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Ninth Report

WORLD HEALTH ORGANIZATION

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EXPERT COMMITTEE ON BIOLOGICAL STANDARDIZATION

Ninth Session

Geneva, 10-15 October 1955

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* Was unable to attend.

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EXPERT COMMITTEE ON BIOLOGICAL STANDARDIZATION

Ninth Report *

The ninth session of the Expert Committee on Biological Standardization was held in Geneva from 10 to 15 October 1955.

The Assistant Director-General, Central Technical Services, on behalf of the Director-General of the World Health Organization, welcomed the members of the Committee and the representative of the Food and Agriculture Organization of the United Nations.

IMMUNOLOGICAL

1. Antivenins

The Committee noted reports on the standardization of antivenins [1] and discussed the complex problems involved. The Committee agreed that further studies on the venoms themselves should be made before proceeding with work on the standardization of antivenins. It decided therefore to begin by studying the venom of *Bothrops jararaca*, a properly prepared supply of which was offered by the Instituto Butantan, São Paulo, Brazil. The Committee agreed to ask the Instituto Butantan to arrange for the dispensing of this venom in a form acceptable for use as

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* The Executive Board, at its seventeenth session, adopted the following resolution :
The Executive Board

1. NOTES the ninth report of the Expert Committee on Biological Standardization ;
2. THANKS the members of the Committee for their work ; and
3. AUTHORIZES publication of the report.

(Resolution EB17.R4, *Off. Rec. Wld Hlth Org.*, 1956, **68**, 2)

[1] Grasset, E., unpublished working document WHO/BS/316 (to be published in the *Bulletin of the World Health Organization*) ; Maaløe, O., unpublished working document WHO/BS/317 ; Jerne, N. K., unpublished working document WHO/BS/333 ; Christensen, P. A., unpublished working document WHO/BS/334

the working preparation, and to distribute it to interested laboratories for collaborative study of its suitability as an international reference preparation. The Committee considered that this would probably constitute appropriate material for such a study. It suggested that the investigation should include at least:

(1) an initial study of the toxicity of the venom, both freshly harvested and after storage at different temperatures;

(2) a study in several laboratories of the toxicity and thermostability of freeze-dried venom; and

(3) a collaborative study of the immunological relationship between this material and venoms from closely and distantly related congeneric snakes. Venoms and homologous antivenins for this part of the investigation will also be made available from the Instituto Butantan.

The Committee recommended that descriptions of the methods of selecting snakes from representative ecological niches and of collecting and preserving venoms, as developed in the Instituto Butantan, be made available to laboratories in other parts of the world with a view to deciding in each area whether batches of venom from the important species of snakes of the area might be obtained, which could be considered equally suitable for use in biological standardization.

The Committee recommended that laboratories producing antivenins in these geographical regions should arrange for the collection and examination of such venoms. It was suggested that the venom of *Naja flava* would be suitable material for further studies; it is understood that the South African Institute for Medical Research, Johannesburg, may be able to supply material in due course.

2. Blood-Typing Sera [1]

The Committee noted that the proposed international standard for anti-Rh_0 (anti-D) blood-typing-serum (for the characterization of saline-agglutinating sera) has been distributed for collaborative investigation.

The Committee noted further that a large batch of " incomplete " or albumin-agglutinating anti-D serum has also been collected which will likewise be submitted to a collaborative investigation of its suitability as a standard.[2]

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[1] Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/328

[2] *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 5

3. Clostridium Antitoxins

3.1 *Clostridium welchii (perfringens) antitoxins*

The Committee noted that the International Standard for Gas-Gangrene Antitoxin (*perfringens*), which is a type-A antitoxin, and the newly established International Reference Preparations of *Clostridium welchii* Antitoxins of types B and D [1] have been compared, and that their contents of antitoxin against the *Clostridium welchii* toxin types A, B, and D have been determined as given in the following tabulation : [2]

Type of standard or reference serum	*One antitoxic unit is contained in the following weight (mg) of types*		
	A	*B*	*D*
A	0.1132	negligible activity	negligible activity
B	0.2293	0.0137	negligible activity
D	0.6876	negligible activity	0.0657

The Committee welcomed a suggestion that the Paul-Ehrlich-Institut, Frankfurt-on-Main, and the Veterinary Laboratory, Weybridge, Surrey, in co-operation undertake to determine the relative potencies of several antitoxins in terms of the International Reference Preparations of *Clostridium welchii* Antitoxin of types B and D, using for this purpose a series of differently prepared types B and D test-toxins.

3.2 *Clostridium septicum antitoxin*

The Committee asked the Statens Seruminstitut, Copenhagen, to arrange for replacement of the International Standard for Gas Gangrene Antitoxin (*vibrion septique*), since the stock of the existing standard is low.[3]

The Committee discussed various methods of dispensing and distributing the international serum standards. It recommended that the collaborative study of the replacement for the International Standard for Gas Gangrene Antitoxin (*vibrion septique*) should include an examination of freeze-dried serum, both undiluted and diluted, in parallel with the liquid

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 6

[2] Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/281; Barr, M. & Hulse, E. C., unpublished working document WHO/BS/298 ; Skulberg, A. & Heyningen, W. E. van (1956) *Bull. Wld Hlth Org.*, **14**, 557

[3] Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/318

serum itself. Subject to the results of this investigation, the standard should, if possible, be issued in a freeze-dried diluted form and should be sent to users on request rather than as a routine issue of a solution in glycerol every six months.

The Committee also asked the Statens Seruminstitut, Copenhagen, to investigate the question of adopting this form of distribution for other serum standards in the future.

4. Diphtheria Toxoids and Antitoxin

4.1 *International Standards for Diphtheria Toxoid, Adsorbed, and for Diphtheria Toxoid, Plain*

The Committee noted reports from the Paul-Ehrlich-Institut, Frankfurt-on-Main,[1] and the Statens Seruminstitut, Copenhagen,[2] on the stability of the proposed international standard for diphtheria toxoid, adsorbed, and on its assay in terms of the existing German national standard.[3] The Committee established the material as the International Standard for Diphtheria Toxoid, Adsorbed, and, following its usual practice of equating the International Unit as far as possible with an existing national unit, defined one International Unit as the activity contained in 0.75 mg of the standard preparation, this quantity being the equivalent of one *Schutzeinheit* (protective unit).

The Committee also defined the International Unit of Diphtheria Toxoid, Plain, as the activity contained in 0.5 mg of the existing International Standard. This assignment of unitage is arbitrary since there is no national unit for preparations of diphtheria toxoid, plain.

4.2 *Diphtheria antitoxin for flocculation test*

The Committee asked the Statens Seruminstitut, Copenhagen, to arrange for replacement of the International Standard for Diphtheria Antitoxin for the Flocculation Test, since the stock of the existing standard is low.[4]

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[1] Prigge, R., unpublished working document WHO/BS/330

[2] Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/331

[3] Participants in the collaborative study: Greenberg, L., Laboratory of Hygiene, Ottawa, Canada; Ikić, K., Central Institute of Hygiene, Yugoslavia; Jerne, N. K., Maaløe, O. & Scheibel, I., Statens Seruminstitut, Denmark; Prigge, R., Paul-Ehrlich-Institut, Germany

[4] Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/318

5. Influenza Sera

The Committee noted a report [1] from the World Influenza Centre, London, on influenza diagnostic reagents, confirming that the provision of reference sera would permit of a preliminary differentiation of types of influenza virus, although final classification would require more comprehensive study.

The Committee also noted from this report that materials for study as provisional international reference preparations are not yet available, and agreed to defer any decision on the matter until a later session.

6. Pertussis Vaccine and Sera

6.1 *Pertussis vaccine*

The Committee noted the progress made by the Statens Seruminstitut, Copenhagen, in the collaborative study of the proposed international reference preparation for pertussis vaccine.[2] The Committee agreed to consider further the question of the establishment of an international reference preparation for pertussis vaccine when the results of the collaborative assay and of the field trial of pertussis vaccines, at present being conducted in the United Kingdom, become available.

6.2 *Pertussis sera*

The Committee noted that inquiries had been made by the Statens Seruminstitut, Copenhagen, in response to a recommendation made by the WHO Conference of Heads of Laboratories producing Diphtheria and Pertussis Vaccines, held in Dubrovnik, Yugoslavia, in 1952.[3] These inquiries revealed that there is not yet agreement that the agglutinin titres of the sera of immunized children adequately characterize the immunizing power of a vaccine.

The Committee also agreed that there is at present no need to establish a reference preparation for the characterization of pertussis sera intended for therapeutic use.

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[1] Andrewes, C. H., unpublished working document WHO/BS/315

[2] Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/302

[3] *Wld Hlth Org. techn. Rep. Ser.*, 1953, **68**, 7

7. Poliomyelitis Vaccines and Sera

7.1 *Poliomyelitis vaccines*

The Committee discussed the progress made since its eighth session and confirmed that the establishment of international reference preparations for poliomyelitis vaccines is still premature and must await further developments.[1]

7.2 *Poliomyelitis sera*

The Committee discussed the need for providing international reference preparations of type-specific poliomyelitis antisera for neutralization tests and agreed that this was urgent. It noted a report on the existing British standards for these substances, prepared by the hyper-immunization of monkeys. The Committee decided to accept an offer, made by the National Institute for Medical Research, London,[2] of a supply of sera identical to those used in making the British standards, for study as possible international reference preparations.

The Committee asked the National Institute for Medical Research to arrange for the dilution and distribution of these sera and requested the Statens Seruminstitut, Copenhagen, to arrange for a collaborative study of the materials. It agreed that this study should include a comparison of the proposed reference preparations with type-specific reference antisera to be made available by the National Institutes of Health, Bethesda, Md., USA, and that participants in the study should be asked to compare both sets of sera with any reference sera in current use in their own laboratories. It further agreed that this study should, if possible, include comparisons of type-specific antisera prepared in different species of animals. Participants should be asked to comment on the suggestion, made by the Committee, that a unitage should be assigned to a given weight of each of the proposed international reference preparations to permit the calibration of other sera in terms of these units, rather than in terms of infectious doses of virus.

The Committee authorized the Statens Seruminstitut, Copenhagen, to establish these materials as the International Reference Preparations, subject to the approval of participants in the collaborative study.

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[1] National Institute for Medical Research, London, unpublished working document WHO/BS/321

[2] National Institute for Medical Research, London, unpublished working document WHO/BS/313

The Committee decided that, in view of the limited supply of the antisera proposed as international reference preparations, it would be essential to confine their use to the calibration of national or laboratory working standards. It was further agreed that working standards could be prepared in other animal species since it is considered that valid comparisons can be made between antisera from different species.

8. Rabies Vaccine and Serum

8.1 *Rabies vaccine*

The Committee noted that a collaborative investigation of the material provided by the National Institutes of Health, Bethesda, Md., USA,[1] is in progress to determine its suitability as a standard for rabies vaccine.

8.2 *International Standard for Antirabies Serum*

The Committee noted further reports [2] on the collaborative study [3] of the proposed international standard for antirabies serum. The Committee considered that the material is suitable and therefore established it as the International Standard for Antirabies Serum. The International Unit is defined as the activity contained in 1 mg of the International Standard. The definition of the International Unit in this way follows the Committee's usual practice of equating the International Unit as far as possible with a pre-existing national unit, in this case the unit of the National Institutes of Health, Bethesda, Md., USA.

9. Staphylococcus β Antitoxin

The Committee noted that the supply of the International Standard for Staphylococcus β Antitoxin is low, but agreed that this standard should not be replaced if the Statens Seruminstitut, Copenhagen, would confirm that there is little or no demand for it.

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 10

[2] Maaløe, O., unpublished working document WHO/BS/329 and Add.1; Kaplan, M. M., unpublished working document WHO/BS/335. References to previous reports appear in *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 10.

[3] Participants: Koprowski, L., Lederle Laboratories, USA; Lépine, P., Institut Pasteur, Paris, France; Maaløe, O., Statens Seruminstitut, Denmark; Pérez-Gallardo, F., University of Madrid, Spain; Stableforth, A. W., Ministry of Agriculture, Fisheries and Food Veterinary Laboratory, England and Wales

10. Swine Erysipelas Vaccines and Serum

10.1 *Swine erysipelas vaccines*

The Committee requested the Veterinary Laboratory, Weybridge, Surrey, in collaboration with the Paul-Ehrlich-Institut, Frankfurt-on-Main, to investigate the possible usefulness of reference preparations for the standardization of swine erysipelas vaccines.

10.2 *International Standard for Swine Erysipelas Serum, Anti-N*

The Committee noted a report from the Paul-Ehrlich-Institut, Frankurt-on-Main, and the Veterinary Laboratory, Weybridge, Surrey, on the collaborative studies of the International Standard for Swine Erysipelas Serum, Anti-N.[1] The Committee defined one International Unit as the activity contained in 0.14 mg of the International Standard, this being equivalent to the pre-existing German national unit.

11. Syphilis Diagnostic Reagents and Sera

11.1 *Cardiolipin and lecithins*

The Committee noted that batches of cardiolipin and lecithins are being examined serologically and chemically at the Statens Seruminstitut, Copenhagen, with a view to their serving, when required, as replacements for the existing International Reference Preparations.[2]

11.2 *Syphilitic sera*

The Committee noted a report from the Statens Seruminstitut, Copenhagen, suggesting that the advantages of using pooled sera as an international reference preparation for use in the diagnosis of syphilis outweighed the disadvantages.[3] The Committee authorized the Statens Seruminstitut to proceed with the collaborative study of a large batch of pooled sera to determine its suitability as an international reference preparation.

12. Typhoid Vaccines

The Committee noted that samples from the alcoholized and phenolized typhoid vaccines which are being used in the Yugoslav field trial have

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[1] Paul-Ehrlich-Institut, Frankfurt-on-Main, unpublished working document WHO/BS/300

[2] Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/305

[3] Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/304

been sent to the Statens Seruminstitut, Copenhagen, and have been distributed from there for the collaborative investigation proposed at the Committee's last session.[1] The Committee also discussed reports of other studies [2] carried out on the same batches of vaccine.

The Committee reiterated its belief that the current field trial should present a unique opportunity for comparing the results of laboratory tests with the results obtained with the same batches of vaccine in the field. It recommended that every effort should be made to ensure that the laboratory tests have been and will be carried out on samples of the vaccines kept in the same way as the vaccines administered in the field.

13. Yellow-Fever Vaccine

The Committee discussed a report [3] on the need for characterization of seed lots of the 17D strain of yellow-fever virus, used in the production of yellow-fever vaccine, and agreed that the matter should be referred to the Expert Committee on Yellow Fever. It further decided to call the attention of the World Health Organization to the urgency of the problem and to recommend that action should be taken as soon as possible.

PHARMACOLOGICAL

ANTIBIOTICS

14. Erythromycin

The Committee noted that the National Institute for Medical Research, London, has obtained material for the proposed international standard for erythromycin and that a collaborative study of its suitability is in progress.[4]

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 12 ; Statens Seruminstitut, Copenhagen, unpublished working document WHO/BS/301

[2] Unpublished working document WHO/Typhoid Vaccination/1

[3] Institut Pasteur, Paris, unpublished working document WHO/BS/332

[4] National Institute for Medical Research, London, unpublished working document WHO/BS/322

15. International Standard for Oxytetracycline

The Committee noted that, in accordance with the authorization given at its eighth session,[1] the International Standard for Oxytetracycline has been established and that one International Unit is defined as the activity contained in 0.00111 mg of the International Standard. The International Standard thus contains 900 units per milligram. For practical purposes, one International Unit may be regarded as equivalent to one microgram of pure oxytetracycline base. The Committee adopted a new memorandum [2] to be sent out with issues of this standard.

16. Procaine Benzylpenicillin in oil with Aluminium Monostearate (PAM)

The Committee noted a report [3] from the National Institute for Medical Research, London, which indicates that an accurate assay method for measuring small quantities of penicillin had been devised, but that its application to penicillin in serum is difficult owing to interactions between the penicillin and the serum. The Committee asked the National Institute for Medical Research to continue these investigations. The use of laboratory animals instead of man to determine the degree of persistence of penicillin in the blood after injections of PAM should also be investigated, employing if necessary a reference preparation.

17. International Standard for Polymyxin B

The Committee noted a report [4] on the collaborative investigation [5] of the British Standard for Polymyxin B, a part of which had been offered for use as an international standard. The Committee agreed that the

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 12

[2] Humphrey, J. H. et al. (1955) *Bull. Wld Hlth Org.*, **13**, 903 (this text replaces unpublished working document WHO/BS/285)

[3] National Institute for Medical Research, London, unpublished working document WHO/BS/324

[4] National Institute for Medical Research, London, unpublished working document WHO/BS/326

[5] Participants: Chattwood, J. G., Distillers Co. Ltd, England; Grove, D. C., Food and Drug Administration, USA; Humphrey, J. H. & Lightbown, J. W., National Institute for Medical Research, Great Britain; Stewart, G. A., Burroughs Wellcome & Co., England

material is suitable for this purpose, and therefore established it as the International Standard for Polymyxin B. The International Unit is defined as the activity contained in 0.000127 mg of the International Standard.

18. Streptomycin

The Committee noted that it had become necessary to replace the International Standard for Streptomycin,[1] and asked the National Institute for Medical Research, London, to proceed with the collection and characterization of a suitable batch for consideration as a replacement.

19. Tetracycline

The Committee noted that, in response to its request, the National Institute for Medical Research, London, is obtaining material which, on receipt, will be subjected to a collaborative examination for its suitability as the international standard for tetracycline.[2]

ANTERIOR PITUITARY HORMONES

20. Second International Standard for Corticotrophin (Adrenocorticotrophic Hormone)

The Committee noted that, in accordance with the authorization given at its eighth session,[3] the second International Standard for Corticotrophin has been established and that the International Unit is defined as the activity contained in 0.88 mg of the International Standard.[4] The

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[1] National Institute for Medical Research, London, unpublished working document WHO/BS/314

[2] National Institute for Medical Research, London, unpublished working document WHO/BS/323

[3] *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 13

[4] Participants in the collaborative study: Bond, G., The Upjohn Company, USA; Brown, R. A. & Pascoe, M. R., Parke, Davis & Co., USA; Chapman, R. N. & Dekanski, J. B., The Organon Laboratories, England; Curtis, J., Food and Drug Administration, USA; Hamburger, C. & Thing, E., Statens Seruminstitut, Denmark; Hier, S. W., The Wilson Laboratories, USA; Jones, J. I. M. & Lock, J. A., The Crookes Laboratories, England; Lens, J., N. V. Organon, Netherlands; McCall, P. J., The Armour Laboratories, USA; Parrott, D. M. V., National Institute for Medical Research, Great Britain; Porter, K. C. & Mengoni, A. H., Commonwealth Serum Laboratories, Australia; Varney, R., E. R. Squibb & Sons, USA

Committee adopted a report [1] as the memorandum to be sent out with issues of this standard.

21. International Standard for Growth Hormone

The Committee noted a report [2] on the examination of the proposed international standard for growth hormone and established this material as the International Standard for Growth Hormone. Since there is no existing national unit, the only consideration in defining the size of the International Unit is one of convenience to users both in clinical and laboratory work. With the agreement of the participants in the collaborative study of the proposed standard,[3] one International Unit is therefore defined as the activity contained in 1 mg of the International Standard.

22. Prolactin

The Committee noted that, since its last session, two possible new sources of material suitable for use in replacing the existing International Standard for Prolactin have been found.[4] The Committee asked the National Institute for Medical Research, London, to examine the material from one or both sources, with a view to obtaining a sufficiently large batch for adequate replacement of the International Standard.

23. Thyrotrophin

The Committee noted that, in accordance with the authorization given at its eighth session,[5] the International Unit of Thyrotrophin has been defined as the activity contained in 13.5 mg of the International Standard. The Committee adopted a report [6] as the memorandum to be sent out with issues of this standard.

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[1] Mussett, M. V. & Perry, W. L. M. (1956) *Bull. Wld Hlth Org.*, **14**, 543

[2] National Institute for Medical Research, London, unpublished working document WHO/BS/320

[3] Participants: Hamburger, C., Statens Seruminstitut, Denmark; Steelman, S. L., The Armour Laboratories, USA; Young, F. G., University of Cambridge, England

[4] National Institute for Medical Research, London, unpublished working document WHO/BS/310

[5] *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 14

[6] Mussett, M. V. & Perry, W. L. M. (1955) *Bull. Wld Hlth Org.*, **13**, 917

OTHER HORMONES

24. Insulin

The Committee noted the progress [1] made by the National Institute for Medical Research, London, in setting up the Fourth International Standard for Insulin. The Committee noted that the total amount of insulin provided for the new standard is of the order of 1 kg.

25. Posterior Pituitary Lobe

The Committee noted that stocks of the International Standard for Posterior Pituitary Lobe are low.[2] The Committee considered that, in spite of the recent advances made in the synthesis of the active principles in the posterior pituitary lobe, the need for a biological standard is likely to continue for some years. The Committee therefore asked the National Institute for Medical Research, London, to proceed with the collection of suitable material for replacement of the standard and to arrange for a collaborative assay of its activity, in respect both of oxytocin and of vasopressin, in terms of the existing standard.

26. Progesterone

The Committee noted that stocks of the International Standard for Progesterone are low.[2] Since this hormone is now obtainable in pure synthetic form and can be adequately characterized by chemical and physical methods, the Committee decided not to replace the standard, but to request the Expert Committee on the International Pharmacopoeia to include a specimen of progesterone in the Collection of Authentic Chemical Substances which WHO has established in Stockholm.

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[1] Nichols, A. B. & National Institute for Medical Research, London, unpublished working document WHO/BS/311

[2] National Institute for Medical Research, London, unpublished working document WHO/BS/314

MISCELLANEOUS

27. Dextran Sulfate

The Committee noted that, in accordance with the authorization given at its eighth session,[1] the International Unit of Dextran Sulfate has been defined as the activity contained in 0.04 mg of the existing Author's Preparation. The Committee noted that the National Institute for Medical Research, London, is obtaining material which may serve as an international standard for dextran sulfate, after collaborative investigation in relation to the existing Author's Preparation.

28. Heparin

The Committee noted that it had become necessary to replace the International Standard for Heparin,[2] and asked the National Institute for Medical Research, London, to proceed with the collection and characterization of a suitable batch for consideration as a replacement.

29. International Standard for Hyaluronidase

The Committee noted that the National Institute for Medical Research, London, has obtained a quantity of hyaluronidase suitable to serve as an international standard. This material has been examined in the United States of America in order to determine the quantity that is equivalent to the " turbidity reducing unit " in use in that country. The Committee, following its usual practice, agreed to equate as far as possible the International Unit with the " turbidity reducing unit ", this being the national unit most commonly used. The Committee therefore established the material as the International Standard for Hyaluronidase and defined the International Unit as the activity contained in 0.1 mg of the International Standard.[3]

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[1] *Wld Hlth Org. techn. Rep. Ser.*, 1955, **96**, 15

[2] National Institute for Medical Research, London, unpublished working document WHO/BS/314

[3] National Institute for Medical Research, London, unpublished working document WHO/BS/306

30. Pyrogens

The Committee noted the progress made in the collaborative study of pyrogen preparations [1] and agreed that the National Institute for Medical Research, London, should collect a large batch of a suitable pyrogen for subsequent characterization as an international reference preparation.

31. Tubocurarine

The Committee noted that stocks of the International Standard for Tubocurarine are low.[2] It was agreed that, since this material is now available as a defined chemical substance and can be adequately characterized by physical and chemical tests, there is no need to replace the standard. The Committee requested the Expert Committee on the International Pharmacopoeia to include a specimen of tubocurarine chloride as part of the Collection of Authentic Chemical Substances which has been established in Stockholm, and noted that a specimen, held by the National Institute for Medical Research, London, is available to WHO for this collection.

GENERAL

32. International Standards, National Standards, and "Minimum Requirements"

The Committee discussed the need to provide users of the international standards with further and more detailed recommendations about the methods which should be employed in the preparation and calibration of national standards. It agreed that the memoranda on the international standards should, whenever possible, include a section dealing specifically with this matter.

The Committee recognized the desire, which continues to be keenly felt in many countries, that WHO should provide recommendations about minimum requirements for therapeutic and prophylactic substances, and discussed ways of satisfying this need. The Committee emphasized that

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[1] National Institute for Medical Research, London, unpublished working document WHO/BS/312

[2] National Institute for Medical Research, London, unpublished working document WHO/BS/314

it regards the terms " biological standards " and " biological standardization " as referring to the provision and use of *material* standard preparations of therapeutic and prophylactic substances requiring bio-assay, and not to the drafting of specifications for these substances. The Committee reaffirmed its previous decision, taken at the seventh session, that it is not the appropriate body to deal with the drafting of such minimum requirements.[1] However, since standard preparations are used as reference points in certain minimum requirements, the Committee agreed that it should continue to advise on the use of biological standards in comparative assays. The Committee wished to record that many techniques necessary for the proper use of the international standards are already described in WHO publications, such as the *International Pharmacopoeia*, the *Bulletin of the World Health Organization*, the *Monograph Series*, and the *Technical Report Series*.

[1] *Wld Hlth Org. techn. Rep. Ser.*, 1954, **86**, 20