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INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS  
(ICSU)

# INTERNATIONAL GEOPHYSICAL YEAR ANNÉE GÉOPHYSIQUE INTERNATIONALE

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ANNÉE GÉOPHYSIQUE INTERNATIONALE  
THIRD MEETING OF THE SPECIAL COMMITTEE  
FOR THE  
INTERNATIONAL GEOPHYSICAL YEAR (CSAGI)

Brussels

8-14 September 1955

Part I

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# NARRATIVE ACCOUNT OF THE BRUSSELS MEETING

## INTRODUCTION

The Special Committee for the International Geophysical Year (CSAGI) held its Third Meeting at the Palais des Académies, Brussels, 8-14 September 1955, by kind invitation of the Belgian Royal Academy of Sciences.

The first meeting had been held in the same place, 30 June-3 July 1953, following a preliminary Brussels meeting of the four original members (L. V. BERKNER, J. COULOMB, M. NICOLET, and E. HERBAYS, provisional secretary) to initiate organizational procedures in October 1952; the second meeting was held in Rome, 30 September-4 October 1954. The reports of these meetings were published in the IGY Information Bulletins Nos 1, 2 (Brussels meeting) and 3-5 (Rome meeting), which were reprints from the News Letter of the International Union of Geodesy and Geophysics.

The IGY committees of the International Union of Radio Science (URSI) and of the International Union of Geodesy and Geophysics (IUGG) also met (8-10 September) in the Palais des Académies in conjunction with the CSAGI meetings.

Thirty-three National IGY Committees presented national reports; thirty sent a delegate or delegates. In all, one hundred and seventy-two persons took part in the meetings, and co-operated in the working groups that assisted the CSAGI in planning the IGY program.

The following Presidents of International Unions were present:

Astronomy (IAU): Professor A. DANJON (member of the CSAGI), Radio Science (URSI): Rev. Father P. LEJAY,  
Geodesy and Geophysics (IUGG): Professor K. R. RAMANATHAN.

Sir Edward APPLETON attended as President of the URSI-IGY Committee, and Dr. Ronald FRASER as representative of the International Council of Scientific Unions (ICSU).

The Inaugural Meeting was held on 8 September, beginning at 10 a.m. Later CSAGI met three times in executive session, and it held four plenary sessions which were attended also by members of the Press. The Advisory Council of the International Geophysical Year (ACIGY) held two meetings. The Bureau held nine meetings.

The time-table of the meetings was as follows:

### *Time-table (September 1955)*

Inaugural meeting	Thursday 8th, at 10 a.m.
Executive sessions: CSAGI	Thursday 8th, at 2.30 p.m.
	Monday 12th, at 2.30 p.m.
	Wednesday 14th, at 9.30 p.m.

Plenary sessions: CSAGI	Friday 9th, at 9.30 a.m. Monday 12th, at 9.30 a.m. Tuesday 13th, at 9.30 a.m. Wednesday 14th, at 2 p.m.
Advisory Council: ACIGY	Thursday 8th, at 4 p.m. Wednesday 14th, at 11.30 a.m.
Bureau of the CSAGI	Wednesday 7th, at 10 p.m. Thursday 8th, at 11 a.m. Friday 9th, at 9 a.m. Friday 9th, at 4 p.m. Saturday 10th, at 9 p.m. Monday 12th, at 8 a.m. Tuesday 13th, at 9 a.m. Tuesday 13th, at 11 a.m. Wednesday 14th, at 8 a.m.

On Friday, 9 September, at 4.30 p.m., Dr. H. E. NEWELL gave an address on earth satellites (see pp. 73-79). Members of the Press attended.

On Tuesday, 13 September, at 5 p.m., Mr. G. LACLAVÈRE gave an address on the Antarctic IGY program. Members of the Press attended.

The Ministry of the 'Instruction Publique' entertained those attending the CSAGI meetings, and members of their families, to an all-day excursion to Ghent and Bruges, including luncheon at Bruges, on Sunday, 11 September.

The Brussels Embassy of the Union of Soviet Socialist Republics (USSR) invited those attending the CSAGI meetings, and their ladies, to a reception on Monday, 12 September.

The Brussels Embassy of the United Kingdom of Great Britain and Northern Ireland (UK) invited those attending the CSAGI meetings, and their ladies, to a reception on Tuesday, 13 September.

### INAUGURAL MEETING

10 a.m., Thursday, 8 September 1955

The Inaugural Meeting was attended by Professor J. F. Cox, Permanent Secretary of the Belgian Royal Academy of Sciences, who welcomed CSAGI and the delegates in the following terms:

'Monsieur le Président, très honorés Collègues,

'L'Académie royale de Belgique a bien voulu charger son Secrétaire perpétuel d'adresser des souhaits de bienvenue au Comité Spécial de l'Année Géophysique Internationale 1957-58.

'Je suis heureux d'être chargé de cette mission, car parmi les nombreux et passionnants problèmes dont vous allez vous occuper, il en est qui sont destinés à retenir toute l'attention des astronomes. Je pense notamment à l'étude approfondie et détaillée des trajectoires des satellites artificiels qui appellera, que l'on procède par pointés ou à l'aide du radar, d'intéressantes généralisations de méthodes de la géodésie et qui sont susceptibles d'apporter,

comme Esclançon l'a si bien indiqué, de précieuses indications sur la manifestation d'un Effet Einstein de déplacement du périhélie de ces satellites.

'Je songe au problème de la détermination précise des différences de longitudes et à l'étude de la dérive des continents, aux répercussions possibles de ces phénomènes liés aux variations des latitudes, sur les fluctuations irrégulières de la rotation de notre globe. Il n'est pas jusqu'aux pertes de masse du Soleil, liées aux manifestations de l'aurore boréale qui ne soient de nature à exercer quelque influence sur le mouvement des planètes.

'Je dois m'élever ici au-dessus de ces considérations spéciales pour exprimer la joie toute particulière de l'Académie d'être associée à une grande entreprise de coopération internationale, dont il n'est guère douteux qu'elle marquera une date mémorable dans l'histoire de la pensée scientifique, date comparable en importance pour le planning scientifique international, à celle de l'année 1919 au cours de laquelle ont été fondées, ici même, les grandes unions scientifiques internationales.

'L'Académie est particulièrement heureuse de voir siéger chez elle votre illustre assemblée; elle se réjouit d'apercevoir parmi vous des chercheurs belges compétents, qui contribueront au rayonnement de la Belgique, et dont elle se doit de soutenir l'effort. Elle aime évoquer en cette circonstance le souvenir de l'expédition de la *Belgica*.

'L'Académie royale de Belgique forme les vœux les plus chaleureux et les plus sincères pour la réussite de vos importants travaux.'

In reply, the President, Professor S. CHAPMAN, thanked Dr. Cox for his eloquent and cordial welcome given on behalf of the Belgian Royal Academy of Sciences, to which CSAGI was indeed grateful for having placed so large a part of the Academy premises at their disposal. He recalled with pleasure that CSAGI had held its first meetings in the rooms of the Academy in June-July 1953: 'At the meeting the twelve members of CSAGI (as then constituted) were aided by twelve "observers" coming from nine countries; they had before them 26 reports from URSI, IAU, IUGG, the World Meteorological Organization (WMO), the ICSU Mixed Commission on the Ionosphere (MCI), and National IGY Committees. At that meeting the first draft of the IGY program was drawn up. These plans were improved and enlarged at the second CSAGI meeting in Rome, September-October 1955. At the present Brussels meeting the plans will be further considered in the light of another year's studies and preparation. The program as developed at this meeting may be regarded as substantially definitive, though there will remain some possibility of later additions to the program and to the number of participating nations.'

The President then extended a welcome to three new members added by the ICSU since the Rome meeting: namely, to two additional IUGG representatives, Dr. V. V. BELOUSOV and Dr. N. V. PUSHKOV, and to a representative of the International Union for Biological Sciences (IUBS), Dr. A. F. BRUUN.

The President expressed his regret, and that of the CSAGI as a whole, at the absence, owing to illness, of Dr. J. COULOMB. He mentioned that Dr. J. A. SIMPSON and Dr. M. S. VALLARTA, who represented the International Union of Pure and Applied Physics (IUPAP) on the CSAGI, were

absent in Guanajuato, Mexico, where the IUPAP was holding a symposium on Cosmic Rays. This symposium was to be followed by a meeting of cosmic ray physicists on 14 September, also at Guanajuato, to consider the cosmic ray portion of the IGY program; the Bureau had agreed that this meeting should be recognized as a meeting of the IGY working group on the cosmic ray section of the IGY program; but there would be opportunity for discussion of this part of the program in Brussels if that were desired. Professor J. A. SIMPSON, reporter of the CSAGI cosmic ray group, would prepare the report.

The President then welcomed the delegates appointed by the National IGY Committees as members of the Advisory Council (ACIGY) set up by the ICSU in March 1955. He also welcomed the officers of the International Unions, the representative of the ICSU, and the officers and members of the IGY committees of the Unions. He expressed the pleasure and satisfaction felt by the CSAGI at the presence of so many national observers who had come to join with the CSAGI in the detailed planning of the IGY program.

He added that members of the Press were free to attend the plenary sessions of the CSAGI, but that they were not invited to the other meetings of the CSAGI, of the ACIGY, or of the working groups; at 5 p.m. each day two members of the Bureau would be available to inform the Press of the day's progress.

Finally, he briefly indicated the time-table of some of the later meetings.

He then called on the Vice-President, Dr. L. V. BERKNER, to speak, and congratulated him on his election as the incoming President of the ICSU. Dr. Berkner spoke as follows:

'It is indeed an honor and a pleasure to note the way in which plans for the International Geophysical Year have advanced since last year's meetings. There are now forty nations formally adhering or actively preparing for the International Geophysical Year. But in particular, and more important, this meeting signals the beginning of active operations of the International Geophysical Year. In two or three months the Antarctic expeditions will set off, and their equipment is now being assembled.

'I should like to invite attention to the fact that in 1950, in these rooms of the Palais des Académies, the Mixed Commission on the Ionosphere presented to the ICSU and the Unions the initial official proposal for the International Geophysical Year. With this, and the subsequent meetings of the CSAGI held in Brussels with the co-operation of the Belgian Royal Academy, the Belgian nation has contributed immeasurably to the encouragement of the IGY. Following the enthusiastic concurrence of the interested Unions to the proposal for the IGY, the ICSU formed the CSAGI, thus providing an international mechanism to organize the International Geophysical Year program. We owe a great debt of gratitude to the ICSU not only for providing the organizational mechanism, but also because last year, when the planning grew beyond the original estimates, the ICSU helped by providing additional funds. It is a source of satisfaction that the ICSU is available to help the scientists of the world to plan such a program. We must also recall the very generous support of the UNESCO; it has consistently provided funds to the ICSU for the IGY, and

voted an additional \$15,000 for the support of the CSAGI Secretariat for the year 1955 when the scope of the program made additional funds necessary. Therefore, the ICSU and UNESCO have demonstrated, by their recognition and support of IGY, the ability of international scientific organizations to fulfill their responsibilities. The IGY owes a great debt to these organizations.'

Dr. M. NICOLET, General Secretary, then outlined the day's program. He stated that the report of the National IGY Committee of the USSR had been received, and would be available on the 9th, two copies for each national committee represented at the meeting; as soon as possible copies would be available for all present.

The leaders of all national delegations were then asked to give the list of members of their delegations to the secretariat.

The President announced that, as at the two previous CSAGI meetings, working groups would be formed for the study of the different scientific branches of the IGY program; these working groups were to serve only during the period of the CSAGI meeting.

The President stated that the subjects to be considered by separate working groups had increased by the addition of Seismology and Gravimetry. The working groups and their leaders were announced as follows: the enumeration of the groups is that used in the Rome report (see below, p. 15, regarding group I).

- II. Meteorology: VAN MIEGHEM.
- III. Geomagnetism: LAURSEN.
- IV. Aurora and Airglow: CHAPMAN (acting reporters during the meeting, ELVEY and ROACH).
- V. Ionosphere: BEYNON.
- VI. Solar Activity: SPENCER JONES.
- VII. Cosmic Rays: SIMPSON (during his absence at Guanajuato, HERLOFSON).
- VIII. Latitude and Longitude: DANJON.
- IX. Glaciology: WORDIE.
- X. Oceanography: LACLAVÈRE.
- XI. Rockets and Satellites: BERKNER (acting reporter during the meeting, NEWELL).
- XII. Seismology: BELOUSSOV.
- XIII. Gravimetry: TARDI.

The leaders of national delegations were asked to indicate, on the lists giving their names, the working group(s) to be attended by each delegation member.

Sir Edward APPLETON, on the invitation of the President, then spoke as follows:

'The URSI naturally has a special interest in the IGY program, which has developed in such a gratifying way. As Dr. BERKNER has mentioned, it was five years ago in this room that the Mixed Commission on the Ionosphere first made the official proposal for a Third International Polar Year, a project conceived, I understand, in the fertile brain of our Vice-President,

Dr. Berkner. Now the radio people are modest, and, realizing the scope of the proposal, the URSI, which had received it from the Mixed Commission, passed it on to the ICSU with favorable endorsement, which has been responsible for its growth since 1950. It was natural for us to see the enormous scientific value of "experiments in concert" (to quote an expression due to Francis Bacon). But I should like to remark that the proposal has additional importance in that it emphasizes the common interests rather than the differences between nations. It is my belief that the International Geophysical Year can be and will become a great instrument for fashioning the peace of the world.

'I suppose that here I am the only one of the few people in the world who went to the Arctic during the International Polar Year in 1932 to study ionospheric conditions. Today we realize also the importance of the equatorial regions. Thus we are happy that the proposal for a Third International Polar Year was transformed into one for an International Geophysical Year. We radio workers have also been glad to see the rocket developed as a research tool for the study of the upper atmosphere and the sun; the rockets have valuably supplemented the results of radio research. At first we were anxious to know whether their results would confirm the radio results, and it was gratifying to find in due course that they did; moreover, they add to the radio results. We look forward now to the new atmospheric knowledge opened to us by the radio study of meteors, by radio astronomy, and by the radio study of the troposphere and of auroras.'

He then invited all national observers interested in the IGY ionospheric program to join with the URSI-IGY committee, which would thus act as the CSAGI working group for this subject at the present meetings.

Dr. RAMANATHAN, President of the IUGG, spoke next: he remarked on the importance of the scientific study of the Antarctic, now being planned so vigorously; it will greatly expand our knowledge of this region, hitherto almost as inaccessible as the high atmosphere. In July the General Secretary of the IUGG, Mr. Laclavère, called an Antarctic conference in Paris on behalf of the CSAGI; this conference was attended by representatives of nine nations that proposed to take part in the IGY Antarctic program; they met to decide on the location of stations, and to conceive joint plans for the efficiency and safety of the various expeditions.

Dr. Ramanathan next expressed satisfaction at the inclusion of seismology and gravimetry in the IGY program. He also emphasized the importance of the meteorology of the equatorial region, and of studies of the tropopause.

The President thanked Sir Edward Appleton and Dr. Ramanathan for their remarks.

The meeting was then adjourned, and the leaders of several of the working groups convened their members and began consideration of the national reports and IGY program.

### CSAGI: FIRST EXECUTIVE MEETING

2.30 p.m., Thursday, 8 September

At this meeting the President recalled the addition by ICSU of three new members of the CSAGI: Dr. V. V. BELOUSSOV and Dr. N. V. PUSHKOV as



additional representatives of the IUGG, and Dr. A. F. BRUUN as representative of the IUBS; he also mentioned the Antarctic conference held in Paris in July.

The General Secretary then presented his report for the interval since the Rome meeting of the CSAGI.

#### REPORT OF THE GENERAL SECRETARY

Since the Rome meeting, the National Committees have in many cases made important extensions or changes in their national program following the 1954 CSAGI proposals thus laid down; in some cases budgetary action for the national programs has been taken, or the program has been modified by reason of financial considerations.

At this meeting the international program is to be reviewed in the light of these changes in previous national programs and of the new national programs to be presented by nations that have only lately decided to participate in the International Geophysical Year. Consequently, those national committees which submitted reports last year were invited by a circular letter to prepare revised ones, and those National Committees which have not yet submitted their reports were asked to prepare complete and detailed plans for this meeting, together with statements of their recommendations, if any, regarding the scope and nature of the international program. All the delegates and observers will find these documents at the Secretariat.

Furthermore, the Advisory Council of the International Geophysical Year (ACIGY), formed (following the ICSU recommendations) of representatives one from each national committee, will be able to co-ordinate programs between nations. Such co-ordination will facilitate mutual assistance between countries operating the various stations during the International Geophysical Year and should help the work of the Secretariat.

At the Rome meeting it was decided to prepare operation manuals for the observations during the International Geophysical Year. Some of these manuals are being prepared. At this meeting, all such material must be considered. It is hoped that sufficient material will be available here to permit the final appointment of editors for each discipline, who should be able to prepare the manuals for publication by the CSAGI Secretariat soon after the Brussels meeting.

Finally, at this meeting the problems of publication and distribution of data obtained during the International Geophysical Year must be considered. An important aspect is to get agreement on (a) exactly what data will be interchanged, (b) how and when it will be interchanged during the International Geophysical Year, and (c) the form of the data in terms of publications.

It is essential that the publication problems be considered *discipline by discipline* before final proposals are recommended by the CSAGI.

In particular, the CSAGI has emphasized the desirability of having each nation report the steps it proposes to take to receive and to distribute the notices of Alerts and Special World Days.

The Bureau (President, Vice-President, and General Secretary) met in

Washington, D.C., in November 1953 and April 1954, in Brussels in August 1954, and in Rome in September 1954; it has given special attention to the problems of the International Geophysical Year during visits to many countries.

The finance Committee of the CSAGI has been appointed as follows: the Vice-President and the General Secretary of the CSAGI; a delegate of the ICSU Bureau, E. HERBAYS (who is Vice-President of ICSU); and a member of CSAGI, G. LACLAVÈRE.

The administrative office has been in Uccle at the Royal Meteorological Institute of Belgium since 1 November 1953. It was difficult for the present General Secretary, having the help of only one typist, to exercise properly the responsibilities of his post.

It is with great pleasure that the General Secretary expresses his warmest thanks to the President and Vice-President of the CSAGI for their generous help and understanding support. Their continuous aid has proved to be of great assistance in those critical moments when conditions were not favourable for efficient work by the Secretariat. It is also a source of great satisfaction to the General Secretary that there has been such happy collaboration between the members of the Bureau. The transfer of the Secretariat from the office lent by the Royal Meteorological Institute of Belgium to a private quarter nearby will properly permit a somewhat more expanded activity by the Secretariat.

Since there is every reason to believe that the expansion of the Secretariat Staff will be valuable in connection both with the administrative work in general, and with the scientific work in particular, it should be possible gradually to increase the efficiency of the Secretariat. In the past the activities of the Secretariat might have been more useful to all concerned had the publication of 'Bulletins d'Information du CSAGI' Nos 1 to 5 not been too much delayed owing largely to difficulties in obtaining consistent reports. Preparation of these requires detailed consideration which can only be accomplished with a complete staff.

It is hoped that material for future Bulletins will be of such a form that publication schedules can be met without difficulty.

The Chairman of the Finance Committee of the CSAGI, Dr. BERKNER, then presented the following summary.

#### REPORT OF THE FINANCE COMMITTEE

The Finance Committee of the CSAGI met in Oslo on Thursday, 11 August 1955, and examined the report of the General Secretary of the CSAGI and the proposed Budget for 1956.

The members of the Finance Committee present were:

L. V. BERKNER, Chairman,  
E. HERBAYS, Vice-President of ICSU,  
G. R. LACLAVÈRE, member of CSAGI.

1. It was suggested that the Chairman of the Finance Committee discuss with the Bureau the opportunity now offered by the ICSU to have the CSAGI accounts kept by Messrs. Gimson and Son.

2. The Committee understood that the account presented to it by the Secretary General of the CSAGI represented expenditures in budget categories and would be reported by vouchers to the General Secretary of ICSU.

3. The Committee accepted the distribution of expenditures in accordance with the recommendations adopted in Rome, with the following comments:

(a) The Committee believes it desirable to show the distribution of taxes required for payment by the Belgian Government.

(b) The Committee proposes to increase the proposed budget for 1956 to provide for essential travel of officers and members of CSAGI for the implementation of the final program, and proposes to insert an item for \$3000 for publications.

This increases the projected budget from \$21,540 to \$27,540; this figure corresponds to the amount originally estimated by the CSAGI at its last meeting (Rome, September 1954).

4. The Committee complimented the Secretary General of the CSAGI on the care and effectiveness with which he has established the Services of the Secretariat of the CSAGI.

The CSAGI gave power to the Bureau to decide on the best arrangements for keeping the CSAGI accounts. (The Bureau decided later to defer a conclusion on this matter till the General Secretary had had a meeting with Dr. Ronald FRASER, Administrative Secretary of the ICSU, and Mr. GIMSON, Official Auditor of the ICSU.)

The President took occasion to congratulate Colonel HERBAYS, who was the convenor of the CSAGI when it was first appointed by the ICSU (and later Provisional Secretary), on his election as Treasurer of the ICSU from 1 October 1955, at the end of his period of service as Vice-President of the ICSU.

The Executive Committee then considered the further development of the central secretariat of the CSAGI; they had before them a proposal that regional Adjoint Secretaries be appointed to stimulate and keep watch over the execution of the IGY program in different regions; some members considered that certain parts of the program would not be best served by such a method of organization; it was decided to invite the working groups to consider and report on any addition to the central organization they may deem advisable for their part of the program.

It was understood that any Adjoint Secretaries appointed would, like the General Secretary, receive only reimbursement of expenses they incurred on behalf of the CSAGI.

The meeting was then adjourned till Monday, 12 September.

#### ACIGY: FIRST MEETING

4 p.m., Thursday, 8 September

In opening the meeting, the President recalled that the institution of the Advisory Council was recommended by the ICSU in March 1955. The

purpose of the ACIGY was to advise and assist the CSAGI on general questions concerning the IGY, as distinct from the technical questions on which CSAGI was directly advised by the working groups for the different parts of the program.

For example, the ACIGY might usefully discuss problems of mutual help that the participating nations can render to each other in support of the IGY program. This help might consist of loans or gifts of instruments, of facilities for training, or of technical advice.

The IGY program might be materially helped in some respects by agreements providing that one nation should receive on its territory IGY scientists from another nation, and by offers of equipment, accommodation, or facilities for their work. However, any arrangements involving national territories should be made by bilateral discussion between the nations concerned; CSAGI is strictly non-political, and therefore it is against its policy to recommend that any specific nation should assist another by provision of funds, instruments, equipment, or personnel, or that it should do IGY work on the territory of another, or should permit or accommodate scientists of another nation on its territory. But the CSAGI would welcome information that might be presented to the ACIGY concerning any such mutual arrangements; and the ACIGY affords a convenient assembly in association with which such agreements may informally be proposed and discussed.

An Antarctic regional conference had been called by the CSAGI in Paris in July; it was composed of national representatives from the countries interested in contributing to the Antarctic part of the IGY program. It might be found useful to arrange similar conferences of national representatives in connection with other geographical regions; if so, the ACIGY provided a forum for any such proposals to be presented and discussed. The Antarctic conference had been very successful and valuable; the CSAGI was greatly indebted to Mr. G. LACLAVÈRE, who on its behalf had organized the conference and guided its work.

Another matter that might usefully be discussed by the ACIGY was the provision of archives and distribution centers for the IGY observational data that would later be made available, in accordance with the recommendations of the working groups. The CSAGI would welcome offers from the participating nations to provide and maintain such centers, either for the whole IGY program, or for different parts of it; such offers might suitably be presented to the ACIGY in the first instance, and the ACIGY might discuss the conditions under which such offers should be considered by the CSAGI.

The President remarked that few if any members of the ACIGY would be able to present such offers at the present meetings; but the Bureau proposed to call a meeting of the CSAGI together with the ACIGY late in 1956, and he hoped that by then such offers would be forthcoming. Proposals of other kinds might also be offered by national delegates for consideration by the ACIGY.

After brief discussion the meeting was adjourned till Tuesday, 13 September.

## CSAGI: FIRST PLENARY SESSION

9.30 a.m., Friday, 9 September

The President pointed out that the working groups appointed to consider the various parts of the IGY program have three main tasks:

'One is to fashion *international* programs in their respective subjects, on the basis of the parts of the National Reports dealing with these subjects, and of reports from any Union-IGY committees bearing on them. A second task is to consider the collection, exchange, distribution, and publication of the data to be obtained from the execution of their programs; the appropriate plans will differ from one subject to another; CSAGI regards this second task as specially urgent, and asks the working groups to be ready to present their reports on it, stated as clearly as possible, to the Plenary Session to be held on Monday, 12 September, at 9.30 a.m. A third task is for each group to consider and report on any additions to the central secretariat that they may consider advisable, in the interest of their part of the IGY program; the CSAGI in executive session has considered a proposal to appoint regional Adjoint Secretaries, to stimulate and watch over the execution of the whole IGY program in different regions; but this may not be the most helpful plan as regards some parts of the program.

'At the CSAGI meetings in Rome it was thought useful to appoint geographical working groups to review the whole IGY program in each of a number of special regions of the globe. Since then there has been a conference called by the CSAGI in Paris in July 1955 specially to consider the Antarctic part of the IGY program; this conference was very valuable and successful. The Bureau proposes the appointment of geographical working groups also at the present meetings, and designates them and their leaders as follows:

Antarctic:	LACLAVERÈ
Arctic:	CURRIE
Equator:	HERRINCK
Meridian 10°E:	HERLOFSON
Meridian 70°W:	MORGAN
Meridian 110°E:	DAVITAIA
Meridian 140°E:	NAGATA

'The leaders of the national delegations are asked to give to the secretariat a list showing against the names of their members the geographical groups they wish to attend.'

Some of the leaders of these groups then proposed times at which their groups would be called to meet. There was discussion regarding the difficulty for members who might wish to attend meetings of more than one geographical group, whose times overlapped. A short recess was then allowed to enable the geographical group leaders to arrange times to obviate this difficulty as far as possible.

The President then called the attention of all the groups to the circular sent in May 1955 by the General Secretary to the National Committees.

Up to this point the proceedings of the meetings had been given in both English and French; Mr. LACLAVÈRE was especially helpful in translating into either language. Dr. BELOUSSOV having informed the Bureau that time for translation into the Russian language was desired, such translations were thereafter made, by himself or otherwise, whenever he or other members of the Russian delegation indicated a wish for it to be done. The President asked the leaders of the working groups to follow the same practice.

The President announced that in view of the limited participation of the adhering nations in the rocket and satellite program, and in view of its great importance and of the interest of all delegates in the plan for this program, Dr. H. E. NEWELL had been asked to give a special lecture so that all delegations were fully informed of the plans for this program. This would also be open to the Press.

After announcements of the times of later meetings, the Plenary Session was adjourned until Monday, 12 September.

#### *Working Groups, Friday, 9 September*

During the remainder of Friday, 9 September, much time was devoted to meetings of the Committees of the Unions and of the many working groups, for the different subjects and the different regions concerned in the IGY program.

### CSAGI BUREAU MEETING

11 a.m., Friday, 9 September

The Bureau met after the first Plenary Session of the CSAGI, and appointed two committees to act during the Brussels meetings. One of them was designated to review and co-ordinate the reports of the working groups on the subjects of the collection, exchange, distribution, and publication of such IGY data as were recommended by the working groups for general distribution; this was the second task mentioned by the President at the Plenary Session held earlier in the day, to be fulfilled by the working groups. The Committee was entitled the *Committee on the Availability of Data*; its members were as follows: CHAPMAN (chairman), BELOUSSOV, KAPLAN, LEJAY, MARTIN, RAMANATHAN.

The second committee was appointed to advise the CSAGI on the method to be followed in preparing and issuing CSAGI publications (hitherto the CSAGI reports had been printed as part of the *I.U.G.G. News Letter*). This was entitled the *Committee on CSAGI Publications*; its members were: NICOLET (chairman), FRASER, LACLAVÈRE, MARTIN.

### EARTH SATELLITES: LECTURE BY DR. H. E. NEWELL

4.30 p.m., Friday, 9 September

This lecture is summarized in 'The US Rocket-Satellite Program for the International Geophysical Year', page 73.

#### *Saturday, 10 September*

On this day the Bureau met at 9 a.m., and Committees of the Unions and the working groups continued other discussions.

*Sunday, 11 September*

On this day many members, with their ladies, enjoyed the excursion to Ghent and Bruges offered by the Ministry of the 'Instruction Publique'.

Some groups and group-leaders continued their work, and the Secretariat prepared many reports from the working groups, for distribution and consideration on Monday, 12 September.

### CSAGI: SECOND PLENARY SESSION

9.30 a.m., Monday, 12 September

The reports of the Union-IGY committees were first received. Dr. BEYNON briefly summarized the report (which had been distributed) of the URSI-IGY committee. The first part dealt with the distribution of ionospheric stations of various kinds, and the second part with the interchange of information between stations, and other matters. As regards the production of IGY Manuals for the Ionospheric IGY Program, it had been decided that the editor should be W. J. G. BEYNON; D. LEPECHINSKY would supervise their translation into French, and N. V. PUSHKOV a translation into Russian. The URSI-IGY Committee expected to meet again about the middle of 1956, probably in Brussels.

The URSI-IGY report also recommended that, in view of the great extent and importance of the radio part of the IGY program, the URSI representation on CSAGI be strengthened by the addition of two members, and suggested that they be P. LEJAY, and A. H. SHAPLEY.

Dr. Beynon then indicated the subject of sixteen resolutions (of which the text was distributed later in the day) adopted by the URSI-IGY committee.

The President thanked Dr. Beynon for his presentation of the very full and valuable report of the URSI-IGY committee. The proposal regarding additional members of CSAGI would, he said, be considered by the CSAGI in executive session that afternoon, but in any event would be subject to final action by the ICSU.

Dr. RAMANATHAN then gave a brief summary of the work of the IUGG-IGY committee, whose report was not yet complete. The committee had considered three main aspects of the IGY program:

(a) the expansion of IGY activity; in this connection it proposed that advantage be taken of any opportunities afforded by other IGY plans in order to secure seismic and gravimetric data in regions where these were lacking or scanty;

(b) the future form and development of the central IGY organization; its proposals on this subject were not yet ready;

(c) the availability of data: the question whether each country should publish its own data, or whether data for each distinct part of the IGY program should be collected at, and distributed from, one or more centers, was referred to the separate working groups.

After thanking Dr. Ramanathan for his report, the President announced the appointment by the Bureau of two committees, on Availability of Data and on CSAGI Publications: 'The former committee has the task of collating the recommendations as to collection and distribution of data from the

working groups for the different scientific disciplines, and presenting a unified report to the CSAGI. The CSAGI Publications Committee is asked to collate and review the working-group recommendations as to the IGY Manuals to be produced, and to advise as to the best method of publishing these and other documents as CSAGI publications. These committees are appointed only for the duration of the present Brussels meeting.'

The President then proposed that the reports from the working groups as to additional central IGY organization be received, so far as they are ready, and studied later. P. LEJAY asked whether this included such matters as URSIgrams in connection with the announcements of World Alerts and World Special Intervals; the President said the latter was a part of the mechanism of the agreed technical IGY program, whereas he was referring to recommendations for additions to the central secretariat. G. LACLAVÈRE requested further clarification of the reference. The President replied that in connection with the Antarctic IGY program the CSAGI had arranged an important special conference in Paris in July, of which, indeed, Mr. LACLAVÈRE had been the organizer on behalf of CSAGI, and the very efficient leader. The Bureau thought it would probably be desirable to appoint an Adjoint Secretary to deal with Antarctic IGY problems as they arose; he would be under the direction of the General Secretary and would keep him fully informed on all such Antarctic matters. It might be advisable that the General Secretary should have other assistance for further parts of the IGY program, or in connection with other regions of the globe. Such were among the questions of organization on which the views of the several working groups were invited.

Mr. J. M. WORDIE remarked that the working group on glaciology considered that an Adjoint Secretary for the Antarctic was certainly necessary, but did not think that there was need for such a secretary for Arctic problems. He considered that the need for an Antarctic secretary was urgent. Messrs. J. VAN MIEGHEM, V. LAURSEN, and V. V. BELOUSSOV briefly mentioned opinions of their working groups on these questions; their views would be embodied in written reports. In answer to Mr. P. TARDI, the President stated that full reports of the considerations taken into account by the working groups during their discussions were not necessary; a summary of their conclusions and recommendations would suffice.

He then proposed the formation of a World Days working group, with Mr. A. H. SHAPLEY as leader; there had been such a group at the two preceding meetings of the CSAGI (1953, 1954), but at the first Plenary Session last Friday its renewal was omitted, perhaps under the impression, which was found to be mistaken, that the World Days arrangements needed no further discussion. Leaders of national delegations were asked to give the General Secretary the names of their members who wished to join this working group.

He next requested the leaders of working groups to scrutinize the resolutions they were preparing for presentation, to ensure that these did not contravene the policy laid down at an earlier CSAGI meeting, that CSAGI should not propose or recommend that nation A should do IGY work on the territory of nation B. Any such arrangement should be arranged bilaterally between the two nations themselves.



The General Secretary announced that a time-table had been prepared and rooms allotted for the meetings of working groups; notices had been put up indicating how to reach the allotted rooms.

Before the meeting concluded, Professor W. BLEEKER requested further consideration of a resolution proposed by the Netherlands National IGY Committee, regarding measurements of radioactive matter in the atmosphere; the working group on meteorology had, he said, advised against adoption of the proposal.

Dr. J. KAPLAN said the question seemed to him important, and he requested that Dr. H. WEXLER should be allowed to present a report on the subject.

Dr. H. WEXLER considered that valuable light might be thrown on some natural processes if harmless amounts of radioactive material were introduced into the atmosphere to trace the natural system of atmospheric circulation. He suggested that a group should be set up to make recommendations to CSAGI on the subject, either in time for the final plenary session or shortly thereafter.

It was agreed, on the proposal of the President, to refer the question to the Bureau, which would examine it and report without delay.

(Further information on this subject is given below, p. 19.)

### CSAGI: SECOND EXECUTIVE MEETING

2.30 p.m. Monday, 12 September

The CSAGI first considered the proposal by the URSI-IGY committee for the addition of two members to the CSAGI, as representative of the URSI. The President expressed the opinion that the CSAGI would do well to support the proposal; he thought the CSAGI would be materially strengthened by the inclusion in it of the Rev. Father P. LEJAY, President of the URSI and newly elected Vice-President of the ICSU, and Mr. A. H. SHAPLEY, who had done, and would do, so much for the IGY in connection with the World Days program. It would involve some additional cost. The decision would rest with the ICSU, as with all the appointments to membership of the CSAGI.

Dr. BEYNON explained that the proposal was made not in order to approach more closely to some ideally fair representation as between different Unions; it was made on the ground that the ionospheric IGY program was so considerable, and that radio techniques also had wide application in other parts of the IGY program.

Colonel HERBAYS supported the proposal, and indicated that if the URSI representation on CSAGI was increased as suggested, the special concerns of the four URSI members would be:

BEYNON: the ionosphere,  
LEJAY: URSIgrams,  
BOELLA: longitudes and latitudes,  
SHAPLEY: World Days.

After further discussion, in which the proposal was supported by the Vice-President, Mr. WORDIE, the General Secretary, and Dr. SCHUMANN, it was agreed to recommend it to the ICSU.