of Washington and Lee, Virginia; Professor J. Goguel, Director of Service de la Carte Géologique de la France; Prof. E. Lund, University of Concepcion, Chile.

An important event for this department was the visit of Professor F.J. Turner for the conferrment of an honorary degree. Dr Turner, who is our most eminent graduate, gave an address entitled "The Training of a Geologist".

M.R. Gregory.

DUNEDIN SECTION. GEOLOGICAL SOCIETY OF NEW ZEALAND

In late May 1966, a meeting was held in the Geology Department to discuss the formation of a Dunedin section of the Society. The necessary quorum of 10 was met (12 members of the Society were present) and Mr C.A. Landis was elected organising secretary.

Five meetings have been held so far in the form of the already established research discussions. So far we have had the following speakers: C.A. Landis, A.E. Meder, B.L. Wood, P.C. Rickwood, A. Reay and J.B. Wright.

J.D.C.

AUCKLAND SECTION. GEOLOGICAL SOCIETY OF NEW ZEALAND

Regular meetings have been held in the Geology Department, University of Auckland, during the winter and autumn months. In 1965 Mr B.C. Waterhouse was chairman and Mr M.R. Gregory had the onerous position of secretary. For 1966 these positions are held by Professor A.R. Lillie and Mr L. Kermode respectively.

Attendances at meetings have been excellent and stimulating discussions followed all talks. Speakers and their topics were as follows:

1965:

- Professor Spencer (visiting professor from the University of Washington and Lee, Lexington, Virginia, U.S.A.) ... "An outline of the geologic structure of the Appalachian Mountains".
- Mr J. Hopkins (Hons. student) ... "Aspects of the Te Kuiti Group west of Pio Pio".
- Mr A.M. Quennell "Speculations on the Geological History of Northland".
- Mr W. Hughes (Hons. Student) ... "The Tangihua Volcanics".
- Mr R. Tarvydas (Hons. Student) ... "Geology of the Waipu area".
- Dr E. Lund (Visiting professor from Oregon) ... "Volcanic features of Oregon".

1966:

- Dr W. Parsons (Professor of Geology, Wayne State University, Michigan) ... "Origin of Pyroclastic Breccias".
- Mr J. Schofield (Geological Survey, Otago) ... "Cainozoic Volcanism of the North Island".
- Mr D. Skinner (Ph.D. Student) ... "Geology of Coromandel Peninsula".
- Dr A. Kibblewhite (Naval Research Laboratory) ... "Detection of Submarine Volcanic Activity North-east of Auckland".
- Mr L. Carter (Hons. Student) ... "The Geology of Puketotara Peninsula, Northland".
- Mr B. Jones (Hons. Student) ... "The Waitemata beds of Pakaurangi Point".
- Mr K. Martin (Hons. Student) ... "The Geology of an area South of Kawhia".
- Mr C. Pharo (Hons. Student) ... "The Geology of three small islands in New Caledonia".

Mr Quennell, who has been a prominent and loquacious member of this branch for some years left Auckland in late 1965 to take a position with UNESCO in Nigeria. His stimulating and often provocative comments, especially upon Northland geology, will be missed.

M.R.G.

PERSONAL NOTES

Congratulations from the Society are extended to Dr C.A. FLEMING who was awarded in May the Walter Burfitt Prize of the Royal Society of New South Wales.

MEMBERS of the Society who attended the recent Pacific Science Congress in Tokyo are Professor D.S. Coombs, Dr C.A. Fleming, Mr N. de B. Hornibrook and Professor H.W. Wellman. On his way to Japan Mr HORNIBROOK visited Bangkok to attend the meeting of the ECAFE Science Advisory Group. Before returning to New Zealand he spent several days in Brunei with Dr R.A. Couper, formerly of the N.Z. Geological Survey and now with the Royal Dutch Shell Company.

Mr B.L. WOOD, N.Z. Geological Survey, Dunedin, returned to New Zealand in May after spending a year in the United States, partly with the U.S. Geological Survey at Menlo Park, California, and partly at the Geology Department, University of California at Berkeley.

Dr J.B. WATERHOUSE, N.Z. Geological Survey, Lower Hutt, left in August to spend a year in Canada at the University of Toronto where he is to give a course of lectures in palaeontology. On his way to Toronto he met briefly in Edmonton Mr D.J. McINTYRE, formerly of the N.Z. Geological Survey and now with the Chevron Standard Oil Company in Calgary, Alberta.

Mr D.J. YOUNG recently left New Zealand to join the Swiss-American company Ocean Mining A.G. in Launceston, Tasmania. The best wishes of the Society are extended to him and his family.

Dr A. EWART, N.Z. Geological Survey, Lower Hutt, has been spending several months at the Department of Geophysics, Australia National University, Canberra, working on trace element determination and gaining experience with the electron probe there. Congratulations from the Society are extended to him on the recent award to him of the Hamilton Prize of the Royal Society of New Zealand.

Dr T. HATHERTON, Geophysics Division, Wellington, left in September to spend six months at Stanford University, California, as a visiting professor.

Recent Colombo Plan trainees at the Geological Survey in Lower Hutt are Mr J. Sullang, Geological Survey of Sarawak, and Mr C.T. Tan, University of Malaya, Kuala Lumpur. They return home in October after spending a year in New Zealand.

GEOLOGICAL SOCIETY CONFERENCE 1967

Next year the Geological Society will be holding its first conference at Hamilton during the period May 10 (Wednesday) - 15 (Monday) inclusive.

An organising committee has been established at Auckland and Hamilton, and the general secretary to the conference is Mr J.A. Grant-Mackie, Geology Department, University of Auckland.

In convening such a conference for the first time for New Zealand geologists, the executive committee of the Society does not intend necessarily to regard the function as an annual event. Next year is particularly favourable since no other major conferences are being held in Australasia and because the Geological Survey has kindly agreed to forego its own annual staff conference in favour of the proposed Hamilton conference.

The venue will be the University of Waikato where lecture halls and smaller conference rooms have been generously made available. In addition, morning and afternoon tea (1/-) and lunch (about 5/-) will be available for participants. Two types of accommodation have been reserved: (a) at the university hostels where the complete daily charge will be approximately £1; (b) hotels in Hamilton city where the range of tariffs is £2.10.0 to £3.10.0 for dinner-bed-breakfast. It should be noted that all of the hostel accommodation is in single rooms and is unsuitable for family groups.

The general form of the six-day programme will aim at an equal division of time between presentation of papers and excursions. This will allow a total of three days for field trips to such areas as the west coast Mesozoic and Tertiary rocks, the inland Quaternary sequences and the east Waikato and Hauraki igneous rocks.

It is hoped that a wide range of papers will be offered for presentation so that the lecture programme can be arranged into sessions on related subjects - such topics as techniques in geology, structure of New Zealand, the South-west Pacific, and postgraduate research reports have already been suggested. If necessary, concurrent sessions will be organised to cater for specialist groups. In the presentation of papers, time for delivery will be 15 minutes, with up to 15 minutes allowed for discussion. Projectors (35 mm) will be supplied.

Registration will be essential for all those attending the conference, and a small conference fee will be payable. It will also be necessary to recover the cost of bus transport from those wishing to take part in the various excursions.

Providing enough participants use them, special group concessions of 10% will be available for travel by rail, air and sea to and from the conference venue; concessions are not available for NZR bus services or car ferry, or for railway sleeper berths.

Because the conference is the first of its kind to be held in this country, the organising committee is faced with the problem of estimating the number of participants. It would be of the greatest help if those members of the Society who intend to be present at the conference would fill in and return the accompanying form by October 31 to Mr J.A. Grant-Mackie, Geology Department, University of Auckland. Enquiries about attendance will also be welcomed from other geologists, scientists in related fields, technicians and senior students. A second circular containing details of costs, excursions, etc. will be sent to those who are interested in attending.

NEW MEMBERS

The following new members have been elected since the last Newsletter was issued (April 1966):

Miss A. Cameron, Geology Department, University of Canterbury, CHRISTCHURCH.
Mr C.T. Tan, N.Z. Geological Survey, LOWER HUTT.
Mr R.A. Henderson, Geology Department, Victoria University, WELLINGTON.
Mr A.G. Ben, Geology Department, Victoria University, WELLINGTON.
Mr W.M. Briggs, Geology Department, Victoria University, WELLINGTON.
Dr E.F. Twerenbold, Shell BP and Todd Oil Services Ltd., Box 541, NEW PLYMOUTH.
Mr A.G. Palmer, Mines Department, DUNEDIN.
Mrs M.P. Burton, Information Bureau, DSIR, LOWER HUTT.
Mr C.A. Nelson, Geology Department, University, AUCKLAND.
Dr W.J.M. van der Linden, Oceanographic Institute, DSIR, WELLINGTON.
Mr B.C. McClintock, 145 Triangle Road, Massey, Henderson, AUCKLAND.
Mr N. Pratt, 27 Garfield Avenue, Roslyn, DUNEDIN.
Mr J.S. Hollander, 8 Philpotts Road, CHRISTCHURCH.
Mr L.G. Harvey, 2 Bewley Avenue, Macandrew Bay, DUNEDIN.
Mr J.M. Allen, Geology Department, University of Otago, DUNEDIN.
Mr D.P. Batchelor, N.Z. Geological Survey, LOWER HUTT.

At 30 September 1966, the Society had 299 members.
