

Union Radio - Scientifique Internationale

INTERNATIONAL SCIENTIFIC RADIO UNION
U. R. S. I.

BULLETIN MENSUEL

Mars 1948

● MONTHLY BULLETIN

March 1948

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Informations

VIII^e ASSEMBLÉE GÉNÉRALE - VIIIth. GENERAL ASSEMBLY

Les Comités Nationaux sont invités à faire connaître au Secrétariat Général le nom et l'adresse de leur délégué au Comité Exécutif.



National Committees are requested to send to the General Secretary's Office the name and address of their delegate to the Executive Committee.



Nous attirons tout spécialement l'attention des Membres du Comité Exécutif sur le contenu du Bulletin d'Informations du Conseil International des Unions Scientifiques. (Voir p. 6)



We particularly drawn attention of the Members of the Executive Committee on the contents of the Monthly Bulletin of Informations of the International Council of Scientific Unions. (See p. 6)



COTISATIONS - SUBSCRIPTIONS

Nous rappelons que la cotisation pour 1947 et celle pour 1948 ont été fixées à 450 francs - or par unité statutaire.

L'Union ayant un pressant besoin de fonds pour l'organisation de la prochaine Assemblée Générale, prie les Comités Nationaux qui n'ont pas encore réglé leur cotisation pour 1947 de bien vouloir entreprendre les démarches nécessaires pour que ce paiement se fasse sans retard.

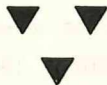
La cotisation pour 1948 peut être payée dès à présent



We remind that subscriptions for 1947 and 1948 have been fixed on the basis of 450 gold francs per statutory unit.

The Union wanting urgently funds for the organization of the next General Assembly, begs National Committees which have not yet paid their subscription for 1947, to undertake the necessary steps so that this payment should be done as soon as possible.

Subscriptions for 1948 may be paid forthwith.



COMITES NATIONAUX — NATIONAL COMMITTEES

Comité National Marocain

Marocan National Committee

Monsieur G. BIDAULT, Service de Physique du Globe et de Météorologie, 2, rue de Foucauld, Casablanca (Maroc) a été nommé Secrétaire du Comité National Marocain de Radiotélégraphie Scientifique en remplacement de Monsieur Georges ROUX, appelé à d'autres fonctions.

COMMISSIONS

Sous-Commission IIc. — Propagation dans la Troposphère.

Sub-Commission IIc. — On Tropospheric Propagation.

La composition de la Sous-Commission est actuellement la suivante :

The composition of the Sub-Commission is actually as follows :

Dr. G. H. Booker, Christ's College, Cambridge, England (President) ;

Dr. H. Bremmer, Natuurkundig Laboratorium der N. V. Philip's Gloeilampenfabrieken, Eindhoven, Holland ;

Prof. C. Marneback, 27, rue de la Tourelle, Brussels, Belgium ;

Prof. C. R. Burrows, Cornell University, Ithaca, N. Y., U. S. A. ;

Dr. T. J. Carroll, National Bureau of Standards, Washington D. C., U. S. A. ;

Dr. J. B. Smythe, Naval Electronics Laboratory, San Diego, California, U. S. A. ;

Dr. R. L. Smith-Rose, National Physical Laboratory, Teddington, England ;

Dr. E. G. Bowen, Radiophysics Laboratory, The University Sydney, New South Wales, Australy ;

Dr. E. Marsden, Department of Scientific and Industrial Research, Wellington, New Zealand.

CONSEIL INTERNATIONAL DES UNIONS SCIENTIFIQUES
International Council of Scientific Unions



Bulletin d'Information n°4. — Décembre 1947.

Monthly Bulletin of Information n°4. — December 1947.

EXTRAITS — ABSTRACTS

Union Géographique Internationale.

Compte rendu de la réunion tenue à Paris le 23 novembre 1947 par la Commission pour la publication et la reproduction des cartes.

The Programme of U. N. E. S. C. O. in 1948.
Natural Sciences.

The second General Assembly of UNESCO, which was held in Mexico City in November 1947, agreed on the following programme of activities in 1948 for the Natural Sciences.

Field Science Co-operation Offices :

The Director-General is instructed :

To maintain Field Sciences Co-operation Offices in the Middle East, the Far East and Latin America, and to establish an Office in South Asia in 1948, as undertakings of the highest priority within the Natural Sciences programme. In this connection the Director-General shall give due regards to the following consideration :

The effort and budget of the Latin American Field Science Co-operation Office in 1948 shall be concentrated on specific liaison tasks and shall be closely co-ordinated with the Hylean Amazon project.

Latin American Conference :

The Director-General is instructed to convene a Panel of Experts in Latin America to advise UNESCO as to the best way in which the development of science in Latin America may be assisted in the future ; provided that the governments and other Specialised Agencies of the United Nations concerned are prepared to pay the expenses of the meeting and that Unesco's only expenditure shall be for the attendance of its own representative and, if necessary, that of an exceptional expert not nominated by his government.

Hylean Amazon Institute :

The Director-General is instructed to take steps to bring into being in 1948 an International Institute of the Hylean Amazon.

High Altitude Stations :

The Director-General is instructed to convene a conference in Paris of expert delegates from Member States, appropriate international organizations and Specialised agencies of the United Nations interested in the establishment and maintenance of high altitude stations for the study of the effects of high altitudes on life and of physical phenomena observable only at high altitudes, for the purpose of making recommendations to UNESCO and to the United Nations concerning international stations of this kind, provided that the expenses of attendance of the delegates be met outside the budget of UNESCO.

Cartographic Science :

The General Conference recommends to the Secretary-General of the United Nations the urgency of adequate planning in the basic field of cartographic science.

Co-operation with non-governmental organizations :

The Director-General is instructed :

To further international scientific co-operation by means of grants-in-aid and other similar forms of assistance to international scientific and technological organizations, unions and societies.

To assist in the international organizations of scientists engaged in the applied field of engineering, agricultural and medicine, provided that in the latter fields the necessary close co-operation with the Food and Agricultural Organization and the World Health Organization respectively be maintained.

To provide to scientific bodies within nations appropriate financial and other aid for carrying out scientific work of international significance along the lines of UNESCO's aims, after consultation with the relevant Government or National Commission or co-operation body, with the International Council of Scientific Unions and with the appropriate specialised union, subject to regulations adopted by the General Conference.

World Centre of Scientific Liaison :

The Director-General is instructed to continue the activities of the organization which constitute a World Centre Scientific Liaison. These include such activities as the scientific apparatus information service, measures toward standardisation, abstracting and other scientific documentation, rationalisation of scientific publications, scientific films, exchange of scientific persons,

facilitation of movement of scientists across frontiers, world register of scientists and institutes, collaboration with the United Nations and with other specialised Agencies in the field on applied science.

Grants-in-aid allocated by UNESCO in 1948 :

The total amount of grants-in-aid allocated in 1948 to non-governmental organizations is, in the field of Natural Sciences \$ 240.000. Out of this sum, \$ 232.254 are for I. C. S. U. and the scientific Unions which it federates.

I. C. S. U. and the Unions :

The attention of adhering countries is drawn to the creation of three new International Unions of Crystallography, Theoretical and Applied Mechanics and History of Science. Adhesion of further countries to these Unions would be welcome.

List of the 10 Scientific Unions which are federated in the International Council of Scientific Unions :

- I. A. U. International Astronomical Union.
General Secretary : Prof. J. H. Oort, Sterrewacht,
Leiden (Netherlands).
- I. U. B. S. International Union of Biological Sciences.
General Secretary : Prof. P. Vayssière, Muséum
d'Histoire Naturelle, 57, rue
Cuvier, **Paris** (V^e) (France).
- I. U. C. International Union of Chemistry.
General Secretary : Prof. R. Delaby, Ecole de Phar-
macie, 4, avenue de l'Observa-
toire, **Paris** (VI^e) (France).
- I. U. Cr. International Union of Crystallography.
General Secretary : Dr. R. C. Evans, Crystallogra-
phic Laboratory, Free School
Lane, University of **Cambridge**
(England).
- U. G. G. I. Union Géodésique et Géophysique Internationale.
General Secretary : Dr. J. M. Stagg, Kew Obser-
vatory, **Richmond** (Surrey)
(England).
- U. G. I. Union Géographique Internationale.
General Secretary : M^{lle} M.-A. Lefevre, Institut
Géographique P. Michotte, 2,
rue des Doyens, **Louvain** (Bel-
gique).

- U. I. H. S. Union Internationale d'Histoire des Sciences.
General Secretary : Prof. P. Sergescu, 7, rue Daubenton, **Paris** (V^e) (France).
- I. U. P. A. M. International Union of Pure and Applied Mechanics.
General Secretary : Prof. J.-M. Burgers, 1, van Houtenstraat, **Delft** (Netherlands).
- I. U. P. A. P. International Union of Pure and Applied Physics.
General Secretary : Prof. Fleury, Institut d'Optique, **Paris** (XV^e) (France).
- U. R. S. I. Union Radio-Scientifique Internationale.
General Secretary : Major A. Dorsimont, 42, rue des Minimes, **Bruxelles** (Belgique).

CALENDAR (Abstracts).

- 28th-30rd. July 1948 - I. C. S. U. - Brussels : Commission on the Ionosphere.
- Aug. 1948 - I. C. S. U. - Brussels : Commission on Radio-Meteorology.
- 24 juin - 3 juillet 1948 - Paris : Conférence Internationale des Grands Réseaux Electriques.
- July 1948 - Paris : Commission Internationale de l'Eclairage.
- 12-23 juillet 1948 - U. R. S. I. - Stockholm : VIIIth General Assembly Union Radio-Scientifique Internationale.
- 14-15 Sept. 1948 - I. C. S. U. - Brussel : Executive Committee of the International Council of Scientific Unions.
- 12 Oct. 1948 - Paris : General Conference on Weights and Measures.
- 14-16 Sept. 1949 - I. C. S. U. - Copenhagen : General Assembly, International Council of Scientific Unions.



EXTRAITS — ABSTRACTS

Contacts with Spanish American Scientists, by Dr. A. Establier,
Liaison Officier I. C. S. U. - UNESCO. (Abstracts.)

Dr. Establier gives as follows the reasons of his journey :

» During the second session of the General Conference of
» UNESCO, held in Mexico in November 1947, I was urged to
» extend my journey to several other countries of Central America
» and the Caribbean. The suggestion was made successively by
» Dr. J. A. FLEMING, President, and Professor F. J. M.
» STRATTON, General Secretary of the INTERNATIONAL COUN-
» CIL OF SCIENTIFIC UNIONS, and by Dr. J. NEEDHAM, Head
» of the Natural Sciences Section of UNESCO.

» Before I started, a number of meetings were held in Mexico
» to decide what countries I should visit, and what were the
» objects of my journey.

» In the first place, in view of the short time at my disposal
» (a fortnight), it was decided that the trip should be limited to
» the following countries : Guatemala, El Salvador, Colombia,
» Venezuela and Cuba.

» In the second place, as regards the ends to be sought, it
» was considered that I should :

» 1. Make contacts with the greatest possible number of scien-
» tists in the countries mentioned.

» 2. Seek to interest scientists and the authorities of their
» countries in joining I. C. S. U. and a number of the individual
» Unions.

» The principle of membership of selected Unions only had
» to be accepted because the condition of science in some of the
» countries made it impracticable to consider their adhering to
» all the existing Unions. »

Dr. Establier gives then an account of meetings he was able
to have in Guatemala, El Salvador, Colombia, Venezuela and

Cuba, and also of discussions he had in Mexico with scientists concerning the adherence of their respective countries to I. C. S. U.

He concludes as follows :

» As a result of this journey the contacts made with scientists » in the Spanish American countries, I have a strong impression » that a great effort ought to be made by I. C. S. U. and the » Unions in these lands. In the first place both the work of the » Unions in the field on organization and the technical results » obtained from discussion, commissions, etc., must be made » known by being given the widest possible publicity.

» Secondly it appears to me that the number of Spanish » American scientists on our Commissions, Committees, etc., » might usefully be increased, and that every opportunity should » be taken of bringing them into our discussions and technical » meetings.

» I think, too, that it would be desirable, from time to time, » to arrange for the holding of the General Assembly of an Union » in a Spanish American country. I am aware of all the difficul- » ties in such a proposal, but I am convinced of the enormous » advantages thus obtainable in the near future in view of the » rapid scientific development of these countries.

» I think that contacts such as I had occasion to make are most » valuable for making known the activities of the Unions and for » the establishment of personal relations which cannot fail to » assist international relations in the future. »



Union Internationale de Physique Pure et Appliquée.

Compte rendu du Colloque de Thermodynamique, tenu à Bruxelles, du 4 au 8 janvier 1948 et de la réunion de la Commission des Grandeurs et Unités Thermodynamiques, tenue à Bruxelles le 6 janvier 1948.



Mixed Commission on Ionosphere. — I. C. S. U.

The Mixed Commission on the Ionosphere will held a three day meeting of the full Commission at Brussels, on July 28th., 29th., and 30rd., 1948.

Secretary is :

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

U. N. E. S. C. O.


Bibliographie - Bibliography



Le Chef du Bureau de Traduction des Classiques a adressé un appel à notre collaboration pour le choix d'ouvrages scientifiques qui seraient traduits, sur une large échelle, pour les lecteurs instruits des pays d'autres langues que celles dans lesquelles ces ouvrages ont été écrits. Actuellement, seuls les livres écrits avant 1900 sont pris en considération et les ouvrages à prédominance technique ou de vulgarisation sont écartés.


Les Membres de l'U. R. S. I. ayant des ouvrages à renseigner, peuvent communiquer au Secrétariat Général les renseignements suivants :

Titre exact, nom de l'auteur, année de la publication, nom et adresse de l'éditeur de la meilleure édition, nombre de volumes et de pages.



The Chief of the Bureau of Translation of the Classics, has appealed for our co-operation in the selection of works in the scientific field that should be widely translated for the general educated public of other countries than that for which they are written. At present, only works published before 1900 are being considered and preponderantly technical works of vulgarisation should be avoided.

Members of the U. R. S. I. wishing to mention some works are requested to send the following data to the General Secretary's Office : exact title, name of author, date, place and publisher of the best edition, number of pages and volumes.



UNION INTERNATIONALE DE CHIMIE
International Union of Chemistry

Comptes rendu de la quatorzième Conférence. Londres, 17-24 juillet 1947.

Table des matières :

Avant-propos.

Organismes adhérents.

Bureau et Comité Exécutif 1947-1951.

Composition des Commissions.

Quatorzième Conférence.

Procès verbaux des réunions.

Statuts et règlement 1947.

Rapports.



UNION INTERNATIONALE DES SCIENCES BIOLOGIQUES

Procès verbal de la IX^e Assemblée Générale. Copenhague, 28 juillet 1947.

Table des matières :

1^{re} partie : Procès verbal de la IX^e Assemblée Générale ;

2^e partie : Documents généraux sur U. I. S. B.



COMMISSION I

Sous-Commission Permanente Permanent Sub-Commission

Copy of a letter addressed by Dr. R. L. Smith-Rose, to the Members of the Permanent Sub-Commission :

We beg members of the U. R. S. I. interested in the field of Commission I to bring their help to the members of the Permanent Sub-Commission.

DEPARTEMENT OF SCIENTIFIC
AND INDUSTRIAL RESREACH,
NATIONAL PHYSICAL LABORATORY,
TEDDINGTON, Middlesex,
16th. February, 1948.

« Dear Sir,

» **U. R. S. I. Permanent Sub-Commission of Commission I**

Our **Sub-Commission** will be expected to report to the Assembly of the Union during 12th. to 22nd. July 1948, on the progress that has been made in recent years in our subject of **Standards and Measurements**. I am therefore inviting Members of the Sub-Commission to send their contributions to me by 1st. May 1948, in order that I may incorporate them together in my comprehensive report to Commission I.

» It is suggested that reports should in general comprise short accounts of the advances made in recent years as described in papers already published : and it is important that each report should contain a comprehensive bibliography. In view of the interrupted state of affairs that prevailed at the time of the last assembly in 1946, I think that the period covered might with advantage date from the General Assembly in Italy in 1938.

» In order to secure some measure of uniformity in the reports and to facilitate unification of the contributions, I propose that these should be classified under the following headings :

- A. Frequency.
- B. Power, current and voltage.
- C. Impedance.
- D. Attenuation and gain.
- E. Field strength.
- F. Miscellaneous.

» In view of the fact that in some cases the technique of measurement is changed materially at very high frequencies, it

is suggested that the above sections might be sub-divided where necessary at a frequency of 300 Mc/s. This will apply particularly to sections B, C and E.

» Since our Sub-Commission does not cover all countries I invite Members to report on any work they are aware has been conducted elsewhere on the basis shown below :

Dr. Decaux : European countries.
Ing. Lemoine : European countries.
Prof. Vecchiacchi : European countries.
M. Vormer : European countries.
Dr. Dellinger : North and South America.
Mr. Oatley : British Commonwealth.

» I trust that you will all be good enough to co-operate with me in this work, and I look forward to receiving your reports as soon as possible, and in any case, not later than 1st May 1948. I give below a list of names and addresses of the members of the Sub-Commission to whom this letter is addressed.

» With my kindest regards and best wishes
» Yours sincerely,
» (Sgd.) R. L. SMITH-ROSE,
» President of Sub-Commission of Commission I. »

List of names of members of Sub-Commission :

Dr. J. H. Dellinger : National Bureau of Standards, Washington D.C., U. S. A.
Dr. B. Decaux : Comité Français de Radiotélégraphie Scientifique, 196, rue de Paris, Bagneux (Seine), France.
Ing. S. Lemoine : Direction Générale des Télégraphes de Suède, Stockholm, Suède.
Mr. C. W. Oatley : Engineering Laboratory, Trumpington Street, Cambridge, England.
Prof. F. Vecchiacchi : Professore di Comunicazioni Elettriche al Politecnico, Milan, Italy.
M. J.-J. Vormer : Staatsbedrijf der P. T. T., Radiolaboratorium, 29, Parkstraat, 's Gravenhage, Holland.

Traduction d'une lettre envoyée par le Dr. R. L. Smith-Rose
aux membres de la Sous-Commission Permanente :

Nous invitons les membres de l'U. R. S. I., intéressés dans les questions traitées par la Commission, d'apporter leur concours aux membres de la Sous-Commission Permanente.

«Cher Monsieur,

» On prévoit que notre Sous-Commission présentera à l'Assemblée de l'Union, du 12 au 22 juillet 1948, un rapport sur les progrès réalisés, ces dernières années, dans notre domaine de **Mesu-**

res et Etalons. C'est pourquoi j'invite les membres de la Sous-Commission à m'envoyer leurs contributions avant le 1^{er} mai 1948 afin de me permettre de les incorporer dans mon rapport général à la Commission I.

» Il serait souhaitable que les rapports comprennent, en général, des comptes rendus succincts des progrès réalisés durant ces dernières années et déjà exposés dans des articles publiés ; il convient que chaque rapport contienne une bibliographie détaillée. Etant donné que la dernière assemblée de 1946 a surtout été dominée par l'idée de la reprise de l'activité qui avait été interrompue, je crois que la période envisagée pourrait avantageusement débiter à l'Assemblée Générale tenue en Italie en 1938.

» Pour assurer une certaine uniformité et faciliter l'unification des contributions, je propose d'adopter la classification suivante :

- A. Fréquence.
- B. Puissance, courant et voltage.
- C. Impédance.
- D. Atténuation et gain.
- E. Intensité du champ.
- F. Divers.

» Tenant compte du fait que, dans certains cas, la technique des mesures est matériellement affectée aux très hautes fréquences, là où cela s'avère nécessaire, les rubriques ci-dessus pourraient être subdivisées à la fréquence de 300 Mc/s ; ceci s'appliquera spécialement aux rubriques B, C et E.

» Comme notre Sous-Commission ne compte pas de représentants dans tous les pays, j'invite les membres à établir leurs rapports en tenant compte de ce qui a été fait en dehors de leur pays et ceci sur les bases ci-après :

- Dr. Decaux : Pays d'Europe.
- M. Lemoine : Pays d'Europe.
- Prof. Vecchiacchi : Pays d'Europe.
- M. Vormer : Pays d'Europe.
- Dr. Dellinger : Amériques du Nord et du Sud.
- M. Oatley : Empire Britannique.

» Je suis certain que vous voudrez bien tous collaborer avec moi pour ce travail et j'espère recevoir vos rapports le plus rapidement possible et, en tous cas, pour le 1^{er} mai au plus tard. Je donne, ci-après, la liste des membres de la Sous-Commission, avec leur adresse, auxquels cette lettre est envoyée.

» Avec mes meilleurs sentiments et souhaits,

» (Signé.) R. L. Smith-Rose.

Président de la Sous-Commission Permanente
de la Commission I.

Pour la liste des Membres de la Sous-Commission : voir page 17.

Commission Mixte de l'Ionosphère

JOINT COMMISSION ON IONOSPHERE

Une réunion de cette Commission aura lieu à Bruxelles, les 28, 29 et 30 juillet 1948.

A meeting of this Commission will be held in Brussels, the 28th., 29th. and 30rd. of July 1948.

Commission Mixte de Radio - Météorologie

JOINT COMMISSION ON RADIO-METEOROLOGY

Membres — Members

Prof. Chas. R. Burrows : Director, School of Electrical Engineering, Cornell University, Ithaca, New York, U. S. A., Convener.

Le R. P. Lejay, 35, rue de Sèvres, Paris (VI^e), France.

Prof. Dr. Ing. J. Lugeon, Directeur de la Station Centrale Suisse de Météorologie, 35, Gloriosastrasse, Zurich, Suisse.

Dr. H. G. Booker, Christ's College, Cambridge, England.

Mr. Norman R. Hagen, U. S. Weather Bureau, U. S. Department of Commerce, Washington. 25, D.C., U. S. A.

Mr. Andrew Thomson, Comptroller, Canadian Meteorological Service, 315, Bloor St. West, Toronto 5, Ontario, Canada.

Dr. A. H. R. Goldie, Meteorological Office, Air Ministry, Kingsway, London.

M. l'Ingénieur en Chef A. Perlat, 93, quai d'Orsay, Paris (VII^e).

Dr. E. G. Bowen, Chief, Division of Radiophysics, University Grounds, City Road, Chippendale, New South Wales, Australia.

Réunion — Meeting

Le Dr. Chas R. Burrows, rapporteur de la Commission Mixte de Radio-Météorologie envisage une réunion de cette Commission qui aura lieu soit immédiatement avant, soit immédiatement après notre prochaine Assemblée Générale. Le programme de cette réunion, communiqué par le Dr. Burrows, est reproduit ci-dessous.



Dr. Chas. R. Burrows, Convener of the Joint Commission on Radio Meteorology, is considering a meeting of that Commission that will take place either immediately before or after our next General Assembly. Program of this meeting, established by Dr. Burrows, is as follows.

Le Dr. Burrows invite les Membres de la Commission à lui communiquer des éléments à inclure sous la rubrique III, il leur suggère d'envoyer copie des communications qu'ils lui feraient au sujet de la prochaine réunion aux autres Membres de la Commission, de façon à accélérer l'échange de suggestions entre les Membres.

Le Secrétariat Général de l'U. R. S. I. peut effectuer cet échange de correspondance entre les Membres de la Commission.

Dr. Burrows asks the Members of the Commission to provide him with details of the outline under III; he suggests them that correspondence regarding the topics for consideration at the next meeting be sent to the various members of the Commission at the same time they are sent to him; this in order to accelerate the process of bringing the thoughts of the membership together.

The General Secretary's Office of the U. R. S. I. may circulate such correspondence between the Members of the Joint Commission.

I. Problems for consideration :

1. The effect of meteorological factors on radio propagation.
 - 1.1. Refraction, reflection and superrefraction.
 - 1.1.1. Climatology (magnitude and frequency of occurrence).
 - 1.1.2. Theory.
 - 1.1.3. Experiment.
 - 1.2. Reflection and scattering from particles.
 - 1.2.1. Experimental confirmation of theory.
 - 1.2.2. Reflections from drops having a distribution in size.
 - 1.2.3. Application to cloud and rain formations.
2. Radio means of weather forecasting.
 - 2.1. Storm detection by radar.
 - 2.2. Storm detection by sferics.
 - 2.3. Frontal passage by field strength measurement.
3. Instrumental development for the measurements of :
 - 3.1. Temperature.
 - 3.2. Pressure.
 - 3.3. Humidity.

- 3.4. Total water vapor contained.
- 3.5. Drop size.
- 3.6. Drop density.
- 3.7. Ion density.

(Above development should include instruments suitable for telemetering.)

II. Investigations now in progress.

1. Radio meteorology research is being carried out by the Radio Physics Laboratory in Australia. These investigations include :
 - 1.1. A New South Wales « Coastal Front ». Quantitative measurements indicate that the mechanism of reflection from air mass boundaries play an important part.
 - 1.2 Radiation inversion over land. This project is nearly completed.
 - 1.3. Propagation of radio waves in the lower atmosphere.
 - 1.4. Reflection from water particles.
 - 1.5. Artificial stimulation of rainfall.
 - 1.6. Physics of cloud and rain formations.
2. Investigations on this problem being carried on in England include :
 - 2.1. The study of vertical variation of temperature in the lowest 350 feet of atmosphere.
 - 2.1.1. An experimental investigation of the changes in the vertical gradient of temperature and humidity in the lowest 300 meters in the atmosphere when air passes from land to water.
 - 2.1.2. The investigation of the structure of sea breezes. This is under investigation as part of the Canterbury Project of New Zealand.
 - 2.2. Quantitative experimental confirmation of the theory of scattering by water particles (East Hill Radar Station).
 - 2.3. The interpretation of bright band phenomena in scattering (T. R. E.).

III. Subjects upon which reports can be made.



Documents - Travaux

PAPERS - WORKS



Les documents suivants ont été reçus au Secrétariat Général pendant le mois de Février 1948

Les membres de l'Union désireux d'obtenir l'un ou l'autre des articles mentionnés sont priés de s'adresser au Secrétariat Général.

The General Secretary's Office has received during February 1948 the following papers.

Members of the Union wishing to receive some of those notes, are requested to apply to the General Secretary's Office.

BELGIQUE — BELGIUM

N° B/114. — Centre de Contrôle des Radiocommunications des Services Mobiles. (C. C. R. M.)

Rapport Mensuel Aé. 1/48 — Janvier 1948.

Le rapport comprend les résultats des mesures de fréquences effectuées à Bruxelles sur les transmissions des stations suivantes :

A. Radiophares européens d'aviation (ondes moyennes).

B. Stations aéronautiques travaillant dans les bandes de fréquence suivantes :

320	—	365 kc/s
6.200	—	6.675 kc/s
8.200	—	8.900 kc/s

C. Stations d'aéronefs travaillant dans les bandes de fréquence suivantes :

320	—	365 kc/s
6.200	—	6.675 kc/s

Les stations d'avion travaillant entre 320 et 365 kc/s sont classées par nationalité, celles travaillant entre 6.200 et 6.675 kc/s sont classées d'après la station aéronautique avec laquelle elles correspondaient au moment de la mesure.

L'attention du lecteur est attirée sur la présence d'une nouvelle station de radiodiffusion au voisinage de 6.513 kc/s. Ses programmes sont ceux de la B. B. C. mais le C. C. R. M. ne possède aucune indication sur son identité et elle ne figure pas sur les graphiques de l'O. I. R. La fréquence n'est pas stable et varie d'un jour à l'autre, parfois de plusieurs kc/s. Les transmissions d'avion sont souvent brouillées par cette station.

N° B/115. — Centre de Contrôle des Radiocommunications des Services Mobiles. (C. C. R. M.)

Rapport Mensuel M. 1/48 — Janvier 1948.

Le rapport comprend les résultats des mesures de fréquence effectuées à Bruxelles par le C. C. R. M. pendant le mois de janvier 1948 sur les émissions des stations suivantes :

A. Radiophares maritimes.

B. Stations côtières travaillant dans les bandes de fréquences suivantes :

365	—	485 kc/s
485	—	515 kc/s
8.200	—	8.900 kc/s
12.300	—	13.350 kc/s

C. Stations de navires travaillant dans les bandes de fréquences suivantes :

415	—	485 kc/s
8.200	—	8.900 kc/s

Les résultats des mesures sous A et B sont représentés sous forme de graphiques, ceux sous C sont mis sous forme de tableaux.

N° B/116. — **Institut Royal Météorologique de Belgique. Service du Rayonnement. Prévisions Ionosphériques.**

Sommaire :

Informations générales pour l'utilisation des prévisions ionosphériques.

- I. L'état de l'ionisation de la haute atmosphère :
 - A. Conditions normales ;
 - B. Variations irrégulières de l'état d'ionisation.
- II. Prévisions :
 - A. Conditions normales ;
 - B. Variations irrégulières.
- III. Utilisation des prévisions :
 - A. Fréquence maximum utilisable FMU ;
 - B. Fréquence optimum de travail FOT ;
 - C. Fréquence utilisant la couche E sporadique ;
 - D. Problème pour un trajet donné ;
 - E. Fréquence minimum utilisable.

Graphiques donnant des prévisions pour mars 1948 sur les trajets :

Bruxelles — Copenhague
Bruxelles — Stockholm
Bruxelles — Oslo
Bruxelles — Casablanca
Bruxelles — Albany
Bruxelles — San Francisco
Bruxelles — Santiago
Bruxelles — Bombay
Bruxelles — Calcutta
Bruxelles — Coquilhatville
Bruxelles — Afrique du Sud
Bruxelles — Batavia
Bruxelles — Rio de Janeiro
Bruxelles — Dorval
Bruxelles — Washington
Bruxelles — Sao Paulo
Léopoldville — Bruxelles
Léopoldville — Constantinople
Léopoldville — Albany
Léopoldville — San Francisco

Léopoldville — Buenos-Ayres
Léopoldville — Santiago
Léopoldville — Le Cap
Léopoldville — New York.

Graphiques donnant des prévisions pour avril 1948 dans les directions 0°, 30°, 60°, 90°, 120°, 150°, 180°, 210°, 240°, 270°, 300° et 330°.

Emissions ou réceptions centrées sur Bruxelles pour un cercle de 4.000 km. de rayon. Prévisions pour avril 1948 pour 0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20 et 22 h. G. M. T.

ETATS-UNIS D'AMERIQUE — UNITED STATES AMERICA

N° B/117. — **Central Radio Propagation Laboratory. National Bureau of Standards. F. 41 — January 1948. — Ionospheric data.**

Contents :

Terminology and Scaling Practices.

Monthly Average and Median Values of World-Wide Ionospheric Data.

The ionospheric data given in tables and figures were assembled by the Central Radio Propagation Laboratory for analysis and correlation, incidental to CRPL predictions of radio propagation conditions. The data are median values unless otherwise indicated. The following are the sources of the data :

Australian Council for Scientific and Industrial Research, Radio Research Board :

Brisbane, Australia,
Canberra, Australia,
Hobart, Tasmania
Townsville, Australia.

Australian Department of Supply and Shipping, Bureau of Mineral Resources, Geophysical Section :

Watheroo, W. Australia.

British Department of Scientific and Industrial Research, Radio Research Board :

Slough, England,
Falkland Islands.

Canadian Radio Wave Propagation Committee :

Churchill, Canada,
Clyde, Baffin I.,
Ottawa, Canada,
Portage La Prairie, Canada,
Prince Rupert, Canada,
St. John's, Newfoundland.

New Zealand Radio Research Committee :

Campbell I.,
Christchurch, New Zealand (Canterbury University College
Observatory),
Fiji Is.,
Kermadec Is.,
Rarotonga I.

South African Council for Scientific and Industrial Research Johannesburg, Union of South Africa.

Scientific Research Institute of Terrestrial Magnetism, Moscow, U. S. S. R. :

Alma Ata, U. S. S. R.,
Bay Tiksey, U. S. S. R.,
Bukhta Tikhaya, U. S. S. R.,
Chita, U. S. S. R.,
Leningrad, U. S. S. R.,
Moscow, U. S. S. R.,
Sverdlovsk, U. S. S. R.,
Tomsk, U. S. S. R.

Japanese Physical Institute for Radio Zaves (under supervision of Supreme Commander, Allied Powers) :

Fukaura, Japan,
Shibata, Japan,
Tokyo (Kokobunji), Japan,
Wakkanai, Japan,
Yamakawa, Japan.

United States Army Signal Corps :
Okinawa I.

National Bureau of Standards (Central Radio Propagation Laboratory) :

Adak, Alaska,
Baton Rouge, Louisiana (Louisiana State University),
Boston, Massachusetts (Harvard University),
Fairbanks, Alaska (University of Alaska, College, Alaska),
Guam I,
Huancayo, Peru (Geophysical Institute of Huancayo),
Maui, Hawaii,
Palmyra I,
San Francisco, California (Stanford University),
San Juan, Puerto Rico (University of Puerto Rico),
Trinidad, British West Indies,
Washington, D.C.,
White Sands, New Mexico,
Wuchang, China (National Wuhan University).

All India Radio (Government of India), New Delhi, India :

Bombay, India,
Delhi, India,
Madras, India.

Indian Council of Scientific and Industrial Research, Radio Research Committee :

Calcutta, India.

Radio Wave Research Laboratory, Central Broadcasting Administration :

Chungking, China,
Lanchow, China,
Nanking, China,
Peiping, China.

French Ministry of Naval Armements (Section for Scientific Research) :

Fribourg, Germany.

National Laboratory of Radio-Electricity (French Ionospheric Bureau) :

Bagneux, France.

Philippine Republic, Department of National Defense :

Leyte, Philippine Is.

Norwegian Defense Research Establishment, Florida, Bergen, Norway :

Tromso, Norway.

Ionospheric Data for Every Day and Hour at Washington, D.C.,
Ionosphere Disturbances.

American and Zürich Provisional Relative Sunspot Numbers Solar
Coronal Intensities Observed at Climax, Colorado.

Index of Tables and Graphs of Ionospheric Data :

Adak, Alaska — November 1947.

Baton Rouge, Louisiana — November 1947.

Bocayuva, Brazil — May 1947.

Bombay, India — July 1947.

Boston, Massachusetts — November 1947.

Brisbane, Australia — September 1947.

Canberra, Australia — September 1947.

Christchurch, New Zealand — October 1947.

Clyde, Baffin I. — November 1947.

Delhi, India — July 1947.

Fairbanks, Alaska — November 1947.

Falklands Is. — August 1947.

Fiji Is. — September 1947.

Fribourg, Germany — December — November — October 1946.

Fukaura, Japan — October — September 1947.

Guam I. — November — October 1947.

Hobart, Tasmania — September 1947.

Huancayo, Peru — October — September — August — July 1947.

Johannesburg, Union of South Africa — October 1947.

Leyte, Philippine Is. — October — September 1947.

Madras, India — July 1947.

Maui, Hawaii — November 1947.

Okinawa I. — October 1947.

Ottawa, Canada — November 1947.

Palmyra I. — November 1947.

Portage La Prairie, Canada — November — October 1947.

Prince Rupert, Canada — November — October 1947.

Rarotonga I. — September — August 1947.

St. John's, Newfoundland — November 1947.

San Francisco, California — November 1947.

San Juan, Puerto Rico — November 1947.

Shibata, Japan — October 1947.

Slough, England — September 1947.

Townsville, Australia — August 1947.

Trinidad, Brit. West Indies — November 1947.

Wakkanai, Japan — October 1947.

Washington, D.C. — December 1947.

Watheroo, W. Australia — October 1947.

White Sands, New Mexico — November 1947.

Yamakawa, Japan — October 1947.

FRANCE

N° B/118. — **Centre Natinal d'Etudes des Télécommunications. Bulletin d'Information du Laboratoire National de Radioélectricité. Bureau Ionosphérique Français (B. I. F.). N°10 = 1947.**

Sommaire :

Partie I. — Généralités.

Terminologie.

Indications particulières.

Partie II. — Ionosphère.

Tableau des moyennes de Bagneux pour octobre 1947.

Sondages ionosphériques de Bagneux du 1^{er} au 31 octobre 1947.

Comparaison des sondages de Bagneux avec les prévisions du C. R. P. L.

Tableau des perturbations ionosphériques (P. I. D. B.) observées au L. N. R.

Tableau des perturbations ionosphériques (P. I. D. B.) observées au centre de réception de Noiseau.

Tableau des perturbations ionosphériques (P. I. D. B.) observées au centre de réception de Villecresnes (Seine-et-Oise).

Partie III. — Soleil et Magnétisme Terrestre.

Phénomènes solaires. Indications générales sur l'activité.

» » Caractères principaux des centres d'activité signalés.

» » Eruptions chromosphériques observées à Meudon.

Carte synoptique des phénomènes solaires signalés dans les « Ursigrammes ».

Taches solaires.

Orages magnétiques.

Caractères magnétiques.

Partie IV. — Ursigrammes.

Texte des « Ursigrammes » transmis du 1^{er} au 31 octobre 1947.

GRANDE-BRETAGNE — GREAT BRITAIN

N° B/119. — **Department of Scientific and Industrial Research, Radio Division, National Physical Laboratory. Bulletin A. — N° 13. January 1948.**

Predictions of Radio Wave Propagation Conditions for March 1948.

Contents :

Ordinary Ray Critical Frequencies F₂ Zone E, I, W.

M. U. F. Factors for 3.000 km. F₂ Zone E, I, W.

Maximum Usable Frequencies for 4.000 km. Zone E, I, W.

Optimum Working Frequencies :

Zone E	Zone I	Zone W
Lat. 70° N.	Lat. 70° N.	Lat. 70° N.
Lat. 60° N.	Lat. 60° N.	Lat. 60° N.
Lat. 50° N.	Lat. 50° N.	Lat. 50° N.
Lat. 40° N.	Lat. 40° N.	Lat. 40° N.
Lat. 30° N.	Lat. 30° N.	Lat. 30° N.
Lat. 20° N.	Lat. 20° N.	Lat. 20° N.
Lat. 10° N.	Lat. 10° N.	Lat. 10° N.
Lat. 0°	Lat. 0°	Lat. 0°
Lat. 10° S.	Lat. 10° S.	Lat. 10° S.
Lat. 20° S.	Lat. 20° S.	Lat. 20° S.
Lat. 30° S.	Lat. 30° S.	Lat. 30° S.
Lat. 40° S.	Lat. 40° S.	Lat. 40° S.

N^o B/120. — **Department of Scientific and Industrial Research, Radio Division, National Physical Laboratory. Bulletin A. — N^o 14. February 1948.**

Predictions of Radio Wave Propagation conditions for April 1948.

Contents :

- Ordinary Ray Critical Frequencies F₂ Zone E, I, W.
- M. U. F. Factors for 3.000 km. F₂ Zone E, I, W.
- Maximum Usable Frequencies for 4.000 km. Zone E, I, W.
- Optimum Working Frequencies :

N^o B/121. — **Department of Scientific and Industrial Research, Radio Research Board. Radio Division. National Physical Laboratory. Bulletin B. — N^o 12. January 1948.**

Monthly Bulletin of Ionospheric Characteristics.
Falklands Islands for October 1947.
Slough for November 1947.

Contents :

- Terminology ;
- Note on Ionospheric Absorption Measurements ;
- Units and Abbreviations ;
- Table :
- I. Noon Ionospheric Characteristics — Slough.
- II. Monthly Mean Ionospheric Characteristics — Slough.
- III. Median Hourly Values of Absorption — Slough.
- IV. Hourly Values of hm. in km. for Region F. — Slough.
- V. » » » ym/ho » » — »
- VI. Hourly Values of fF₂ in Mc/s — Slough.
- VII. » » » fF_s » » — »
- VIII. Noon Ionospheric Characteristics — Falkland Islands.
- IX. Monthly Mean Ionospheric Characteristics — Falkland Islands
- X. Hourly Values of hm. in km. for Region F. — Falkland Islands.
- XI. » » » ym/ho for Region F. — Falkland Islands.
- XII. » » » fF₂ in Mc/s — Falkland Islands.
- XIII. » » » fF_s in Mc/s — Falkland Islands.

The observing stations are :

Slough, Bucks, England. Lat. 51° 30' N., Long. 0° 34' W.

(Frequency sweep of recorder 0.5 Mc/s to 14.0 Mc/s in 6 minutes supplemented, when necessary, by manually operated apparatus covering 14 Mc/s to 25 Mc/s.)

Port Stanley, Falkland Islands, Lat. 51° 40' S., Long. 57° 51' W.
(Frequency sweep recorder 2.2 Mc/s to 16.0 Mc/s in 1 minute.)