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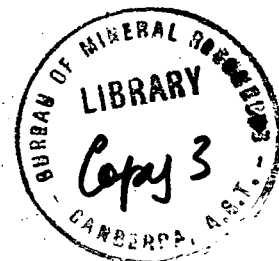
DEPARTMENT OF  
MINERALS AND ENERGY



# BUREAU OF MINERAL RESOURCES, GEOLOGY AND GEOPHYSICS

088873

Record 1973/176



OPERATIONS BRANCH - SUMMARY OF ACTIVITIES FOR 1973

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BMR  
Record  
1973/176  
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Record 1973/176

**OPERATIONS BRANCH - SUMMARY OF ACTIVITIES FOR 1973**

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OPERATIONS BRANCH

Staff

Assistant Director

K.R. Vale

Publications and Information Section

Geologist Class 5:

K.A. Townley

Geologist Class 4:

H.L. Higginson  
I.R. McLeod  
W.H. Oldham

Geologist Class 3:

Mrs M.E. Bartlett  
R.R.E. Jacobson  
Mrs E.E. Young

Geologist Class 2:

P.A. Smith  
G.M. Bladon (A/g)  
Mrs P. Simpson (A/g)

Technical Officer Grade 2:

L.C. Mundy

ADP Applications Section

Geophysicist Class 5:

A.J. Barlow

Geophysicist Class 3:

D.W. Kerr

Programmer Class 9:

I.C. Briggs

Programmer Class 6:

Mrs F.D. Newman

Planning and Co-ordination Section

Geophysicist Class 4:

K.M. Kennedy

Geologist Class 3:

R.B. Aronsen  
R. Thieme

Geologist Class 2:

A.J.B. Driessen

Library

Librarian Class 2:

Mrs H. Hughes

Librarian Class 1:

Miss S. Attwood  
Mrs M.A. Thompson

Administrative Section

Administrative Officer:

B.M. Williams

Assistant Administrative Officer:

S. Pysden

Finance Officer:

B.F. Hoare

Officer-in-Charge, Publication  
Distribution, & Sales Section:

G. Scott

## 1. PUBLICATIONS AND INFORMATION SECTION

Mr Townley carried out general administration of the section and helped to remove the backlog of manuscripts to be edited.

### Publications Sub-section

The filling of all nominal positions was completed in December 1972 when G. Bladon was appointed to the position formerly occupied by Mrs P. Angus. There were no resignations in 1973.

The considerable backlog of unedited manuscripts was virtually eliminated. Manuscripts on which the group worked during 1973, and the status of each at 31 October 1973, are tabulated in this Record. In addition, all the Records and a substantial number of papers for submission to scientific journals were edited.

Other activities included attendance at meetings of the Publications Review Committee, and discussions with the Australian Government Printing Service, the Government Printer, and contract printers.

### Information Sub-section

The Information Sub-section provides information on BMR's activities, the Australian mineral industry, and the geosciences generally to other Government organizations, industry, and the public. It does this by answering enquiries, by preparing articles, brochures, and pamphlets on appropriate topics (commonly with the assistance of other parts of BMR) and issuing catalogues and indexes of various kinds, and by arranging displays and lectures. The Sub-section is also concerned with the storage and retrieval of scientific and technical information.

Information. The major part of the Sub-section's effort goes into attending to the continuous flow of enquiries, by letter and personal request, from industry and the public. These range from simple requests which can be met by sending a brochure or other publication to enquiries needing considerable effort to gather the appropriate information; an example of the latter was collection of detailed historical data on BMR's activities in Papua New Guinea.

Publications. The Annual Report on BMR's activities in 1972, and the Pictorial Index of Activities showing where work of various kinds has been done by BMR in Australia and its Territories, were prepared and issued during the year. The catalogue of publications other than maps was revised and issued in loose-leaf form to facilitate future revision.

Material was prepared for inclusion in Government and commercial publications including: Commonwealth Year Book, and Department of Overseas Trade, Department of Immigration, and Australian Information Service publications.

Distribution of BMR Records to Open File Centres continued through the year. 175 Records were placed on open file in the past 12 months.

PROGRESS OF BULLETINS AND REPORTS BEING EDITED OR PRINTED

FORECAST TO 31 DECEMBER 1973

EDITING IN PROGRESS	- Diurnal magnetic variation	- Bismarck Sea & Gulf of Papua
	151 Bathurst Island palynology	- Tottenham detailed aeromag.
	159 Cymbric Vale fauna	- Deep crustal seismic tests
EDITED BUT AWAITING AUTHORS' AMENDMENTS	121 Xystrodiurid trilobites	- Amadeus Basin A/B
	154 Bowen Basin P-Tr sediments	152 Lansdowne 1:250 000 geology
	155 Kubor Anticline geology	173 Recharge of aquifers
	160 Central Eromanga Basin geology	174 Birrindudu-Tanami geology
EDITED - AWAITING PRINTING CONTRACT	150 Palaeontological Papers 1972-73	153 Lennard River 1:250 000
	152 Standard magnetic curves	162 Catalogue of isotopic age det.
	153 Burke River trilobites	167 South Victoria River geology
	158 Canning Basin conodonts	169 Seismicity of PNG 1968
		170 Bibliography of silcrete
		171 Blackwater coal
		172 Broad Sound sedimentology
		175 Galilee Basin seismic
		176 Madang earthquake report
		177 Burdekin Delta u/g water
IN PRESS		178 Earthquake focal mechanisms
	143 PNG bibliography	145 Bowen (N) 1:250 000
	146 Analyses, ign. & met. rocks	154 Charnley "
	147 Rouchel geology	160 Catalogue of type specimens
	148 Mineral Map of PNG	161 Auvergne 1:250 000
	149 Sydney Basin review	164 Warwick-Goonidindi Pz geol.
	156A Carboniferous correl. chart	166 North Victoria River geol.
	157 Arafura Sea geology	168 AFMAG recordings

BMR Symposium. The annual BMR Symposium was held on 22 and 23 May, and was again well received. Attendance, excluding BMR staff, was about 130; this included 17 members of a Department of Foreign Affairs Minerals Training Course.

BMR staff presented 16 papers on results of BMR's work. An innovation this year was to hold a buffet dinner, at which the maps and diagrams used by the speakers were displayed; this resulted in considerable informal discussion on the various symposium and other topics.

Preliminary arrangements have been made for the next symposium, which will be held on 30 April and 1 May 1974.

Displays and visits. A display featuring BMR's work in the Cloncurry region, marine geophysics, and the ERTS program was mounted for the official opening of the AMF building in Adelaide, and attracted favourable comment. The display will be borrowed by two universities. Several displays were provided for functions in Canberra.

Visits by high school classes continued to increase, numbering about 50 during the year. Six of these were from Sydney and Melbourne schools. The display in the Geological Branch museum, which is unfortunately limited by the space available, is the main attraction during these visits.

Information storage and retrieval. Interim terms of reference for the proposed feasibility study for a BMR scientific and technical information system were sent to selected management consultants late in 1972. Each firm examined a cross-section of BMR's information activities, and submitted proposals for carrying out the study. However, following the transfer of BMR to the newly formed Department of Minerals and Energy, the study has been deferred pending a review of departmental policy on information systems.

Developments relevant to national scientific and technical information systems were kept under review during the year. As a first step towards the development of a national geoscience information system, BMR has taken part in discussions with several other interested organizations on the development of a thesaurus suitable for such a system (whatever form the system might take), and which could also be used in whole or part by organizations for their own information systems.

Liaison with Commonwealth Archives Office on storage of magnetic tapes and other material resulting from offshore petroleum exploration continued. Arrangements are being made for CAO to accept custody of some scientific and technical material now held by BMR, particularly some material received in accordance with the Petroleum Search Subsidy Acts.

## 2. ADP APPLICATIONS SECTION

An Automatic Data Processing group was formed in August 1973. The functions of this group are to co-ordinate the existing ADP uses within the Bureau, assist geoscientists with programming and application problems, investigate possible new areas of application, and manage the routine operations such as computer terminal operation and card punching.

BMR has been a large user of the CSIRO Division of Computing Research computer facilities. CSIRO's recent installation of a Cyber 76 computer has reduced the output capacity of the CDC 3600 computer. This has created considerable problems for BMR, and there is now an urgent requirement to accelerate program conversion to the Cyber 76. The group in 1973 has therefore been heavily involved, within the limits of the staff appointed, in assistance with program conversion, and has arranged a contract for a consultant from Control Data Australia to advise in conversion problems.

The Hewlett-Packard Model 2100 computer to be used for on-line data acquisition and data conversion problems has been delivered, and the group has set up this computer for use in these applications. Peripheral equipment to interface geological laboratory equipment is due to be delivered shortly.

## 3. PLANNING AND CO-ORDINATION SECTION

The Section, of four professional officers, was fully staffed throughout the year. Assistance was given to the Director and Assistant Director, Operations Branch in the preparation and review of proposals concerning the activities and reorganization of the Bureau.

Details for the Supervisors' and Director's program meetings to consider the 1973-75 program were prepared. Subsequently the printed program was made ready and distributed in March. Notifications of activities were relayed to relevant State Mines Departments and mining companies for concurrence on information.

A number of cost/effort reviews were undertaken, including BMR's drilling activities and the proposed crustal survey through Central Australia. The latter was prepared for the February program meeting, and led to the decision to defer and review the project.

In order to sharpen-up the factors relating to program decisions, a costing system was devised and implemented. The system records all costs, money and manpower, against disciplines and projects and on review gives reliable costs which are valuable for management at all levels. It will make the preparation of estimates much more accurate than in the past; the measurement of manpower usage will assist discussions on establishment with the PSB, including the concept of bulk establishment, and the allocation of priorities and maximum utilization of resources will be based on reliable figures. The system is computer operated, with tabulated and cumulative print-out at monthly or quarterly intervals.



Considerable effort was directed to the future accommodation needs of the Bureau. Additional buildings and/or rented premises will be required in the near future.

The qualification requirements of trainee technical officer and technical officers were investigated and a proposal submitted to the Department for onforwarding to the PSB for acceptance of the Diploma of Applied Science, Canberra College of Advanced Education, as a qualification for these officers.

Prior to approval of an ADP Applications Section and staffing of this Section, the Bureau's ADP activities, including control of finance, card punching, and computer terminal operation, were supervised.

#### 4. LIBRARY

The Library has been fully staffed this year for the first time. All in-house procedures are generally functioning normally with the exception of overdues' recall, which is still in arrears.

There has been a pleasing increase in reference requests (227%), due no doubt to the full-time availability of a Reference Librarian and an expanded set of reference tools. Improved staffing and greater co-operation on the part of the users were reflected in an overall increase in library output statistics. Particularly significant is the increase from 10 099 to 16 932 in serials circulation figures, an area heavily dependent on users returning items promptly.

Steps have been taken to improve shelf labelling and to colour-code the Library's shelving arrangement. User guides to the Library and to the catalogues are in preparation.

A stocktake, much more strictly controlled than former ones, was carried out early in December 1972. The resulting discrepancy list was much smaller than former ones, emphasising the benefits of better loan control.

The holdings, storage facilities, and loan procedures at all BMR branch libraries have been checked and, where necessary, adjusted.

During the year three Library staff members, E. Walter, J. Prance, and R. Rutherford, attended the BMR geology course; all attained satisfactory assessments.

The Librarian-in-Charge has had to devote almost all of her time to administrative duties. She is also involved in the National Geoscience Thesaurus Working Group and other activities pertaining to scientific and technical information storage and retrieval. During the year she attended a number of seminars and symposia.

Library output, November 1972 to October 1973

LOANS:	7 190
CIRCULATION:	
Books	2 893
Serials	16 932
INTER-LIBRARY LOANS:	
Loaned to other libraries	2 089
Borrowed from other libraries	693
REFERENCE SEARCHES:	321
CATALOGUING:	
Books	1 164
Serials	641
Pamphlets	159

5. ADMINISTRATIVE SECTION

For most of the year the Section has had more than one-third of the staff on higher duties; accordingly it has been very difficult to maintain maximum efficiency at all times.

Approval was obtained for **any** reclassification of Darwin clerical positions, and a number of other staffing proposals have been submitted to Central Office.

A fire occurred in the Chemical Lab/Store of the Core and Cuttings Laboratory at Fyshwick on 27 February 1973. The fire was confined to a fume cupboard and the ceiling and roof area immediately above the fume cupboard.

A Staff Canteen conducted by the Department of Supply opened in the Basement during March 1973.

**During the year several compactus units were installed in the Fyshwick area. Extensions to the Core and Cuttings Laboratory are also nearing completion.**

Staff changes during 1973 for the whole of BMR are summarized as follows:

	<u>Joined</u>	<u>Left</u>	<u>Difference</u>
Professional	18	16	+2
Technical/Drafting	15	19	-4
Clerical	40	28	+12
Total	<u>73</u>	<u>63</u>	<u>+10</u>

The following publications were printed during the year:

### Bulletins

- 105 - MacRobertson Land - Ice Thickness Measurements - Fowler.
- 123 - Wiso Basin - Groundwater - Randal
- 126 - Palaeontological Papers 1969
- 130 - Bowen Basin - Geology - Malone and Dickins
- 132 - Drummond Basin Geology - Olgers
- 133 - South Sepik Geology - Dow et al.
- 135 - Cape York Peninsula. Geology-Willmott et al.
- 136 - NW Continental Shelf Marine - Jones
- 137 - Murrumbidgee Group, Taemas - Chatterton
- 138 - Northwest Queensland Middle Cambrian - de Keyser and Cook.
- 139 - Geological Papers 1970-71
- 140 - Palaeontological Papers 1970-71
- 141 - Metallogenic Provinces - Fisher, ed
- 144 - Central Australia deformation - Forman and Shaw.

### Reports

- 134 - Otway Basin Review - Reynolds
- 140 - Warwick Post Pz - Exon et al.
- 142 - Eddystone, Taroom, Mundubbera - Mollan et al.
- 143 - Tambo-Augathella - Exon et al.
- 150 - Mount Ramsay Adelaidean and Cambrian - Roberts et al.
- 158 - Sydney Basin Bibliography - Mayne et al.
- 159 - Isomagnetic Maps - Finlayson
- 163 - Gosses Bluff Seismic - Brown
- 165 - Australian University Abstracts - Etheridge and Irving

### Geological Maps and Explanatory Notes (M = map; N = notes)

Abau (M,N)	Kurnalpi (N)	The following were reprinted:
Balladonia (N)	Lennard River(N)	
Burketown (M,N)	Limbunya (M,N)	Bauhinia Downs (M,N)
Charnley (N)	Machattie (N)	Cairns (N)
Cue (N)	Madura-Burnabbie (N)	Calvert Hills (M,N)
Dalby (N)	Menzies (N)	Eddystone (N)
Delamere (M,N)	Millungera (M,N)	Ingham (N)
Dobbyn (M,N)	Mount Doreen (M,N)	Innisfail (M,N)
Donors Hill (M,N)	Normanton (M,N)	Mackay (M,N)
Esperance (N)	Norseman (N)	Mount Drummond (M,N)
Fergusson Island (M,N)	Peak Hill (N)	Robinson (N)
Fergusson River (M,N)	Petermann Ranges (M,N)	Rodinga (N)
Forrest (N)	Rutland Plains (M)	Roper River/C. Beatrice (M,N)
Galbraith (M,N)	Samarai (M,N)	Springsure (M,N)
Gazelle Peninsula (M,N)	Victoria River Downs (N)	Urapunga (N)
Geraldton (M,N)	Waterloo (N)	
Gilberton (M,N)	Warwick (M)	
Goondiwindi (N)	Wave Hill (M,N)	
Jericho (N)	Yampi (N)	
Jubilee (N)	Zanthus (N)	

Preliminary Geological Maps

Alcoota  
Aurukun  
Bathurst Island  
Beaver Lake  
Blucher Range  
Cape Raoult - Arawe  
Cape Weymouth  
Cobb  
Cobourg Peninsula  
Crohn Massif  
Ebagoola  
Fisher Massif - Mt Hicks  
Fog Bay  
Hann River  
Holroyd  
Hyon  
Kalo  
Kimberley Basin 1:500 000

Mason  
Melville Island  
Mount Isa 1:100 000  
Northern Territory 1:2 500 000  
Robert - Kingston  
Seemore  
Southern Carpentaria Basin 1:1 000 000  
Stinear Nunataks  
Talasea - Gasmata  
Tufi - Cape Nelson  
Vernon  
Wanna  
Wau  
Weipa  
West Kimberley Region 1:500 000  
Westwood  
Yowalga

Aeromagnetic Maps

Abau  
Adavale  
Blackall  
Brighton Downs  
Buna  
Cape Nelson  
Eromanga  
Fergusson Island  
Jundah  
Kalo  
Longreach

Maneroo  
Port Moresby  
Quilpie  
Samarai  
Sandstone  
Thargomindah  
Trobriand Islands  
Tufi  
Windorah  
Youanmi

Bouguer Anomaly Maps

Abminga  
Alberga  
Barton  
Birksgate  
Callabonna  
Childara  
Chowilla  
Cook  
Coompana  
Copley  
Curnamona  
Everard  
Fowler  
Frome  
Lindsay  
Mann  
Maurice  
Noorina  
Nullarbor  
Nuyts  
Olary  
Ooldea  
Orroroo  
Parachilna  
Port Augusta  
Streaky Bay  
Tarcoola

Woodroffe  
Wyola

(reprinted)

Balladonia  
Baralaba  
Corrigin  
Cundeelee  
Dampier  
Jackson  
Minilya/Winning Pool  
Mondrain Island  
Moora  
Mount Barker  
Mount Isa  
Newdegate  
Robertson  
Runton  
Winning Pool  
Zanthus

Other publications

Petroleum Exploration and Development Titles Map and Key - 30 June 1972 and 31 December 1972.

AMI Quarterly Review Volume 25 Numbers 2 and 3.

AMI Annual Review 1971

Papua New Guinea - Geological Map - 4 sheets.

Pictorial Index of Activities December 1972.

Publication sales

Sales of publications over the counter totalled \$34 977.

<u>Summary estimates</u>				<u>Estimate</u> <u>1973/74</u>	<u>Expenditure</u> <u>1972/73</u>
				\$	\$
Division 355 - 1	Item 01	Salaries		4 900 000	4 451 891
" " "	02	Extra Duty		182 000	164 308
Total Salaries, Extra Duty				5 082 000	4 616 199
Division 355 - 2	Item 01	Fares and Allowances		470 000	424 163
" " "	02	Office Requisites		73 000	86 686
" " "	03	Telephones, Postage, Telex		120 000	119 100
" " "	04	Office Services		34 000	29 010
" " "	05	Printing & Distribution of Publications		283 000	227 168
" " "	06	Motor Vehicles		659 000	569 696
" " "	07	Bureau Aircraft		170 000	119 736
" " "	08	General Stores		410 000	453 986
" " "	09	Contract Investigations		1 800 000	2 067 427
" " "	10	Freight and Cartage		95 000	132 685
" " "	11	Minor Field Operating Costs		65 000	58 567
" " "	12	Repairs and Maintenance, Plant and Equipment		40 000	40 549
" " "	13	Computing		400 000	381 706
" " "	14	Incidentals		45 000	62 634
Total Administrative				4 664 000	4 773 132
Division 355 - 3	Item 01	Oil Search Subsidy		9 000 000	8 084 257
" " "	02	Riverview College Observatory Grant		4 000	4 000
				9 004 000	8 088 257
<u>TOTAL DIVISION 355</u>				18 750 000	17 477 588
Division 890 - 1	Item 01	Plant and Equipment		500 000	490 911
Grand Total BMR				19 250 000	17 968 498