

The Annual At Home of the Society and its first meeting in its new home, 198 College Street, was held on the 23rd of January.

Dr. C. A. Chant, the President, occupied the chair during the transaction of business, when Dr. W. F. King, Chief Astronomer, Ottawa, was elected Hon. President. It has been usual for the Minister of Education to accept the office, but Hon. Dr. Pync thought it inadvisable. Messrs. E. B. Frost, director of the Yerkes Observatory, and W. D. Campbell, director of the Lick Observatory, were elected corresponding fellows.

Three Associate members were elected, Messrs.

Geo. B. de Garland, B.S. University of Toronto.
R. Melbrium Stewart, M.A. Dom. Observatory, Ottawa.
Fergus A. McDiarmid, B.S.
John Censor, 216 Collingham St. Toronto.

Mr. W. B. Musson having taken the chair, Dr. Chant reviewed the work of the year. ~~After calculations covering a pile of foils~~ ~~fourteen-foot-high~~ the constant of aberration has been determined at 20.54 seconds, and the distance of the earth from the sun established at 92,908,000 miles. Indubitable evidence has been gained of the existence of canals on Mars, and Schiaparelli's views are likely to be confirmed. Many other interesting data were adduced. Among past Presidents present were Messrs. Andrew Elvins and J. A. Paterson, K.C.

At the close of the meeting an informal social hour was spent. Mr. Miller entertained a stream of visitors with simple demonstrations with the spectroscope, and refreshments were served.

Feb. 20, 1906

C. A. Chant
President

M I N U T E S

of a meeting of the Royal Astronomical Society of Canada, held at the Canadian Institute on the 6th of February, 1906.

Minutes of the meeting held on the 26th of January were read and approved.

Communications read from :

- Mr. J. Miller Barr, St. Catharines;
- Mrs. Manley, Meaford;
- The Reverend Father Kavanagh, Loyola College, Montreal, referring to certain lantern-slides presented by him to the Society.
- Mr. L. C. Wadsworth, Simcoe;
- Miss Fall, Simcoe;
- The Academy of Sciences, St. Louis;
- Harvard College Observatory Bulletins, respecting observations made of Brooks Comet.

Observations :

- Mr. Jackson gave the result of his measurement of the distance between Mira and its companion as
- Mr. Miller reported his observations of Mira, recently at maximum, and of the planet Jupiter.
- Mr. Stupart showed a slide of a seismograph record of a disturbance which occurred on the 31st of January.
- Mr. Clipsham showed two fine photographs taken by himself of the moon during the last few weeks.

Reviews :

- Mr. Miller and Mr. Collins gave reviews of recent numbers of the Review of the Belgian Astronomical Society and Popular Astronomy.

A very admirable paper was then read by Mrs. S. D. Keran, upon the subject of "Some Differences in Ancient and Modern Science." Mrs. Keran referred to the conflict which for centuries existed between Science and Religion and to the dawning of an era when the two shall be not antagonistic but in complete harmony.

The meeting then adjourned.

Feb. 20, 1906.

Calhoun
P. I. D.

REPORT FROM COUNCIL

of a meeting held on the 16th of February, 1906.

The payment of various accounts for printing, etc., was authorized, amounting to about \$39.

The President, in the absence of the Treasurer, was requested to attend to the renewal of the Society's insurance.

The President was also authorized to have the printing of the Report for 1905 ^{by Mr. Z. M. Collins at \$1.50 a page} proceeded with, and it was directed that payments on account thereof be made as the work progresses.

A motion was moved, seconded and carried, --
That By-law No. XXI of the Constitution be amended by the insertion after the words "Second Vice-President" of the following words: "with the addition of other Vice-Presidents living outside of the Province of Ontario, when deemed desirable by the Society," and that By-law No. XXIV be amended by the substitution of the word "five" for the word "three."

C. A. H. A. W.
President

Toronto, February 20th, 1906.

MINUTES

of a meeting of Council held on the 16th of
February, 1906.

Present : Dr. Chant, in the Chair;
Mr. Elvins;
Mr. Musson;
Mr. Collins;
Miss Dent.

In the absence of the Treasurer, the following
accounts were presented by the President, and
payment was directed to be made to :

Mr. Howell (for mounting photographs, lantern slides, etc.),	\$ 13.10
Soule Printing Co. (printing),	2.50
American Tent & Awning Co. (floor covering),	5.00
Rolph & Clark, (zinc cuts),	5.75
University Press, (printing),	<u>12.70</u>
	\$39.05

The President was requested to attend to the
renewal of the insurance on the library, instru-
ments, etc.

The President reported that he had issued a cheque
to the Librarian for salary and postage.

The President was authorized to have the printing
of the Transactions for 1905 proceeded with imme-
diately, and that payments therefore be made as
the work progresses.

A discussion took place respecting the advisability
of having the number of Vice-Presidents of the
Society increased to six, in order that the in-
fluence of the Society in other Provinces might
be extended, and the number of Councillors elected
by the Society increased from three to five.

It was moved by Mr. Musson, seconded by Mr. Elvins,
and carried :

That By-law No. XXI of the Constitution be
amended by the insertion after the words
"Second Vice-President" of the following
words : "with the addition of other Vice-
Presidents living outside of the Province of
Ontario, when deemed desirable by the Society,"
and that By-law No. XXIV be amended by the
substitution of the word "five" for the word
"three."

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA.

MINUTES of a meeting held on the 20th of February, 1906, at the Canadian Institute, the President in the chair.

Minutes of the two last previous meetings were read and approved.

Communications read, from :

Mr. Henry Harrison, Jersey City, who is working on the Orion Nebula;

Professor W.W. Campbell, thanking the Society for his election as an Honourary Fellow;

Mrs. E.W. Maunder, thanking the Society for her election as an Honourary Associate.

A Report from Council of a meeting held on the 16th instant was presented.

Moved by Mr. Graham, seconded by Mr. Spry, and carried, that the Report be adopted.

Moved by Mr. Musson that Mr. Graham be elected a member of Council.

Moved by Mr. Collins that Professor L.B. Stewart, of the School of Science, be elected a member of Council.

There being no opposition these gentlemen were declared to be duly elected.

Nomination :

The nomination for membership was read of Mr. S.W. Lowry, 139 Dovercourt Road, Toronto, proposed by Messrs. J.R. Collins and C.A. Chant.

Predictions:

Under this head Dr. Marsh called attention to an occultation of a Tauri which will occur on the 2nd of March.

Observations :

Dr. Marsh reported his observations of the total eclipse of the moon which occurred on the 8-9th of February, and showed some fine photographs taken by himself of the moon taken during eclipse.

The President reported observations made at the Observatory.

A few notes regarding the bright stars and constellations now visible were given by E.A. Dent.

Reviews :

Mr. Musson gave a review of a paper lately given before the Royal Society on the Evolution of the Spectrum of a Star in its growth from a nebula.

The paper was by Mr. R. Meldrum Stewart, of the Dominion Observatory, on the subject of "The Time Service of the Dominion." Owing to Mr. Stewart's inability to be present, his paper was read by the President. Notes are attached.

CANADA'S TIME.

Mr. Meldrum Stewart Tells How Clocks Are Kept Right.

At the meeting of the Royal Astronomical Society of Canada a paper was read on the time service at the Dominion Observatory at Ottawa by Mr. H. Meldrum Stewart, M.A., who is in charge of the service. Everyone, from the railway management to the man on the street, is ultimately dependent on some observatory clock. The method of determining the time from the stars was explained, and also the essentials of a good clock. The ultimate standard at the observatory winds itself up electrically every half-minute. It keeps time with the stars, and so is called a sidereal clock. The chief mean-time clock which keeps ordinary time, is checked daily by comparison with the sidereal clock. By electrical means this clock controls a clock in each of the Government buildings, and these again actuate dials placed in each of the rooms. Four insulated wires run from the Observatory to the city for this purpose. At present there are 42 dials in the Parliament Buildings, 60 in the West Block, and 48 in the Langevin Block. These, with a few others, make up a total of 214 dials.

Miss E. A. Dent gave the first of a series of short lessons on "How to Find the Stars." Dr. Marsh, of Hamilton, exhibited a number of photographs of the eclipsed moon, taken by himself. Mr. L. H. Graham, B.A., of East Toronto, and Prof. Louis B. Stewart, of the School of Practical Science, were elected to the council of the society.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA.

Minutes of a Meeting held on the 6th of March, 1906, at the Canadian Institute, Mr. John A. Paterson, Past President of the Society, in the Chair.

Minutes of the previous meeting were read and approved.

Communications read :

Bulletins from Harvard College Observatory respecting the discovery of a new faint comet;
The Royal Society of Canada, giving notice of its Annual Meeting, and requesting the appointment of a delegate from this Society, and the presentation of a Report. Matter referred to Council.

Mr. Paterson reported that a delegation from the Society had recently waited on the Honourable Sir Wilfrid Laurier, Premier of Canada, and asked him to consider the request of the Society that pecuniary assistance be given to enable the Society to publish more elaborate and more frequent reports, and that the Premier stated that the subject would receive the consideration of himself and his colleagues.

Nominations :

The nomination was read for the second time of Mr. G. W. Lowry. Moved, seconded and carried that the Recorder be directed to cast a ballot in favour of Mr. Lowry's election, and he was declared to be duly elected.

The following new nominations were made :

Isaac E. Moore, B.A., Rothesay, N.B., proposed by C. A. Chant and E. A. Dent;
Thomas Donnelly, Examiners of Masters and Mates, Kingston, proposed by L. B. Stewart and C. A. Chant.
G. L. Smith, Toronto, proposed by

The Librarian's Report was read and several important additions to the Library were announced.

Predictions :

E. A. Dent referred to the approaching appearance of the planet Mercury as an evening star.

Notes and Queries :

Under this heading, ^{a discussion} took place respecting a theory of the cosmos formulated by Professors Chamberlain and Moulton, of Yerkes Observatory.

Reviews :

Mr. Clipsham reviewed the B. A. A. S. Journal and Mr. Collins the Journal of the Astronomical Society of the Pacific.

The lecture was given by Mr. Elvins, on the subject of Terrestrial Magnetism. Mr. Elvins gave the result of his

investigations into magnetic phenomena with the
aid of the records of Toronto and other Observa-
tories.

C. A. Hunt
President

March 20th, 1906.

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA.

Minutes of a meeting held on the 20th of March, 1906, at the Canadian Institute, the President in the Chair.

Minutes of the last previous meeting were read and approved.

Communications read :

From the Clerk of the City of Toronto, asking for the appointment of a representative of this Society to join a deputation to go to Ottawa to protest against the proposed removal from Toronto of the Meteorological Observatory.

Moved by Mr. Miller, seconded by Mr. Musson, that the President be appointed to represent the Society, and that in case the deputation should arrange to go on a day on which Dr. Chant should be unable to attend, Mr. Maybee's name be substituted for his. Carried.

Moved by Mr. Maybee that the following Resolution be passed by the Society :
 "Resolved that, in the opinion of this Society, the interests of the country at large will be best served, and the interests of the Meteorological Service itself, by retaining the head-quarters of the 'Service in Toronto.'"

Sec. by Mr. Miller & Carried

Elections :

The nominations were read for the second time of Messrs. I. E. Moore, Thomas Donnelly and ~~George~~ Larratt Smith. *Goldman*

Moved, seconded and carried that the Recorder be directed to cast a ballot in favour of all candidates, and they were accordingly declared to be elected.

The nomination was read for the first time of Mr. E. G. N. Hoyle, Cannington, proposed by Professor DeLury and Mr. Collins; and of Miss E. B. Woods, 91 Braedalbane Street, Toronto, proposed by Mr. Collins and Professor DeLury.

Observations :

Mr. Graham, Mr. Carlyle and Miss Dent reported having seen Mercury to-night.

Dr. Chant reported the observation of two bright meteors on Sunday night.

Notes and Queries :

Reference was made to the recent death of Professor Langley, an Honourary Fellow of the Society, and Mr. Graham gave a brief account of his work and paid high tribute to his achievements.

Mr. Blake reported, regarding the sun's activity, that there had been few spots during February, but that at present there are many small spots. A discussion took place respecting the question whether the sun's limb is ever seen notched by spots.

--2--

Review :

Mr. Collins gave a review of the current number of
Popular Astronomy.

The lecture was given by Mr. R. F. Stupart, Director of
the Observatory, on the subject of "Magnetic Disturbances
and the Aurora." Notes are herewith.

C. Chant
President

Papers and Subjects for Discussion

Session: April-June, 1906.

Meetings begin at 8 p.m.

- April 10:** The Age of the Earth.
J. R. COLLINS.
- April 24:** Physical Theories of the Universe.
A. T. DELURY, M.A.
- May 8:** Astronomy and the Bible.
J. EDWARD MAYBEE, M.E.
- May 22:** Double-stars and their Measurement.
WALTER E. JACKSON, B.A.
- June 5:** Mars: an Account of Recent Work on the Planet.
L. H. GRAHAM, M.A.
- June 19:** The Earth's Beginnings.
F. L. BLAKE, D.L.S.
- June 26:** Open Air Meeting with Telescopes.

SPECIAL NOTICE.

In addition to the papers announced on the opposite page there will be at each meeting:

1. Easy Star Lessons, to Aid in Identifying the Chief Constellations and Stars.
By MISS ELSIE A. DENT.
2. Report on the Sun's Activity.
By F. L. BLAKE.
3. Review of Important Articles in Current Literature.
By VARIOUS MEMBERS.

NOTES.

Free discussion is allowed on each paper and on other timely subjects. This often is a very interesting feature of the evening.

The Society publishes its transactions, and has a library open to its members.

Miss J. K. Lawson, Assistant Librarian, will be in the Library on Tuesday evenings, and on other days from 3.30 to 5.30 p.m.

Associate Membership is open to every one interested in Astronomy or Astronomical Physics.

FEE ?

Gentlemen residing in Toronto \$2.00
Ladies and non-residents - - 1.00

a meeting of the Royal Astronomical Society of Canada
 was held in the Canadian Institute on April 10/04
 at 8 o'clock The President Mr. Chant in the chair

Communications were read from

British Association for the Advancement of Science
 in reference to the nomination of a
 representative at the meeting in York

From the City Clerk in reference to the steps
 being taken to secure the retention of
 the Head office of the Meteorological Service
 in Toronto -

and from the provincial secretary of the Smithsonian
 Institution Washington communicating
 officially the intimation of the death
 of the late secretary, Langley

Electing of Associates

Miss E. B. Woods of Toronto

Nominations

Mr. G. E. Hoyle - Cunningham Ast

Mr. Pemberton Newton Brook

The Librarian reported the receipt of a number of
 exchanges and several new books

Observations

Mr. Graham and several other members reported
 described a peculiar lunar halo seen on the
 night of April 6th

The paper for the evening was by Mr Collins reviewing
 a number of theories regarding the age of the earth
 special reference being made to
 Kelvin's theory of "the age of the sun's heat" and
 "the secular cooling of the earth"
 and Darwin's theory of tidal action on the moon's mass
 and Prof Joly's approximations from the salinity of
 the sea

considerable discussion followed the reading
 of the paper, Mr Collins, the president, Mr Hickey,
 Mr Mayber, Graham Redout & others taking
 part in the discussion

C. A. Chant
 President
 Apr. 24, 1906

THE ROYAL ASTRONOMICAL SOCIETY OF CANADA.

Minutes of a meeting held at the Canadian Institute,
24th April, 1906, the President in the Chair.

Minutes of the previous meeting were read and approved.

Communications read :
Nautical Almanack Office, Washington;
Harvard College Observatory, giving the ephemeris of Planetoid No.

Election :
Mrs. C.E. Humberstone, Newton Brook, nominated
by Dr. Chant and Mr. Collins.

Moved by Mr. Clipsham, seconded by Mr. Robinson that the Recorder cast a ballot for the election of Mrs. Humberstone, and the President declared her to be duly elected an Associate of the Society.

Nominations :
H.S. Robertson, B.A., Stratford, proposed by Dr. Chant and Professor DeLury;
Robert Wightman, B.A., Balmoral Avenue, Toronto, proposed by Dr. Chant and Professor DeLury;
J. Frederick Sharpe, 103 Yonge Street, Toronto, proposed by Dr. Chant and Professor DeLury;
Albert Young, Science Master, Port Perry, proposed by Mr. Collins and Dr. Chant;
Miss Alma Hastings, 80 Czar Street, proposed by Dr. Chant and Mr. Collins;
Miss Nellie G. Fraser, 45 Carlton Street, Toronto, proposed by Dr. Chant and Miss Dent.

Librarian's Report.

Predictions :
Mr. Collins gave the positions of the planets during May.

Observations :
Mr. Clipsham reported having observed an unusually bright meteor on the evening of the 20th of April.

Notes and Queries :
Mr. Graham inquired whether it would be possible to assist the out of town members in their desire to make use of the library by issuing a catalogue.

Moved by Mr. Musson, seconded by Mr. Graham, that the Society deems it advisable to take steps towards the immediate preparation of a catalogue.

The matter was referred to Council.

Mr. Elvins called attention to an especially good article on the subject of gravitation in the English Mechanic of the 6th of March.

Moved by Mr. Musson, seconded by Mr. Clipsham that the Society subscribe for the English Mechanic and Nature.

Mr. Collins gave a review of the articles in the current number of Popular Astronomy, and Mr. Musson of the Astrophysical Journal.

Director Stupart of the Observatory exhibited an enlarged tracing of the recent earthquake shock, as recorded by the seismograph in the Observatory. The records of Toronto and Ottawa differed by about 45 seconds, that time being taken for the earth tremors to reach Ottawa after passing through Toronto. Mr. Stupart stated that on the average five or six pronounced disturbances are recorded on the seismograph in Toronto each year. The paper for the evening was by Prof. DeLury, on "Physical Theories of the Universe," particular mention being made of recent developments and to the application of dynamics to the nebular theory, the meteoritic theory, and the latest planetesimal theory propounded by Profs. Chamberlain and Moulton, of Chicago University. Prof. De Lury said that there were difficulties with any theory that had as yet been propounded, and it must be borne in mind that whilst the facts ever remain the same, a theoretical explanation of theory must be but provisional.

Calhoun
President
May 8, '06

May 8/04

The regular meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on May the 8th. The President Mr. Chant in the Chair.

The minutes of the last meeting were read and approved.

The following were elected associates of the Society

R. S. Robertson B.A., Stratford Ont

Robt Wightman Balmain Ave City

J. Frederick Sharpe, 103 Yonge St "

Albert Young B.A. Port Perry Ont.

Miss Alma Hastings, 87 Gouge St City

Mrs H. G. Fraser 48 Carlton St "

Nominations

Miss Mary C. Campbell 14 Clarendon Ave City

Mrs A. D. B. Jones 126 Carlton St City
by Mr Chant & Mr Collins

Communications

a communication from the Lick Observatory was read stating that the instruments there were not at all damaged by

2

the recent earthquake and that the building
remains uninjured excepting a few cracked walls
and chimneys

The paper for the evening was by Mr J. E. Mayhew
on the Authority of the Bible

Some discussions followed the reading of the paper

Captain
Pres.
May 22, 1906

J. R. Collins

Minutes June 4/06

A meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on the evening of May 22/06 at 8 o'clock. The president Dr. Chant in the chair.

Minutes of the last meeting were read and approved.

A communication from W. W. Campbell director of the Lick Observatory to the president was read referring to and expounding information sent out in regard to the comparative unimpaired condition of the instruments and buildings of the Observatory after the earthquake which had recently visited the neighbouring region.

also a letter from describing the appearance of a fire ball that had recently fallen.

Mrs Mary C. Campbell 15 Clarie Ave Toronto
 Mrs A. D. B. Jones 126 Carlton St " were elected associates of the Society

John W. Adell B. A. Cobourg Ont
 Mrs Geo H. Wilson 40 Howland Ave Toronto
 Mrs M. L. Beltrami Balmain Ave Toronto
 were nominated for membership

Observations

Mrs Humberstone reports observations on the form and structure of hailstones which fell at Newmarket

2
June 5/06

within a few days. previous to the meeting a number of diagrams illustrating in section the various peculiarities of structure were shown on the blackboard. Mr Graham also reported noting the hailstones that fell during the storm some of them being $1\frac{1}{4}$ " in length.

Mr Clouds also took part in the discussions.

The president exhibited a seismogram received from the Fick Observatory showing ~~the~~ a tracing of the ~~instrument~~ record of the recent earthquake there until the instrument was thrown out of adjustment by the violence of the shock.

The Paper for the evening was by Mr Walter Sparks of the Observatory dealing with methods and results of double star measurements.

John A. Dale
Chairman

// the ...

Minutes June 5/06

J. R. Collins
Secy

June 5/06

The regular meeting of the P.A.S.C. was held in the Canadian Institute on June the 5th/06 John A. Paterson M.A. in the Chair the minutes of the ^{previous} meeting were read and approved

Communications

A letter from Dr. Downman South Norwalk Conn, U.S. is referred to a press report alleging that a resident of that place had been struck and injured by a falling meteorite which was said to have been about the size of an orange and composed largely of nickel iron as well as showing the characteristic Widmann slatted lines. Dr. Downman the press dispatch stated had operated on the injured man in the hospital there. His letter ~~was~~ in answer to a query as to the truth of the report ~~stated~~ was to the effect that he had operated upon a man for a wound which the patient stated was caused by a meteorite but later the truth came out that he had been struck on the head with a stone in a free fight and the meteorite story ~~was~~ was given out as a mere popular enthusiastic fable.

Selection of associates

John W. Odell Bath Cobourg Ont
Mrs George H. Wilson ~~Bath Cobourg~~ ~~Frank~~
Miss M. L. Wetmore ~~Bath Cobourg~~ ~~Frank~~

Nominations

Mrs Jennie Kerr Lawson
17 St Vincent St Toronto

Reviews of articles of interest appearing in the current numbers of Journal B.A.A. and Popular Astronomy, were given

The Paper for the evening was by Mr. F.H. Graham on the subject "Recent work on the Planet Mars" giving a full and comprehensive review of observations of the planet from its discovery to the present time.

W.R. Collins
Secretary

C. Alfant
Pres.

June 18, 1906.

ROYAL ASTRONOMICAL SOCIETY
OF CANADA.

Meeting of Council R.A.S.C.
Can Institute

Wednesday June 10/06

The President DeLaurant in the Chair.

The following accounts were passed

Printing Proceedings for 1905 - -	375.70
Advertising Globe	7.50
Carriage	1.75
Ralph Clark for die	2.00
J. Jones engraving half-tone	53.40

Present

- Chant
- Mussor
- Elvins
- Stewart
- Marsh
- Clepham
- Collins

Some discussion took place in regard to the treatment of affiliated societies but this matter was left over for discussion at a future meeting.

W. Collins
Secretary

June 19/06

a meeting of the Royal Astronomical Society of Canada was held in the Canadian Institute on June 19/06. The President in the chair

The minutes of the previous meeting were read and approved

Communications

were read from Prof Léon, Mexico, - Geo Sanford Fleming, - the Hon the Minister of Education, J. Miller Barr, St Catharines, and from the Gill University, Miss Jessie Kerr Lawson, St Vincent St Fronte, was and Mr. E. Harper of the Dominion Observatory Ottawa, were elected ~~an~~ associates of the Society

It was noted that Mr Harper was the recipient of the Gold Medal for highest honors in astronomy and Astrophysics in the University of Toronto for 1906 the medal being donated by this Society

an observation of a mirage, seen from Swansea across the lake, - was reported by Mr John Ellis

The paper for the evening was by Mr F. L. Blake on the "Earth's Beginnings"

C. G. Hunt
Secy, 9/06 Pres

M Collins
Secretary

Open air meeting June 26/06

An open air meeting with telescopes, was held on the university campus and the observatory on the evening of June the 26th at which a number of interesting celestial objects were observed by friends and visitors. Six telescopes were in use as well as the large instrument in the dome of the observatory which was made accessible by the courtesy of the director.

C. B. Hunt

Pres.

Oct. 9/06

J. R. Allen
Secretary

Council Meeting Sep 21/06

In the Society's Library

Members of Council present were

- | | | |
|------------|-------------|------------|
| Mr Chant | Mr Paterson | Mr Ridout |
| Mr Graham | Mr Marsh | Mr Duncan |
| Mr Stewart | Mr Elvins | Mr Stupart |
| Mr Clapham | Mr Collins | Mr Munson |

The President explained that the Dominion Government had decided to grant the Society \$1000 per annum and it was thought that this large accession to the Society's funds would enable the publications to be published more frequently than in the Annual form as at present.

It was moved by Mr Munson & Mr Marsh that Mr Chant, Mr Ridout, Mr Paterson and Mr Stupart ^{with power to add to the members} be appointed a committee to consider the matter of a publication and to report at the next Council meeting - ~~concluded~~

The view was generally expressed - that objects of the Society might be better served - and a more general interest in astronomy stimulated - by the establishment of local branches in each province of the Dominion.

On motion of Mr Ridout & Mr Duncan:

Mr Marsh, Prof. de Ferris, Mr Chant and the Secretary were appointed a committee to consult and report as to the best means of proceeding in the matter and report at next Council meeting.

on request of
Mr Stuart consent was given Mr March
to have the use of the 4th Cooke telescope for
one month for comparison purposes

JR Collins
Secretary

Papers and Subjects for Discussion.

Session: October - December, 1908.

Meetings begin at 8 p.m.

October 9:

Astronomical and Geological Period.

ANDREW ELVINS.

Reports of Summer Observations.

October 23:

The Stonyhurst College Observatory.

REV. I. J. KAVANAGH, S.J., M.A., B.Sc.,
Loyola College, Montreal.

Some Recent Views on the Earth's Interior.

J. R. COLLINS.

November 6:

On Hailstones and Cosmic Ice.

A. KIRSCHMANN, Ph.D.

November 20:

Stellar Motions.

A. F. MILLER.

December 4:

Longitude Work on the 141st Meridian.

F. A. MCDIARMID, B.A.; Ottawa.

December 18:

The Astronomy of Shakespeare.

JOHN A. PATERSON, M.A., K.C.

SPECIAL NOTICE.

In addition to the papers announced on the opposite page there will be at each meeting:

1. Report on the Sun's Activity.

By F. L. BLAKE.

2. Review of Important Articles in Current Literature.

By VARIOUS MEMBERS.

NOTES.

Free discussion is allowed on each paper and on other timely subjects. This often is a very interesting feature of the evening.

The Society publishes its transactions, and has a library open to its members.

Miss J. K. Lawson, Assistant Librarian, will be in the Library on Tuesday evenings, and on other days from 3.30 to 5.30 p.m.

Associate Membership is open to every one interested in Astronomy or Astronomical Physics.

FEE:

Gentlemen residing in Toronto \$2.00

Ladies and non-residents - - 1.00

MINUTES

of a meeting of THE ROYAL ASTRONOMICAL SOCIETY OF CANADA, held at the Canadian Institute on the 9th of October, 1906, the President in the Chair.

Minutes of the previous meeting were read and approved.

Communications read from :

Mr. J. T. W. Claridge, the representative of the British Association on the Eclipse Expedition to Spain, asking for the Society's Report;

Mr. Henry Harrison, Jersey City;

Bulletins from Harvard College Observatory, respecting recent observations of the seventh satellite of Jupiter and the reappearance of Kopff's Comet.

Report from Council was read of a meeting held on the 21st of September.

Nominations :

James H. Coyne, B.A., St. Thomas,
proposed by E. A. Dent and C. A. Chant.

J. G. Boyce, 81 Beatty Avenue, Toronto,
proposed by J. R. Collins and C. A. Chant.

R. Stewart Muir,
proposed by A. Elvins and J. K. Lawson.

w. 14 Blizard, Toronto, *225 Huron St.*,
proposed by A. Elvins and J. R. Collins.

Chas. Tait,
proposed by J. K. Lawson and A. Elvins.

Reports of Observations :

A report of a fine aurora observed near Parry Sound on the 7th of August was given by Mr. J. McEachern.

A remarkable lunar halo or rainbow was reported by Mr. Graham as having been observed in Toronto on the 6th of October.

Librarian's Report :

The Report consisted of a list of the summer's additions to the Library.

Notes and Queries :

Mr. Elvins invited attention to a series of interesting articles which are appearing in the English Mechanic on the subject of The Infra World.

Dr.Chant reminded the Society that during the next year the rings of Saturn would gradually close up and that an opportunity would therefore be offered to observers to test the accuracy of the statement frequently made that at such times the ring gradually disappears until it is altogether invisible.

The paper of the evening, on ASTRONOMICAL AND GEOLOGICAL PERIOD, was written by Mr.Elvins and read by Dr.Chant. It dealt with the possible explanation of geological changes by astronomical causes.

Oct. 23, 1906.

C. A. Chant
Pres.

MINUTES of a Meeting of Council of the Royal Astronomical Society of Canada, held at the Canadian Institute, 22nd October, 1906, the President, Dr. Chant, in the Chair.

Present : Dr. Chant;;
Mr. Musson;
Mr. Stewart;
Dr. Marsh;
Mr. Collins;
Mr. Elvins;
Miss Dent.

The Committee on Publication, through Dr. Chant, reported (1) that it had been decided to recommend ~~for~~ that the preparation and printing of the Society's Annual ~~be~~ be at once proceeded with, and (2) that an estimate of \$2 per page had been made for the expense of printing and publishing the bi-monthly periodical which has for some time been contemplated by the Society.

Moved by Dr. Marsh, seconded by Mr. Musson, that the Report of the Committee be received with the thanks of the Council, and that the Committee be authorized to proceed with the publication of the annual, and that for this purpose the sum of \$300 be placed at its disposal. Carried.

Handbook

The Committee to consider ways and means of enlarging the scope and usefulness of the Society throughout the Dominion reported that though no formal meeting had been held, the subject had been informally considered and discussed between the individual members of the Committee, and that each member felt the importance of taking such measures as shall conduce to the greater usefulness of the Society. With this end in view, it was recommended that the Society make an effort to organize outside branches affiliated with itself in different parts of the country, and that the fee for all members of such branches be \$2 per annum, of which \$1 should be retained by the local

branches for their own expenses and \$1 be transmitted to this Society, in return for which the publications of the Society, including the bi-monthly periodical, which shall, when desirable, include notices of their meetings, etc.

Moved by Mr. Elvins, seconded by Mr. Stewart, that the Report of the Committee be received. Carried.

Moved by Dr. Marsh, seconded by Mr. Stewart, that this Council recommend to the Society the expediency of so amending By-law No. 16 of its Constitution as to provide that the annual fee payable by all members shall be \$2. per annum. Carried.

Mr. Collins reported that he had been informed that Lady Wilson has a terrestrial globe which she is willing to present to the Society, and the Secretary was requested to communicate with her on the subject.

The meeting was then adjourned.

REPORT FROM COUNCIL

of a meeting held on the 22nd of October, 1906.

Council met at the Canadian Institute, the President in the Chair.

The Report of the Committee on Publication was received ~~under this Report~~. The Committee was authorized to at once proceed with the publication of ~~the So-~~^{an}
~~society's~~ *Astronomical* Annual report, and the sum of \$300 was recommended to be placed at its disposal for the purpose.

The Report of the Committee on ways and means of enlarging the scope and usefulness of the Society throughout the country was received. This Report recommended that the Society make an effort to organize outside branches affiliated with itself in different parts of the Dominion, and that the fees for members of such branches be \$2 per annum, of which \$1 should be retained by the local branches for their own expenses, and \$1 be transmitted to this Society, in return for which the publications of the Society, including the bi-monthly periodical which has for some time been in contemplation by the Society, shall be supplied to such members.

It was resolved to recommend to the Society the expediency of so amending By-law No. 16 of the Constitution as to provide that the ^{annual} fee payable by all members shall be \$2.

Toronto, October 23rd, 1906.

C. J. Hunt
Pres.

THE GIANT PLANET.

The planet Jupiter, which will shortly be conspicuous in the evening sky, promises to be an interesting subject for telescopic observation, because of the appearance of a well-known marking on its surface. Jupiter's typical feature is its belts, or dark bands more or less parallel to its equator. In the south edge of the south equatorial belt there is an indentation or bay, in which lies an object known as the Great Red Spot, remarkable in one respect because of its changes of colour, which was almost a brilliant red for three years (about 1830), and, after some variations of tint, is now such that the spot is quite a faint object, but yet more notable, perhaps, because of its rate of movement. The length of Jupiter's day is still uncertain, because the time of rotation deduced from the individual visible markings—which are probably cloud-forms—varies. The Great Red Spot has shown rotation periods varying from 9h. 55min. 35s. (in 1879) to about 9h. 55m. 41s. in 1886 and 1896, and these are about twenty seconds longer than the period of the atmospheric belt in which it lies, so that, as has been said, it is like an island in a river whose current is drifting at the rate of twelve or fifteen miles an hour. The point of immediate interest is this:—At the beginning of this year the spot appeared to be moving at the slower of the rates indicated above, but observations show that during the past three months its velocity has suddenly increased, and that its period of rotation is now 9h. 55m. 34s., so that its rate is about the same as that exhibited in 1879. Why these variations?—“Daily Telegraph.”

MINUTES of a Meeting of
THE ROYAL ASTRONOMICAL SOCIETY OF CANADA,
held at the Canadian Institute on the 23rd of October,
1906, the President in the Chair.

MINUTES of the previous meeting were read and approved.

COMMUNICATIONS were read from :

J.T.W. Claridge, acknowledging receipt of the Society's Transactions, which had been sent to him;

J. Miller Barr, St. Catharines, respecting his observations of variable stars.

REPORT FROM COUNCIL of a meeting held on the 22nd instant was presented.

It was moved by Mr. Paterson, seconded by Mr. Graham, and carried, that the Report as read be received.

NOMINATIONS were read for the second time of -

J.G. Boyce, Toronto;
James H. Coyne, B.A., St. Thomas;
R. Stewart Muir, Toronto;
Charles Tate, Toronto;
W.H. Blizard, Toronto.

Moved by Mr. Graham, seconded by Mr. Duncan, and carried, that the Recorder be directed to cast a ballot in favour of their election.

The President then declared all candidates to be duly elected members of the Society.

The nomination was read for the first time of Dr. Rowena Hume, 226 Carlton Street, Toronto, proposed by Effie B. Woods and J.R. Collins.

LIBRARIAN'S REPORT was read, showing recent additions to the Library.

OBSERVATIONS : Mr. Blake reported that the sun is now and has been since the second week in September practically free of spots. He also stated that it is now proposed at Toronto Observatory to photograph the sun daily.

The attached newspaper clipping respecting the great red spot on Jupiter was read, and led to an interesting discussion in which Mr. Elvins took part.

An account of the work of the Stonyhurst College Observatory, in Lancashire, England, written by Rev. Father Kavanagh, of Loyola College, Mont-

real, was read

by Mr. John A. Paterson, K.C. The paper in addition recounted the great work of the Jesuit fathers for astronomy, including such names as Secchi, Perry, and Sidgraves. Mr. J. R. Collins reviewed the reasons for believing that the earth's interior is rigid and outlined the views ventilated on the subject by Professor Elihu Thomson, Dr. T. J. J. See and others.

Nov. 6/1906

C. J. Hunt
Pres.

M I N U T E S

of a meeting of The Royal Astronomical Society of Canada held at the Canadian Institute on the 6th of November, 1906, the President, Dr. Chant, in the Chair.

Minutes of the previous meeting were read and approved.

Business Arising out of the Minutes :

Dr. Chant referred to the proposed amendment of the Constitution recommended by the Report from Council presented at the last meeting, and gave a full explanation of the reasons which moved Council to recommend a change in the amount of the annual fee. A discussion followed, in which Dr. Marsh and Mr. Collins took part.

Moved by Dr. Marsh, seconded by Mr. Collins, that the Report from Council be adopted. Carried.

New Business :

Moved by Dr. Marsh, seconded by Mr. Muir, that a delegation, consisting of the President, the Secretary and the Recorder, be appointed to attend the opening meeting of the Hamilton Scientific Association on Thursday evening, the 8th instant. Carried.

Election of Members :

The nomination of Dr. Rowena Hume was read for the second time. It was moved, seconded and carried that the Recorder cast a ballot for the election of Dr. Hume, and the President declared her to be duly elected.

Nominations :

Alexander Laing, Detroit, Mich.,
proposed by Dr. Marsh and J. R. Collins;
Stuart Watkins, 318 Lippincott St., Toronto;
proposed by R. Stewart Muir and J. R. Collins;
P. Flint, 258 Gerrard Street, E., Toronto,
proposed by J. R. Collins and C. A. Chant.

Librarian's Report consisted of a list of recent additions to the Library.

Reports of Observations :

Mr. Miller reported that the variable star Mira is now visible. The star when first seen by him during the previous week was below the 6th magnitude, and to-night it has risen to about the 4th, a very rapid increase in light.

Several members reported having seen bright meteors.

The address was given by Professor Kirschmann,
of the University of Toronto.

Prof. Kirschmann, when discussing the nature of the earth's interior ~~and~~ ~~from the Royal Astronomical Society,~~ suggested conditions whereby certain chemical elements in the gaseous state might be changed or transmuted. These conditions were extreme pressure, and a fall of temperature to below the critical point. It was stated that these conditions probably existed in the earth's crust in times past, and likely now exist in the interior of the earth. Great light, it was thought, would be thrown on the question of the nature of material condensed in world formation, especially so as regards the metalli process, now found on the earth's crust, when artificial means of producing sufficient pressure can be obtained.

Dr. Chant exhibited a number of lantern slides of actual photographs recently taken of the planet Mars, showing lines like canals on its surface. These are the first photographs to be taken showing such marks. The plates were forwarded from Lowell Observatory, Flagstaff, Arizona, to Toronto, a few days ago. Photographs of the moon were also taken by Dr. Marsh of Hamilton.

Nov. 20, 1906.

C. A. Chant
President

M I N U T E S

of a meeting of THE ROYAL ASTRONOMICAL SOCIETY OF CANADA held on the 20th of November, 1906, at the Canadian Institute, the President, Dr. Chant, in the Chair.

MINUTES of the previous meeting were read and approved.

COMMUNICATIONS read from :

Mr. Harrison, of Jersey City, respecting his promised painting of the eclipse of 1900;

J. Keele, of the Geological Survey, requesting a copy of Professor Kirschmann's paper on "Life in Other Worlds."

Lady Wilson, presenting a fine terrestrial globe to the Society.

The Secretary was directed to acknowledge receipt of the globe and to express to Lady Wilson the thanks of the Society for her gift and good wishes.

ELECTION of Members :

The nominations were read for the second time of Messrs. P. Flint, Stuart Watkins and Alexander Laing.

Moved by Mr. Musson, seconded by Mr. Elvins, and carried, that the Recorder be directed to cast a ballot for the election of all candidates, who were then declared by the President to be duly elected Members of the Society.

NOMINATIONS :

The nomination was read of :

William A. Macdonald, Esq., M.B.,
8 Bloor Street, East, Toronto,

proposed by Dr. Chant and Mr. William Bain.

NEW BUSINESS :

Mr. Musson stated that Professor Heryama, of Tokyo Observatory, is willing to accept a Corresponding Membership in the Society, and that he is recommended for any such vacancy by the Reverend C. H. Short, a member of the Society, now in Japan.

Mr. Musson was directed to write to Prof. Heryama offering him a Corresponding Membership.

LIBRARIAN'S REPORT:

This consisted of a list of recent additions to the Library, and a number of Harvard Observatory Bulletins respecting the Comet recently discovered by Thiele at Copenhagen.

PREDICTIONS :

Mr. Collins read notes on approaching phenomena.

REPORTS OF OBSERVATIONS :

Mr. Miller reported his observations of the brightening of the variable star Mira within the last few weeks. Within a few days Mira rose from the seventh to the fourth magnitude, and it is now almost as bright as alpha Ceti, a second magnitude star.

Mr. Collins mentioned an interesting observation recently made by Professor Stebbins, of the University of Chicago, on the crater Linne.

NOTES AND QUERIES,

A resume of interesting articles which are appearing in the current scientific journals was given by Mr. Collins.

The Lecture of the evening was given by Mr. A. F. Miller, and was in continuation of his previous addresses on "Star Motions." Mr. Miller spoke particularly of the motions in binary star systems, and explained the method of mapping out the orbits of double stars and the manner of determining their masses. He considers that, as many of these bodies approach one another so closely at times that tremendous tides must be produced, there is little chance of such stars having planets upon which life as conceivable to us could be sustained. The address led to an interesting discussion, and the meeting was prolonged beyond the usual hour.

MINUTES OF A MEETING OF COUNCIL held in the Library,
29th November, 1906, the President in the Chair.

There were present :
Dr. Chant;
Mr. Elvins;
Mr. Musson;
Mr. Collins;
Mr. Ridout;
Professor Stewart;
Miss Dent.

An account of P.W. Ellis & Co., amounting to \$68, for the die and medal made therefrom, (being the medal presented for competition at the University of Toronto last term) was discussed. It appeared that the account was for some \$13 in excess of the Company's estimate.

Moved by Mr. Musson, seconded by Mr. Collins, that Dr. Chant and Mr. Ellis be given authority to deal with the settlement of the account according to their own discretion.

The subject of the amount of rental which the Society should pay to the Canadian Institute for the use of the small room used as a Library and the fortnightly use of the lecture room, was fully discussed, and it was finally decided to offer the Institute a yearly rental of \$100.

The recommendations of Council respecting Officers for the coming year were fully discussed. It being understood that Professor DeLury was unwilling to act as President, Dr. Chant was urged to continue in office for another year, and the list of recommendations was finally settled as follows :

Honourary President, ---William F. King, B.A., C.E., LL.D.;
President, -----C. A. Chant, M.A., Ph.D.;
1st Vice-President, ---W. Balfour Musson;
2nd Vice-President, ----Professor L. B. Stewart;
Treasurer, -----George Ridout;
Secretary, -----J. R. Collins;
Recorder, -----Elsie A. Dent;
Librarian, -----A. Sinclair;
Curator, -----Robert S. Duncan;
Members of Council : - Joseph Pope, C.M.G., F.R.S.C.;
A. F. Miller;
Reverend Dr. Marsh;
Professor A. T. DeLury;
L. H. Graham, M.A.

REPORT FROM COUNCIL

of a meeting held on the 29th of November, 1906, in the Library of the Society.

Three items of business were disposed of at this meeting :

1. The subject of the payment of an account for the die and astronomical medal presented by the Society for competition at the University of Toronto last year was discussed, and the matter was placed in the hands of Dr. Chant and Mr. Ellis to settle the same;
2. It was decided to offer the Canadian Institute a yearly sum of \$100 as rental for the use of the room used as a Library and the Lecture Room for its meetings;
3. The recommendations of Council for Officers for the year 1907 are as follow :

Honourary President -----William F. King, B.A., C.E., LL.D
Chief Astronomer, Ottawa;

President, -----C. A. Chant, M.A., Ph.D.;

1st Vice President, -----W. Balfour Musson;

2nd Vice President, -----Professor L. B. Stewart;
Treasurer, -----George Ridout;

Secretary, -----J. R. Collins;
Recorder, -----Elsie A. Dent;

Librarian, -----A. Sinclair;

Curator, -----Robert S. Duncan;

Members of Council : -----Joseph Pope, C.M.G., F.R.S.C.;

A. F. Miller;

Reverend Dr. Marsh;

Professor A. T. DeLury;

L. H. Graham, M.A.

M I N U T E S

of a meeting of THE ROYAL ASTRONOMICAL SOCIETY OF CANADA held at the Canadian Institute on the 4th of December, 1906, Mr. W. Balfour Musson, Vice-President, in the Chair.

Minutes of the previous meeting were read and approved.

Communications were read from: ^{Struven}
Professor Struven (?) of the Astronomical Society of Belgium;
Mrs. Mann, of Collingwood;
The Revd. Mr. Ward of Essex. ~~The Reverend Mr. Mann, of Collingwood~~
Harvard College Observatory Bulletins, respecting the ephemeris of Metcalf's Comet.

The Report from Council of the meeting held on the 29th of November was read and adopted.

Nomination :

William A. Macdonald, M.B.; nomination read for the second time. Moved by Mr. Elvins, seconded by Mr. Collins, and carried, that the Recorder be directed to cast a ballot for the election of Dr. Macdonald, who was then declared by the Chairman to be duly elected.

The Librarian's Report consisted of a list of recent additions to the Library.

Observations :

Mr. Miller reported that Mira has continued since the last meeting to increase in brightness. At that time it was below the second magnitude, and it is now above the second, and the brightest object in that part of the sky, being as bright as gamma Orionis, and yellow in tint. Mr. Miller asked particularly that the members of the Society observe the star during the next few weeks, as the present maximum was an unusually bright one and occurs at an unusually favourable time of the year for observation.

Predictions were read by Mr. Collins of approaching phenomena.

LONGITUDE WORK ON THE 141ST MERIDIAN was the title of the address by Mr. F. A. McDiarmid, B.A., of the Dominion Geological Survey, which was read, in his absence by Professor Stewart. The paper gave an interesting account of Mr. McDiarmid's experiences

last

last summer while engaged in determining the boundary between Canada and Alaska. The instrumental equipment was described in detail with the aid of lantern slides, and the method of making and verifying observations was explained.

At the close of the address it was moved by Mr. _____ and seconded by Mr. Miller that the paper be printed in full in the Society's Transactions.

Dec. 18, '06

C. A. Grant
Pres.

MINUTES OF A MEETING OF THE ROYAL ASTRONOMICAL SOCIETY OF CANADA, held at the Canadian Institute on the 18th of December, 1906.

The Minutes of the previous meeting were read and approved.

Communications read from :

J. Miller Barr, St. Catharines, respecting the future publication to be issued by the Society;

Professor Bickerton, of Christchurch, New Zealand, respecting his astronomical work;

Reverend Robert Atkinson, Chesley, recommending certain books to be placed in the Library.

Nominations :

Miss Helen Paton, Lachute, P.Q.,
proposed by K.M. Clipsham and E.A. Dent;

W.G. McMillan, 66 Howland Avenue, Toronto,
proposed by J.E. Maybee and E.A. Dent.

Librarian's Report of recent additions to the Library was read.

Observations :

Bulletins of Harvard College Observatory respecting Metcalf's Comet;

Mr. Musson and Mr. Miller reported having observed Mira during the last fortnight. Mr. Miller is of the opinion that the star has declined slightly in light, but that it is still of the second magnitude.

Dr. King, of Ottawa, who was present stated that the spectrum of Mira had been photographed at the Dominion Observatory, and that bright lines were found therein.

It was also reported that a large group of sun-spots is at present visible.

Dr. King, on being asked to speak, gave an outline of the work now being carried on at Ottawa Observatory, and stated that it is proposed to form an Astronomical Society in Ottawa. He was assured by the President that this Society would do everything to aid in such a scheme and that ~~if~~ the new Society would be, probably, regarded as a Section of the Royal Astronomical Society of Canada.

Notes and Queries :

An inquiry was made by Mr. Musson as to whether the election officers for 1907 was complete, and the President ruled that, the Report from Council embodying the recommendations for officers having been adopted without alteration or amendment on the 4th instant, the necessary action was complete, and that, under the circumstances, no formal election was called for.

A very fine photograph of the Moon taken by Dr. Marsh was presented to the Society by Dr. Chant on behalf of Dr. Marsh.

THE LECTURE was by Mr. John A. Paterson, K.C., ^{Pres}~~Vice~~ President of the Society, on the subject of "The Astronomy of Shakespeare." The paper was a particularly interesting one, and at its close the President stated that it would appear in the Society's Transactions.

Jan 22, 1907

C. Chant
Pres.