

sub-commissions unless they would be simultaneously coopted on to the commission concerned, in the manner provided for by the statutes."

The resolutions and recommendations adopted by the various commissions, which had been stencilled and distributed to the members present, were then read by the recorders of the General Assembly.

The President, in moving the adoption of these resolutions as well as the reports of the commissions, explained that in a number of the resolutions involving finances, which had been read in the form in which they were submitted by the presidents of the commissions, the amounts were to be corrected so as to bring them into accordance with the report of the Finance Committee which had already been adopted. He moved the adoption of the resolutions so modified and of the reports of the commissions, but would first invite comments. No comments being made, the President remarked, in connection with a resolution submitted by Commission 4, that it would be of great value to have also tables of the numerical values of goniometric functions for seconds of time in addition to those for seconds of arc mentioned in the resolution. Dr Spencer Jones answered that such tables are already being published by the British Government.

The reports and resolutions were then adopted by the General Assembly, and the President adjourned the meeting to 14.30.

#### *Meeting on August 10, 1938, 14.30 in the House of Parliament*

The President opened the Assembly and said that the election of the new President and Vice-Presidents of the Union was the first item on the programme for this afternoon. Following the proposal made in the morning's Assembly by the Executive Committee, Sir Arthur Eddington was elected as President for the following three years. In connection with the election of the new Vice-Presidents, Prof. Banachiewicz made the following statement:

"Je ne doute pas que les savants qui sont proposés par le Comité Exécutif méritent bien d'être élus membres du Comité. Toutefois, je crois que le principe d'après lequel certains pays devraient être représentés au Comité Exécutif d'une manière permanente n'est pas juste, vu que les autres pays en sont affectés. Par conséquent la Délégation Polonaise a l'intention de proposer à la prochaine Assemblée Générale une modification partielle du règlement de l'Union Astronomique Internationale qui apporterait un changement à cet état des choses."

The President remarked that these proposals would have to be discussed in the next General Assembly, three years hence, and proposed the election of Profs. Abetti, Brunner and Fabry as new Vice-Presidents to replace the retiring Vice-Presidents Profs. Banachiewicz and Bianchi and Dr Spencer Jones. The proposal was adopted *nem. con.*

The next business was to elect members of various committees of the "Conseil International des Unions Scientifiques". The following nominations were submitted by the Executive Committee:

Committee on Solar and Terrestrial Relationships: Dr d'Azambuja and Dr Nicholson.

As representatives of the Union on the Executive Committee of the "Conseil

International" the President (or a substitute nominated by him) and Prof. Bergstrand.\*

These nominations were agreed to.

Prof. Stratton then proposed that the list of members of various standing commissions as drawn up by the Nominating Commission and amended by the Executive Committee, and circulated to all those present be accepted as a whole. He remarked upon an omission to be corrected and said there might be a few printing errors which, however, the General Secretary and himself would be able to correct. He drew attention to the resolution accepted that morning, by which the presidents of commissions would have liberty to extend their activities through small sub-commissions in which members of other commissions could be included. The list of members was adopted.

In this connection the President called attention to a few changes: The new Commission 17 on the Moon is intended to cover exclusively the problems concerning the motion of the moon; a separate sub-commission was proposed for the occultations. Questions concerning physical observations and lunar nomenclature would be taken up by a separate sub-commission of Commission 16.

Two new sub-commissions had been proposed in Commission 22 (Meteors), one on the light of the night-sky, the other on zodiacal light. A new commission had been formed on interstellar material.

Profs. Fabry, Leuschner and Esclangon had been elected as presidents of honour of, respectively, Commission 9 (Instruments), Commission 20 (Minor Planets) and Commission 23 (Carte du Ciel).

Mr W. D. Lambert drew attention to the fact that some of the commissions are mixed commissions containing members from the Union of Geodesy and Geophysics as well as members from the Astronomical Union, and that the members nominated at present are only the astronomical members. The President answered that due notice would be taken of this fact.

The next point was the determination of the place of the next meeting. The President called on Prof. Brunner to address the Assembly. Prof. Brunner spoke as follows:

MONSIEUR LE PRÉSIDENT, MESDAMES, MESSIEURS,

Au nom du Comité National Suisse d'Astronomie et avec l'autorisation du Gouvernement Fédéral Suisse j'ai l'honneur d'inviter l'Union Astronomique Internationale à tenir sa prochaine Assemblée en Suisse. Les astronomes suisses se rendent compte qu'ils ne pourront pas offrir aux membres de l'Union un accueil aussi splendide que celui dont nous avons joui à Stockholm et lors des réunions précédentes. Cependant je puis vous assurer qu'ils feront tous leur possible pour faciliter les travaux de l'Union pendant le congrès et pour rendre agréable le séjour de leurs collègues en Suisse.

The President proposed that the invitation from Switzerland be accepted, and this proposal was carried with acclamation. The President said that the thanks of the Union were due to the Swiss colleagues as well as to the Swiss Government for the loyal way in which they had extended this invitation.

\* Previous to the Stockholm meeting Prof. Bok had been nominated as correspondent on the Committee on Science and its Social Relations, and Prof. E. Strömgren as delegate to be consulted by the "Institut International de Coopération Intellectuelle" in the matter of scientific nomenclature.

He then said that he would ask Prof. Leuschner to carry the thanks due by the members and guests to their Swedish hosts while he would ask Mrs Jackson to speak more especially on behalf of the ladies.

**PROF. LEUSCHNER:**

At the close of our meetings it becomes the privilege of a member of the Union to give expression to the thoughts that stir our hearts and minds as we prepare to scatter to the four corners of the world. No one, least of all the speaker, could presume that he can measure up to this opportunity and yet, I must venture to speak for all of you. We came here virtually in droves, the greatest number from my own country. What caused this invasion? As astronomers we realize that practically in all of our scientific activities we are building on foundations that, to a very large extent, have been laid by the great scientific minds of this highly intellectual nation. Some of our older members have been here before, but the younger generation, which is exceptionally well represented here, could not resist the urge to visit the Swedish centres of creative science about which they had read and heard so much at home. To combine the serious work of scientific conferences with an enjoyment of the marvellous setting and the cultural features of Stockholm and Upsala, so characteristic of the scenic beauties of the land and of the high place of the kingdom in scholarship, science and art, was an opportunity of a lifetime not to be missed. So we came by water, air, rail, and motor with expectations so high that only the descendants of the Vikings, rugged and adventurous in body and mind, could dare to live up to our visions, and yet they have more than surpassed our extravagant expectations by the combined efforts and generosity of the representatives of the kingdom and of the municipality, of the Swedish Academy of Science, the national and local committees and the directors and staffs of its noted observatories. Time does not permit to dwell on all they have done to make this meeting not only an historical event of the highest significance in steering the course of future astronomical exploration by international cooperation, but unconsciously perhaps, to confirm our admiration of the Swedish nation, well known all over the world for its sane social and political structure, for its flourishing industries, and for its prestige as a balance wheel in the settlement of international problems.

On several special occasions during the past week our distinguished and amiable President, M. Esclançon, has expressed our gratitude in eloquent terms, and last evening, at the final banquet tendered by the Swedish National Committee, Mr Stratton, without precipitating the slightest confusion of languages, such as prevailed at the Tower of Babel, paid particular tribute in many tongues to the National Committee in incomparable manner. Thanks for hospitality have also been offered in behalf of the ladies by Mme Mineur. Nevertheless, I cannot refrain on this occasion to acclaim once more the splendid arrangements, perfect in every detail, for which the national and local committees are responsible and, in this connection, our thanks are due primarily to Messrs von Zeipel, Lindblad and Öhman.

The striking evidences of interest in our meeting of the national and municipal governments have become more and more apparent from day to day. We thank Statsrådet Westman for the cordial words of welcome addressed to us in behalf of the kingdom at the opening session, and beg him to convey to the Swedish Government our deep sense of appreciation for placing at our disposal the House of Parliament with its unparalleled facilities for conducting our conferences in a most

dignified atmosphere. The Municipality greeted us with a display of flags waving a continuous goodwill to all the 25 nations represented at the meeting. This and the magnificent supper tendered us in the Gold Room of its world-famous City Hall presided over with such genuine cordiality by the Vice-President of the City Council, General Åkerman, will long linger in our memory as a tribute to our science. To the Swedish Academy of Science we owe a debt of gratitude for the founding and maintenance of the Stockholm Observatory. The Academy has been richly rewarded by the resulting flow of outstanding contributions to the science of astronomy. Happily for us the present President of the Academy is a distinguished astronomer and we extend to Mr Lindblad our sincere thanks for the hearty welcome extended to us in behalf of the Academy.

Our visits to the observatories at Saltsjöbaden and Upsala virtually gave us the long-sought opportunity of seeing the staffs at work on their significant investigations. For this privilege we convey our thanks to their distinguished directors, Messrs Lindblad and Bergstrand. We beg the latter to convey our heartfelt thanks to the University of Upsala which he so admirably represented, as Vice-President, in the absence of Rektor Magnificus Engströmer, and to the municipality of Upsala through Mr Johansson, President of the City Council, for joining so generously in the hospitality of the Upsala Observatory and the National Committee on the occasion of our visit to the Observatory, the Cathedral and the Library, all so rich in cultural traditions.

And now, Ladies and Gentlemen, words fail me in expressing our appreciation and deep sense of obligation to His Majesty the King for the reception tendered us at the Royal Palace and to Prince Gustaf Adolf, who represented His Majesty in his absence and in that of H.R.H. the Crown Prince. The gracious manner in which the Prince received us and chatted with us will long linger in our memory. To Baron Fleetwood, Master of Ceremonies, we owe our thanks for his prominent part in this unusual occasion. The contributions of the Royal Family to science are so well known that I venture to express our pride in having so noble and competent colleagues in the advancement of science. In homage to His Majesty the King and his Royal House who have made this meeting so significant I ask you all to rise.

I cannot close this expression of appreciation without referring at least briefly to some of the Swedish pioneers of astronomical science, although I realize the impossibility of doing full justice to Sweden's large army of creative scientists. Let me call to your minds but a few facts and men. The first Swedish observatory was founded at Lund in 1671 under Spole, who also originated the first observatory at Upsala 250 years ago. One of the most distinguished directors at Lund was Charlier, under whose leadership statistical and fundamental astronomy, as well as astrophysics, flourished, while under the present noted director Mr Lundmark, metagalactic investigations have been developed with the highest standards and are afforded recognition throughout the astronomical world.

At Upsala astronomical instruction had been inaugurated without observatory facilities as early as 1477. After a period of decline the University was rehabilitated in 1620 by King Gustavus Adolphus. The present observatory owes its origin to A. Celsius, distinguished for his work in photometry and for the centigrade thermometer. Upsala also claims A. J. Ångström, who gave us the unit of wave-length that bears his name and who was the first of three generations of the Ångström dynasty of scientists. Dunér, as is well known, introduced astrophysical work in Sweden, so outstanding at the Upsala Observatory under the present noted

director Mr Bergstrand, while in theoretical work Mr von Zeipel keeps Upsala in the forefront of research.

The old Stockholm Observatory was founded by the Swedish Academy of Science in 1748, with Wargentin, known for his work in theoretical and practical statistics, as first director. Since 1931 it is in the new location at Saltsjöbaden, splendidly equipped for its outstanding work, under the direction of Mr Lindblad, in spectrum analysis, luminosity criteria, parallax determination, milky way structure, and so forth. Time does not permit to enlarge on my very incomplete sketch of Swedish astronomy but indeed it would seem strange if I did not refer to the achievements of Gylden and Bohlin in theoretical astronomy, the field of my own special interest. Both inaugurated epoch-making attacks on the problem of planetary perturbations. To Mr Bohlin and his fellow Dean of Swedish astronomy Mr Lindstedt we extend our devoted greetings.

And now, as we bid affectionate farewell to our hosts who made this meeting so memorable, I offer to tender to them as the principal reward of their untiring efforts in our behalf the sincere assurance that through the inspiration which they and their predecessors have given us, we return to our homes with ever-increasing love and devotion to the noble science of astronomy.

MRS JACKSON:

On behalf of the ladies who have come to this meeting of the International Astronomical Union, I wish very sincerely to convey our heartfelt thanks to the Ladies Committee for the gracious welcome and lavish entertainment which we have received.

During our stay here we have been shown Stockholm old and new. We have enjoyed seeing, under excellent guidance, much in your art galleries and museums, that has made Sweden famous.

The work of organising the excursions and other entertainments has won our greatest admiration and appreciation.

When we leave your beautiful city and its lovely surroundings, we shall carry away with us, to all parts of the world, pleasant memories which will remain with us all our lives.

In the name of the ladies attending this congress, I have to thank Mrs Lindblad, Mrs Öhman and their helpers for their untiring kindness throughout our stay.

After the address by Mrs Jackson two bowls filled with flowers were offered by Lucinda Boss and Lucienne Cox, on behalf of the ladies present, to Mrs Lindblad and Mrs Öhman as a lasting souvenir of the Stockholm meeting.

PROF. ESCLANGON:

Au moment où nous allons nous séparer, nous disperser à nouveau aux divers coins du monde, je ne peux, en abandonnant la présidence, que renouveler ici, aux membres de l'Union, l'expression de ma gratitude pour l'honneur qu'ils ont bien voulu me faire, et faire à l'astronomie française, en me désignant, en 1935, pour présider, pendant les trois années écoulées, aux destinées de l'Union Astronomique.

Jamais notre Union n'a été aussi florissante, ni aussi grande. Le Congrès de Stockholm marque une étape magnifique de sa puissance. L'éclat des manifestations, l'ampleur des travaux qui se sont poursuivis ici, l'affluence considérable et exceptionnelle des astronomes qui y ont participé, sont le témoignage de sa vitalité, de sa force, de son activité, de son rayonnement; j'ajouterai, de l'union si parfaite

qui y règne, de l'unanimité des sentiments de cordialité profonde qui s'y développent et l'entourent d'une atmosphère de confiance réciproque et sans mélange.

Mais je manquerais à mon devoir, si je ne rendais un témoignage particulier aux principaux artisans de l'éclatant succès de ce congrès. En ce qui concerne l'organisation de nos assemblées et de nos travaux, nous devons adresser à notre Secrétaire Général, M. Jean Oort, nos félicitations et nos plus chaleureux remerciements. Il a apporté en cette tâche, un soin, une compétence, une méthode, un désintéressement qui sont au-dessus de tout éloge, mérites rehaussés, au surplus, par une manière particulièrement affable, agréable et obligeante.

Quant à nos collègues de Stockholm, et particulièrement à l'éminent directeur de l'Observatoire M. Lindblad, et aussi au Président du Comité National le professeur von Zeipel, nous leur devons la magnificence de ce congrès; nous ne pouvons que leur exprimer notre admiration et notre reconnaissance. Notre congrès s'est déroulé en effet, dans un émerveillement continu; le ciel, lui-même, s'est joint aux efforts de nos collègues pour parer d'un éclat incomparable, notre séjour en cette merveilleuse cité.

Si nous avons pu nous tromper sur les caractères météorologiques de ces climats nordiques, où nous ne voyions que brumes épaisses et froidures mélancoliques, il est un point sur lequel nous ne pouvions avoir aucune surprise; c'est celui de l'accueil qui devait nous être fait ici. Nous savions combien il serait cordial et chaleureux; il a encore dépassé nos espérances; accueil inoubliable, empreint de charme et de simplicité affectueuse. A notre collègue et ami M. Lindblad, qui a été l'âme agissante de cet accueil si émouvant pour nous, nous devons adresser aujourd'hui l'expression de notre infinie reconnaissance, ainsi qu'au professeur von Zeipel, à M. Ohman, et à tant d'autres, qui y ont si activement participé.

Et maintenant, Messieurs, il nous faut adresser nos salutations au nouveau président M. Eddington. Son nom rayonne d'un éclat incomparable dans la science moderne; M. Eddington a apporté dans l'astronomie et dans la pensée scientifique des horizons nouveaux, qui ont ouvert des vues pleines de clarté sur l'intimité du monde qui nous entoure.

Notre Union ne pouvait que s'honorer grandement en le choisissant comme Président, et nous le remercions d'avoir accepté.

Nous devons exprimer aussi notre vive gratitude aux membres du Comité exécutif qui se retirent du Bureau après avoir apporté tant d'intérêt et d'efforts au développement de notre Union et pris tant de part à son activité. J'ai nommé MM. Spencer Jones, Bianchi et Banachiewicz. Je suis sûr que les membres de l'Union n'oublieront pas les éminents services qu'ils nous ont rendus.

Nous devons adresser, enfin, des remerciements aux membres de l'Union: MM. Abetti, Chrétien, Swings, qui ont accepté de remplir le rôle d'interprètes et de secrétaires du Congrès. Leur concours actif et désintéressé a apporté de grandes facilités dans l'accomplissement de notre tâche et de celle des commissions qui ont eu recours à leur compétence.

Et maintenant je prierai les nouveaux membres du Comité exécutif, Vice-Présidents de l'Union, de bien vouloir prendre place au Bureau et, en l'absence de M. A. S. Eddington, que des nécessités impérieuses ont mis dans l'obligation de partir ce matin, j'invite M. W. S. Adams à présider la suite de la dernière Assemblée générale.

Dr Adams having taken the chair explained that, in connection with preparations for the Cambridge meeting of the British Association for the Advancement of

Science, Sir Arthur Eddington had had to leave Stockholm before the final General Assembly and had asked him to read the following message:

MEMBERS OF THE INTERNATIONAL ASTRONOMICAL UNION,

I am sorry that I cannot be present in person to thank you for electing me to this high office. I must speak to you from a distance through other lips; and you will doubtless observe that my velocity of recession from Stockholm has given my accent a displacement towards the West.

I can scarcely attempt to express the feelings with which I follow M. Esclançon and the other eminent astronomers who have shed lustre on this office. It is so dizzy an eminence that I scarcely dare to look down and realise my position. But what adds especially to the honour is that so many of you who have chosen me are friends and colleagues with whom I have had long associations; and you have not even the excuse of being unaware of my deficiencies.

My uppermost feeling is a great responsibility to deserve the trust you have placed in me. We cannot foresee what may happen before we meet again in Zürich. On the astronomical side we can make some guess. The 200-inch reflector will be completed or approaching completion. The marvellous advance in the photography of the corona and prominences, which has been so memorable a feature of this meeting, will bear fruit in advancing knowledge. And our numerous commissions will patiently extend their researches. But on the international side no one dares prophesy. But, if in international politics the sky seems heavy with clouds, such a meeting as this at Stockholm is as when the sun comes forth from behind the clouds. Here we have formed and renewed bands of friendship which will resist the forces of disruption.

I tender to you my heartfelt thanks for this election and I look forward to meeting you all again at our reunion three years hence.