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No. 35

**EXPERT COMMITTEE
ON THE UNIFICATION
OF PHARMACOPOEIAS**

Report on the Seventh Session

Geneva, 30 October – 4 November 1950

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WORLD HEALTH ORGANIZATION

PALAIS DES NATIONS

GENEVA

APRIL 1951

EXPERT COMMITTEE ON THE UNIFICATION OF PHARMACOPOEIAS

Seventh Session

Members :

Dr. H. Baggesgaard Rasmussen, Professor of Organic Chemistry, Royal Danish School of Pharmacy, Copenhagen, Denmark ; Member of the Danish Pharmacopoeia Commission

Dr. E. Fullerton Cook, formerly Chairman, Committee of Revision of the Pharmacopoeia of the United States of America, New York, N.Y., USA

Dr. I. R. Fahmy, Professor of Pharmacognosy, Faculty of Medicine, Fouad I University, Cairo, Egypt ; Secretary, Egyptian Pharmacopoeia Commission

Dr. H. Flück, Professeur de Pharmacognosie à l'Ecole Polytechnique Fédérale, Zürich, Switzerland ; Membre de la Commission fédérale de la Pharmacopée

Dr. C. H. Hampshire, formerly Secretary, British Pharmacopoeia Commission, General Medical Council Office, London, United Kingdom (*Chairman*)

Dr. R. Hazard, Professeur de Pharmacologie et de Matière médicale à la Faculté de Médecine de l'Université de Paris, France ; Membre de la Commission de la Pharmacopée française (*Vice-Chairman*)

Dr. C. Heymans, Professor of Pharmacology and Toxicology, University of Ghent, Belgium

Dr. D. van Os, Professor of Pharmacy and Toxicology, University of Groningen, Netherlands ; Chairman, Netherlands Pharmacopoeia Commission

Secretary :

P. Blanc, Chief, Pharmaceutical Section, WHO

The report on the seventh session of this committee was originally issued in mimeographed form as document WHO/Pharm/125, 10 November 1950.

EXPERT COMMITTEE ON THE UNIFICATION OF PHARMACOPOEIAS

Report on the Seventh Session ¹

The Expert Committee on the Unification of Pharmacopoeias held its seventh session in Geneva from 30 October to 4 November 1950.

The Director-General opened the seventh session of the Expert Committee on the Unification of Pharmacopoeias and welcomed its members.

¹ The Executive Board, at its seventh session, adopted the following resolutions:

I. Having noted the report of the Expert Committee on the Unification of Pharmacopoeias on its seventh session,

The Executive Board

1. EXPRESSES its gratitude to the members of the committee for their work, and
2. AUTHORIZES the publication of the report.

II. Having noted with satisfaction the agreement between the Belgian Government and the World Health Organization whereby the World Health Organization is henceforth to constitute the permanent International Pharmacopoeia Secretariat,

The Executive Board

1. PAYS TRIBUTE to the spirit of international collaboration shown by the Belgian Government, and
2. RECOMMENDS to the Fourth World Health Assembly the adoption of the following resolution:

The Fourth World Health Assembly

APPROVES the taking-over by the World Health Organization, in application of Article 72 of the Constitution, of the functions of the permanent International Pharmacopoeia Secretariat previously performed by the Belgian Pharmacopoeia Commission.

III. Considering that the publication of the first volume of the first edition of the *Pharmacopoea Internationalis* authorized by resolution WHA3.10 of the Third World Health Assembly and the adoption of all or part of its provisions by a greater or lesser number will in future show what modifications to the Agreement revising the Agreement respecting the Unification of Pharmacopoeial Formulas for Potent Drugs, signed at Brussels, 20 August 1929, should possibly be proposed,

The Executive Board

REQUESTS the Director-General to continue his study of this question and to report to the Executive Board in due course.

IV. Considering the complexity of the problem of the protection of international non-proprietary names,

The Executive Board

REQUESTS the Director-General to continue his study of the question, to explore the possibilities offered by the International Union for the Protection of Industrial

In stressing the importance of the work of expert committees in general—which alone made it possible to keep the activities of WHO on a sound scientific basis—he indicated that the problems of the more highly developed countries should not be given prominence to the detriment of the lesser developed countries, where it was likewise essential to implement the decisions reached.

The Director of the Division of Therapeutic Substances paid a warm tribute to the extensive work accomplished by members of the committee in the preparation of the English and French editions of the *Pharmacopoea Internationalis* (Ph.I).

1. Resolutions Adopted at the Third World Health Assembly and at the Sixth Session of the Executive Board

The committee noted the two resolutions adopted by the Third World Health Assembly,^{2,3} approving the publication of the *Pharmacopoea Internationalis*, and recommending the eventual inclusion of its provisions in the national pharmacopoeias after the adoption of the said provisions by the authorities responsible for the pharmacopoeias.

The Third World Health Assembly also approved the principles enumerated by the Expert Committee on the Unification of Pharmacopoeias at its fifth session, and adopted a resolution⁴ on the selection and protection of non-proprietary names for drugs which might be described in later editions of the Ph.I., and on the adoption of such names by national pharmacopoeial authorities.

The committee also noted that the Executive Board at its sixth session authorized the publication of the report on the sixth session of the Expert Committee on the Unification of Pharmacopoeias⁵ and requested the Director-General to send to Member States a questionnaire in order to

Property, Berne, and to report in due course to the Executive Board on the result of his inquiries and of the steps taken.

V. Considering that it might be desirable for a meeting of representatives of administrations responsible for the control of drugs in the various countries to be convened to consider the advantages of more uniform methods for the control of drugs in the various countries in the interests of health and international commerce,

The Executive Board

REQUESTS the Director-General to continue his study of this question and to report in due course to the Executive Board on the result of his inquiries and of the steps taken.

(Resolution EB7.R79, *Off. Rec. World Hlth Org.* 32)

² Resolution WHA3.9, *Off. Rec. World Hlth Org.* 28, 18

³ Resolution WHA3.10, *Off. Rec. World Hlth Org.* 28, 19

⁴ Resolution WHA3.11, *Off. Rec. World Hlth Org.* 28, 19

⁵ Resolution EB6.R29, *Off. Rec. World Hlth Org.* 29, 12

obtain general information on national pharmacopoeias and the control of drugs which would be of service to governments, pharmacopoeial authorities, and drug administrations in the various countries. The Executive Board also made a recommendation referring to the mechanism for the introduction of international non-proprietary names for drugs, and the setting-up of a subcommittee of the present committee to decide on the names to be selected.

2. Negotiations Regarding the Permanent International Pharmacopoeia Secretariat

The Chief of the Legal Office explained that according to Article 35 of the Agreement revising the Agreement respecting the Unification of Pharmacopoeial Formulas for Potent Drugs, signed at Brussels, 20 August 1929 (known as the 1929 Brussels Agreement),⁶ the Belgian Pharmacopoeia Commission was responsible for provisionally providing an international secretariat for pharmacopoeias. In a letter dated 12 June 1950, WHO had proposed to the Belgian Government that this provisional situation should be terminated and that WHO should constitute the permanent International Pharmacopoeia Secretariat at its headquarters. The Belgian Government had agreed to this proposal.

The committee adopted the following resolution :

The Expert Committee on the Unification of Pharmacopoeias,

Considering that by letter of 12 June 1950 the World Health Organization proposed to the Belgian Government, in application of Article 35 of the Agreement revising the Agreement respecting the Unification of Pharmacopoeial Formulas for Potent Drugs, Brussels, 1929, that the provisional situation envisaged in paragraph 2 of the above-mentioned Article whereby the Belgian Pharmacopoeia Commission was made responsible for providing an International Pharmacopoeia Secretariat should be terminated, and that the World Health Organization should constitute the permanent International Pharmacopoeia Secretariat, and

Considering that, in a laudable spirit of international co-operation and in order to facilitate the task of the World Health Organization, the Ministère de la Santé publique et de la Famille de Belgique, in a letter dated 5 July 1950, gave its agreement to the proposal contained in the above-mentioned letter,

1. NOTES with satisfaction the result of the negotiations with the Belgian Government undertaken by the Director-General ;

⁶ League of Nations (1930) *Treaty Series*, 98, 127

2. RECOMMENDS that the Director-General take the necessary steps to give effect without delay to the agreement made.

2.1 *Agreement revising the Agreement respecting the Unification of Pharmacopoeial Formulas for Potent Drugs*

The committee adopted the following resolution :

The Expert Committee on the Unification of Pharmacopoeias,

Considering that certain provisions of the Agreement revising the Agreement respecting the Unification of Pharmacopoeial Formulas for Potent Drugs, Brussels, 1929, will no longer be consistent when the *Pharmacopoea Internationalis* has been published, and

Considering, therefore, that it would be desirable that the said 1929 Brussels Agreement be revised,

RECOMMENDS that the World Health Organization, under its Constitution, undertake the revision of the said 1929 Brussels Agreement and that the Director-General investigate the most suitable means by which such revision might be effected.

**3. Publication of the Pharmacopoea Internationalis,
First Edition**

The Director of the Division of Editorial and Reference Services reported on the publication of the *Pharmacopoea Internationalis*, first edition, in English and in French. He informed the committee that the changes suggested by members had been incorporated in the text, and that the printing in page proofs in both languages was to be started immediately. It was, therefore, expected that the two books would be published and ready for sale and distribution in 1951. In view of the fact that the first addendum was to include a large number of articles on important drugs and also on injections, tablets, tinctures, sterility tests, and the pyrogen test, which could not be finalized in time for inclusion in the first edition, the committee agreed that "First Edition, Volume I", "First Edition, Volume II", and "First Addendum" should replace "First Edition", "First Addendum", and "Second Addendum" respectively.

Arrangements for translating the Ph.I. into Spanish had been made with the WHO Regional Office for the Americas, in keeping with the policy of decentralization, and it was estimated that the translation would be completed within about three months.

The committee was informed that Professor D. Mayoral Pardo, a member of the Expert Advisory Panel on the Unification of Pharmacopoeias, had undertaken the supervision of the Spanish translation.

The committee thanked the Chairman for the work done in connexion with the finalization of the English text and Professor Hazard for the great help he had given in the finalization of the French text, which would permit both the English and the French editions to be published simultaneously, in accordance with the wishes expressed by the Executive Board.

An offer from a German publishing firm to translate and publish the Ph.I. in German was discussed, and it was agreed that the Director of the Division of Editorial and Reference Services would submit further information to a later session of the committee.

The committee was of the opinion that permission for the publication of editions in different languages should be given only after careful examination of the conditions and in any case should only be undertaken subject to supervision by WHO.

3.1 *Announcement concerning the publication of the Pharmacopoea Internationalis*

The committee considered the text of a draft announcement to be sent to national pharmacopoeial authorities and public-health administrations through the governments at the time of the publication of the Ph.I., recommending that its provisions be incorporated in their pharmacopoeias. It was felt that while the necessary procedure for negotiations outlined in section 2.1 was being established, the Ph.I. could be sent officially to the various authorities.

3.2 *List of synonyms of drugs included in the Pharmacopoea Internationalis, first edition, volume I*

The committee approved the list of synonyms and the introduction prepared by WHO to be published as a supplement to the *Bulletin of the World Health Organization* and considered that such a list was extremely desirable as a practical means of helping physicians and pharmacists. A number of additions had already been received and the members agreed to send in further names in order that the list should be as complete as possible. It was recommended that in future editions an index of names in alphabetical order should be added. Special mention should be made in the introduction that the word "synonym" was not intended to convey the idea of complete identity between a drug of the Ph.I. and the corresponding product issued in the list under a synonym but should serve as a general indication. A statement should also be made to the effect that all Member States, pharmacopoeial authorities, manufacturers, and others who might be interested were invited to send in additional names in order to make future editions as complete as possible.

4. Preparation of the Pharmacopoea Internationalis, First Edition, Volume II

The major part of the session was devoted to the consideration of the draft monographs and appendices for inclusion in the *Pharmacopoea Internationalis*, first edition, volume II. 178 draft monographs and 15 appendices and reports had been prepared by the members of the committee (see Annex 2, page 19). Many of the draft monographs had been submitted by the members to specialists in their respective countries and much laboratory work had been done by the members themselves.

4.1 *Basic drugs*

The following draft monographs were approved with amendments :

Acidum Undecylenicum, Amodiaquini Hydrochloridum, Bismuthi et Kalii Tartras, Digitoxosidum, Hydrocodoni Bitartras, Hydromorphoni Hydrochloridum, Methadoni Hydrochloridum, Natrii Chloridum, Oxophenarsini Hydrochloridum, Oxycodoni Hydrochloridum, Propylthiouracilum.

Discussion on Dimercaprolum was deferred pending a report after testing of samples. The committee agreed to delete Isopentaquini Monoxalas, suggested for insertion in the Ph.I. by the Expert Committee on Malaria, as it is not commercially available. It was agreed that a test for toxicity should be inserted in the monograph on Oxophenarsini Hydrochloridum subject to the advice of the Expert Committee on Biological Standardization. The assay of Thyroidea is to be revised with regard to the determination of the content of thyroxin-iodine, and the possible admixture of iodinated proteins.

4.2 *Injectiones*

Revised draft monographs based on the decisions taken at the sixth session were considered and approved with amendments. In the general article on Injectiones, the vehicles for injections were discussed. For non-aqueous vehicles newer substances such as isolated or synthetic esters of higher fatty acids were admitted. The paragraph on containers was considered and revised and it was agreed that standards on the quality of glass should be worked out. The following methods of sterilization were approved : (a) for aqueous injections : heating in an autoclave, heating with a bactericide, sterilization by filtration ; (b) for oily solutions and suspensions : dry heat and aseptic technique. All injections must comply with the sterility test. For the bactericides Chlorobutanolum, Chlorocresolum, Phenylhydrargyri Boras, and Phenylhydrargyri Nitras, new monographs for inclusion in volume II are to be prepared as well as for Natrii Metabisulfis

used as a stabilizing agent. The addition of bactericides should not be allowed for injections administered in large doses (e.g., *Injectio Dextrosi*). The requirements for labelling were carefully considered in order to ensure adequate information for the physician and to identify the product if required for control purposes. In the monographs on individual injections, special attention was given to the pH of the preparations and to the methods of sterilization (thermostability of the medicament). For *Injectio Calcii Gluconatis*, for which newer investigations allow the preparation of stable solutions also of high concentrations through the addition of calcium-D-saccharate, or by other suitable methods, a new draft monograph is to be prepared and also a monograph on *Calcii Saccharas*.

The following draft monographs were approved with amendments :

Injectio Aminophyllini, *Injectio Coffeini et Natrii Benzoatis*, *Injectio Coffeini et Natrii Salicylatis*, *Injectio Morphini*, *Injectio Neostigmini Methylsulfatis*, *Injectio Pethidini Hydrochloridi*.

Owing to lack of time it was possible to examine only a limited number of monographs. It was decided that the final preparation of the remaining monographs on injections should be concluded by the Chairman and WHO in the light of the report and comments submitted by members.

Aqua pro Injectione being the fundamental solvent for most of the injections, special attention was given to this monograph and to that on distilled water. Water which has been demineralized by use of ion-exchange methods is sometimes sold as "distilled water"; this was not approved and a report on the presence and detection of substances used in distilled water for this purpose will be prepared.

4.3 *Tincturae*

In the general monograph on *Tincturae*, percolation and maceration were admitted for the preparation of these substances, the suitable method being specified in the individual monographs. Standards for ethanol content and tests for methanol, isopropanol, and acetone were included. Tinctures for which no assay is possible shall be of such a concentration that ten parts of the tincture represent one part of the crude drug. Tinctures for which assays are available are to be adjusted to a specified concentration. It was decided to prepare a draft monograph on *Ethanolum* in connexion with the preparation of the tinctures. Since decomposition occurs in some tinctures and such decomposition cannot be sufficiently detected by chemical assay during storage, it was decided that these tinctures should not be stored for more than one year. This requirement applies to *Tinctura Aconiti*, *Tinctura Belladonnae*, and *Tinctura Hyoscyami*.

The monographs on *Tinctura Aconiti*, *Tinctura Belladonnae*, *Tinctura Colchici*, *Tinctura Hyoscyami*, *Tinctura Scillae*, and *Tinctura Stramonii* were considered and accepted with amendments.

4.4 *Compressi*

A first draft of a general monograph on *Compressi* and a report on coated tablets were received, and it was decided to leave these for action by correspondence.

The finalization of monographs on *Injectiones*, *Tincturae*, and *Compressi* and appendices for inclusion in the *Pharmacopoea Internationalis*, first edition, volume II, was left to the Chairman and WHO, after consultation with the members by correspondence.

4.5 *New methods of analysis*

Reports by members of the committee were submitted. It was agreed that a working party, consisting of Professors Baggesgaard Rasmussen, Flück, and van Os, should submit a joint report to the next session of the committee.

4.6 *Consideration of new drugs and appendices to be included in the Pharmacopoea Internationalis, first edition, volume II*

The Director of the Division of Therapeutic Substances asked the committee if it would agree in principle to include cardiolipin and purified lecithin in the Ph.I. He stated that cardiolipin and purified lecithin had at first been manufactured by Dr. Mary Pangborn, and that the holder of the patent, the New York State Department of Health, had ensured the control of the production. A number of firms had undertaken manufacture under licence and under the control of the Division of Laboratories and Research, New York State Department of Health. However, the use of these two products in serological tests for syphilis had increased to such an extent that the checking of the whole production had proved to be too much for the facilities of the Division. Accordingly the matter was discussed at the recent session of the Subcommittee on Serology and Laboratory Aspects⁷ and it was proposed that WHO should arrange to have the standards mentioned in one of its official documents, and to suggest that cardiolipin and purified lecithin be inserted in the Ph.I. in order to ensure standardization of these two products for diagnosis. Such precedents have already been established, since a number of national pharmacopoeias describe standards of purity for products used in diagnosis. The inclusion of monographs on cardiolipin and purified lecithin in the Ph.I. appears to be the most adequate means to ensure a proper control and standardization of these products, and it was agreed to include them in a special appendix in the Ph.I.

Samples of cardiolipin and purified lecithin are to be sent to Professors Baggesgaard Rasmussen, Fahmy, Flück, and van Os, who agreed to carry

⁷ *World Hlth Org. techn. Rep. Ser.* 1951, **33**, 14

out the physical and chemical tests and to report on the result in order to complete the appendix for the next session. The description of the serological tests is to be provided by the Expert Committee on Biological Standardization.

The committee considered a list of 74 drugs submitted by the members and WHO, for possible inclusion in the future supplements to the Ph.I. The drugs were classified under the following headings: (a) for inclusion in the second volume of the first edition; (b) for inclusion in the First Addendum; (c) not to be considered at the present time. The drafting of monographs for the second volume of the first edition and the First Addendum was allocated among the members of the committee (see Annex I, page 17).

It was agreed that samples of new drugs should be sent to members of the committee to enable them to carry out the tests described in the monographs, and that the source of supply should be indicated.

5. Relations with Other WHO Expert Committees

5.1 *Expert Committee on Biological Standardization*

The Director of the Division of Therapeutic Substances indicated that the following monographs and appendices referring to biological assays:

- Benzylpenicillinum
- Biological Assay of Benzylpenicillinum
- Penicillinatum
- Dihydrostreptomycinum
- Biological Assay of Dihydrostreptomycinum
- Dimercaprolum
- Oxophenarsini Hydrochloridum
- Streptomycinum
- Biological Assay of Streptomycinum
- Tubocurarinum Chloridum
- Biological Assay of Tubocurarinum Chloridum
- Pyrogen Test
- Sterility Tests

had been submitted to the members of the Expert Committee on Biological Standardization which was to meet the following week, together with a proposal to institute International Chemical Reference Standards for Carbacholum, Histamini Phosphas, Lanatosidum C, Menadionum, Oestradioli Benzoas, Testosteroni Propionas. The decisions reached would be communicated to the members of the Expert Committee on the Unification of Pharmacopoeias, for finalization of the draft monographs and appendices.

In this manner it might be expected that final texts for these monographs and appendices could be submitted for approval at the next session.

The committee expressed its warm appreciation of the valuable help which it received at all times from the Expert Committee on Biological Standardization.

5.2 *Expert Committee on Maternal and Child Health*

Comments had been received from members of this committee on the Table of Usual Doses of Drugs for Children.⁸ It was decided that these, together with other comments received from various specialists in Sweden, Switzerland, and the United Kingdom, and other reports to be obtained by members in their countries, would be considered by Professor Hazard for drafting a new table. This table would be submitted to the members for comments and subsequently to the World Medical Association, as was the case for the Table of Usual and Maximal Doses for Adults, and together with the comments would be considered by the committee at its next session.

5.3 *Expert Committee on Drugs Liable to Produce Addiction*

It was reported that the secretary of this committee was of the opinion that Ceto-Bemidonum should not be included in the Ph.I., and the committee agreed to delete this monograph.

5.4 *Expert Committee on Insecticides*

It was reported that consultations had been held with this committee and it was agreed that the monograph on Chlorophenothanum Technicum should be retained.

6. Relations with Other Organizations

6.1 *International Union of Chemistry*

Relations had been continued with the International Union of Chemistry and the committee received a report from a member on the work of the Commission for Standardization of the Purity of Chemical Products. The committee is prepared to accept the standards for reagents to be set up by the Union. Professor van Os agreed to maintain contact with the Union Commission and to report on the matter.

⁸ Unpublished working document WHO/Pharm/93

6.2 *World Medical Association*

The committee decided to submit the Table of Usual Doses of Drugs for Children to the World Medical Association when a new draft had been completed, as well as the Table of Usual and Maximal Doses for Adults for the drugs to be included in the *Pharmacopoea Internationalis*, first edition, volume II.

6.3 *International Pharmaceutical Federation*

Relations were maintained with the International Pharmaceutical Federation which had been informed of the work of the committee in regard to the Ph.I., the control of drugs, and international non-proprietary names.

7. **International Non-Proprietary Names for Drugs**

The Chairman declared that the answers received to the questionnaire from the different governments were in general encouraging. Thirty-one Member States had expressed their approval of the principles recommended by the expert committee, some of them with comments or reservations on certain points. A number of countries had stressed the importance and need for such action to prevent confusion in the minds of physicians arising from the multiplicity of non-proprietary names for some of the more important drugs, and considered that such a step would definitely lead towards the protection of public health and would facilitate international commerce. The Council on Pharmacy and Chemistry of the American Medical Association had likewise expressed its approval of the principles, and its willingness to co-operate with WHO. A communication had been received from the American Drug Manufacturers' Association expressing concern that their interests might not be sufficiently safeguarded by the proposed action. After Professor Fullerton Cook had reported on an interview he had had with the secretary of this association, it was agreed that a letter should be sent to explain the objective in view, pointing out that the proposed action would help to prevent the regrettable registration as trademarks in certain countries of names officially adopted as non-proprietary names in the country of origin, a practice which unfortunately had taken place for some of the more important new drugs.

7.1 *Protection of international non-proprietary names*

The Chief of the Legal Office introduced the question of securing official international recognition for non-proprietary names to be adopted by WHO, a matter which had been referred to the Legal Office for study. After full

consideration of the suggestions put forward the committee adopted the following resolution :

The Expert Committee on the Unification of Pharmacopoeias,

Considering that the Third World Health Assembly, in its resolution WHA3.10 of 19 May 1950, approved the publication of the *Pharmacopoea Internationalis* and recommended to Member States the eventual inclusion of its provisions in the national pharmacopoeias, after the adoption of those provisions by the authorities responsible for national pharmacopoeias ;

Considering that the Third World Health Assembly, in its resolution WHA3.11 of the same date, approved the general principles laid down by the Expert Committee on the Unification of Pharmacopoeias and decided that the expert committee should select and approve non-proprietary names for drugs which might be described in later editions of the *Pharmacopoea Internationalis* ;

Considering that the Assembly also decided that the names chosen should be communicated by the Director-General to national pharmacopoeial authorities together with a recommendation that these names be officially recognized and approved as pharmacopoeial names if the substances to which they refer are eventually to be included in national pharmacopoeias ;

Considering also that Member States were invited in the above-mentioned resolution WHA3.11 to take appropriate measures to prevent the improper use of the names selected and to prevent the granting of exclusive proprietary rights in these names to manufacturers, and

Considering that it is eminently desirable that the recommendations and invitations contained in the resolutions referred to should be effectively applied,

RECOMMENDS

1. that the Director-General examine the possibility of setting up a procedure by which application of the recommendations and invitations contained in the resolutions WHA 3.10 and WHA3.11 of 19 May 1950 should become obligatory, possibly by the establishment, in application of Article 21 (d) and (e) of the Constitution, of appropriate regulations, which make possible the rapid verification of existing names already protected and the effective legal protection of non-proprietary names selected by the Expert Committee on the Unification of Pharmacopoeias, and
2. that the Director-General examine the possibility of ensuring, through the good offices of the International Union for the Protection of Industrial Property, Berne, the inclusion in the International Convention for

the Protection of Industrial Property (London, 1934) of provisions capable of ensuring the international protection of non-proprietary names selected by the above-mentioned expert committee, if possible on the occasion of the conference to be held in Lisbon in 1951, at which the above-mentioned Convention is to be revised.

8. Conference on the Control of Drugs

The committee noted that a number of answers had already been received to the questionnaire sent to Member States according to the resolution of the Executive Board⁹ with a view to obtaining information on national pharmacopoeias, legislation on the control of drugs, and the methods employed for such control. The committee was of the opinion that some of the differences existing between the countries on matters relating to the control of drugs could be eliminated to the advantage of public health and international commerce, and considered that it was one of the duties of WHO to encourage the exchange of information and the co-operation of health authorities of Member States in such important matters. The committee expressed the wish that a conference on the control of drugs be convened in 1952 or 1953 under the aegis of WHO, attended by representatives of drug administrations in various countries and members of the committee and that steps should be taken to prepare for such a conference.

On the basis of these considerations, the committee adopted the following resolution :

The Expert Committee on the Unification of Pharmacopoeias

RECOMMENDS

1. that a conference on the control of drugs be convened in 1952 or 1953, under the aegis of WHO, attended by experts representing drug administrations in various countries, to consider the advantages of more uniform methods for the control of drugs in the various countries, in the interests of health and international commerce, and to make recommendations on the best methods for the control of drugs, and
2. that steps be taken by the Director-General with the concurrence of the members of the Expert Advisory Panel on the Unification of Pharmacopoeias to prepare for such a conference.

All members of the expert advisory panel will be requested to send reports on the control of drugs in their respective countries and suggestions to be examined at a later session together with an analysis of the answers received to the questionnaire. The committee noted that specialists on the

⁹ Resolution EB6.R29, *Off. Rec. World Hlth Org.* 29, 12

question of the control of drugs were being asked to join the Expert Advisory Panel on the Unification of Pharmacopoeias. The committee voiced its appreciation of the publication of articles pertaining to regulations on drugs of various countries in the *International Digest of Health Legislation* published by WHO. The committee proposed that the name of the Expert Advisory Panel should be: "Expert Advisory Panel on the International Pharmacopoeia."

9. Fellowships

The committee noted that following a recommendation of the committee at the sixth session¹⁰ certain funds have been earmarked for fellowships of from two months to a year to be granted for the study of problems pertaining to the establishment of pharmacopoeial standards for drugs. The fellowships were primarily intended for pharmaceutical and pharmacopoeial workers in less highly developed countries. WHO could act only on the written application of governments and the various members agreed to remind any experts from the less highly developed countries, with whom they might come into contact, of the possibility of such fellowships.

10. Handbook on the Pharmacopoea Internationalis for the Use of Physicians

The committee considered a proposal that a handbook be published by WHO explaining the use of drugs included in the Ph.I., and while agreeing that the project had some advantages thought that it could not be undertaken at the present time.

11. Date of Next Session

The committee recommended that the next session be held at the end of April 1951 and that in view of the large amount of work to be done on the finalization of the texts for the *Pharmacopoea Internationalis*, first edition, volume II, it should last nine days.

¹⁰ *World Hlth Org. techn. Rep. Ser.* 1950, 29, 14

Annex I**PREPARATION OF DRAFT MONOGRAPHS, REPORTS,
AND EXPERIMENTAL INVESTIGATIONS**

Professor Baggesgaard Rasmussen agreed :

- To prepare a draft monograph on Hexobarbitalum
- To report on : the assay of Thyroidea (in collaboration with Professor Hazard)
Dichlorophenarsini Hydrochloridum (in collaboration with Professor van Os)
isotonic solutions for injections, including graphs
- To check the samples of Cardiolipinum and Lecithinum
- To report jointly with Professors Flück and van Os on the colour and clarity of a solution
- To report jointly with Professors Fahmy and Hazard on the quality of glass for injections
- To report jointly with Professors Flück and van Os on new methods of analysis

Professor Flück agreed :

- To prepare draft monographs on : Calcii Saccharas
Antazolini Hydrochloridum
Phenylhydrargyri Boras
Phenylhydrargyri Nitras
- To re-draft the monograph on Injectio Calcii Gluconatis
- To send figures for the pH for the autoclaving of Injectio Procaini Hydrochloridi,
and figures for the pH of Injectio Ergometrini Maleatis
- To report on reactions for water prepared by the ion-exchange method
- To report jointly with Professors Baggesgaard Rasmussen and van Os on the colour
and clarity of a solution
- To report jointly with Professors Baggesgaard Rasmussen and van Os on new methods
of analysis
- To check the samples of Cardiolipinum and Lecithinum

Professor Hazard agreed :

- To report on the assay of Thyroidea (in collaboration with Professor Baggesgaard Rasmussen)
- To prepare draft monographs on : Acetylcholini Hydrochloridum
Conessini Hydrochloridum
Pentamidinum
Profenaminum
Oleum Chaulmoograe
Ethyl esters of Oleum Chaulmoograe
Gallaminum
- To re-draft the Table of Usual Doses of Drugs for Children
- To prepare the Table of Usual and Maximal Doses for Adults for the drugs to be included in the *Pharmacopoea Internationalis*, first edition, volume II
- To help in the preparation of the French texts for the *Pharmacopoea Internationalis*, first edition, volume II
- To report jointly with Professors Baggesgaard Rasmussen and Fahmy on the quality of glass for injections

Professor van Os agreed :

- To report on : Dichlorophenarsini Hydrochloridum (in collaboration with Professor Baggesgaard Rasmussen)
- To report jointly with Professors Baggesgaard Rasmussen and Flück on the colour and clarity of a solution
- To prepare a draft monograph on Trichloroethylenum
- To control the chemical and physical standards of the samples of Cardiolipinum and Lecithinum and to prepare draft monographs on these
- To report jointly with Professors Baggesgaard Rasmussen and Flück on new methods of analysis
- To keep in touch with the International Union of Chemistry

Dr. Hampshire agreed :

- To prepare draft monographs on : Trihexyphenidylum
Insulin
Protamine-Zinc Insulin
- To finalize the monograph on Digitoxosidum
- To finalize the monographs on Injectiones, Compressi, and Tincturae and the appendices for the *Pharmacopoea Internationalis*, first edition, volume II

Professor Heymans agreed :

- To prepare draft monographs on : Methioninum
Arterenolum
Isopropylarterenoli Hydrochloridum
Cyclopropanum
Dextranum

Professor Fahmy agreed :

- To prepare draft monographs on : Bismuthi Subnitras
Chlorobutanolum
Chlorocresolum
Natrii Metabisulfis
Ethanolum
- To report after consultation with Professors Baggesgaard Rasmussen and Hazard on the quality of glass for injections
- To check the samples of Cardiolipinum and Lecithinum

Professor Fullerton Cook agreed :

- To provide information on : Cortisone
Adrenocorticotrophic Hormone
Vitamin B₁₂

The following monographs will have to be prepared for the second volume:

- Ethylurethanum, Acidum Aminoaceticum, Acidum Lacticum, Dexamphetamineum, Ethinyloestradiolum, Hyaluronidasum, Mepyramini Maleas.

Annex 2

**LIST OF MONOGRAPHS AND APPENDICES SUBMITTED FOR
INCLUSION IN THE PHARMACOPOEA INTERNATIONALIS,
FIRST EDITION, VOLUME II**

Monographs

Acidum Folicum	Compressi Hydromorphoni Hydrochloridi
Acidum Para-aminosalicylicum	Compressi Hyoscini Hydrobromidi
*Acidum Undecylenicum	Compressi Lanatosidi C
*Amodiaquini Hydrochloridum	Compressi Menadioni
*Aqua Destillata	Compressi Mepacrini Hydrochloridi
*Aqua pro Injectione	Compressi Methyltestosteroni
Aureomycini Hydrochloridum	Compressi Morphini Sulfatis
Benzylpenicillinum	Compressi Natrii Nitris
Benzylpenicillinum Kalicum	Compressi Natrii Salicylatis
Benzylpenicillinum Natricum	Compressi Neostigmini Bromidi
*Bismuthi et Kalii Tartras	Compressi Nicotinamidi
Chloramphenicolum	Compressi Oestradioli
Chlorophenothanum Technicum	Compressi Pethidini Hydrochloridi
Compressi Acidi Acetylsalicylici	Compressi Phenacetini
Compressi Acidi Ascorbici	Compressi Phenobarbitali
Compressi Aethisteroni	Compressi Phenobarbitali Natrici
Compressi Amidopyrini	Compressi Proguanili Hydrochloridi
Compressi Aminophyllini	Compressi Quinidini Sulfatis
Compressi Amphetamini Sulfatis	Compressi Quinini Sulfatis
Compressi Apomorphini Hydrochloridi	Compressi Riboflavini
Compressi Atropini Sulfatis	Compressi Santonini
Compressi Barbitali	Compressi Succinylsulfathiazoli
Compressi Barbitali Natrici	Compressi Sulfadiazini
Compressi Calcii Gluconatis	Compressi Sulfaguanidini
Compressi Calcii Lactatis	Compressi Sulfamerazini
Compressi Carbacholi	Compressi Sulfanilamidi
Compressi Carbarsoni	Compressi Sulfathiazoli
Compressi Chiniofoni	Compressi Theobromini et Natrii Acetatis
Compressi Chloroquini Diphosphatis	Compressi Thiamini Hydrochloridi
Compressi Codeini Phosphatis	Dextrosium
Compressi Colchicini	*Dichlorophenarsini Hydrochloridum
Compressi Dicoumaroli	*Digitoxosidum
Compressi Diethylstilboestrolis	Dihydrostreptomycinum
Compressi Digitalis	Dimercaprolum
Compressi Digitoxosidi	Diphenhydramini Hydrochloridum
Compressi Ephedrini Hydrochloridi	Ethylenediamini Hydras
Compressi Ergometrini Maleatis	Gonadotrophinum Chorionicum
Compressi Ergotamini Tartratis	Gonadotrophinum Sericum
Compressi Ferrosi Sulfatis	*Hydrocodoni Bitartras
Compressi Glycerili Trinitratis	*Hydromorphoni Hydrochloridum
Compressi Hydrargyri Subchloridi	

* Considered at the seventh session.

Injectio Adrenalini	Injectio Stibopheni
*Injectio Aminophyllini	Injectio Streptomycini et Calcii Chloridi
Injectio Apomorphini Hydrochloridi	Injectio Streptomycini Hydrochloridi
Injectio Atropini Sulfatis	Injectio Streptomycini Sulfatis
Injectio Bismuthi et Kalii Tartratis	Injectio Strychnini Nitratis
Injectio Bismuthi Subsalicylatis	Injectio Sulfadiazini Natrici
*Injectio Calcii Gluconatis	Injectio Sulfamerazini Natrici
Injectio Carbacholi	Injectio Sulfathiazoli Natrici
*Injectio Coffeini et Natrii Benzoatis	Injectio Testosteroni Propionatis
*Injectio Coffeini et Natrii Salicylatis	Injectio Tetracaini Hydrochloridi
Injectio Desoxycortoni Acetatis	Injectio Thiopentali Natrici cum Natrii Carbonate
*Injectio Dextrosi	Injectio Tryparsamidi
Injectio Diethylstilboestrolis	Injectio Tubocurarini Chloridi
Injectio Digoxini	*Methadoni Hydrochloridum
Injectio Dihydrostreptomycini	Metoponi Hydrochloridum
Injectio Dimercaprolis	*Natrii Chloridum
*Injectio Emetini Hydrochloridi	Natrii Nitris
*Injectio Ergometrini Maleatis	Natrii Para-aminosalicylas
Injectio Ergotamini Tartratis	*Oxophenarsini Hydrochloridum
Injectio Heparini	*Oxycodoni Hydrochloridum
Injectio Histamini Phosphatis	Procaini Benzylpenicillinum
Injectio Hydromorphonei Hydrochloridi	Promethazini Hydrochloridum
Injectio Hyoscini Hydrobromidi	*Propylthiouracilum
Injectio Lanatosidi C	Solutio Acidi Citratis Dextrosi Anticoagulans
Injectio Lobelini Hydrochloridi	Solutio Natrii Chloridi Isotonica
Injectio Menadioni	Solutio Natrii Chloridi Composita
Injectio Mepacrini Methanosulfonatis	(Synonym : Ringer's Solution)
Injectio Mersalyli et Theophyllini	Solutio Natrii Citratis Anticoagulans
*Injectio Morphini	Solutio Natrii Lactatis Composita
*Injectio Neostigmini Methylsulfatis	(Synonym : Ringer's Lactate Solution)
Injectio Nicethamidi	Streptomycini et Calcii Chloridum
Injectio Nicotinamidi	Streptomycini Hydrochloridum
Injectio Oestradioli Benzoatis	Streptomycini Sulfas
Injectio Oestroni	Streptomycinum
Injectio Ouabaini	Suraminum Natricum
Injectio Papaverini Hydrochloridi	Thyroidea
Injectio Pentetrazoli	*Tinctura Aconiti
*Injectio Pethidini Hydrochloridi	*Tinctura Belladonnae
Injectio Phenobarbitali Natrici	*Tinctura Colchici
Injectio Physostigmini Salicylatis	*Tinctura Hyoscyami
Injectio Physostigmini Sulfatis	*Tinctura Ipecacuanhae
Injectio PicROTOXINI	*Tinctura Scillae
Injectio Procaini Benzylpenicillini Aquosa	*Tinctura Stramonii
Injectio Procaini Benzylpenicillini Oleosa	*Tinctura Strychni
*Injectio Procaini Hydrochloridi	Tripelennamini Hydrochloridum
Injectio Progesteroni	Tubocurarini Chloridum
Injectio Riboflavini	Tyrothricinum
Injectio Stibii et Kalii Tartratis	Vitaminum B ₁₂
Injectio Stibii et Natrii Tartratis	
Injectio Stibii et Natrii Thioglycollatis	

* Considered at the seventh session.

Appendices

Biological Assay of Benzylpenicillinum	Reagents and Test Solutions
Biological Assay of Dihydrostreptomycinum	Coated Tablets
Biological Assay of Streptomycinum	*Table of Usual Doses of Drugs for Children
Biological Assay of Tubocurarinum Chloridum	Test for Freedom from Abnormal Toxicity of Dimercaprolum
*Compressi	Tests for Sterility
Determination of Methoxyl	Test for Sterility of Streptomycinum
*Injectiones	*Tincturae
*Pyrogen Test	

* Considered at the seventh session.

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Annex 3

SUBCOMMITTEE ON NON-PROPRIETARY NAMES

Report on the First Session

Geneva, 6 - 7 November 1950

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1. Resolutions adopted at the sixth session of the Executive Board	25
2. Answers received from Member States to circular letter	26
3. International non-proprietary names	28
4. Date of next session	31

SUBCOMMITTEE ON NON-PROPRIETARY NAMES

First Session

Members :

Dr. H. Baggesgaard Rasmussen, Professor of Organic Chemistry, Royal Danish School of Pharmacy, Copenhagen, Denmark; Member of the Danish Pharmacopoeia Commission

Dr. C. H. Hampshire, formerly Secretary, British Pharmacopoeia Commission, General Medical Council Office, London, United Kingdom (*Chairman*)

Dr. R. Hazard, Professeur de Pharmacologie et de Matière médicale à la Faculté de Médecine de l'Université de Paris, France; Membre de la Commission de la Pharmacopée française (*Vice-Chairman*).

Secretary :

P. Blanc, Chief, Pharmaceutical Section, WHO

The report on the first session of this subcommittee was originally issued in mimeographed form as document WHO/Pharm/126, 7 November 1950.

SUBCOMMITTEE ON NON-PROPRIETARY NAMES

Report on the First Session ¹

The Subcommittee on Non-Proprietary Names held its first session in Geneva, on 6 and 7 November 1950.

The secretary recalled that the Executive Board had adopted a resolution ² setting up a subcommittee of three members to decide, in collaboration with WHO, on non-proprietary names which are to be selected.

1. Resolutions Adopted at the Sixth Session of the Executive Board

In accordance with the resolutions of the Executive Board at its sixth session ² the subcommittee recommended that a letter giving a full explanation of these resolutions be sent to national pharmacopoeial authorities through their governments. The national pharmacopoeial authorities and other bodies dealing with this matter should be asked to advise WHO of new drugs which might be included later in the *Pharmacopoea Internationalis* (Ph.I.) and for which international non-proprietary names are required. They should also be asked to invite manufacturers and research laboratories to indicate to them such new drugs. In order to speed up matters, they could also invite manufacturers, research laboratories, and universities to indicate these drugs directly to WHO.

Should no answer be received from national pharmacopoeial authorities, or national public-health administrations or similar bodies, within two months, this should be taken as an indication that the above-mentioned authorities wish manufacturers to be approached directly by WHO. The members of the subcommittee will endeavour to send similar indications on new drugs. The following procedure for dealing with names by correspondence between meetings was agreed upon. When a suggestion for the naming of a drug is sent to WHO by a member of the Expert Committee on the Unification of Pharmacopoeias, or by one of the above-mentioned authorities, or by a manufacturer, this suggestion is to be sent immediately

¹ The Executive Board, at its seventh session, adopted the following resolution:
The Executive Board

1. NOTES the report of the Subcommittee on Non-Proprietary Names of the Expert Committee on the Unification of Pharmacopoeias on its first session;
2. THANKS the members of the subcommittee for their work, and
3. AUTHORIZES the publication of the report.

(Resolution EB7.R73, *Off. Rec. World Hlth Org.* 32)

² Resolution EB6.R29, *Off. Rec. World Hlth Org.* 29, 12

to the Chairman of the subcommittee, who will propose a name or a selection of names which will be sent to the other members of the subcommittee for their opinions. These opinions will be sent to the Chairman who will make a formal proposal. Should the name not meet with the approval of the other members of the subcommittee, they will write to the Chairman who will endeavour to obtain agreement from the members of the subcommittee. The Chairman has final authority to make decisions on the name after one or two exchanges of views, and will make the final choice.

The subcommittee recommends that these international non-proprietary names be published in a WHO official publication. These international non-proprietary names will then be communicated by WHO to Member States, to national pharmacopoeial authorities, national public-health administrations, or national drug administrations or similar bodies, with the recommendation that they be adopted for national use, in accordance with the procedure set forth in the recommendation adopted by the Third World Health Assembly.

The procedure is the following :

“... such names as are from time to time selected and approved by the expert committee should be communicated by the Director-General to national pharmacopoeial authorities, together with a recommendation that these names be officially recognized and approved, and, if the substances are eventually included in the national pharmacopoeia, adopted as pharmacopoeial names ;

“... such recommendations shall further include a request that such measures as may be deemed appropriate by Member States be taken with a view to preventing the use of the names selected for unauthorized purposes, and in particular to prevent the granting of exclusive proprietary rights in these names to the manufacturer.”³

Further “ when there is an objection to the adoption of the name decided upon—if, for instance, the proposed name or a closely similar name is already registered as a trade-mark in a country—a name as similar as possible to the name decided upon and respecting the general principles for a system of international non-proprietary names be adopted ”.⁴

2. Answers Received from Member States to Circular Letter

Full consideration was given by the subcommittee to the 31 answers received from Member States to the circular letter submitting general

³ Resolution WHA3.11, *Off. Rec. World Hlth Org.* 28, 19

⁴ Resolution EB6.R29, *Off. Rec. World Hlth. Org.* 29, 12

principles for a system of international non-proprietary names. In the Annex to the circular letter it had been recommended that WHO should adopt the practice of recognizing as approved names, certain non-proprietary names which may be used freely by manufacturers, in order to avoid difficulties which arise from the multiplication of names for the same medicinal substance. These international non-proprietary names should eventually be adopted for the Ph.I. or the national pharmacopoeias as international non-proprietary names.

The subcommittee noted that the answers indicated a general approval of the plan, and stressed the desirability for the introduction of such international non-proprietary names. 26 countries⁵ expressed their full agreement with the proposals set out in the resolution of the Executive Board.⁶ Among those, 19 had no objection to the general principles for a system of international non-proprietary names,⁷ while 6 countries, i.e., Denmark, Egypt, France, Italy, Norway, and Sweden, had proposed some changes to these principles.

The proposals and comments for changes were taken into consideration, and the general lines for answering the various letters received were drawn up. A particular point mentioned by a number of Member States is the necessity for establishing legal authority for such a plan. This point was considered in detail at the seventh session of the Expert Committee on the Unification of Pharmacopoeias.⁸ A recommendation had been made by the expert committee to this effect.

Meanwhile it is expected that the goodwill of the Member States should be sufficient to obtain practical results on the basis of the resolution of the Third World Health Assembly requesting that "such measures as may be deemed appropriate by Member States be taken with a view to preventing the use of the names selected for unauthorized purposes, and in particular to prevent the granting of exclusive proprietary rights of these names to the manufacturer".⁹ The last-mentioned practice of granting exclusive non-proprietary rights, officially chosen by some countries, had unfortunately taken place for some of the newer and more important drugs, such as penicillin and cortisone. The subcommittee stressed the importance of speed in all matters dealing with the introduction of international non-proprietary names, and expressed the desire that Member States should

⁵ Brazil, Burma, Canada, Ceylon, Chile, Denmark, Egypt, France, Greece, Iran, Ireland, Italy, the Hashemite Kingdom of the Jordan, Lebanon, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Pakistan, Portugal, Sweden, Syria, Turkey, the United Kingdom, the United States of America

⁶ *Off. Rec. World Hlth Org.* 25, 8

⁷ Unpublished working document WHO/Pharm/90

⁸ See section 7.1, page 13.

⁹ Resolution WHA3.11, *Off. Rec. World Hlth Org.* 28, 19

co-operate fully in these matters in the best interests of public health and international commerce.

3. International Non-Proprietary Names

The subcommittee considered the names of certain drugs which are to be included in the *Pharmacopoea Internationalis*, first edition, volume II, and adopted for these drugs the following international non-proprietary names :

<i>International non-proprietary name</i> (Latin, English, French)	<i>Chemical name or description</i>
Acidum Aminoaceticum Amino-acetic Acid Acide amino-acétique	amino-acetic acid, glycoll
Aminothiazolum Aminothiazole Aminothiazol	
Amodiaquini Hydrochloridum Amodiaquine Hydrochloride Chlorhydrate d'amodiaquine	7-chloro-4-(3'-diethylaminomethyl-4'-hydroxy-anilino)-quinoline dihydrochloride dihydrate
Antazolini Hydrochloridum Antazoline Hydrochloride Chlorhydrate d'antazoline	2-N-benzylanilinomethyliminazoline hydrochloride
Chloramphenicolum Chloramphenicol Chloramphénicol	D(-)-threo-1- <i>p</i> -nitrophenyl-2-dichloro-acetamido 1,3-propanediol
Chlorophenothanum Technicum Technical Chlorophenothane Chlorophénothane technique	contains <i>p,p'</i> -dichlorodiphenyltrichloroethane and <i>o,p'</i> -dichlorodiphenyltrichloroethane
Cyclopropanum Cyclopropane Cyclopropane	
Dexamphetaminum Dexamphetamine Dexamphétamine	dextro-amphetamine
Dextranum Dextran Dextran	
Dichlorophenarsini Hydrochloridum Dichlorophenarsine Hydrochloride Chlorhydrate de dichlorophénarsine	3-amino-4-hydroxyphenyl dichlorarsine hydrochloride

<i>International non-proprietary name</i> (Latin, English, French)	<i>Chemical name or description</i>
Digitoxosidum Digitoxoside Digitoxoside	consists of digitoxoside proper plus a small amount of related heterosides
Dihydrostreptomycinum Dihydrostreptomycin Dihydrostreptomycine	
Dimercaprolum Dimercaprol Dimercaprol	2,3-dimercaptopropanol
Diphenhydramini Hydrochloridum Diphenhydramine Hydrochloride Chlorhydrate de diphénhydramine	β -benzhydryl 2-dimethylaminoethyl ether hydrochloride
Ethinyløstradiolum Ethinyløstradiol Ethinyløstradiol	17-ethinyl-3, 17-dihydroxy- Δ -1,3,5-oestra-triene
Ethylurethanum Ethylurethane Ethylurèthane	ethyl carbamate
Gallaminum Gallamine Gallamine	1,2,3-tri(2'-diethylaminoethoxy) benzene
Gonadotrophinum Chorionicum Chorionic Gonadotrophin Gonadotrophine chorionique	contains the gonad-stimulating substance obtained from the urine of pregnant women
Gonadotrophinum Sericum Serum Gonadotrophin Gonadotrophine sérique	contains the follicle-stimulating substance obtained from the serum of pregnant mares
Hexobarbitalum Hexobarbital Hexobarbital	5-(1-cyclohexenyl)-1,5,-dimethyl-barbituric acid
Hyaluronidasum Hyaluronidase Hyaluronidase	enzymes of various origins which depoly-merize hyaluronic acid
Hydrocodoni Bitartras Hydrocodone Bitartrate Bitartrate d'hydrocodone	dihydrocodeinone acid tartrate
Hydromorphoni Hydrochloridum Hydromorphone Hydrochloride Chlorhydrate d'hydromorphone	dihydromorphinone hydrochloride
Mepyraminum Mepyramine Mépyramine	N- <i>p</i> -methoxybenzyl-N', N'-dimethyl-N-2-pyridylethylenediamine

<i>International non-proprietary name</i> (Latin, English, French)	<i>Chemical name or description</i>
Methadoni Hydrochloridum Methadone Hydrochloride Chlorhydrate de méthadone	6-dimethylamino-4,4-diphenyl-heptanone hydrochloride
Metoponi Hydrochloridum Metopon Hydrochloride Chlorhydrate de métopon	7-methylhydromorphone hydrochloride
Oxophenarsini Hydrochloridum Oxophenarsine Hydrochloride Chlorhydrate d'oxyphénarsine	3-amino-4-hydroxy-phenyl arsenoxide hydrochloride
Oxycodoni Hydrochloridum Oxycodone Hydrochloride Chlorhydrate d'oxycodone	dihydro-oxycodone hydrochloride
Pentamidinum Pentamidine Pentamidine	<i>p'</i> - <i>p'</i> -diamidino-diphenoxy-pentane
Profenamini Hydrochloridum Profenamine Hydrochloride Chlorhydrate de profénamine	N(diethylaminopropyl) dibenzoparathiazine hydrochloride
Promethazini Hydrochloridum Promethazine Hydrochloride Chlorhydrate de prométhazine	(dimethylamino-2'-methyl-2'-ethyl)-N-dibenzoparathiazine hydrochloride
Propylthiouracilum Propylthiouracil Propylthio-uracile	2-mercapto-4-hydroxy-6- <i>n</i> -propylpyrimidine
Solutio Natrii Chloridi Composita Compound Solution of Sodium Chloride Soluté de chlorure de sodium composé	synonym : Ringer's solution
Solutio Natrii Lactatis Composita Compound Solution of Sodium Lactate Soluté de lactate de sodium composé	synonym : Ringer's lactate solution
Streptomycinum Streptomycin Streptomycine	
Suraminum Natricum Suramin Sodium Suramine sodique	symmetrical urea of the sodium salt of <i>m</i> -benzoyl- <i>m</i> -amino- <i>p</i> -methylbenzoyl-1-amino-naphthalene-4,6,8-trisulfonic acid
Trichloroethylenum Trichlorethylene Trichloréthylène	
Trihexyphenidyl Hydrochloridum Trihexyphenidyl Hydrochloride Chlorhydrate de trihexyphénidyle	1-cyclohexyl-1-phenyl-3-piperidino-1-propanol hydrochloride

<i>International non-proprietary name</i> (Latin, English, French)	<i>Chemical name or description</i>
Tripelennamini Hydrochloridum Tripelennamine Hydrochloride Chlorhydrate de tripélenamine	N-benzyl-N',N'-dimethyl-N-2-pyridyl- ethylenediamine hydrochloride
Tubocurarini Chloridum Tubocurarine Chloride Chlorure de tubocurarine	D-tubocurarine chloride
Tyrothricinum Tyrothricin Tyrothricine	

4. Date of Next Session

The subcommittee recommended that it should meet for a two-day session before or after the next session of the Expert Committee on the Unification of Pharmacopoeias.

**WORLD HEALTH ORGANIZATION
TECHNICAL REPORT SERIES**

	Number	Date of publication	Price
Antibiotics , Expert Committee on Report on the first session	26	October 1950	9d \$0.10
Bilharziasis in Africa , Joint OIHP/WHO Study-Group on Report on the first session	17	August 1950	9d \$0.10
Biological Standardization , Expert Committee on Report on the third session	2	February 1950	1/6 \$0.20
Report on the fourth session	36	April 1951	9d \$0.10
Report of the Subcommittee on Fat-Soluble Vitamins	3	February 1950	9d \$0.10
Brucellosis , Joint FAO/WHO Expert Panel on Report on the first session	37	1951	<i>To be published</i>
Cholera , Joint OIHP/WHO Study-Group on Report on the third session	18	December 1950	1/3 \$0.15
Communicable diseases of childhood , active immunization against common Report of a group of consultants	6	March 1950	1/3 \$0.15
Drugs Liable to Produce Addiction , Expert Committee on Report on the second session	21	March 1950	9d \$0.10
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Report on the second session (including reports on the first sessions of the Subcommittees on the Definition of Stillbirth and Abortion, on Registration of Cases of Cancer, and on Hospital Statistics).	25	October 1950	2/- \$0.25
Hygiene of Seafarers , Joint ILO/WHO Committee on Report on the first session	20	September 1950	9d \$0.10
Insecticides , Expert Committee on Report on the first session	4	October 1950	2/3 \$0.30
Report on the second session	34	1951	<i>To be published</i>
Malaria , Expert Committee on Report on the third session	8	May 1950	2/3 \$0.30
Report on the fourth session	39	1951	<i>To be published</i>
Malaria Conference in Equatorial Africa	38	1951	<i>To be published</i>
Mental Health , Expert Committee on Report on the first session	9	May 1950	2/3 \$0.30
Report on the second session	31	1951	<i>To be published</i>
Nursing , Expert Committee on Report on the first session	24	November 1950	1/6 \$0.20
Nutrition , Joint FAO/WHO Expert Committee on Report on the first session	16	June 1950	1/3 \$0.15