

# PROCEEDINGS

## OF THE

# ROYAL SOCIETY OF NEW SOUTH WALES.

WEDNESDAY, MAY 3, 1893.

### ANNUAL GENERAL MEETING.

Prof. WARREN, M. Inst. C.E., Wh. Sc., President, in the Chair.

Sixty members and two visitors were present.

The minutes of the preceding meeting were read and confirmed.

The following Financial Statement for the year ending 31st March, 1893, was presented by the Hon. Treasurer, and adopted:—

#### GENERAL ACCOUNT.

				RECEIPTS.			£ s. d.			£ s. d.		
Subscriptions	{	One Guinea	...	...	...	182	14	0	}	652	1	0
		Two Guineas	...	...	...	443	2	0				
		Arrears	...	...	...	24	3	0				
		Advances	...	...	...	2	2	0				
Entrance Fees	...	...	...	...	...	...	...	...	...	58	16	0
Parliamentary Grant on Subscriptions received during 1892										500	0	0
Rent of Hall										32	0	6
Sundries										13	11	10
Total Receipts										1256	9	4
Balance on 1st April, 1892										38	11	7
										<u>£1295 0 11</u>		
				PAYMENTS.			£ s. d.			£ s. d.		
Advertisements				...	...	...	30	15	0			
Assistant Secretary				...	...	...	250	0	0			
Books and Periodicals				...	...	...	128	17	1			
Bookbinding				...	...	...	73	18	1			
Freight, Charges, Packing, &c....				...	...	...	9	13	7			
Furniture and Effects				...	...	...	68	5	6			
Gas				...	...	...	29	6	6			
Housekeeper				...	...	...	10	0	0			
Insurance				...	...	...	9	10	0			
Office Boy				...	...	...	25	9	2			
Petty Cash Expenses				...	...	...	14	1	0			
Postage and Duty Stamps				...	...	...	55	4	0			
Printing				...	...	...	39	11	0			
Carried forward				...	...	...	<u>£744 10 11</u>					

PAYMENTS— <i>continued</i> .						£	s.	d.	£	s.	d.
Brought forward	...	...	...	...	...	744	10	11			
Printing and Publishing Journal	...	...	...	...	...	292	19	7			
Prize Essay Award	...	...	...	...	...	25	0	0			
Rates	...	...	...	...	...	25	6	3			
Refreshments and attendance at Meetings	...	...	...	...	...	19	8	0			
Repairs	...	...	...	...	...	9	19	0			
Stationery	...	...	...	...	...	11	18	8			
Sundries	...	...	...	...	...	21	9	6			
Total Payments	...	...	...	...	...				1150	11	11
Transfer to Building and Investment Fund...									84	16	0
Balance on 31st March, 1893	...	...	...	...	...				59	13	0
									£1295	0	11

## BUILDING AND INVESTMENT FUND.

RECEIPTS.						£	s.	d.
Transfer from General Account	...	...	...	...	...	84	16	0
Interest on Fixed Deposit	...	...	...	...	...	38	10	0
Amount of Fund on 1st April, 1892	...	...	...	...	...	769	10	1
						£892	16	1
						£	s.	d.
Fixed Deposit in Union Bank	...	...	...	...	...	892	16	1
						£892	16	1

## CLARKE MEMORIAL FUND.

RECEIPTS.						£	s.	d.
Interest on Fixed Deposit	...	...	...	...	...	15	15	0
Amount of Fund on 1st April, 1892	...	...	...	...	...	315	1	8
						£330	16	8
						£	s.	d.
Fixed Deposit in Union Bank	...	...	...	...	...	330	16	8
						£330	16	8

## ABERCROMBY FUND.

RECEIPTS.						£	s.	d.
Amount received from the Hon. Ralph Abercromby to be offered as Prizes for Competitive Essays on various phases of Australian weather	...	...	...	...	...	100	0	0
						£	s.	d.
Fixed Deposit in Union Bank	...	...	...	...	...	100	0	0

AUDITED, P. N. TREBECK.

A. LEIBIUS, *Honorary Treasurer.*

S. MACDONNELL.

W. H. WEBB, *Assistant Secretary.*

SYDNEY, 12th April, 1893.

Messrs. P. N. Trebeck and J. T. Wilshire were appointed Scrutineers for the election of officers and members of Council.

A ballot was then taken, and the following gentlemen were duly elected officers and members of Council for the current year :—

**Honorary President :**

HIS EXCELLENCY SIR R. W. DUFF, P.C., G.C.M.G.

**President :**

PROF. T. P. ANDERSON STUART, M.D.

**Vice-Presidents :**

C. W. DARLEY, M. INST. C.E.

H. C. RUSSELL, B.A., C.M.G., F.R.S.

PROF. LIVERSIDGE, M.A., F.R.S.

PROF. WARREN, M. INST. C.E., WH. SC.

**Hon. Treasurer :**

A. LEIBIUS, PH. D., M.A., F.C.S.

**Hon. Secretaries :**

Prof. T. W. E. DAVID, B.A., F.G.S.

J. H. MAIDEN, F.L.S., F.C.S.

**Members of Council :**

H. DEANE, M.A., M. INST. C.E.

J. A. McDONALD, M. INST. C.E.

JAMES GRAHAM, M.A., M.D.

CHARLES MOORE, F.L.S., F.Z.S.

W. M. HAMLET, F.C.S., F.I.C.

E. F. PITTMAN, ASSOC. R.S.M., F.G.S.

LAWRENCE HARGRAVE.

PROF. THRELFALL, M.A.

F. B. KYNGDON.

H. G. A. WRIGHT, M.R.C.S.E., &c.

The following gentlemen were duly elected ordinary members of the Society :

Henderson, John, Civil Engineer ; North Sydney.

McKay, William J. Stewart, B.Sc. M.B., Ch.M.; Sydney.

Nangle, James, Architect ; Newtown.

Orr, Alexander, Analytical Chemist ; Sydney.

Owen, Percy Thomas, Lieut., Assistant Engineer, Military Works ; Sydney.

Smith, Charles Walter, Civil Engineer ; Sydney.

Smith, Henry George, Laboratory Assistant, Technological Museum ; Sydney.

The certificates of two new candidates were read for the second time, and of ten for the first time.

The names of the Committee-men of the different Sections were announced :—

**Section H.—Medical.**

Chairman—Hon. Dr. H. N. MacLaurin, M.L.C., M.A.

Secretaries—Dr. G. E. Rennie and Dr. Huxtable.

Committee—Dr. Fiaschi, Prof. Anderson-Stuart, M.D., Dr. W. Chisholm, Dr. James Graham, Dr. P. Sydney Jones.

*Three Meetings will be held, viz.—June 16th, August 18th and October 20th 1893, at 8.15 p.m.*

#### Section K.—Engineering.

Chairman—H. Deane, M.A., M. Inst. C.E.

Secretary—J. A. McDonald, M. Inst. C.E.

Treasurer—D. M. Maitland.

Committee—Cecil W. Darley, M. Inst. C.E., Professor Warren, M. Inst. C.E., J. W. Grimshaw, M. Inst. C.E., W. F. How, Assoc. M. Inst. C.E., J. M. Smail, M. Inst. C.E.

*Meetings held on the Third Wednesday in each month, at 8 p.m.*

Fifty volumes, four hundred and thirty-three parts, one hundred and twenty-eight pamphlets, twenty-four reports, three atlases of maps, three hydrographic charts and one photograph received as donations since the last meeting, were laid upon the table and acknowledged.

The following letter was read from Prof. Ralph Tate, F.G.S., Adelaide University, acknowledging the award of the Clarke Medal for 1893 :—

The University, Adelaide,

January 10, 1893.

Gentlemen,—It is with unqualified pleasure that I acknowledge the very high honour which you have conferred upon me by the award of the Clarke Memorial Medal.

I care not to disguise the fact that I have been ambitious to win this prize, but I had hardly hoped to have been thought worthy of it at so early date, as on reviewing my Australian work I recognize only an aggregate of small and diverse efforts, but as you are aware, the role of the scientific pioneer, or that of a promoter of scientific investigation in an almost unexplored country, is not conducive to a concentration of purpose likely to evolve an *opus magnum*. Therefore, I will not regard your estimable favour in the light of a retiring allowance but as an incentive to continue those investigations, to which you have alluded, to some measure of completeness as far as time and opportunity will allow.

Yours faithfully,

RALPH TATE.

To the President and Members of Council of the Royal Society of N.S.W.

Also one from William Huggins, D.C.L., LL.D., F.R.S., F.R.A.S., &c., London :—

90 Upper Tulse Hill, London, S.W.,  
17 December, 1892.

My Dear Sir,—It is indeed a very high gratification to me to receive the unexpected news of the very high honour which the Royal Society of New South Wales has conferred upon me.

So welcome and distinguished a recognition of what little I have been able to do for science, from your Society which represents the highest intellect and science of the Colony, is indeed a tribute which I am proud to receive. Next to the delight of any new conquest however small, in the realms of Nature, the most acute pleasure which a worker in science can receive comes from the recognition and approval of his fellow workers.

May I ask you to convey to the Society my best thanks and the expression of my very high appreciation of the honour conferred upon me. With many thanks to yourself for the kind words in which you have conveyed the news of the honour done me.

I remain yours very truly,

WILLIAM HUGGINS.

To the Honorary Secretary of the Royal Society of New South Wales.

Prof. WARREN, M. Inst. C.E., Wh. Sc., then read his address.

A vote of thanks was passed to the retiring President, and Prof. T. P. ANDERSON STUART, M.D., was installed as President for the ensuing year.

Prof. STUART thanked the members for the honour conferred upon him, and hoped to prove himself worthy of their confidence.

Mr. RUSSELL proposed a vote of thanks to Mr. F. B. KYNGDON for his valuable services as Honorary Secretary for so long, and who had been compelled to resign office on account of his removal from Sydney ; the vote was carried unanimously.

### *WEDNESDAY, JUNE 7, 1893.*

Prof. T. P. ANDERSON STUART, M.D., President in the Chair.

Thirty-seven members and two visitors were present.

The minutes of the preceding meeting were read and confirmed.

The certificates of two new candidates were read for the third time, of ten for the second time, and of one for the first time.

The following gentlemen were duly elected ordinary members of the Society :—

Noyes, Edward, Civil Engineer ; Sydney.

Roberts, W, S. De Lisle, Civil Engineer ; Sydney.

Thirty-five volumes, one hundred and eighty-nine parts, four pamphlets, nine reports, and fourteen meteorological charts received as donations since the last meeting were laid upon the table and acknowledged.

The following papers were read :—

1. "Flying-machine Motors and Cellular Kites," by LAWRENCE HARGRAVE. Some remarks were made by the President.
2. "Notes and analysis of a Metallic Meteorite from Moonbi, near Tamworth, New South Wales," by John C. H. MINGAYE, F.C.S., M.A.I.M.E.

Remarks were made by Prof. T. W. E. David, Rev. J. Milne Curran, and the Author.

3. "Plants with their habitats, discovered to be indigenous to this Colony since the publication of the Handbook of the Flora of New South Wales ; chiefly furnished by Baron von MUELLER, from unpublished Herbarium Notes," by CHARLES MOORE, F.L.S., &c.
4. "Description of a new Myrtaceous tree indigenous to New South Wales *Eugenia parvifolia*," by CHARLES MOORE, F.L.S.
5. "On the Whip-worm of the Rat's Liver," by THOMAS L. BANCROFT, M.B. *Edin.*, (Communicated by J. H. MAIDEN, F.L.S., &c.) Some remarks were made by the President.
6. "Small Whirlwinds," by HUGH CHARLES KIDDLE.

A discussion ensued in which the following gentlemen took part, viz., Mr. H. C. Russell, Rev. S. Wilkinson, Messrs. W. F. Bell, C. W. Darley, W. S. Campbell, C. A. Benbow, Prof. T. W. E. David, L. Hargrave, and P. N. Trebeck.

#### EXHIBITS :

Mr. H. C. RUSSELL, C.M.G., F.R.S., exhibited several beautiful photographs of star clusters and the Milky Way, taken with the

large star camera at the Observatory. The largest cluster—one of the finest in the heavens—had been photographed with the double object of showing its beauty and seeing if there were any nebula connected with the stars. Long exposure of six and eight hours were given without sign of any nebula ; but where Herschel estimated 200, there were considerably more than 2,000. Several of the other photographs exhibited were taken with the object of still further exploring the depths of the Milky Way, and the result was surprising. The earlier photographs taken at Sydney with a smaller instrument were very perfect ; in fact, the best of the kind that had been published. As a means of showing the difference between these earlier and later photographs, it might be stated that in one space where one of the earlier photographs showed forty-three stars, the later one taken in May last, showed 1,166, or twenty-seven times as many, and the scale was so large that each star stood separate from its neighbours. The smaller scale had two serious drawbacks—first, the stars were so crowded together that it was impossible to see separate stars that it was now known ought to have been visible ; and, secondly, the crowding of the stars helped to mislead the eye by presenting apparent lines, curves, and forms which were not found when the stars were conveniently separated and clearly shown, as in the later photographs.

Mr. L. HARGRAVE showed a new 2·8lb. steam screw motor, of about one-quarter horse power.

*WEDNESDAY, JULY 5, 1893.*

Prof. T. P. ANDERSON STUART, M.D., President, in the Chair.

Twenty-seven members and six visitors were present.

The minutes of the preceding meeting were read and confirmed.

The certificates of ten new candidates were read for the third time, of one for the second time, and of six for the first time.

The following gentlemen were duly elected ordinary members of the Society :—

Allman, Edward McCarthy, Civil Engineer ; Mudgee.  
Beal, Latham Osborn ; New Zealand.  
Blomfield, Charles E., B.C.E. *Mel.* ; Sydney.  
Bowman, John, Civil Engineer ; Homebush.  
Brownless, Anthony Colling, M.B. et Ch. B. *Mel.* ; Sydney.  
Cameron, John MacDonald, F.G.S., F.C.S., F.I.C., Deputy  
Master Royal Mint ; Sydney.  
Hope, Joseph, Civil Engineer ; North Sydney.  
Purser, Cecil, M.B., Ch. M. *Syd.* ; Sydney.  
Rygate, Philip W., M.A., et B.E. *Syd.* ; Sydney.  
Townsend, George W., Civil Engineer ; Sydney.

Six volumes, seventy-seven parts, nine reports, sixteen pamphlets and six charts, received as donations since the last meeting were laid upon the table and acknowledged.

The following letter from Baron von Mueller was read :—

24 June, 1893.

It is my mournful duty, dear Prof. Liversidge, to convey my profound condolence to the Royal Society of New South Wales at the death of its distinguished member and Past-President, Dr. Leibius. This *triste* intelligence comes to me with sudden sadness, in as much as I was not even aware of any serious ailing of his. Much will he be missed by us, for he was not only a sterling man of knowledge, but also a genial sympathetic friend, as I experienced myself, and all the more as I had so little claim on his generosity.

If his friends unite to erect a monument at his grave, I will readily contribute.

With regardful remembrance, yours,  
FERD. VON MUELLER.

The President referred to the great loss the Society had sustained by the death of Dr. Leibius, who had served it so long and so faithfully in the various offices of Honorary Secretary, President, Honorary Treasurer and Member of Council, and stated that a letter of sympathy had been forwarded by the Council to Mrs. Leibius and family in their bereavement.

The following papers were read :—

1. "On the Languages of the New Hebrides," by Mr. SIDNEY H. RAY.

2. "Unrecorded genera of the Older Tertiary Fauna of Australia, including diagnoses of some new genera and species," by Prof. RALPH TATE, F.G.S., F.L.S., Hon. Memb.
3. "On an approximate method of finding the forces acting in Magnetic Circuits," by Prof. RICHARD THRELFALL, M.A., assisted by FLORENCE MARTIN, Student in the University of Sydney. Some remarks were made by Mr. H. C. Russell.

EXHIBIT :

Mr. L. O. BEAL exhibited and described some specimens of granite with markings attributed to glacial action.

*WEDNESDAY, AUGUST 2, 1893.*

Prof. T. P. ANDERSON STUART, M.D., President, in the Chair.

Thirty-eight members and five visitors were present.

The minutes of the preceding meeting were read and confirmed.

The certificate of one new candidate was read for the third time, of six for the second time, and of one for the first time.

The following gentleman was duly elected an ordinary member of the Society :—

Spencer, Thomas Wm. Loraine, Resident Engineer, Roads and Bridges ; Muswellbrook.

Thirty-six volumes, one hundred and thirty-seven parts, eight reports, ten pamphlets, five meteorological charts and one photograph received as donations since the last meeting were laid upon the table and acknowledged.

The following papers were read :—

1. "Notes on the Bingera Diamond Field," by the Rev. J. MILNE CURRAN, F.G.S. Some remarks were made by Prof. Liversidge.
2. "Preliminary Note on the occurrence of a chromite-bearing rock from the Pennant Hills Quarry near Parramatta," by Prof. T. W. E. DAVID, B.A., F.G.S., W. F. SMEETH, M.A., B.E., Assoc. R.S.M., and J. A. WATT, M.A.
3. "Note on the occurrence of Barytes at the Five Dock Sandstone Quarry," by Prof. T. W. E. DAVID, B.A., F.G.S.

4. "Note on the occurrence of Calcareous Sandstone allied to Fontainebleau Sandstone from Rock Lily near Pittwater," by Prof. T. W. E. DAVID, B.A., F.G.S.

## EXHIBITS :

Photographs and specimens of diamonds by Rev. J. MILNE CURRAN, F.G.S.; the Moonbi Meteorite by J. C. H. MINGAYE, F.C.S. and specimens, microscopic sections and micro-photographs relating to the papers read by Prof. DAVID.

## WEDNESDAY, SEPTEMBER 6, 1893.

H. C. RUSSELL, B.A., C.M.G., F.R.S., Vice-President, in the Chair. Twenty-nine members and six visitors were present.

The Chairman said that before the business of the evening was gone on with he wished to announce a fact in which those present would, no doubt, be greatly interested. That this was the two hundredth meeting of the Society, which he hoped would go on for a good many more hundreds.

The minutes of the preceding meeting were read and confirmed.

The certificates of six new candidates were read for the third time, of one for the second time, and of two for the first time.

The following gentlemen were duly elected ordinary members of the Society :—

Clark, Charles Dagnall, M.B. *Lond.*; Sydney.

Cobbett, Pitt, Professor of Law ; Sydney University.

Cohen, Algernon A., M.B., M.D. *Aberd.*, M.R.C.S. *Eng.*; Sydney.

Martin, Charles James, B.Sc., M.B. *Lond.*, M.R.C.S. *Eng.*,

Demonstrator of Physiology ; Sydney University.

Millard, Reginald Jeffery, M.B., Ch.M. *Syd.*; Parramatta.

Money, Angel, M.D., F.R.C.P. *Lond.*; Sydney.

Fifty-five volumes, ninety-four parts, ten reports, nine pamphlets and two photographs received as donations since the last meeting were laid upon the table and acknowledged.

The Chairman announced that a bust of the late Professor Hoffman of Berlin, had been presented to the Society by Mrs. Leibius.

The following papers were read :—

1. (a) "On the origin of Moss Gold"; (b) "On the condition of Gold in Quartz and Calcite Veins"; (c) "On the origin of Gold Nuggets"; (d) "On the Crystallization of Gold in Hexagonal Forms"; (e) "Gold Moiré-métallique," by Prof. LIVERSIDGE, M.A., F.R.S., &c. Remarks were made by Mr. P. N. Trebeck and the Chairman.
2. "Results of observations of Comet VI. (Brooks) 1892 at Windsor, New South Wales," by JOHN TEBBUTT, F.R.A.S. &c.
3. "The treatment of Manufactured Iron and Steel for constructional purposes" by WILLIAM FIELD HOW, Assoc. M. Inst. C.E., M. I. Mech. E., Wh. Sc.

Some remarks were made by Prof. Warren, and the Chairman stated that this paper would be further discussed by the Engineering Section on Sept. 20, 1893.

#### EXHIBITS.

Prof. LIVERSIDGE exhibited a combination laboratory lamp, retort, and filter stand, provided with bunsen, argand, fishtail and blowpipe jets, all with ground joints, screws being liable to corrode. Besides this he showed an example of the purple-coloured alloy of gold, 78%, and aluminium 22%, as recently described by Prof. Roberts-Austen; also, a specimen of the purple alloy of copper and antimony.

The Rev. J. MILNE CURRAN showed "nature prints" of the Widmanstätten figures on a slice of the Moonbi meteorite. The plates were printed direct from the iron meteorite itself.

#### WEDNESDAY, OCTOBER 4, 1893.

Prof. T. P. ANDERSON STUART, M.D., President, in the Chair. Forty-seven members and three visitors were present.

The certificate of one new candidate was read for the third time, of two for the second time, and of two for the first time.

The following gentleman was duly elected an ordinary member of the Society :—

E E—Dec. 6, 1893.

Smeeth, William Frederick, M.A., B.E., F.G.S., A.R.S.M., Demonstrator in Geology ; Sydney University.

Eighteen volumes, one hundred and twenty-nine parts, two pamphlets, five reports, and one geological map, received as donations since the last meeting were laid upon the table and acknowledged.

The following papers were read :—

1. "Rock paintings by the Aborigines in caves on Bulgar Creek near Singleton" by R. H. MATHEWS, L.S.

A discussion ensued in which the following gentlemen took part, viz., Messrs. D. M. Maitland, Prof. David, Judge Docker, C. Moore, J. Trevor Jones, B. H. Purcell, G. R. Cowdery, W. M. Hamlet, W. D. Campbell, and the President.

2. "Notes on Artesian Water in Australia," by Prof. T. W. E. DAVID, B.A., F.G.S. ; illustrated by lantern views.

Some remarks were made by the President, Messrs. F. B. Gipps and P. N. Trebeck, when it was resolved that the discussion be postponed to the next meeting.

#### EXHIBITS :—

By E. F. PITTMAN, A.R.S.M., Government Geologist, Carborundum, a newly discovered abrasive, stated to have the hardness of the diamond, and a collection of agates cut and polished, from New South Wales.

By Professor DAVID, petrological specimens from the Ipswich Coal Measures, Queensland.

#### *WEDNESDAY, NOVEMBER, 1, 1893.*

Prof. T. P. ANDERSON STUART, M.D., President, in the Chair.

Forty-seven members and six visitors were present.

The minutes of the preceding meeting were read and confirmed.

The certificates of two new candidates were read for the third time, of two for the second time, and of two for the first time.

The following gentlemen were duly elected ordinary members of the Society :—

Taylor, James, B.Sc., A.R.S.M., Government Metallurgist ;  
Sydney.

Wright, John, Civil Engineer ; Sydney.

Forty-eight volumes, seventy-seven parts, twenty-one reports and six pamphlets received as donations since the last meeting were laid upon the table and acknowledged.

The following papers were read :—

1. "Notes on Artesian bores at Bunda Bunda Station in Queensland," by the Hon. W. H. SUTTOR, M.L.C.
2. "On the probability of extraordinarily high spring tides about the December solstice of 1893," by JOHN TEBBUTT, F.R.A.S., &c.
3. "On Meteorite No. 2 from Gilgoon Station," by H. C. RUSSELL, B.A., C.M.G., F.R.S.
4. "Pictorial Rain Maps," by H. C. RUSSELL, B.A., C.M.G., F.R.S.
5. "Note on the occurrence of a new Mineral at Broken Hill," by Edward F. PITTMAN, A.R.S.M., Government Geologist.

Prof. T. W. E. David, B.A., F.G.S., in opening the discussion upon the paper read by him at the previous meeting on "Artesian Water in Australia," exhibited and described a model designed to account for the various levels of Artesian flows. The following gentlemen took part in the discussion :—Messrs. F. B. Gipps, G. H. Knibbs, H. C. Russell, J. W. Grimshaw, James Wilson, H. G. McKinney, W. M. Hamlet, W. A. Dixon, Prof. Liversidge, Lewis Whitfeld, the President, and Prof. David.

Mr. E. F. PITTMAN exhibited and described some specimens and photographs of some of the rarer minerals occurring in the Australian Broken Hill Consols Mine.

Prof. LIVERSIDGE exhibited a collection of Tasmanian Minerals.

*WEDNESDAY, DECEMBER 6, 1893.*

Prof. T. P. ANDERSON STUART, M.D., President, in the Chair.

Fifty-one members and four visitors were present.

The minutes of the preceding meeting were read and confirmed.

The certificates of two new candidates were read for the third time, of two for the second time, and of four for the first time.

The following gentlemen were duly elected ordinary members of the Society :—

Bowman, Reginald, M.B., et Ch. M. *Edin.*, M.R.C.S. *Eng.*;  
Parramatta.

Sinclair, Russell, M.I.M.E., &c., Consulting Engineer; Sydney.

It was resolved that Messrs. P. N. Trebeck and W. C. W. Bartels be appointed Auditors for the current year.

Fifteen volumes, ninety-three parts, seven reports and twenty pamphlets received as donations since the last meeting were laid upon the table and acknowledged.

The following papers were read :—

1. "On the occurrence of Triassic plant remains in a shale bed near Manly," by B. DUNSTAN, F.G.S. Some remarks were made by Prof. David. B.A., F.G.S.
2. "The orbit of the double star  $\eta$  5014," by R. P. SELLORS, B.A.
3. "Occurrence of Evansite in Tasmania," by HENRY G. SMITH.
4. "On the separation of gold, silver, and iodine from sea-water by Muntz metal sheathing," by Prof. LIVERSIDGE, M.A., F.R.S. Some remarks were made by Mr. W. A. Dixon.
5. "Notes on the Cremorne Bore," by Prof. T. W. E. DAVID, B.A., F.G.S., and E. F. PITTMAN, A.R.S.M., F.G.S. Remarks were made by Messrs. J. T. Wilshire, — Roberts, E. F. Pittman and H. C. Russell.
6. "The Progress and position of Irrigation in New South Wales," by H. G. McKinney, M.E., M. Inst. C.E.
7. "On Artesian Water in connection with Irrigation," by W. A. DIXON, F.I.C., F.C.S. [Taken as read.]

## EXHIBITS :

Mr. J. W. BOULTBEE, Officer-in-Charge of the Water Conservation Branch, Department of Mines, New South Wales, exhibited samples of produce grown at the Barrington and Native Dog Artesian Bore farms, also a number of photographs of Artesian Bores in different parts of the Colony.

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## PROCEEDINGS OF THE SECTIONS

(IN ABSTRACT.)

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### ENGINEERING SECTION.

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At the preliminary meeting held on April 12th, the following officers were elected for the 1893 Session :—Chairman : Mr. H. DEANE, M. Inst. C.E. Hon. Secretary : Mr. J. A. McDONALD, M. Inst. C.E. Hon. Treasurer : D. M. MAITLAND, L.S. Committee : Mr. C. W. DARLEY, M. Inst. C.E., Mr. J. W. GRIMSHAW, M. Inst. C.E., Mr. W. F. HOW, Assoc. M. Inst. C.E., Mr. J. M. SMAIL, M. Inst. C.E., Professor WARREN, M. Inst. C.E.

It was resolved that the subscription to the Printing Fund be raised to £1 1s.

*Monthly meeting held May 17, 1893.*

Mr. H. DEANE, in the Chair.

Twenty-five members present.

The evening was devoted to a discussion in connection with the printing of Mr. BURGE's paper on "Light Railways," and the discussion on Mr. HOUGHTON's paper on the "Economical Use of Steam," which was opened by Professor Warren, and continued by Messrs. Grimshaw and Haycroft, and further adjourned until next meeting.

*Monthly meeting held June 21st, 1893.*

Mr. DEANE, in the Chair.

Twenty-five members present.

The Chairman alluded to the death of Dr. Leibius and mentioned the great services he had rendered to the Society, as Honorary Secretary, President, and Hon. Treasurer ; and also announced the retirement of Mr. McDonald from the position of Honorary Secretary, and that the Committee had nominated Mr. Grimshaw for that position. The nomination was approved and Mr. Grimshaw elected.

The adjourned discussion on Mr. HOUGHTON's paper on the "Economical Use of Steam," was resumed by Messrs. How and Grimshaw, and Professors Threlfall and Warren, and replied to by Mr. Houghton.

The adjourned discussion on Mr. BURGE's paper on "Light Railways for New South Wales," was opened by the Author and continued by Mr. Parkinson, and then adjourned to the next meeting.

*Monthly meeting held July 19th, 1893.*

Professor WARREN, in the Chair.

Twenty-six members present.

The Chairman stated that the Committee had nominated Mr. Houghton, to fill the vacancy caused by the retirement of Mr. McDonald ; the nomination was approved and Mr. Houghton appointed.

The adjourned discussion of Mr. BURGE's paper on "Light Railways for New South Wales," was resumed by Messrs. Cowdery, Vandavelde, How and Thow, Col. Wells, Messrs. Noyes, Grimshaw and Professor Warren, and adjourned to next meeting.

Mr. How exhibited photographs of the types of engines he referred to, and Mr. VANDEVELDE exhibited photographs of the "Dechanville" system of light railways.

*Monthly meeting held August 16th, 1893.*

Mr. DEANE in the Chair.

Twenty-eight members present.

The discussion on Mr. BURGE's paper on "Light Railways for New South Wales," was resumed by communications from Mr. Renwick, Engineer-in-Chief of Railways, Victoria, and Mr. Trevor Jones being read, and continued by Messrs. Allen, Fischer, Poole, Middleton, Firth, Thow, Vandeveld, and the Chairman, and replied to by Mr. Burge.

*Monthly meeting held September 20th, 1893.*

Mr. DEANE in the Chair.

Twenty-one members and visitors present.

The discussion on Mr. How's paper on "The Treatment of Manufactured Iron and Steel for Constructional Purposes," was continued by Messrs. Thow, Houghton, Grimshaw, H. Hunt, Mansfield, Farr, Cowdery, Noyes, Col. Wells and the Chairman. Mr. How then replied.

*Monthly meeting held October 18th, 1893.*

Mr. DARLEY in the Chair.

Nine members present.

A paper by Mr. HAYCROFT, on "Highway Construction and matters pertinent thereto," was read and the discussion adjourned.

*Monthly meeting held November 15th, 1893.*

Mr. DEANE in the Chair.

Sixteen members present.

The discussion of Mr. HAYCROFT's paper on "Highway Construction and matters pertinent thereto," was opened by Col. Wells, and continued by Messrs. Statham, Smail, Trevor Jones, W. S. Wells, Cowdery, Grimshaw, and the Chairman, and was adjourned to next meeting to give Mr. Haycroft an opportunity of replying.

Mr. TREVOR JONES then explained the nature of his paper "A Hydrostatic Paradox," and the diagrams ; further discussion was adjourned to next meeting.

*Monthly meeting held December 20th, 1893.*

Mr. DEANE in the Chair.

Thirteen members present.

Mr. HAYCROFT replied to the discussion of his paper on "Highway Construction and matters pertinent thereto."

Mr. SELMAN read his paper on "Oil Engines," and the discussion was opened by Mr. C. W. Darley. Messrs. Houghton, How, Grimshaw, and J. A. Griffith, took part. As the paper required carefully reading through before it could be fully discussed it was decided to adjourn it to the next meeting, but before doing so Mr. Selman replied to the remarks made.

It was resolved that Mr. Trevor Jones' paper "A Hydrostatic Paradox" be postponed to the next meeting.

During the Session thirty-one (31) members have subscribed £32 9s. to the Printing Fund, and the disbursements for printing amounts to £23 16s., a further expenditure of £1 7s. 4d. for type writing having also been incurred.

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### MEDICAL SECTION.

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At the provisional meeting held on April 21st 1893, the following officers were elected :—Chairman : Hon. Dr. MACLAURIN, LL.D., M.L.C. Committee : Drs. FIASCHI, ANDERSON STUART, CHISHOLM, SYDNEY JONES, J. GRAHAM. Secretaries : Drs. L. R. HUXTABLE and G. E. RENNIE.

It was announced that the New South Wales Branch of the British Medical Association intended to approach the Council of the Royal Society in the hope of obtaining certain concessions, with a view to the establishment of a Medical Library ; a Committee consisting of Dr. SYDNEY JONES, Prof. ANDERSON STUART,

and Dr. HUXTABLE was appointed to draw up a report upon the matter.

It was decided that in lieu of the monthly meetings of the Section only three meetings be held during the year at suitable intervals.

*First meeting, June 23, 1893, at 8.15.*

Hon. Dr. MACLAURIN in the Chair.

This was the largest meeting of the Section ever held.

Dr. SYDNEY JONES exhibited a patient suffering from myxoedema.

Dr. JAMES GRAHAM read a paper on "Peripheral Neuritis" as it occurs more specially as an endemic disease amongst the Chinamen of Sydney.

Prof. J. T. WILSON read a paper on "Recent Investigations on the Structure and Development of the Nervous System." The paper was illustrated by numerous diagrams and microscopical specimens. The discussion on the papers was adjourned until July 21st.

The recent additions to the University Museum of Anatomy and Pathology were on view during the evening.

*Adjourned meeting, July 21, 1893. at 8.15.*

Hon. Dr. MACLAURIN in the Chair.

At this meeting, Prof. J. T. WILSON completed his remarks on "Recent Investigations on Structure and Relation of Nerve Fibres, etc."

At the discussion which followed, Drs. SHEWEN, SYDNEY JONES, ANGEL MONEY, STEEL, WILKINSON, C. J. MARTIN, and the Chairman took part.

*Second meeting, October 18, 1893, at 8.15.*

Dr. FIASCHI ex-Chairman, in the Chair.

Dr. C. J. MARTIN, B.Sc., read a paper on "Recent Development of the question of the Coagulation of the Blood," illustrated by some experiments on animals.

Dr. MARTIN was accorded a very hearty vote of thanks for his interesting paper and for the trouble he had taken in preparing the experiments.

*Third meeting October 20, 1893, at 8.15.*

Hon. Dr. MACLAURIN in the Chair.

Drs. CRAGO and MORGAN MARTIN exhibited a female patient suffering from myxoedema.

Dr. F. N. MANNING and Dr. BLAXLAND also exhibited a female case of myxoedema.

Dr. C. J. MARTIN, B.Sc., showed a case of sporadic cretinism, in which, he in conjunction with Dr. RENNIE had performed thyroid grafting with marked beneficial results. Dr. MARTIN also read notes of the case, and exhibited photographs and temperature charts.

Dr. G. E. RENNIE read a paper on Myxoedema.

Dr. F. N. MANNING made some very interesting and suggestive remarks on sporadic cretinism.

The Chairman made a few remarks, and this closed the meetings for the year.

As on a previous occasion the recent additions to the University Museum of Anatomy and Pathology were on view during the evening.

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## ADDITIONS

TO THE

LIBRARY OF THE ROYAL SOCIETY OF NEW SOUTH WALES.

DONATIONS—1893.

(The Names of the Donors are in *Italics*.)

TRANSACTIONS, JOURNALS, REPORTS, &c.

ABERDEEN—University. The Aberdeen University Calendar for the year 1893-94.

*The University*



1983. "Proceedings of the Royal Society of New South Wales." *Journal and proceedings of the Royal Society of New South Wales* 27, 471–490.

<https://doi.org/10.5962/p.359175>.

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