n°62. March 50

INFORMATIONS

Secretariat

In order to keep the members of National Committees informed of communications concerning the next General Assembly, from now the Bulletin will be issued monthly.

IXth. GENERAL ASSEMBLY

Letter to Presidents of National Committees

We publish a letter sent to Presidents of National Committees, we beg the members of these Committees to bring their help for the preparation of the General Assembly.

« Dear Mr President,

» We have the honour to confirm that the IXth. General Assembly of the U. R. S. I. will be held in Zurich from September 11th. to 22rd., 1950.

In view to facilitate the preparation of the meeting and in order to allow you to appoint the delegation to represent your Committee, we should be very thankful to you to inform us, as soon as possible, of :

1. — The name of the delegate to the meetings of the Executive Committee (Statutes, art. 12).

2. — The names of the delegates representing officially your Committee to the General Assembly (Statutes, art. 5). In agreement with art. 24 of the Statutes, your Committee is allowed to appoint ... official delegates. We remind that accordingly to art. 31, all members of National Committees may attend the meetings of the General Assembly and take part in discussions but without voting powers.

3. — The names of delegates to our various Commissions. It is desirable that each National Committee should appoint one single official delegate for each Commission, being understood that all members may attend any sessions they wish.

* * *

Some National Committees sent us suggestions or questions to submit either to the Executive Committee, either to the General Assembly ; we are most thankful to them and would very much appreciate to receive the suggestions and proposals from others National Committees, *before June 1st*, 1950, in order to give us time to study them and to communicate them to the members of the Executice Committee before the meeting.

We remind you that in agreement with art. 32 of the Statutes, matters not figuring in the Agenda of the General Assembly will be considered only if prior approval is given by not less than half of the votes allocated to countries represented at the General Assembly.

* * *

We remind you also that the last General Assembly voted a recommendation asking National Committees to draft a Report on their activities.

You will find herewith, for your information, copy of the Recommendations drafted for the Presidents of Commissions ; supplementary copies are at your disposal.

In thanking you for the care you will give in the above matters, we remain,

Yours very sincerely,

The Secretary,

(sgd) HERBAYS.

Recommendations to Presidents of Commissions

I. *Rapporteurs.* — It is desirable that two Rapporteurs, one English speaking and one French speaking, be nominated as soon as possible by the Presidents of Commissions. In order to facilitate such nominations, the Central Office will inform each President of the names of the National Committees delegates participating to the General Assembly.

II. *Reports, Papers, Communications, etc.* — It seems advisable that :

1. Summaries only of Reports of Commissions to be read, the full text being circulated before the opening session of each Commission.

2. Progress Reports of National Committees be taken as read, those Reports will also be communicated in full text to delegates at the General Assembly.

3. Individual papers should not be presented unless :

a) their authors are present ;

b) those papers form convenient introductions to discussions ;

c) the papers have reached the *Central Office in Brussels before July 1st*, 1950, in time to be communicated to the Presidents of the interested Commissions.

III. *Works of Commissions.* — 1. It seems useful that a program of work be drafted before the meeting by each President of Commission in order to have it circulated.

2. Topics of live interest at the present time could be selected for discussion and especially those which lead to proposals for international co-operation (See our letter nr 4333 of 3rd. November 1949 to Presidents of Commissions).

3. Arising out of III — 2, working groups should be set up to formulate recommendations concerning further work or action in corporate measures.

IV. *Recommendations to be presented at the General Assembly.*— 1. Recommendations mentioned in III — 3 seem to be the logical conclusions of the work done by the Commissions. It is desirable that these recommendations be drafted both in English

and in French and handed, as soon as possible, to the Secretariat of the Assembly.

2. These recommendations may include suggestions for the publication in the Proceedings of the General Assembly, in full text, of papers brought into discussion (II — 3).

V. *Minutes of the meetings.* — It is desirable that rapporteurs should draft, both in English and in French, short minutes of each meeting. Those minutes ought to mention at least the subjects discussed and the conclusions of the discussions.

VI. *Composition of the Commissions.* — It is reminded that in agreement with art. 5, 6 and 7 of the Statutes and with art. 1 and 2 of the Rules for Commissions :

1. Commissions are appointed by the General Assembly ;

2. Presidents of Commissions are elected by the General Assembly on proposal of the Executive Committee ;

3. Members of Commissions are appointed by National Committees (one per Committee) ;

4. Officers of Commissions, the President not included, are appointed by the Commissions during the meetings of the General Assembly.

Provisionaly Programme

Friday 8*th. September* and *Saturday* 9*th. September* : Executive Committee.

Sunday, 10*th. September* : Free.

Monday, 11*th. September* :
Morning : Presidents of Commissions meeting.
Afternoon : Administrative Opening Session.

Tuesday, 12*th. September* :
Morning : Solemn Opening Session.
Afternoon : Opening Sessions Commissions I and II.
Evening : Dinner at the Congress Palace.

Wednesday, 13*th. September* :
Morning : Opening Sessions Commissions III, IV and V.
Afternoon : Opening Sessions Commissions VI and VII.

Thursday, 14*th. September* :
Morning : Commission sessions.
Afternoon : Visites.

Friday, 15*th. September* :
Morning : Commission sessions.
Afternoon : Commission sessions.

Saturday, 16*th. September* :
Morning : Commission sessions.

Sunday, 17*th. September* : Free.

Monday, 18*th. September*, *Tuesday*, 19*th. September*, *Wednesday*, 20*th. September* : Commission sessions.
One of these days is reserved for a trip on the mountains.

Thursday, 21*th. September* :
Morning : Commission sessions.
Afternoon : Short meeting of the Executive Committee and visits.

Friday, 22*nd. September* :
Mrning : Closing session. Farewell lunch.

* * *

A full programme shal be forwarded to National Committees which are requested to inform us as soon as possible of the number of copies required.

* * *

The Swiss National Committee has appointed an Organizating and Reception Committee under the Chairmanship of Prof. SANGER. The address of the Committee is as follows :

7, Sternwartstrasse, Zurich 6e
Telephone : (051) 32.73.30
Telegrams : URSISWISS.

Unesco

USERS OF ABSTRACTS OF PHYSICS

In accordance with recommendation 8.1 of the International Conference on Science Abstracting held in June 1949 (1), the Natural Science Department of Unesco invited in December last, a Committee of Users of Abstracts of Physics.

The final report drafted by this Committee reads as follows.

Final Report

The Committee, having noted the Final Act of the International Conference on Science Abstracting, 20 to 25 June 1949, expressed its keen appreciation of the work done by that Conference and studied its recommendations which concerned physics in particular.

1. The Committee considers that abstract journals are, and must remain, the principal tool of physicists both for keeping in touch with current literature and for retrospective search.

2. The Committee recommends that lists of titles of scientific papers and communications be published regularly, provided that they be published rapidly and that titles be properly classified.

2. 1. The Committee expresses the wish that there be adequate facilities for supplying copies (original or photographic) of all articles whose titles are listed.

2.2. The Committee recommends that cumulative author and subject indexes be published every five or ten years, and that the work should start from 1950 for the period 1950-1954 or 1950-1959.

3. The Committee draws attention to the importance of reviews and to the need of co-ordination to ensure that no important subject is left unreviewed for an undue length of time.

4. Certain papers too long or too specialized for publication *in extenso* are being accepted for deposit with the Centre National de la Recherche Scientifique in France and the American Documen-

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(1) *U. R. S. I. Bul.*, nº 59, Sept.-Oct. 1949, p. 5-13.

tation Institute in the United States of America, from which photocopies may be obtained. The Committee recommends that greater use be made of these services ; that similar services be established in other countries ; and that abstracts of papers thus deposited be disseminated widely.

5.1. The Committee considers that the « Guide for the Preparation of Synopses » prepared by the Royal Society is very satisfactory and that similar rules could usefully be included in the instructions issued by each journal to authors.

5.2. The Committee has examined in what ways the synopses could be made most useful. It was suggested, for example, that each synopsis might be printed with the title so that it could be detached from the page proof for use in a card index or for photomechanical reproduction ; the column width not being greater than 10 cm so that the detached synopses may be pasted on standard index cards.

6. The Committee attaches great importance to resolutions 10.1, 10.2 and 10.3 of the Final Act of the International Conference on Science Abstracting (1) and notes with satisfaction the preliminary steps contemplated by ICSU and Unesco in this matter.

7. The Committee supports resolution 18.2 (1) and recommends that Unesco collect new scientific terms as they appear and submit lists of these terms to the appropriate international scientific organizations for their comments ; and that Unesco disseminate the decisions of these organizations regarding these new terms.

8. The Committee supports resolution 19.3 (1) and expresses the hope that Unesco will immediately undertake an enquiry among experts of various countries in preparation for the meeting in 1951 planned by Unesco on the establishment of a standard code for use with mechanical or electrical devices for the selection of scientific information.

9. The Committee supports resolutions 11.1, 11.2, 12.1, 12.2, 12.3, 12.4, and 16.2 of the Final Act of the International Conference on Science Abstracting (1).

Complementary details concerning the above meeting are available at the Secretariat of U. R. S. I.

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(1) *U. R. S. I. Bul.*, nº 59, Sept.-Oct. 1949, p. 5-14.

International Council of Scientific Unions

SECRETARIES OF THE INTERNATIONAL SCIENTIFIC UNIONS

International Astronomical Union : Prof. B. STROMGREN, Astronomiske Observatorium, Ostervoldgade, 3.K., Copenhagen, (Denmark).

International Union of Biological Sciences : Prof. P. VAYSSIÈRE, Museum National d'Histoire Naturelle, 75, rue Cuvier, Paris, (5e) (France).

International Union of Pure and Applied Chemistry : Prof. R. DELABY, Faculté de Pharmacie, 4, avenue de l'Observatoire, Paris (6e) (France).

International Union of Cristallography : Dr. R. C. EVANS, Cristallographic Laboratory, Cavendish Laboratory, Cambridge, (England).

International Union of Geodesy and Geophysics : Dr. J. M. STAGG, Kew Observatory, Richmond, (Surrey) (England).

International Geographical Union : Prof. George H. T. KIMBLE, Department of Geography, Mc. Gill University, Montreal.2. (Quebec) (Canada).

International Union of History of Sciences : Prof. P. SERGESCU, 7, rue Daubenton, Paris, (5e) (France).

International Union of Theoretical and Applied Mechanics : Prof. J. M. BURGERS, van Houtenstraat, 1, Delft (Netherlands).

International Union of Pure and Applied Physics : Prof. P. FLEURY, Institut d'Optique, 3, boulevard Pasteur, Paris (15e) (France).

International Scientific Radio Union : Lt. Colonel E. HERBAYS, 42, rue des Minimes, Brussels, (Belgium).

SECRETARIES OF JOINT COMMISSIONS

High Altitude Research Stations : Dr. R. STAMPFLI, Bühlplatz, 5, Berne (Switzerland).

Ionosphere : Dr. W. J. G. BEYNON, Department of Physics, University College of Swansea, Singleton Park, Swansea, (England)

Oceanography : Lt. Col. R. B. Seymour SEWELL, The Zoological Laboratory, Cambridge (England).

Physics Abstracting : Prof. G. A. BOUTRY, Conservatoire National des Arts et Métiers, 292, rue Saint-Martin, Paris (3e) (France).

Physico-Chemical Constants and Data : Prof. J. TIMMERMANS, Bureau des Etalons Physico-Chimiques, Université Libre de Bruxelles, 50, avenue F. D. Roosevelt, Brussels, (Belgium).

Radioactive Standards and Units : Prof. G. J. SIZOO, Natuurkunding Laboratorium der Vrije Universiteit, de Lairessestraat, 174, Amsterdam, (Netherlands).

Radiobiology : Dr. P. BONET-MAURY, Institut de Radium, 11, rue Pierre-Curie, Paris, (5e) (France).

Radiometeorology : Dr. W. E. GORDON, School of Electrical Engineering, College of Engineering, Cornell University, Ithaca, New York, (U.S.A.).

Rheology : Prof. J. M. BURGERS, van Houtenstraat, 1, Delft, (Pays-Bas).

Solar and Terrestrial Relationships : Observatoire de Paris, Meudon, (Seine-et-Oise) (France).

Spectroscopy : Prof. Dr. D. C. BAKKER, Plantage Muidergrach, 4, Amsterdam. C. (Netherlands).

Committee on Science and its Social Relations : Prof. M. FLORKIN. Laboratoire de Biochimie, 17, place Delcour, Liège, (Belgium).

JOINT COMMISSION ON PHYSICS ABSTRACTING

Membership

Dr. J. H. AWBERRY, International Union of Pure and Applied Physics.

Prof. G. A. BOUTRY, (Secretary) International Union of Pure and Applied Physics.

Dr. K. K. DARROW, International Union of Pure and Applied Physics.

Prof. E. PERUCCA, International Union of Pure and Applied Physics.

Dr. P. BOURGEOIS, International Astronomical Union.

Col. G. LACLAVERE, International Union of Geodesy and Geophysics.

Prof. J. PERES, International Union of Theoretical and Applied Mechanics.

Lt. Col. E. HERBAYS, International Scientific Radio Union.

Dr. J. PELSENEER, International Union for History of Sciences.

Dr. A. J. C. WILSON, International Union of Cristallography.

* * *

The Commission held an information session during the meeting of the Committee of Users of Physics Abstracting.

After the session the Joint Meeting drafted a final report which was submitted to the Bureau of the International Council of Scientific Unions. The report was approved by the Bureau during its January meeting.

Final Report

1. The Committee took note of the first results of the survey carried out in accordance with a decision taken in June 1949 by a group of physicists interested in the question (see UPAP/Doc. Publ. 49-2, July 1949), on the position of the various physics journals considered from the viewpoint of the resolutions contained in the Final Act of the Unesco Conference in June 1949, with particular reference to resolution 11.1.

1.1. The Committee recommends that the survey be continued actively in each country by the National Committees, each of which will appoint someone to carry out the work.

1.2. The Committee hopes that the Secretary of the Joint Committee, having received the results of the survey, will be able to presents them in tabular form, on 1. March 1950, giving the following particulars for each journal :

whether the journal agrees to publish synopses of all original articles ;

whether the journal agrees to publish synopses in French or in English ;

whether the editor of the journal accepts responsibility of examining the synopses, to make sure that they are drafted in accordance with the recommendations of the Royal Society, and that they give a correct idea of the contents of the article and are of a reasonable length.

2. The Committee requests that care be taken to ensure the best possible liaison between the National or Regional Committees and the International Subject Committees, and to see that the various subjects are adequately represented on the National or Regional Committees.

3. The Committee proposes to include in its programme of work the consideration of possible improvements in the publication of reviews. It requests its members to forward to the Secretariat any proposals or suggestions they may wish to make in this connexion.

3.1. The Committee proposes to include in its programme of work the definition of frontier zones between physics, applied physics and related sciences (from the point of view of abstracts only).

4. The Committee instructs its Secretary to transmit for approval to the International Council of Scientific Unions, before the latter's next meeting, its proposals relating to its programme of work and to the nomination of its officers.

5. The Committee unanimously proposes that it shall be represented on Unesco's Expert Committee on Physical Abstracts by the following persons :

Dr. P. Bourgeois,
Professor G.-A. Boutry
Dr. J. H. Awbery,
Dr. E. E. Hutchisson.

Dr. Bourgeois and Professor Boutry would be, respectively, Chairman and Secretary of the delegation. The Committee instructs its secretary to transmit this proposal to the Inter-

national Council of Scientific Unions under the same conditions as in the case of the preceding proposal.

6. The Committee notes with satisfaction the message convoyed, through its Secretary, by the Committee of Management of « Science Abstracts », expressing the opinion that the Joint Committee on Physics Abstracting, set up by the International Council of Scientific Unions, is, from every point of view, the body best qualified to consider problems of physics abstracts on an international level.

NATIONAL COMMITTEES

JAPANESE NATIONAL COMMITTEE

We have the pleasure to inform our readers that the Science Council of Japan has constituted as follows a National Committee on Radio-Science :

Chairman :

Dr. Yusuke HAGIHARA, Professor, Tokyo University ; Director Tokyo Astronomical Observatory ; Mem. Acad., Mem. Science Council.

Secretaries :

Dr. Masao KOTANI, Professor, Tokyo University.

Dr. Kenichi MAEDA, Electrical Communication Laboratory.

Dr. Toshifusa SAKAMOTO, Professor, Tokyo University.

Dr. Hiroshi SHINKAWA, Radio Wave Division, Radio Regulatory Agency.

I. — *On Measurements and Standardization* :

Mr. Ryochi KIYOTA, Chief, Radio Wave Division, Radio Regulatory Agency.

Dr. Hideo SEKI, Radio Wave Division, Radio Regulatory Agency.

Mr. Hiroshi SEIMIYA, Electrical Communication Laboratory.

Dr. Issaku KOGA, Professor, Tokyo University.

II. — *On Troposphere and Wave Propagation* :

Mr. Tsuyoshi AMISHIMA, Radio Regulatory Commissioner.

Dr. Hiroyuki UEDA, Radio Wave Distribution, Radio Regulatory Agency.

Dr. Hisanao HATAKEYAMA, Director, Meteorological Research Institute ; Mem. Science Council.

Dr. Kenichi MAEDA, Electrical Communication Laboratory.

III. — *On Ionosphere and Wave Propagation* :

Mr. Tsuyoshi AMISHIMA, Radio Regulatory Commissioner.

Dr. Hiroyuki UEDA, Radio Wave Division, Radio Regulatory Agency.

Dr. Yusuke HAGIHARA, Professor, Tokyo University ; Director, Tokyo Astronomical Observatory ; Mem. Acad. ; Mem. Sc. Council.

Dr. Masao NOTUKI, Chief, Solar Physics Division, Tokyo Astronomical Observatory.

Dr. Takesi NAGATA, Asst. Prof., Tokyo University.

Dr. Kenichi MAEDA, Electrical Communication Laboratory.

Dr. Mankichi HASEGAWA, Professor, Kyoto University, Mem. Sc. Council.

IV. — *On Terrestrial Atmospherics* :

Mr. Hiroshi SHINKAWA, Radio Wave Division, Radio Regulatory Agency.

Dr. Atsushi KIMPARA, Professor, Nagoya University.

Dr. Osamu MINAGAWA, Meteorological Research Institute.

V. — *On Extra-terrestrial Radio Noise* :

Dr. Takeo HATANAKA, Asst. Prof., Tokyo Astronomical Observatory.

Mr. Tetsuo KONO, Radio Wave Division, Radio Regulatory Agency.

Dr. Atsushi KIMPARA, Professor, Nagoya University.

VI. — *On Waves and Oscillations* :

Mr. Takeo SEKI, Electrical Communication Laboratory.

Dr. Toshifusa SAKAMOTO, Professor, Tokyo University.

Mr. Kei MIZOKAMI, Director, Research Laboratory Broadcasting Corporation of Japan.

Dr. Kiyoshi MORITA, Professor, Tokyo Institute of Technology.

VII. — *On Electronics* :

Dr. Masao KOTANI, Professor, Tokyo University.

Dr. Sakuji KOMAGATA, Director, Electro-Technical Laboratory ; Mem. Sc. Council.

Dr. Yasushi WATANABE, Professor, Tohoku University.

Mr. Takeo SEKI, Electrical Communication Laboratory.

Dr. Seitoku HAMADA, Mem. Science Council.

Dr. Toshifusa SAKAMOTO, Professor, Tokyo University.

Dr. Toshinosuke MUTO, Professor, Research Institute for Science and Technology.

Dr. Hiroo KUMAGAYA, Professor, Research Institute for Science and Technology.

Dr. Kinjiro OKABE, Professor, Osaka University.

Dr. Seishi KIKUCHI, Professor, Osaka University.

UNITED STATES NATIONAL COMMITTEE

Membership for 1949-1950

Chairman : Mr. L. V. BERKNER.

Vice-Chairman : Dr. C. R. BURROWS.

Secretary-Treasurer : Dr. NEWBERN SMITH.

Junior Past-Chairman : Dr. J. H. DELLINGER.

Members :

Major General F. L. ANKENBRANDT, Director of Communications, Department of the Air Force, Room 4C1066, National Defense Bldg., Washington 25, D. C.

Mr. John E. KETO, Chief, Radiation Laboratory, Engineering Div., Air Material Command, Wright-Patterson Air Force Base, Dayton, Ohio.

Major General S. B. AKIN, Chief Signal Officer, Room 3E258, National Defense Bld., Washington 25, D. C.

Mr. A. R. Beach, Office of the Chief Signal Officer, Department of the Army, Room 3C315, National Defense Bldg., Washington 25, D. C.

Dr. Newbern Smith, National Bureau of Standards, Connecticut Ave. at Upton, Washington 25, D. C.

Mr. E. W. Allen. Jr., Federal Communications Commission, 1629 Temporary Bldg. T., 14th. and Constitution Ave., N. W., Washington 25, D. C.

Mr. C. M. Jansky, Jr., National Press Building, 14th. and F., N. W., Washington, D. C.

Dr. R. C. Gibbs, National Research Council, 2101, Constitution Ave., N. W., Washington 25, D. C.

Rear Admiral E. E. Stone, Director of Naval Communications, Room 4C679, National Defense Bldg., Washington 25, C. D.

Dr. R. M. Page, Naval Research Laboratory, Washington 25, D. C.

Dr. J. H. Dellinger, 618, Pickwick Lane, Chevy Chase, Maryland.

Dr. L. C. Van Atta, Naval Research Laboratory, Washington 25, D. C.

Mr. G. F. Metcalf, General Electric Company, Syracuse, New York.

Members-at-Large, Term as Member-at-Large expires June 30, 1950.

Mr. L. V. Berkner, Department of Terrestrial Magnetism, Cr. Carnegie Institution of Washington, 5241 Broad Branch Road, N. W., Washington, D. C.

Dr. C. R. Burrows, Director, School of Electrical Engineering, Cornell University, Ithaca, New York.

Dr. D. H. Menzel, Harvard College Observatory, Cambridge, Mass.

Members-at-Large, Term as Member-at-Large expires June 30, 1951.

Dr. J. A. Stratton, Director, Research Laboratory of Electronics, Massachussetts Institute of Technology, Cambridge, Mass.

Dr. C. G. SUITS, Director, Research Laboratory, General Electric Company, Schenectady, New York.

Dr. F. E. TERMAN, Dean, School of Engineering, Standford University, Calif.

Members-at-Large, Term as Member-at-Large expires June 30, 1952.

Dr. J. A. PIERCE, Cruft Laboratory, Harvard University, Cambridge, Mass.

Mr. Haraden PRATT, Mackay Radio & Tel. Co., 67, Broad Street, New York, N. Y.

Mr. J. C. SCHELLENG, Bell Telephone Labs., Deal, New Jersey.

Members-at-Large, Term as Member-at-Large expires June 30, 1953.

Mr. Stuart L. BAILEY, 1339, Wisconsin Ave., N. W., Washington 7, D. C.

Dr. Frederick B. LLEWELLYN, Bell Telephone Labs., 463, West Street, New York 14, New York.

Mr. Harry W. WELLS, Department of Terrestrial Magnetism, Carnegie Institution of Washington, 5241, Broad Branch Road, N. W., Washington, D. C.

* * *

The U. S. A. National Committee will held this year two spring meetings with the I. R. E.

San Diego meeting. During the week of April 3. Matters on the Agenda are those connected with the fields of activities of U. R. S. I. Commissions II, III, V and VI.

Washinglon meeting. On April 17, 18 and 19. Matters on Agenda, those connected with the fields of activities of U. R. S. I. Commissions I, IV, VI and VII.

COMMISSIONS

COMMISSION I

On Measurements and Standardization

General Assembly

Dr. DELLINGER, President, sent on January 30th., 1950, the following letter to the members of Commission I :

« Dear Sir,

» The next General Assembly of the U. R. S. I. is scheduled to take place in Zurich, Switzerland, Sept. 11 to 23. Commission I should do its share to make a success of that meeting by securing scientific papers for the Zurich sessions and by presenting a suitable report. I request therefore that you do what you can along the following lines :

» 1. Please secure, in your country, papers in our field of work for the Zurich sessions and subsequent reproduction in the Proceedings of the General Assembly. Rather brief papers are preferable to long ones. In any case they should be clearly written and illustrations (Figures) should be few, distinct and simple. Papers should be submitted, in both English and French, to the Secretary of the Union through your National Committee (or through me if desired). I would be pleased to have you send me information on titles and authors of all papers, even before they are formally submitted.

2. I believe it desirable that Commission I prepare a report on the status of radio standards and methods of measurement, particularly the development since the General Assembly of two years ago (or, let us say, from about the beginning of 1948 to the

present). I would appreciate it if you would let me have such a statement of status or progress, either on work in your country or in those parts of our field in which you are most interested. It will be useful to make references in such reports to the 1948 status as reported in particular papers at the General Assembly (the papers of Commission I are on pages 105 to 175 of the Proceedings of the 1948 General Assembly).

3. At the Stockholm General Assembly the groundwork was laid for good coordination between the work of the U. R. S. I. and the C. C. I. R. (International Radio Consultative Committee). See pages 14 and 15 (especially footnote) of the Proceeding 1948. I suggest you examine the Recommendations and Questions adopted by the C. C. I. R. at Stockholm. I would be pleased to receive any suggestions as to any of these in which you think the U. R. S. I. could give assistance and the form such assistance might take. The C. C. I. R. topics which seem most pertinent are Recommendations 14, 18, 21, 26, 34 and Questions 1, 2, 3, 8, 9, 12 (see U. R. S. I. Bulletin, nº 59, Sept.-Oct. 49, p. 14-32).

» 4. The Resolutions of Commission I should be examined and any desired recommendations prepared. (See these Resolutions pp. 76 and 77 of the Proceedings of the 1948 General Assembly). I should like your comment on those Resolutions and any suggestions as to Resolutions which should be proposed for the 1950 General Assembly.

» Finally, I would welcome any additional proposals or ideas you care to offer on the field of work of Commission I. I would appreciate at least a preliminary reply on the several matters enumerated above by March 20.

Very truly yours,

(sgd) J. H. DELLINGER,
Chairman Commission I.

Permanent Sub-Commission

We publish a letter sent by Dr. SMITH-ROSE, Chairman, to the Members of the Sub-Commission :

« Dear Sir,

» May I seek your assistance and collaboration in connection with the activities of our Subcommission in order that I may prepare a report for submission to the next General Assembly of U. R. S. I. which will take place in Zurich in September 1950.

» You will note that my previous report was published in the Proceedings of the General Assembly held in Stockholm in 1948, page 134. I wish also to draw your attention to the recommendations which were made by our Subcommission and adopted by Commission I. These are reproduced on pages 76 and 77 of the above-mentioned proceedings.

» I should be glad, therefore, if you would send me a brief report surveying any progress which has been made in your country towards the implementation of these recommendations or other matters related thereto.

» In order that I may have all the material in good time to enable me to prepare my report, would you please submit your contribution to me at the following adress as soon as possible and by 1st May 1950 at the latest.

Yours faithfully,

(s) R. L. SMITH-ROSE,
Director of Radio Research,
c/o National Physical Laboratory
Teddington, Middlesex
Great-Britain

National Committees not represented to the Permanent Sub-Commission are invited to collaborate to Dr. Smith-Rose's work.

Co-operation with the C.C.I.IRI

The following letter was sent on February 20 to the members of Commission I, by Dr. Dellinger :

« Dear Sir,

» In my letter of January 30, paragraph 3, I mentioned the prospective coordination of the work of U. R. S. I. and C.C.I.R. I have now received a letter from Dr. Decaux (of which copy follows), chairman of C.C.I.R. Study Group 7 which is handling Stockholm Recommendation 18. That Recommendation specifically calls for cooperation between U. R. S. I. and C. C. I. R. Dr. Decaux's suggestions seem very good. I would appreciate your telling me what if any measurements are regularly made in your country on WWV or other standard frequency stations. These emissions do provide excellent opportunity for frequency standardization and research on various kinds of precision measurement as well as on radio propagation. I would also appreciate any suggestions as to help that Commission I could render in this connection to the objectives of the C. C. I. R.

Very truly yours,

(sgd) J. H. DELLINGER,
Chairman, Commission I, U.R.S.I.

Bagneux (Seine), Feb. 1, 1950.

To Doctor J. H. DELLINGER,
Chairman, Commission I. U.R.S.I.

« Dear Dr. Dellinger,

» No doubt you recall that C. C. I. R. Recommendation Nº 18, relating to standard frequency and time signal emissions, provided for the collaboration of the U. R. S. I. in the study of these emissions.

» In particular, Article 15 draws the attention of the proper commissions of the U. R. S. I. to the possibility of the use of the standard frequency emissions in the study of propagation.

» The program of studies of C. C. I. R. Study Group N° 7, in considering Recommendation N° 18, provided for experiments to be made by means of test emitters, situated for example in Great Britain and in Australia, in addition to the WWV transmitter in Washington ; these should permit the study of the distribution of the useful field for the entire world, possible interference between stations functioning simultaneously, and in a subordinate way, the choice of modulation frequencies. For more than a year, an emitter has been operating in the Hawaiian Islands ; a station operates a partial service in Tokyo ; emissions will begin in Great Britain on Feb. 1st.

» The measurements which can be made on these different emissions concern both the received frequency and the resultant field intensity. Work already undertaken in the different countries shows the considerable importance of such measurements, not only for the precision of frequency measurements, but also in the study of propagation. In fact the existence of emitters operating continuously with stable and well known radiation characteristics would permit relating all the particulars of the received field to propagation phenomena.

» I believe the members of your Commission already use the standard frequency and time signal emissions for different researches where they serve a definite purpose. I would very much appreciate your letting me know any interesting results which have been accumulated in this manner. Any suggestions which you consider important on the subject of experiments to be organized would be very useful to me, and I thank you in advance for this information.

» Personally, I believe it would be interesting, as concerns propagation studies, to plan special measurements and experiments on the occasion of the total eclipse of the sun which will take place Sept. 12, 1950. This eclipse which will affect the North Pacific should have an influence on the frequencies emitted by the stations in Hawaii and Tokyo ; the attached graph shows the approximate zones in which the eclipse would give greater data. It seems to me that experiments on the Doppler effect

and the field intensity or noise would furnish interesting data on propagation. I would be happy to have your opinion on this subject, to receive your suggestions, and to find out if it appears opportune to organize a special experimental program on the emissions as well as reception.

» Very truly yours,

(sgd) B. DECAUX,
Chairman, Study Group 7, C.C.I.R.

STANDARD FREQUENCY TRANSMISSIONS

In September, 1948, the Department of Scientific and Industrial Research announced that arrangements were being considered for an experimental service of standard frequency transmissions from the United Kingdom. A committee under the chairmanship of Dr. R. L. Smith-Rose established the need for such a service and at the request of the Department the General Post Office has assumed technical responsibility for the transmissions, which take place from the Rugby Radio Station. The service begin on 1st. February, 1950. The frequencies to be used are 60 kc/s, 5 Mc/s and 10 Mc/s. The transmissions on 60 kc/s should be received throughout the United Kingdom and Western Europe and enable local standards to be calibrated with high precision. The transmissions on 5 and 10 Mc/s form part of an international programme designed to give reliable world coverage on one or other of the frequencies 2.5, 5, 10, 15, 20, 25 Mc/s which have been allocated to standard frequency services. The transmissions on these frequencies from the U. S. A. National Bureau of Standards station WWV are not always satisfactorily received in the United Kingdom and farther east. It is hoped to learn from the experimental service now being initiated to what extent reception in the European area is improved by transmissions from the United Kingdom and also to what extent the usefulness of both the U. S. A. and U. K. transmissions may be impaired by mutual interference.

The frequencies, which are to be maintained within two parts in one hundred million of the nominal values, will be monitored

at the National Physical Laboratory and all enquiries or comments concerning the transmissions should be addressed to the Director, National Physical Laboratory, Teddington, Middlesex, England. Information about reception conditions and interference with the U. S. A. transmissions will be particularly useful.

Details of the daily experimental service are given below. It is regretted that at present it is not possible to transmit on 5 and 10 Mc/s at times more convenient to users in the United Kingdom.

Experimental Service
of Standard Frequency Transmissions

G.M.T.	Carrier Frequency	Power
0544-0615	5 Mc/s	10 kW
0629-0700	10 Mc/s	10 kW
1029-1045	60 Mc/s	10 kW

Each transmission will be modulated in accordance with the following 15 minute cycle where applicable.

Minutes past the hour

59-00 14-15 29-30 44-45	Slow morse call sign MSF followed by a speech announcement.
00-05 15-20 30-35 45-50	Carrier modulated with 1000 c/s tone.
05-14 20-29 35-44 50-59	Carrier unmodulated.

It is proposed to add in due course 1 c/s pulses during the first five minutes of each period at present unmodulated.

COMMISSION III

ON IONOSPHERE AND WAVE PROPAGATION

Communication from the President

Following the « Recommendations to Presidents of Commissions » recently circulated by the Secretary's Office I wish to suggest to members of Commission III that they should communicate to me the titles of subjects which they feel might well be the topics of major discussions in our forthcoming meetings in Zurich.

As tentative suggestions in this connection I list the following :

(*a*) The nature and origin of the fading of radio waves reflected by the ionosphere.

(*b*) The nature and origin of Ionospheric Storms.

(*c*) The anomalous behaviour of the F2 Layer of the Ionosphere.

March 2nd, 1950.

(sgd) E. V. Appleton.
Old College, The University
Edinburgh, 8.

URSIGRAMS

France

Copies of the codes used are available either at the General Secretariat of U. R. S. I. either at the Laboratoire National de Radioélectricité, 196, rue de Paris, Bagneux (Seine), France.

In the recapitulation, data (PIDB, MAG, CORON, etc.) constituting the daily « Ursigrams » have been grouped under the date of observation of the physical phenomena they are describing, whatever the broadcasting day of data may be.

NOVEMBER 1949

Date	Text
1 =	PIDB MARDI NIL =
	SOL 01122 162X1 14621 11211 243X2 =
	SOLER 10545 30000 =
	MAGMA CIDJE 60952 =
	CORON 10111 HGHHH IJKKM NQUVU PRPRN PZZZZ ZZZZZ ZZZZZ 01624 ZZZZZ ZZZZZ ZZZOR SUPQR OPMJJ IHHHH HHHHH 01328 =
2 =	PIDB MERCREDI NIL =
	SOL 02122 172X1 16631 13221 233X2 286X1 =
	SOLER 10545 40000 =
	MAGME DIESXX 21013 01016 =
	CORON 00200 =
3 =	PIDB JEUDI NIL =
	SOL 03122 182X1 14231 213X2 276X2 =
	SOLER 10545 50000 =
	MAGJE EGBWE 30350 00530 32124 02206 =

CORON 10311 GHHII JJJKL NRSUQ PRSTU TTPNN JJHHA AAAAA 02237 ZZZZZ ZZZZZ ZJKMN QPOOO ONLKK JJHHH HHHHG 01118 =

4 = PIDB VENDREDI NIL =
SOL 04121 15241 113X2 22311 266X2 =
SOLER 10545 60000 =
MAGVE BKCSB 10536 00548 11030 01042 =
CORON 10411 HHHHH IJJKK NRSQT POPRT SSOLL KLJHG AAAAA 02002 AGGIJ JJJKK JJLMP POPQQ QOMLM KIHHG GHGGG 01531 =

5 = PIDB SAMEDI NIL =
SOL 05121 17251 123X2 21321 246X2 =
SOLER 10545 7XXXX =
MAGSA DRCWD 21012 01024 11551 01557 =
CORON 00500 =

6 = PIDB DIMANCHE NIL =
SOL 01261 18262 133X2 11331 236X2 =
SOLER 10545 10000 =
MAGDI DDCRB 30050 00230 11139 01151 =
CORON 00600 =

7 = PIDB LUNDI NIL =
SOL 07121 143X2 12341 21341 226X2 23221 59201 00946 =
SOLER 10545 2XXXX =
MAGLU CNBXX 11104 01124 =
CORON 00700 =

8 = PIDB MARDI NIL =
SOL 08121 163X1 14352 12351 116X2 22231 282X1 =
SOLER 10545 3XXXX =
MAGMA AXXXX =
CORON 00800 =

9 = PIDB MERCREDI NIL =
SOL 09NIL =
SOLER 10545 40000 =
MAGME AFDPC 10503 00509 10545 00553 70621 11027 01036 =
CORON 00900 =

```
10 = PIDB    JEUDI  NIL  =
     SOL     IONIL  =
     SOLER   10545  50000  =
     MAGJE   DRCWD  10152  00203  10339  00354  10504
             00512  21122  01130  21130  01136  21142
             71559  =
     CORON   01000  =
11 = PIDB    VENDREDI  NIL  =
     SOL     IINIL  =
     SOLER   10545  60000  =
     MAGVE   ESDYB  90256  21040  01049  31610  01725  =
     CORON   01100  =
12 = PIDB    SAMEDI  NIL  =
     SOL     12422  19391  17392  166X1  232X1  162X1  =
     SOLER   10545  70000  =
     MAGSA   BDDSE  11045  01052  11102  01112  31854
             02000  =
     CORON   01200  =
13 = PIDB    DIMANCHE  NIL  =
     SOL     13123  18302  177X1  21631  211X1  24211
             252X1  272X1  =
     SOLER   10545  10000  =
     MAGDI   DUAXX  21109  01124  31906  02018  =
     CORON   01300  =
14 = PIDB    LUNDI  NIL  =
     SOL     14123  187X1  11641  111X1  23221  262X1  =
     SOLER   10545  2XXXX  =
     MAGLU   BDDXX  70344  32100  02148  =
     CORON   01400  =
15 = PIBD    MARDI  NIL  =
     SOL     15123  13651  12621  121X1  12211  22232
             252X1  262X1  =
     SOLER   10545  30000  =
     MAGMA   CGBND  10504  00512  =
     CORON   01500  =
16 = PIDB    MERCREDI  NIL  =
     SOL     16NIL  =
     SOLER   10545  40001  15114  =
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MAGME DJBXX 30145 00230 20839 00854 =
CORON 11613 HHHHH HHIIJ KKMRS PONRP HOLJI HHGGG FAZAZ 01348 ZAEFG GHHJK MOPPT TQOPQ UUTRO LJHHH HHIHH 02133 =

17 = PIDB RENF JEUDI 0941 0958 =
SOL 17133 16671 15642 14231 12152 12211 222X1 55601 91043 =
SOLER 10545 50007 10101 10189 10221 10230 11206 14021 14332 =
MAGJE AHBXX 10945 00949 12018 02032 =
CORON 01700 =

18 = PIDB VENDREDI NIL =
SOL 18NIL =
SOLER 10545 60001 11291 =
MAGVE BJDXX 12239 02245 12354 02400 =
CORON 01800 =

19 = PIDB RENF SAMEDI 1030 1040 EVAN SAMEDI 1030 1040 =
SOL 19XXX 78612 91030 =
SOLER 10545 70001 10310 ACTIVITE PARTICULIEREMENT INTENSE =
MAGSA DGESF 70601 52031 02039 =
CORON 01900 =

20 = PIDB DIMANCHE NIL =
SOL 20NIL =
SOLER 10545 10000 =
MAGDI EPDXX 42358 =
CORON 02000 =

21 = PIBD LUNDI NIL =
SOL 21NIL =
SOLER 10545 2XXXX =
MAGLU CIBPE 20910 00920 21640 01656 21933 01950 =
CORON 02100 =

22 = PIDB MARDI NIL =
SOL 22533 162X1 147X1 123X1 112X1 238X1 242X4 262X2 =
SOLER 10545 30000 =

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      MAGMA  CJDXX 11033 01040 21324 01339 11403
             01412 11500 01506 =
      CORON  02200 =
23 =  PIDB   MERCREDI NIL =
      SOL    23NIL =
      SOLER  10545 40000 =
      MAGME  CMBSD 10358 00412 10952 01000 21042
             01103 11422 01426 32012 02040 =
      CORON  02300 =
24 =  PIDB   JEUDI NIL =
      SOL    24NIL =
      SOLER  10545 50000 =
      MAGJE  CJBPC =
      CORON  02400 =
25 =  PIDB   VENDREDI NIL =
      SOL    25NIL =
      SOLER  10545 60000 =
      MAGVE  AICNB 11004 01009 11045 01051 11642
             01648 =
      CORON  12511 HHHHH IIILQ UVWTU UUNMN
             NOMIN KIIHH HGFAA 02346 AAAAG
             HHIIK NNRRS SSQSQ TTOML IHHIH
             HHHHG 01978 =
26 =  PIDB   SAMEDI NIL =
      SOL    26NIL =
      SOLER  10545 70000 =
      MAGSA  AHBVC 12242 02303 12334 02345 =
      CORON  02600 =
27 =  PIDB   DIMANCHE NIL =
      SOL    27NIL =
      SOLER  10545 10000 =
      MAGDI  CJDWC 21045 01051 31530 01700 =
      CORON  02700 =
28 =  PIDB   RENF LUNDI 1246 1251 EVAN LUNDI
             1246 =
      SOL    28NIL =
      SOLER  10545 20001 15060 =
      MAGLU  CQAZD 10445 00500 10559 00604 11446
             01451 72317 =
      CORON  02800 =
```

29 = PIDB MARDI NIL =
SOL 29NIL =
SOLER 10545 3XXXX =
MAGMA EDDLE 20103 00105 20109 00110 30100 00155 =
CORON 12913 EEEEE EHHIG PQUUU TONRQ RPNLK KKJJJ JJIJI 02077 HHIIJ KKKKK LMONN NOORQ TQKKJ HFFEF DDEEE 01546 =

30 = PIDB MERCREDI NIL =
SOL 30833 186X1 152X2 121X1 222X1 257X1 252X1 263X2 =
SOLER 10545 40000 =
MAGME ELFYD 91116 31639 01830 32003 02100 =
CORON 13011 EEDGF GHFHL OPTUQ QQRRS TQRNM KJIII IGFGF 02087 HGGGH IHIJK KOQNL NNMQQ QPMKZ ZZZZZ ZZZZZ 01263 =

Décembre 1949

1 = PIDB JEUDI NIL =
SOL 01NIL =
SOLER 10545 50000 =
MAGJE DJCMB 20210 00221 =
CORON 00100 =

2 = PIBD VENDREDI NIL =
SOL 02233 172X1 15611 151X1 12311 227X1 233X1 24311 247X4 =
SOLER 10545 60000 =
MAGVE ADCOB =
CORON 00200 =

3 = PIDB SAMEDI NIL =
SOL 03NIL =
SOLER 10545 70000 =
MAGSA CEBHD 10320 00330 11942 01948 =

CORON 10310 GGFGH JJIMM NRSUU UTTUT QMMKK KJHHH IHGGF 02302 FGHHI HHHHG JNPPS TRLQR ORPLK KJIGE FGFEE 01691 =

4 = PIDB DIMANCHE NIL =

SOL 04233 18631 171X1 14331 127X1 113X1 21331 226X4 25611 =

SOLER 10545 10000 =

MAGDI DPCSD 10500 00509 21245 01257 12345 02350 =

CORON 10410 EEEEF FGGGF KNSUU VTSSQ RMLKG HGGGF FFGFE 01849 EEGGH HGHHG MNOMP PONNQ QROML JJHGG FEEFE 01474 =

5 = PIDB LUNDI NIL =

SOL 05NIL =

SOLER 10545 20000 =

MAGLU DUCXX 11028 01029 21236 01251 11744 01750 =

CORON 10511 EFEFF GGHHI LPSTT RSQRN MLLJJ GGFFE FEFEF 01586 EFGHI HIIZZ ZZZZZ ZZZZZ ZZZZZ ZZZZZ ZZZZZ 00136 =

6 = PIDB MARDI NIL =

SOL 06NIL =

SOLER 10545 30000 =

MAGMA DPCYA 10722 00734 20901 00908 11044 01052 11108 01115 11303 01309 11327 01339 =

CORON 10610 DEEFG IHGHI JMSUT TRPRN LLNLI GFEEF EFFFF 01590 FGGHI IHIIG IKJMN QMRQS RSNNL IIHFF FFFEE 01504 =

CORON 20612 AAAAA AAAAA AEFHF FEEFF FEEAA AAAAA AAAAA 00102 AAAAA AAADD EEAAI GFGIH KIIHF FFEEA AAAAA 00265 =

7 = PIDB MERCREDI NIL =

SOL 07NIL =

SOLER 10545 40000 =
MAGME BQAXX =
CORON 10709 FFEEF HIHHI JMORR SPPRV RPOOK IHGEE EFFFG 01747 EFGHI IHHIH IIMMO ONNRR SRSQP LKIHG FFFFE 01696 =
CORON 20712 ZZZZZ ZZZZZ AAAGG HAAAA ZZZZZ ZZZZZ ZZZZZ 00044 ZZZZZ ZZZZZ ZZZAA FFIJJ MHLHF AAZZZ ZZZZZ 00255 =

8 = PIDB JEUDI NIL =
SOL 08NIL =
SOLER 10545 50000 =
MAGJE AHCXX 32336 02400 =
CORON 00800 =

9 = PIDB VENDREDI NIL =
SOL 09532 183X2 16381 166X4 12661 226X2 222X1 =
SOLER 10545 60000 =
MAGVE BDESD 60321 =
CORON 00900 =

10 = PIDB SAMEDI NIL =
SOL 10NIL =
SOLER 10545 70000 =
MAGSA CDBUC 10151 00203 11410 01421 32009 02050 =
CORON 01000 =

11 = PIDB RENF DIMANCHE 1434 1439 =
SOL 11NIL =
SOLER 10545 10000 =
MAGDI AJBUA =
CORON 01100 =

12 = PIDB RENF LUNDI 1300 1305 EVAN LUNDI 1300 =
SOL 12322 181X1 16691 142X1 136X1 266X1 271X1 =
SOLER 10545 20000 =
MAGLU AFBXX 11254 01303 =
CORON 01200 =

13 = PIDB MARDI NIL =
SOL 13NIL =
SOLER 10545 30000 =
MAGMA BMCPA 11234 01242 11327 01339 =
CORON 01300 =

14 = PIDB MERCREDI NIL =
SOL 14NIL =
SOLER 10545 40000 =
MAGME CJDSC 11457 01500 11546 01551 =
CORON 01400 =

15 = PIDB JEUDI NIL =
SOL 15NIL =
SOLER 10545 50000 =
MAGJE CQBWC 21144 01151 22154 02215 =
CORON 01500 =

16 = PIDB VENDREDI NIL =
SOL 16NIL =
SOLER 10545 60000 =
MAGVE ABDDC =
CORON 01600 =

17 = PIDB SAMEDI NIL =
SOL 17NIL =
SOLER 10545 70000 =
MAGSA CMBVC =
CORON 01700 =

18 = PIDB DIMANCHE NIL =
SOL 18622 153X1 136X1 121X1 221X1 =
SOLER 10545 10000 =
MAGDI BMAUB =
CORON 01800 =

19 = PIDB LUNDI NIL =
SOL 19NIL =
SOLER 10545 20000 =
MAGLU BICXX 10828 00834 11318 01325 =
CORON 11912 FFGGH HHJJL NOQRS RQORS
OMLJG HIHHI IIIGF 01724 FGGHH
GGGHH IKLKM OOOPQ SSQNL LKIIG
GGGAA 01487 =

20 = PIDB MARDI NIL =
SOL 20NIL =
SOLER 10545 30000 =
MAGMA CKBRC =
CORON 12014 EFGGH HIJKL NPSSR RRNQP MONMI JIHII IJIHF 01824 FFFGG GGHHI HLMMQ NONMP OPPOK JIIHZ ZZZZZ 01285 =

21 = PIDB MERCREDI NIL =
SOL 21NIL =
SOLER 10545 4XXXX =
MAGME BDCND 11533 01539 11651 01700 21728 01736 21755 01802 12103 02112 =
CORON 12110 EEFGH IIIKN PQRRV RNNLK LMMKJ IIHHH HGHHF 01649 FGFFG GGGGH JMOQP PPOOQ PURNI GGFFG FFFFF 01544 =
CORON 22112 ZZZZZ ZZZZZ ZAFGH IFFEA AEAAZ ZZZZZ ZZZZZ 00094 ZZZZZ ZZZZZ ZADED EGEEF FFGHH HDAZZ ZZZZZ 00143 =

22 = PIDB JEUDI NIL =
SOL 22NIL =
SOLER 10545 50000 =
MAGJE CLBSC 30040 00115 19034 00939 12020 02021 =
CORON 02200 =

23 = PIDB VENDREDI NIL =
SOL 23NIL =
SOLER 10545 60000 =
MAGVE BMCSD =
CORON 02300 =

24 = PIDB SAMEDI NIL =
SLO 24NIL =
SOLER 10545 70000 =
MAGSA DFCVA 30130 00212 10426 00430 11521 01530 =

CORON 12410 FGFGH IKKKO UVVUR NOORR NLKLK JHHGG HFGFE 02062 EEEEF FFGGH IIMPP OQQSS OQNKI EEEFF EEEED 01346 =

25 = PIDB DIMANCHE NIL =
SOL 25NIL =
SOLER 10545 IXXXX =
MAGDI BICRB =
CORON 02500 =

26 = PIDB LUNDI NIL =
SOL 26NIL =
SOLER 10545 20000 =
MAGLU CQBXX =
CORON 12610 FGGHH HHIJL RUVUR SRRRP PPLJK KHGGH FEFFE 02048 EEFFF FFGGH IJLLJ KNOSP PQNII HGGGF FEEEE 01122 =
CORON 22615 ZZZAZ AZAEF HJKHG EEFEF FAZAZ ZZAZZ ZZZZZ 00179 ZZZAZ ZAEAA DAZAE FGFIG EEDCA ZZAZZ AZZZZ 00102 =

27 = PIDB MARDI NIL =
SOL 27NIL =
SOLER 10545 30000 =
MAGMA CCALC 30018 00112 21140 01148 11930 01939 =
CORON 12712 FFFGG GGGJL MPSRR SRSTT RSOLK LJHHH FEEEF 02020 FEFFH HHHII IJMKL PNQRR ROMJJ IHHGG FFFEF 01318 =
CORON 22710 ADEED DADEG GKLIJ EFGGF EDAAA DDDED DAAZA 00288 AZAZA AAAAA AADAG FGGHI FEEAA AADDD EEAAZ 00139 =

28 = PIDB MERCREDI NIL =
SOL 28NIL =
SOLER 10545 40000 =
MAGME BLCSD 71101 =

CORON 12812 EFFGH HHHHK MMOPQ OPQRT QQOLJ IIIIH FEEEF 01650 FEFGH IHHHI JIMLP QNNQQ ROMJJ IHHGF FFEEF 01339 =

29 = PIDB JEUDI NIL =

SOL 29NIL =

SOLER 10545 50000 =

MAGJE CPBVC 10008 00011 12045 02052 12230 02238 =

CORON 02900 =

30 = PIDB VENDREDI NIL =

SOL 30022 182X4 176X1 152X1 213X1 223X1 251X4 =

SOLER 10545 60000 =

MAGVE BJCQD =

CORON 03000 =

31 = PIDB SAMEDI NIL =

SOL 31122 186X1 162X2 123X1 213X1 241X4 =

SOLER 10545 70000 =

MAGSA DUEWB 20348 00408 31910 02038 =

CORON 03100 =

DOCUMENTATION

Periodicals, articles, works and books under this heading have been received at the Secretariat of the U. R. S. I. and may be communicated, on request, to members of National Committees.

Periodicals

INTERNATIONAL COUNCIL OF SCIENTIFIC UNIONS

Monthly Bulletin of Information, nº 22, Nov.-Dec. 1949.
Eighteenth Session Executive Board Unesco.
Meeting of Committee of Experts on the Arid Zone.
Physics Abstracting (see p. 11).
Secretaries of the International Unions (see p. 10).
Secretaries of Joint Commissions (see p. 10).

Calendar (abstracts) :

March 1950, Unesco, Paris : 2nd. meeting Temporary Consultative Committee for the Sciences of the Engineer.

May 22 to June 16 1950, Unesco, Florence : Fifth Session of the General Conference.

Spring 1950, ICSU, Paris : Committee on Science and its Social Relations.

August 10-11, 1950, ICSU : Berne : Executive Board.

September 11-23 1950, URSI, Zurich : IXth. General Assembly.

September 4-6 1950, ICSU, Brussels : Joint Commission on the Ionosphere.

September 11-12 1950, Unesco, Paris : Int. Meeting of the Associations for the Advancement of Science.

September 1951, IUPAP, Copenhagen : General Assembly.

BELGIUM

Ciel et Terre, Monthly Bulletin of the Société Belge d'Astronomie, de Météorologie et de Physique du Globe, LXVIst year, nº 1-2, Jan.-Febr. 1950.

Centre de Contrôle des Radiocommunications des Services Mobiles (C. C. R. M.)
Monthly Report M 1/50, Jan. 1950.
Monthly Report Aé 1/50, Jan. 1950.

Union of International Associations, Monthly Bulletin, 1950, nº 2, Feb. (contains the list of International Organisations).

FRANCE

Annales de Radioélectricité, t. V, nº 19, Jan. 1950.

Abstracts : *Method for computing in frequency modulation, the non linear distortion in function of the propagation time variations of an amplifier*, by J. Fagot.

Summary. — The paper gives a mathematical treatment, as simple as possible, of the problem of harmonic distortion in frequency-modulated signals. A simple reaction is thus found which enables to figure the distortion factor in terms of the variations of the time of propagation. The introducing section surveys succintly some classical properties of frequency-modulation and networks.

Principal waves in electromagnetic guides, by J. Ortusi and J. C. Simon.

Summary. — After describing the application of Maxwell's equations to guided waves, this paper is concerned with the general expression of the transverse electromagnetic wave as defined by a velocity of propagation equal to that of light in unbounded space. It is shown that the characteristic functions of such waves (power, voltage, current, characteristic impedance) are invariant in any conformal transformation of coordinates. The latter theorem is then used to evaluate the iterative impedances of coaxial and multi-wire lines from the characteristic impedance of two strips of unbounded plane, which corresponds to the simplest T.E.M. wave.

Study of experimental devices used for measuring the noise of centimetric wave amplifiers, by M. Denis.

Summary. — After a brief survey of the main concepts involved, experimental devices are studied that enable the noise factor and the signal-

to-noise ratio of amplifiers operated on centimetre waves to be determined. The descriptions are more specially concerned with the systems employed for studying travelling-wave tubes.

Some aspects of Bode theory, by H. FAMILIER.

Summary. — The general principles of Bode theory are summarized. The main mathematical relations are then applied to the investigation of transmission systems, and particularly to negative feed-back amplifiers. The results obtained are examplified.

Dynamical measurements of over-voltages and frequencies of cavities with single link, by M. DENIS and S. COUYBES.

Summary. — A theoretical analysis of the dynamical measurement of the Q-factor of resonators having only one coupling element is given. The equipment used is described. The authors show that the proposed method especially useful for high-value Q's enables to obtain rapidly the characteristics of a rhumbatron loaded by an electron beam (*i. e.* resonant frequency, Q, equivalent shunt impedance) and their variation with varying parameters.

Observations Ionosphériques, issued by the Service de Prévision Ionosphérique Militaire.
SPIM, O 37-38-39, Friburg and Dakar, July, Aug. Sept. 1949.

ITALY

Elettrotecnica, issued by the Electrotechnical Documentation Center of the Padova University, Year VII, nº 4, Oct.-Dec. 1949.

NEW-ZEALAND

Cosmics Relations Bullelin, issued by the Dominion Physical Laboratory, Carter Observatory, Wellington, nº 6, Nov. 1949; nº 7, Dec. 1949.

SWEDEN

Ionospheric Measurements at Kiruna, issued by the Research Laboratory of Electronics Chalmers University of Technology, Gothenburg, Jan. 1950.

UNITED STATES

Basic Radio Propagation Predictions, issued by the National Bureau of Standards, CRPL, Series D, nº 66, Febr. 1950, for May 1950.

Articles — Works — Books

INTERNATIONAL SCIENTIFIC UNIONS

Geomagnetic Indices, K and C, 1948, by H. Herbert Howe and Evelyn K. Weisman, with two appendices by Julius Bartels (International Union of Geodesy and Geophysics, Association of Terrestrial Magnetism and Electricity).

FRANCE

Optique Géométrique de l'Ionosphère, by K. Rawer, Reprinted from *La Revue Scientifique*, nº 3298, Sept.-Oct. 1948, p. 585-600.

La hauteur de la couche ionosphérique F2 et le nombre relatif des taches solaires, by R. Eijfrig. Reprinted from *La Revue Scientifique*, nº 3299, Nov. 1948, p. 763-674.

L'effet de longitude de la couche ionosphérique F2 et la prévision ionosphérique, by F. Oboril and K. Rawer. Reprinted from *Comptes Rendus de l'Académie des Sciences*, t. 228, p. 1962-1963, 20 June, 1949.

Calcul du déviement d'absorption relatif à une couche ionosphérique parabolique dans le cas d'une incidence normale, by E. Argence and K. Rawer. Reprint from *Comptes Rendus de l'Académie des Sciences*, t. 229, p. 996-997, 14 Nov. 1949.

Mesure de la fréquence maximum utilisable en parcours ionosphérique, by E. Harnischmaker. Reprinted from *Comptes Rendus de l'Académie des Sciences*, t. 228, p. 1936-1937, 20 th. June, 1949.

Observations de la couche E sporadique de l'ionosphère réalisées par plusieurs stations en Europe, by F. HÖCHTL et K. RAWER. Reprinted from *Annales de Géophysique*, t. 5, fasc. 2, Febr. 1949, p. 150-156.

Summary. — Critical frequencies of the sporadic E-layer (*fEs*) are compared by means of correlation-coefficients, calculated between 4 European stations. At first daily coefficients are calculated. Correlation-values diminish rapidly with increasing distance. There is no homogeneity in sporadic E-ionization at distances beyond 100 km; for distances larger than 500 km no real correlation remains.

Monthly correlations give similar results. Each day is caracterized by the maximal value of *fEs* or by the number of observations surpassing a certain limit. It is only for restricted regions (with a diameter not larger than 1000 km) that one could perhaps characterize a single day as having much or little sporadic ionization.

L'influence du cycle solaire sur l'angle d'arrivée dans des liaisons radioélectriques en ondes courtes, by H. NEYER et K. RAWER. Reprinted from *Annales de Géophysique*, t. 5, fasc. 1, Jan. 1949, p. 61-73.

Measurement of Sporadic E-layer Ionization, by K. RAWER. Reprinted from *Nature*, vol. 163, p. 528, April 2, 1949.

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Strahlwege von Radiowellen in der Ionosphäre, by Herman POEVERLEIN.

Erste Mitteilung, reprinted from the « Sitzungsberichten der Bayerischen Akademie der Wissenschaften, 1948 ».

Zweite Mitteilung, Theoretische Grundlagen, reprinted from « Zeitschrift für angewandte Physik », 1 Band, 11 Heft, Oct. 1949.