



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
ORGANISATION DES NATIONS UNIES POUR L'ALIMENTATION ET L'AGRICULTURE
ORGANIZACION DE LAS NACIONES UNIDAS PARA LA AGRICULTURA Y LA ALIMENTACION
00100 Rome, Via delle Terme di Caracalla. Cables: FOODAGRI, Rome. Tel. 5797



WORLD HEALTH ORGANIZATION
ORGANISATION MONDIALE DE LA SANTÉ
1211 Genève, 27 Avenue Appia. Câbles: UNISANTÉ, Genève. Tél. 34 60 61

ALINORM 72/13(A)

JOINT FAO/WHO FOOD STANDARDS PROGRAMME
CODEX ALIMENTARIUS COMMISSION

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6-17 November 1972

REPORT OF THE NINTH SESSION OF THE
CODEX COMMITTEE ON FOOD HYGIENE

Washington, D.C., U.S.A.
19-23 June 1972

INTRODUCTION

1. The Ninth Session of the Codex Committee on Food Hygiene was held in the Main Conference Room, Department of State, in Washington, D.C., from 19 to 23 June 1972. The session was attended by 51 participants including the representatives and observers of 24 countries and observers from one international organization (see Appendix I for List of Participants).

2. The participants were welcomed on behalf of the Government of the U.S.A. by Mr. L.R. Shelton, Chairman of the Committee, and Mr. G.R. Grange, Vice Chairman of the Codex Alimentarius Commission. Mr. Grange briefly reviewed matters of general interest which had been discussed by the 18th Session (May 1972) of the Executive Committee.

ADOPTION OF THE AGENDA

3. The Committee adopted the proposed agenda unanimously with a minor change in the order of items to be discussed.

USE OF THE SPANISH LANGUAGE

4. Mr. Grange indicated that the U.S.A. would provide simultaneous interpretation in the three working languages of the Commission and to the maximum extent of capability would also provide translation of working papers - but not the draft report - into three languages.

5. The delegate of Argentina, speaking on behalf of the Spanish-speaking delegates, expressed his gratitude to the U.S. Government for making available simultaneous interpretation facilities in Spanish for this session of the Committee.

MATTERS ARISING FROM THE REPORT OF THE 8TH SESSION OF THE CODEX ALIMENTARIUS COMMISSION -
JULY 1971 (ALINORM 71/31)

6. The Committee took note of the discussion by the Commission regarding the need for issuing individual codes of hygienic practice as separate booklets. It agreed that in general, separate publication was desirable. In the future, when submitting codes of hygienic practice at Step 8 to the Commission, the Committee would specifically indicate whether, in its opinion, the code warranted individual publication.

7. The Committee was informed that the Commission had adopted the Draft Codes of Hygienic Practice for Desiccated Coconut and for Dehydrated Fruits and Vegetables including Edible Fungi at Step 8 of the Procedure, but that the Draft Code of Hygienic Practice for Quick Frozen Foods, Vegetables and their Juices had been held at Step 8 of the Procedure.

8. The Committee noted the decision of the Commission to establish a new Committee to deal with matters pertaining to meat hygiene. It further noted that such codes of hygienic practice which the Committee on Meat Hygiene might develop would not be reviewed by this Committee, nor would the Code of Hygienic Practice for Processed Meat Products. However, hygiene provisions in standards elaborated by the Codex Committee on Processed Meat Products would continue to be submitted to the Committee for endorsement. Some delegates were of the view that for the sake of consistency all codes of hygienic practice should be reviewed by the Committee on Food Hygiene and that this might well prove to be a useful educational exercise.

MATTERS ARISING FROM THE REPORT OF THE 18TH SESSION OF THE EXECUTIVE COMMITTEE - MAY 1972
(ALINORM 72/3)

9. At the request of the Commission the Executive Committee had studied in considerable detail the best way to proceed with the development of codes of technological practice and codes of hygienic practice in the fish and fishery products field. The Committee noted the discussion as recorded in the Report of the 18th Session of the Executive Committee (ALINORM 72/3, paras 6-17) and endorsed the decisions reached by the Executive Committee, namely:

- (a) After consideration at Step 2 by the Committee on Food Hygiene, the Codes of Hygienic Practice for (i) Fresh and Frozen Fish, and (ii) Canned Fish, would be referred to the FAO Fisheries Department, so that this Department could elaborate combined codes for fresh, frozen and canned fish which would cover both technology and hygiene;
- (b) After consideration at Step 2 by the Committee on Food Hygiene, the Code of Hygienic Practice for Smoked Fish would be referred to the FAO Fisheries Department for incorporation into a combined code of practice for smoked fish - to be elaborated - covering both technology and hygiene.
- (c) All combined codes would be placed before the Codex Committee on Fish and Fishery Products at Step 2. In due course the above named codes, and such codes as will be elaborated in the future by the Expert Consultation, would be sent to the Committee on Food Hygiene for endorsement of the hygiene provisions;
- (d) The Committee on Food Hygiene would continue its work on the Code of Hygienic Practice for Molluscan Shellfish as this code was essentially of a hygienic nature.

REVIEW OF RELEVANT MATTERS DISCUSSED BY OTHER CODEX COMMITTEES

Codex Committee on Cocoa Products and Chocolate (ALINORM 71/10)

10. The Committee was informed that the paper on hygiene requirements for cocoa products and chocolate, which was being prepared by the U.S.A. and the Netherlands in collaboration with the OICC for the Committee on Cocoa Products and Chocolate, was not yet ready. The delegate of Switzerland, the host country of the Cocoa Committee, pointed out that the study would cover in a first phase the hygiene requirements related to cocoa mass, cocoa cakes and cocoa powders. The second part of the paper covering chocolate (containing a considerable portion of sugar, milk solids, and other ingredients) would be dealt with at a later time.

Codex Committee on Food Additives (ALINORM 72/12)

11. The Committee noted that the Commission had decided to defer work on the Proposed Draft General Standard for Commercial Enzyme Preparations for Food Processing. In the Report of the 8th Session of the Food Additives Committee, however, an exception to the previously recommended text on micro-biological hazards had been made. The Committee on Food Hygiene indicated a reservation to the proposed change in the text.

Joint ECE/Codex Group of Experts on Standardization of Fruit Juices (ALINORM 72/14)

12. The Committee endorsed the Hygiene sections in the following revised standards:

- (a) Draft Standard for Vitis Vinifera Type Grape Juice Preserved Exclusively by Physical Means
- (b) Draft Standard for Concord and Concord Type Grape Juice Preserved Exclusively by Physical Means

- (c) Draft Standard for Vinifera Type Concentrated Grape Juice Preserved Exclusively by Physical Means
- (d) Draft Standard for Concord and Concord Type Concentrated Grape Juice Preserved Exclusively by Physical Means

13. The Committee considered but did not agree with the written comments from the Government of Austria relative to the hygiene provisions.

Codex Committee on Processed Meat Products (ALINORM 72/16)

14. The Committee endorsed the corrected Hygiene Section of the Draft Standard for Canned Corned Beef.

15. The Committee considered revising sub-section 5.4 of the hygiene requirements. One delegation pointed out that the text was ambiguous as it implied that abnormal conditions of storage could allow for the acceptance of contamination. However, the Committee decided not to amend the sub-section as the provision met the quest for uniformity between the various standards being elaborated by the Codex Committee on Processed Meat Products as well as the hygiene requirements of the Committee on Food Hygiene.

Codex Committee on Fish and Fishery Products (ALINORM 72/18)

16. The Committee agreed with the above Committee that the extended provisions relating to microbiological requirements as given in ALINORM 72/13, para 35, for Canned Tuna and Bonito in Water or Oil should also be included in the hygiene section in the Recommended International Standards for Canned Shrimps and Prawns, and for Canned Pacific Salmon.

Proposed Draft Standard for Quick Frozen Shrimps and Prawns

17. The Committee noted the decision of the Committee on Fish and Fishery Products to incorporate into one standard both raw and heat treated quick frozen shrimps and prawns and agreed to the following requirements to be included in the hygiene section of the standard:

- 5.1 It is recommended that the products covered by the provisions of the standard be prepared in accordance with the Recommended International Code of Practice - General Principles of Food Hygiene (CAC/RCP 1-1969).
- 5.2 To the extent possible in good manufacturing practice, the product shall be free from objectionable matter.
- 5.3 When tested by appropriate methods of sampling and examination, the heat treated product:
 - a. shall not contain any pathogenic microorganisms, and
 - b. shall not contain any substances originating from microorganisms in amounts which may be toxic.

18. The Committee modified sub-section 3.3.4 of the Standard by deleting in the fourth sentence of the sub-section dealing with requirements for potability the reference to the year of publication. The Committee reviewed the last sentence of sub-section 3.3.4 relative to glazing and recommended a revised wording taking into account the possibility of contamination by the ingredients and additives used:

"Any other media used for glazing shall be of a microbiological quality consistent with the requirements of Section V."

Proposed Draft Standard for Canned Crab Meat

19. The Committee noted and agreed to the incorporation into the above standard of the same hygiene requirements as previously agreed to in the Proposed Draft Standard for Canned Tuna and Bonito in Water or Oil.

Joint ECE/Codex Group of Experts on the Standardization of Quick Frozen Foods (ALINORM 72/25)

20. The Committee noted that the Group of Experts at its 7th Session had amended the hygiene provisions of the various standards under discussion to bring them into uniformity with the hygiene provisions of the Draft Standard for Quick Frozen Strawberries as elaborated during the 8th Session of the Committee on Food Hygiene, and subsequently adopted at Step 8 by the last Session of the Commission. The Committee agreed that the hygiene provisions for the following Draft Standards should read similar to those for the Standard for Quick Frozen Strawberries:

- a. Quick Frozen Raspberries
- b. Quick Frozen Spinach
- c. Quick Frozen Brussels Sprouts

Codex Committee on Foods for Special Dietary Uses (ALINORM 72/26)

21. The Committee considered two major points relative to the hygiene provisions of the standards. The first centred on the discrepancy in time in the development of specific codes related to the dietetic food standards. This applied specifically to codes of practice for products of animal origin. The Committee, however, recognized the need for hygiene provisions referring to these codes in general to be incorporated into the standards under consideration.

Secondly, the Committee considered portions of text 7.2 and 7.3 and 7.4 in the hygiene section to be superfluous since all ingredients used in the manufacture of the product would have to comply with the specific associated codes.

22. The Committee modified sub-section 7.2 to read as follows:

"The product shall be clean and free of poisonous or deleterious substances which may render it injurious to health. All ingredients used in the preparation of the product shall conform with the hygienic provisions of all applicable codes of practice."

23. In line with the modification of sub-section 7.2, the Committee deleted sub-sections 7.3 and 7.4.

DRAFT CODE OF HYGIENIC PRACTICE FOR POULTRY AND POULTRY PARTS - Considered at Step 7

24. The Committee considered the above named Draft Code as contained in document ALINORM 71/13, Appendix VI, in the light of Government comments received thereon. Particular attention was paid to written comments received from Belgium, Poland and Sweden, which were not represented at the meeting. The Draft Code as revised by the Committee is contained in Appendix II of this Report.

25. The delegates from the Federal Republic of Germany, France and the Netherlands stated that they were bound by the regulations regarding poultry and poultry products developed by the EEC but that their delegations would cooperate to the fullest extent possible in the final elaboration of the present Code.

26. The Committee considered the written comments of Norway stating that general provisions regarding poultry should, because of the nature of the product, be in agreement with those adopted for red meat products and that therefore the elaboration of the Code should be assigned to the Codex Committee on Meat Hygiene - with amended terms of reference. The Committee did not agree with the Norwegian observation and further considered the question raised outside its purview.

Title

27. In the light of the numerous changes made to the text as well as a desire to have the Code title as succinct as possible, the Committee agreed subsequent to its initial discussion of the Code to modify the title to read: "Draft Code of Hygienic Practice for Poultry Processing."

The changes in the draft Code include the following:

Section I - Scope

28. The Committee agreed to specify that the Code applied to the uncooked product only, as it could be foreseen that the cooked product would appear increasingly on the market which would require a separate code of practice; the text of the Scope was amended accordingly.

29. Subsequent to the above decision, the Committee further amended the sentence to read: "This Code is concerned with all uncooked poultry, poultry parts and other edible materials thereof intended for human consumption, whether by direct sale or through further processing".

30. It was pointed out that in the Scope, mention should be made of the transport of poultry, poultry parts and other edible materials so as to make clear that the Code, similar to the Code of Hygienic Practice for Fresh Meat, would also cover this operation. The Committee, after some deliberation, agreed to the proposal and added the following sentence to the second paragraph of the Scope:

"It also applies to conditions of transport from the premises."

31. Following the discussion of Sections III - V, the Committee agreed to the deletion of all definitions except "Poultry" and "Giblets". Some of the defined words had been eliminated from the text during successive revisions of the Code and in the case of the words "Poultry Parts" and "Evisceration" it was not considered necessary to have definitions.

32. As a result of the revision of the main text and also because of the deletion of some of the earlier definitions it became evident the word "carcase" had to be specifically defined: "poultry which has been bled, plucked and eviscerated".

Definition of the word "Giblets"

33. The Committee also discussed the possibility of deleting "Giblets" from the list of definitions. Some delegations considered the word to be too colloquial and possibly not well understood internationally. However, taking into account the wide use in some of the main poultry processing areas of the world it was decided to retain the definition in a revised form taking into account different consumer practices in different countries: " from which the lining and contents have been removed and any other material considered as edible by the consuming country, provided that all such material has been properly trimmed and washed."

Section III - Raw Material Requirements

34. Sanitary disposal of human and animal wastes (III.A.1). To deal with the various operations in their proper sequence, the Committee decided to move the clause dealing with droppings etc. from cages to come first. To assure that proper hygienic procedures would be observed, the Committee agreed to insert in the text specific to the Code in the (new) first sentence "..... be removed at least once daily in such a way" and in the (new) third sentence "..... on the premises and should be emptied at least once daily."

35. Animal, plant pest and disease control (III.A.2). It was agreed that the sub-section would be more appropriately described if reference to animals and plants were deleted. For reasons of clarity, the deletion did not apply to the French and Spanish text.

36. Sanitary techniques (III.B.2). In its written comments the United Kingdom had expressed its opinion that all poultry should be processed separately according to type of bird to protect against the risk of cross contamination. The Committee agreed to the insertion of the following text:

"III.B.2 (b) To protect against the risk of cross contamination, domesticated birds including chicken, turkeys, ducks, geese, guinea fowl, or pigeons should be processed completely separate from one another either in time or place. Where the separation is one of time, the processing areas should be cleaned thoroughly before the introduction of a different species of bird to the processing area."

37. There was some discussion on whether the criterion for cleaning should be the introduction of a different "species" of bird, or of a different "type" of bird. Most delegates gave preference to distinction by species.

38. The Committee further considered the desirability to specify in sub-section III.B.2 that personnel employed in "unclean" areas should not be allowed admission to "clean" areas and vice versa, and the need to identify the different groups of employees by the colour of their uniform or otherwise. It was considered, however, that this matter should be dealt with elsewhere in the Code. (See para 54)

39. Removal of obviously unfit materials (III.B.3). The Committee discussed the text of this provision at great length. Some delegations expressed their concern that the wording "on arrival, unfit birds should be removed as soon as possible", might be misconstrued to mean ante-mortem inspection with the inherent question by whom this should be carried out. It was the consensus of opinion that this part of the Code was not suited to deal with the matter of ante-mortem inspection but that as part of the raw material requirements and of sanitary food production in particular removal of unfit birds was an absolute prerequisite.

40. The Committee finally agreed to retain the sub-section in an amended form, to read as follows:

"III.B.3 It is recommended that unfit birds should be segregated prior to delivery to the processing plant. Similarly on arrival unfit birds should be removed as soon as possible and segregated for disposal in an appropriate manner."

41. Protection of product from contamination (III.B.4). The Committee agreed to some amendments in the text of this provision to read:

"Protection of product from contamination. Suitable precautions should be taken to protect the birds from being contaminated by animals, insects, vermin, other birds, chemical or microbiological contaminants or other objectionable substances during handling and holding."

Section IV - Plant Facilities and Operating Requirements

42. Roadways and yards - (IV.A.1(b)). An amendment was inserted to clarify that the requirement for paved roads related only to such roads which were in the immediate vicinity and actually served the premises.

43. Walls, ceilings and floors (IV.A.1(c)). The first part of the last sentence was modified to read "Buildings should preferably have lined roofs but where these are unlined they should be constructed"

44. Water supply (IV.A.2(b)). The Committee agreed upon an amendment dealing with requirements for the level of use of chlorine in the water supply.

45. Lighting and ventilation (IV.A.2(f)). An amendment was made to the effect that light in inspection areas "should not affect colours".

46. Equipment and utensils (IV.B.3). The Committee agreed to insert the word "condemned" so that the sub-section would provide for three distinct types of equipment and utensils: "Equipment and utensils used for condemned, inedible or contaminating materials" It was pointed out that the modified text would allow for both the safeguarding of the food products as well as the health of plant employees.

47. Processing equipment - scalding (IV.B.5(a)). The Committee was informed by the delegation of the Netherlands of new developments in hygienically improved scalding methods. It was agreed, however, that scalding tanks of the type currently employed would continue to be used for some time. To limit the risk of contamination through the use of scalding tanks the Committee agreed to add to the second sentence a clause: ".... so as to protect against a build-up of contamination and preferably where practicable in such a way that the water flow should be in the opposite direction to that in which poultry is travelling, so that the scalded poultry is pulled out on that side of the scalding tank, on which clean hot water enters the tank."

48. Processing equipment - plucking machines (IV.B.5(b)). The Committee modified the last sentence of the sub-section to read: "Feathers conveyed by continuous running water should be removed from the water which should preferably be run to waste." The Committee further endorsed the necessity to encourage increased research for the development of more hygienically acceptable plucking procedures.

49. Processing equipment - evisceration troughs (IV.B.5(d)). A modification was agreed to allow for more flexibility in the optimal placement of outlets for inedible material.

50. Processing equipment - storage containers (IV.B.5(e)). The first sentence was modified to read "Storage containers for inedible material should be leak proof, constructed of metal ..."

51. Processing equipment - equipment used for chilling (IV.B.5(f)). The Committee agreed to replace the word "birds" by "carcasses and edible material". It further added an extra sentence similar to the remark made for scalding tanks in IV.B.5(a) reading: "Alternative methods of chilling to some presently in use or improvements to them should be developed."

52. Processing equipment - compounds used in freezing procedures (IV.B.5(g)). In the light of certain Government comments, it became apparent that some misunderstanding had occurred. To clarify this matter, the Committee agreed to reword the sub-section to read "Compounds used in spray or immersion freezing procedures should be acceptable to the appropriate official agency."

53. Sanitary maintenance of plant, facilities and premises (IV.C.1(d)). The Committee agreed to amend the sub-section to read: "Poultry which is received rough plucked for the next stage of processing should be hung singly or arranged in single layers on racks or similar type of equipment."

54. Personnel hygiene and food handling practices - personal cleanliness (IV.C.6(a)). A new sentence restricting the free movement of personnel working in "unclean" areas was added: "Personnel working with live birds, feeding stuffs, or unfit materials should not be permitted in other sections of the premises where poultry are being processed unless adequate cleansing measures are taken by such personnel to prevent contamination."

55. Personnel hygiene and food handling practices (IV.C.6(c)). It was pointed out that in different regions of the world different customs prevailed and that for example not only the use of chewing gum but also the use of chew-sticks should be prohibited in food handling areas. The Committee agreed to amend the text of the sub-section to this effect and further agreed to review the text of the provision when revising the General Principles.

56. The Committee agreed to revise the order of the sub-sections (a) and (b). It further agreed to amend the former (a) relating to the obligation of the management to be critical regarding the condition of health of the birds accepted by and taken into the plant and pointed out that the management must accept a certain responsibility for sorting to be carried out: "Independent of ante-mortem and post-mortem inspection procedures it is recommended that unfit poultry or poultry suspected of disease be removed as soon as possible and segregated for disposal in an appropriate manner."

57. Washing and other preparations (IV.D.2). The first sentence of the sub-section was amended: "After evisceration and inspection, carcasses should be washed."

58. Temperatures, cooling and freezing procedures (IV.D.3(b)). The Committee decided to delete the reference to dressed and ready to cook poultry as these were not defined.

59. General cooling requirements (IV.D.3(b)(i)). The Committee agreed to adopt as the maximum temperature, 4°C (39°F) instead of 5°C (40°F) in line with the requirements stated in the "Convention de Genève sur les transports des denrées alimentaires". The Committee discussed at great length the temperature requirements for parts of carcasses cut-up immediately following slaughter. It was agreed to limit the time for the operation. The revised text is as follows:

"General cooling requirements. After preparation there should be no delay in cooling the carcase to an internal body temperature of 4°C (39°F) or less. The temperature should not exceed 10°C (50°F) during processes such as cutting up where this does not take place within one hour as part of the slaughter process, and should immediately be followed by cooling to 4°C (39°F) or less."

The delegations of the Federal Republic of Germany, France, the Netherlands and Spain reserved their position on this matter.

60. Chilling procedures (IV.D.3(b)(iii)). The Committee discussed the desirability to have in the Code passages of a recommendatory nature, advising that more hygienic methods of chilling should be developed. It was agreed to retain the suggestion in essence but to move it to sub-section IV.B.5(f).

61. Packaging of finished product - techniques (IV.D.4(b)). Due to the inherent danger of cross contamination if the giblets are packed unwrapped with the carcass the Committee agreed to an addition to the provision: "Packaging should be done under conditions that preclude the introduction of contamination into the product, including separate wrapping of giblets."

Section V - End Product Specifications

62. The Committee was of the opinion that it was desirable to have more specific requirements than those in the General Principles of Food Hygiene. The Committee agreed to the following text:

- (a) To the extent possible in good manufacturing practice the product should be free from objectionable matter.
- (b) The products should comply with the requirements set forth by the Codex Committees on Pesticide Residues and Food Additives contained in permitted lists or relevant Codex commodity standards.

63. General discussion took place on the end product specification especially in relation to the problem of salmonellae associated with poultry. To this end reference might be made to WHO for advice in the methodology of isolation of salmonellae in poultry.

64. The Committee, however, emphasised that particular attention should be directed to the elimination of salmonellae from the breeder and broiler units in the field, with the object of ensuring that poultry introduced into the processing plant was free of this public health hazard. Countries therefore should be encouraged with the help of such international organizations as need be to take steps to eliminate the hazard at source.

STATUS OF THE CODE

65. The Committee decided to advance the Draft Code of Hygienic Practice for Poultry Processing to Step 8 of the Procedure for submission to the Ninth Session of the Codex Alimentarius Commission. The delegates of France, the Federal Republic of Germany and the Netherlands reserved their position.

MICROBIOLOGICAL EXAMINATION OF LOW ACID, HEAT PROCESSED, SHELF STABLE FOODS IN CANS, GLASS AND RETORTABLE POUCHES

66. As in previous years the Committee briefly discussed the above named paper prepared by Canada and the United States. In reply to the 1971 request for observations on the document only two substantial comments had been received by the author countries which had subsequently decided to temporarily postpone the redraft of the document.

67. The Committee agreed that the essential purpose of the document was to provide guidance on the important features which should be checked when examining a canned food of which no production history was available.

68. The Committee reiterated its serious interest in the subject. Upon direct query by the Chairman, the majority of delegates present replied that they would submit written comments to the head of the delegation of Canada before 1 October 1972.

PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR FROZEN PRE-COOKED AND SEMI-COOKED FOODS

69. Consideration was given to the Scope section as revised by the drafting countries - Canada and the Netherlands. It was realized that the further elaboration of the proposed Code would be difficult.

70. The Committee agreed with the proposed Scope to read:

"Scope. This Code applies to quick frozen prepared food and food components which contain at least two of:

- 1. Vegetables or fruits
- 2. Starch products
- 3. Products of animal, avian or marine sources
- 4. Dairy products

with or without sauces or gravy, and in which the components have been partially or fully cooked.

After preparation and packaging they have immediately been submitted to quick freezing and are intended to remain frozen until purchased by the ultimate consumer.

For consumption these products are, after thawing, habitually warmed to palatability or, depending on the type of food and extent of preparation before freezing, are heated to the boil.

Specifically excluded from this Code are frozen desserts and frozen dairy products."

71. The drafting countries were complimented for submitting a Scope which would serve as a sound basis for further work.

72. While it was pointed out that there might be some overlap with the work of the Joint ECE/Codex Group of Experts on Standardization of Quick Frozen Foods, the drafting countries assured the Committee that close working liaison was being maintained between the two groups.

STATUS OF THE CODE

73. The Committee agreed that the Proposed Draft Code should be retained at Step 2 of the Procedure.

CONSIDERATION OF REVISED PROPOSED DRAFT CODES OF HYGIENIC PRACTICE FOR HANDLING FRESH AND FROZEN FISH, CANNED FISH AND SMOKED FISH

74. The Committee having noted the decision of the Executive Committee regarding the procedure to be followed for the above named codes (see also paragraph 9 of this Report) considered the three codes.

75. Due to the very short time available, a proper review was not possible and delegates were requested to present in writing by 1 October 1972 to the FAO/WHO Food Standards Programme in Rome such observations as they had intended to make orally at the meeting. These comments would be forwarded to the FAO Fisheries Department for consideration during the merging of the various technological and hygienic codes. It was pointed out that the comments should preferably deal with both the hygienic as well as the technological codes.

76. The codes and current government comments which in accordance with the decision of the Executive Committee would be forwarded to the FAO Fisheries Department are:

- (a) Proposed Draft Code of Hygienic Practice for Canned Fish (CX/FH 72/4)
Government comments (CX/FH 72/9)
- (b) Proposed Draft Code of Hygienic Practice for Smoked Fish Products (CX/FH 72/5)
Government comments (CX/FH 72/10)
- (c) Proposed Draft Code of Hygienic Practice for Handling Fresh and Frozen Fish (CX/FH 72/3)
Government comments (CX/FH 72/8)

77. The technological codes elaborated by various Ad Hoc Consultations to be combined with the above hygienic codes are:

- (a) Code of Practice for Fresh Fish (FAO Fisheries Report, No. 74 - FE/R74)
- (b) Code of Technological Practice for Frozen Fish (CX/FFP 71/13 CX/FH 71/8
FII:CP/4/71/1)
- (c) Draft Code of Practice for Canned Fish (FII:CP/4/71/2)
- (d) Draft Code of Practice for Smoked Fish (future work)

78. The Chairman reminded the assembled delegations that the Committee would have the opportunity for detailed review of the combined codes at a future date after the first review by the Committee on Fish and Fishery Products. The Committee on Food Hygiene recommended that during the combining of the codes, it would be beneficial for the FAO Fisheries Department to consult with the individual author countries.

CONSIDERATION OF PROPOSED DRAFT CODE OF HYGIENIC PRACTICE FOR MOLLUSCAN SHELLFISH

79. In further keeping with the Executive Committee decisions relative to the fishery product codes, the delegations agreed to retain the above code within the purview of the Committee on Food Hygiene since the considerations were mainly in the field of food hygiene and no parallel development was planned by the FAO Fisheries Department.

80. As time did not permit a thorough review of the proposed code, the document was examined only preliminarily. The discussion regarding the proposed code centered mainly around the newly proposed Section VI entitled: "Current Laboratory Procedures and Standards". Upon examination by several delegations, the inclusion of abalone was considered to be inappropriate due to differing microbiological conditions.

STATUS OF THE CODE

81. The Committee agreed that the proposed draft code should be retained at Step 2 of the Procedure.

INTERNATIONAL ACTIVITIES IN THE ELABORATION OF MICROBIOLOGICAL METHODS APPLIED TO FOODS

82. At the Eighth Session of the Committee, during the discussion on future work it was proposed and the Committee agreed to investigate the feasibility of expanding the work of the Committee in the field of microbiology and to consider in particular the elaboration of referee methods for assessing the microbiological quality of certain foods. This was felt to be a prerequisite for further progress in the work of the Committee.

83. It was realized that a number of international bodies - made up of Government representatives as well as groups of experts in their individual capacity - were working on the standardization of microbiological methods related to foods. WHO was actively involved in the coordination of some of this work and furthermore had financially supported specific projects in this important field.

84. The discussion of the issue was preceded by brief reviews by the representatives of FAO and WHO*, and Dr. Keith H. Lewis*, Chairman of two sub-committees (frozen foods and shellfish) of the International Commission on Microbiological Specifications for Foods (ICMSF). The members of the ICMSF are selected on the basis of their technical competence and interest. Subsequently, one of the delegates, Dr. M. van Schothorst* informed the meeting of the relevant work of the International Organization for Standardization (ISO) an inter-governmental body.

85. A number of delegations expressed their appreciation for the valuable and important work done by the above named bodies and noted the publication under the auspices of ICMSF of the book, "Microorganisms in Food - Their Significance and Methods of Enumeration", F.S. Thatcher and D.S. Clark - 1968, University of Toronto Press. In this book a series of different microbiological methods for the analysis of a number of microorganisms had been collected, discussed and described. The recommended methods elaborated by ISO were not published collectively, but as individual documents each describing in meticulous detail a single referee method for certain microorganisms in particular groups of food products.

86. The delegation of Togo pointed out the particular importance of reliable standardized microbiological methods for tropical agricultural commodities as a number of developing countries depend to a great extent on the revenues derived from the export of such commodities. In this connection, mention was made of the planned Fourth International Conference on Global Impacts of Applied Microbiology (GIAM IV) to be held in Sao Paulo, Brazil in July 1973. The aim of the Conference was to focus attention on the contributions which applied microbiology could bring to the economy and welfare of developing nations.

87. The opinions expressed by a number of delegations during the discussion clearly indicated that a need existed to initiate action for closer coordination of the work of the various bodies active in the field of standardization of microbiological methods to be applied to foods. As a means to the effect, it was thought that participation of the Codex Alimentarius Commission in the meetings held among interested United Nations organizations on the "Coordination of Microbiological Program Activities" was desirable.

CONSIDERATION OF FEASIBILITY OF ELABORATION OF STANDARD METHODOLOGY FOR DETECTION OF SALMONELLAE IN EGGS AND EGG PRODUCTS

88. The Committee recognized its responsibility for recommending international referee method(s) which could be used for settlement of disputes where these might arise. The individual countries would, however, continue to use their methods of choice.

89. The Committee further recognized that the problem was extremely difficult and complex and again expressed its appreciation for the work done by various international organizations to arrive at generally acceptable detection methods.

* Summaries of the presentations are attached as Appendix III.

90. The Committee wished to encourage the continuation and amplification of the work done by WHO in the coordination of these endeavours and expressed the hope that at next year's meeting WHO would be in a position to provide a summary of progress and possibly could indicate a certain preference for a method for detection of salmonellae to be used as a referee method.

91. The delegations of Canada and the Netherlands agreed to provide the Chairman with a list for informative purposes of the laboratories participating in collaborative salmonellae detection methodology studies.

DATE AND PLACE OF NEXT MEETING

92. The next meeting of the Committee was scheduled to take place in May or June 1973 in Washington, D.C.

FUTURE WORK

93. The Committee agreed that at its next session it would consider, apart from the work currently in progress, the first draft of a code of hygienic practice for groundnuts. The delegations of the Netherlands and the U.S.A. agreed to undertake the initial drafting and would submit the document before 1 December 1972.

94. Regarding the Committee's long range goals it was proposed to consider codes of hygienic practice for alimentary pastes, dry cereals, spices and soya.

SUMMARY STATUS OF WORK

(prepared by Codex Alimentarius Commission-Secretariat)

Codes / Paper	Status (Step)			to be dealt with by	Document ALINORM-App.	Working papers for next session
	9th Session (1972)		previous session			
	advanced	retained				
Tree Nuts			8	C'ssion 9th	72 /13-II	
Poultry Processing	8			C'ssion 9th	72A/13-II	
QF Fruits, Veggies. and their Juices			8	retained	71 /13-IV	
Egg Products			5	C'ssion 9th	72 /13-III	
Molluscan Shellfish		2		Fo. Hy. Cttee 10th		CX/FH 72/2 distr. May 1972
Handling Fresh and Frozen Fish		2		FAO Fisheries Department		
Canned Fish		2		FAO Fish.Dept		
Smoked Fish		2		FAO Fish.Dept		
Micro-biol. Exam. of Low Acid etc. Foods		2		Fo. Hy. Cttee 10th		CX/FH 73/4 *
Frozen Precooked Foods		2		Fo. Hy. Cttee 10th		CX/FH 73/5 *
Groundnuts	1			Fo. Hy. Cttee 10th		CX/FH 73/6 *

* to be distributed in 1973

LIST OF PARTICIPANTS*
LISTE DES PARTICIPANTS
LISTA DE PARTICIPANTES

ARGENTINA
ARGENTINE

Marcelo E. Huergo
Second Secretary
Embassy of the Argentine Republic
1600 New Hampshire Avenue, N.W.
Washington, D.C. 20009 (USA)

AUSTRALIA
AUSTRALIE

John J. Smith
Assistant Secretary
Department of Primary Industry
Canberra
Dr. R.H.C. Fleming
Director, Food Administration Section
Department of Health, PO Box 100
Woden, ACT 2606
Canberra

Dr. Jack T. Hayston
Veterinary Attaché, Embassy of Australia
1601 Massachusetts Avenue, N.W.
Washington, D.C. 20036 (USA)

BRAZIL
BRESIL
BRASIL

Dr. Carlos Alberto Lima Dos Santos
Head, Fish Inspection Section
DIPOA - Ministry of Agriculture, 5th Floor
Brasilia, D.F.

Guilherme R.B. Arroio
Second Secretary, Brazilian Embassy
3006 Massachusetts Avenue, N.W.
Washington, D.C. 20008 (USA)

Dr. Jose Pinto da Rocha
Assistant Director
Division of Food Inspection
DIPOA - Ministry of Agriculture, 5th Floor
Brasilia, D.F.

Ruy de Vasconcellos
Second Secretary, Brazilian Embassy
3006 Massachusetts Avenue, N.W.
Washington, D.C. 20008 (USA)

CAMEROON
CAMEROUN
CAMERUN

Michel Koss Epangue
Counselor, Embassy of the Fed. Rep. of Cameroon
1705 New Hampshire Avenue, N.W.
Washington, D.C. 20009 (USA)

CANADA

Ilmar E. Erdman
Food Microbiologist, Health Protection Branch
Department of National Health and Welfare
Carlingwood Plaza, Carling Avenue
Ottawa, Ontario K1A, 0L2

G.G. Anderson
Assistant Director
Fisheries Services Inspection Branch
Department of the Environment
Ottawa, Ontario

Dr. C.K. Hetherington
Director, Meat Inspection Division
Canada Department of Agriculture
631 Edison Avenue
Ottawa 13, Ontario

DENMARK
DANEMARK
DINAMARCA

N. Skovgaard
Veterinary Inspector, Danish Veterinary
Services
Nyropsgade 37
DK-1602, Copenhagen

P.F. Jensen
Director
Inspection Service for Fish Products
Danish Ministry of Fisheries
Dronningens Tvaergade 21
DK-1302, Copenhagen K

FRANCE
FRANCIA

Mrs. Alice M. Caillet
Inspector Doctor of Health
Ministry of Public Health
20 Bis, rue d'Estrées
Paris 7

* The Heads of Delegations are listed first; Alternates, Advisers and Consultants are listed in alphabetical order.
Les chefs de délégations figurent en tête et les suppléants, conseillers et consultants sont énumérés par ordre alphabétique.
Figuran en primer lugar los Jefes de las delegaciones; los Suplentes, Asesores y Consultores aparecen por orden alfabético.

FRANCE (Contd.)

Jean-Luc Gianardi
Inspector, Répression des Fraudes
42 Bis, rue de Bourgogne
Paris 7

Jacques Rivière
Chief Veterinary Inspector
Ministry of Agriculture
Rue de Varennes
Paris 7

GERMANY, FEDERAL REPUBLIC OF
ALLEMAGNE, REP. FED.
ALEMANIA, REP. FED.

Dr. Klaus Gerigk
Director and Professor in Federal
Institute of Public Health
Bundesgesundheitsamt
Postfach, 1 Berlin 33

HUNGARY
HONGRIE
HUNGRIA

Istvan Moder
Scientific and Technical Attaché
Embassy of the Hungarian People's Republic
2437 - 15th Street, N.W.
Washington, D.C. 20009 (USA)

ITALY
ITALIE
ITALIA

Giuseppe Moscato
Second Secretary (Commercial)
Embassy of Italy
1601 Fuller Street, N.W.
Washington, D.C. 20009

KOREA
COREE
COREA

Jong Kong Park
Director, Food Sanitation Division
Ministry of Health and Social Affairs
Seoul

MEXICO
MEXIQUE

José de J. Velasco Cardenas
Agriculture Engineer
Comisión Nacional de Fruticultura
Paseo de La Reforma 445-5
México, D.F.

NETHERLANDS
PAYS-BAS
PAISES BAJOS

Dr. K. Buchli
Public Health Officer, Dept. of Public Health
Dr. Reyerstraat 10
Leidschendam

W.A.A. Blanche Koelensmid
Adviser, Unilever N.V.
60 Gezichtslaan
Bilthoven

Dr. Gustaaf W.J. Pieters
Agricultural Counsel
Embassy of the Netherlands
4200 Linnean Avenue, N.W.
Washington, D.C. 20008 (USA)

Dr. M. van Schothorst
Chief, Food Hygiene Laboratory
National Institute of Public Health
PO Box 1
Bilthoven

NORWAY
NORVEGE
NORUEGA

Olav C. Sundsvold
Director, Norwegian Quality Control
Institute for Canned Fish Products
4001 Stavanger

Petter Haram
Counsellor, Ministry of Fisheries
Oslo 1

PERU
PEROU

Fernando F. Gambirazio
Head, Division of Food Technology
Institute of Agro-Industrial Investigations
Ministry for Agriculture
Av. la Universidad 595, La Molina
Apartado 11294
Lima 14

SPAIN
ESPAGNE
ESPANA

Dr. Manuel Rodríguez-Rebollo
Jefe de la Sección "Industrias Cárnicas y
Auxiliares de la Ganadería"
Ministerio de Agricultura
P^o. Infanta Isabel, No.1
Madrid 7

SWITZERLAND
SUISSE
SUIZA

Dr. G.F. Schubiger
Assistant Manager, NESTEC
Société Assistance Technique Produits Nestlé
La Tour de Peilz, Ch. 1814

THAILAND
THAÏLANDE
TAILANDIA

Mrs. Rabieb Bhvmitatana
Deputy Director, Ministry of Industry
Department of Science
Bangkok

Prof. Amara Bhvmitatana
Technical Adviser, Institute of Food Research
and Product Development
Thai Food Processor's Association
Bangkok

TOGO

Primus P. Kluga-O'Cloo
Chef de la Division de l'Alimentation
et de la Nutrition
Ministère de l'Economie Rurale
BP 282
Lome

TURKEY
TURQUIE
TURQUIA

Huseyin T. Avci
Commercial Counsellor
Embassy of the Republic of Turkey
2523 Massachusetts Avenue, N.W.
Washington, D.C. 20008 (USA)

UNITED KINGDOM
ROYAUME-UNI
REINO UNIDO

Dr. J.M. Ross
Principal Medical Officer
Department of Health
Alexander Fleming House
London S.E.1

Dr. F.H. Banfield
Adviser, Food Manufacturers Federation
4 Lygon Place
London S.W.1

T.R. Stocker
Assistant Director
Food Manufacturers Federation
4 Lygon Place
London S.W.1

UNITED STATES OF AMERICA
ETATS UNIS D'AMERIQUE
ESTADOS UNIDOS DE AMERICA

William V. Eisenberg
Chief, Microanalytical Branch
Division of Microbiology
Food and Drug Administration
Washington, D.C. 20204

Lowrie M. Beacham (OBSERVER)
Assistant to the Director (OBSERVATEUR)
for International Standards (OBSERVADOR)
Bureau of Foods
Food and Drug Administration
Washington, D.C. 20204

C. Wallace Bohrer
Director, Washington Research Lab.
National Canners Association
1133 - 20th Street, N.W.
Washington, D.C. 20036

James R. Brooker
Chief, Division of Fishery Products Inspection
National Marine Fishery Service
National Oceanic and Atmosphere Administration
1801 North Moore Street
Roslyn, Virginia 22209

Donald H. Houston
Assistant to the Associate Administrator
Animal and Plant Inspection Service
Department of Agriculture
Washington, D.C. 20250

Daniel A. Hunt
Assistant Director
Division of Shellfish Sanitation
Food and Drug Administration
Washington, D.C. 20204

Dr. N.F. Insalata
Laboratory Manager
Post Microbiological Research
General Foods Corporation
Battle Creek, Michigan 49016

OBSERVERS
OBSERVATEURS
OBSERVADORES

CONGO, PEOPLE'S REPUBLIC OF THE
CONGO, REP. POP. DU
CONGO, REP. POP. DEL

Antonio-Felix Tchicaya
First Secretary
Permanent Mission of the People's Republic
of the Congo (Brazzaville) to the UN
New York

OBSERVERS (Contd.)

EL SALVADOR

Ricardo Muñoz Gutiérrez
Economic Counsellor
Embassy of El Salvador
2308 California Street, N.W.
Washington, D.C. 20008

INTERNATIONAL ORGANIZATIONS
ORGANISATIONS INTERNATIONALES
ORGANIZACIONES INTERNACIONALES

EUROPEAN ECONOMIC COMMUNITY (EEC)

Gilbert Castille
Principal Administrator
Commission of the European Communities
200 Rue de la Loi
1040 Brussels (Belgium)

Mrs. Alma R. Dauman
International Trade Specialist
Delegation of the Commission of the
European Communities
Suite 707, 2100 M Street, N.W.
Washington, D.C. 20037

Hans Hoffman
Administrateur Principal à la
Direction Générale de l'Agriculture
Commission des Communautés Européennes
200 Rue de la Loi
1040, Brussels (Belgium)

Federico Serafini
Administrateur Principal
Secrétariat des Conseils CEE
170 Rue de la Loi
1040 Brussels (Belgium)

OFFICERS OF THE MEETING

CHAIRMAN

L.R. Shelton
Director
Office of International Affairs
Food and Drug Administration
5600 Fishers Lane
Rockville, Maryland 20852 (USA)

RAPPORTEUR

E. Spencer Garrett
Laboratory Director
National Marine Fishery Service
National Oceanic and Atmosphere Administration
3209 Frederic Street
Pascagoula, Mississippi 39567 (USA)

CODEX ALIMENTARIUS COMMISSION

George R. Grange
Vice Chairman
Codex Alimentarius Commission
5008 Bradford Drive
Annandale, Virginia 22003 (USA)

FOOD AND AGRICULTURE ORGANIZATION
REPRESENTATIVE

Willem L. de Haas
Food Standards Officer
Joint FAO/WHO Food Standards Programme
Food and Agriculture Organization of the
United Nations
00100 Rome (Italy)

WORLD HEALTH ORGANIZATION REPRESENTATIVE

Dr. L.R.R. Reinius
Food Hygienist
Veterinary Public Health
Division of Communicable Diseases
World Health Organization
1211 Geneva (Switzerland)

DRAFT CODE OF HYGIENIC PRACTICE FOR POULTRY PROCESSING
(Advanced to Step 8)

To be read in conjunction with the Recommended General Principles of Food Hygiene. Side-line portions indicate material which is particular to this Code of Hygienic Practice and therefore does not appear in the General Principles of Food Hygiene.

SECTION I - SCOPE

This Code is concerned with all uncooked poultry, poultry parts and other edible materials thereof intended for human consumption, whether by direct sale as such or through further processing.

It applies to all premises in which poultry is slaughtered, packed, or otherwise handled in the course of preparation, and all premises in which poultry parts are processed, packed, or otherwise handled in the course of preparation. It also applies to conditions of transport from the premises.

SECTION II - DEFINITIONS

- "Poultry" means any live or slaughtered domesticated bird including chickens, turkeys, ducks, geese, guinea-fowls, or pigeons.
- "Carcase" means poultry which has been bled, plucked and eviscerated.
- "Giblets" means the liver from which the bile sac (gall bladder) has been removed, the heart with or without the pericardial sac and the gizzard from which the lining and contents have been removed and any other material considered as edible by the consuming country, provided that all such material has been properly trimmed and washed.

SECTION III - RAW MATERIAL REQUIREMENTS

A. Environmental Sanitation in Raw Food Material Production Areas

NOTE: - Recommendations in this Section are not designed to cover the very important questions of hygiene and disease control in poultry growing and rearing areas. These factors have a particular bearing on this code but are the responsibility of the official agency having jurisdiction.

- (1) Sanitary disposal of human and animal wastes. As in the General Principles of Food Hygiene with the addition of:

All droppings, litter, scrapings, etc. from cages, crates and vehicles should be removed at least once daily in such a way as to protect against contamination and not create a nuisance. Arrangements for the disposal of trade refuse and inedible material should be approved by the appropriate official agency. A separate refuse room or other equally adequate storage facilities should be provided on the premises and should be emptied at least once daily.

- (2) Pest and disease control. Where control measures are undertaken, treatment with chemical, biological, or physical agents should be done only in accordance with the recommendations of the appropriate official agency, by or under the direct supervision of personnel with a thorough understanding of the hazards involved, including the possibility of toxic residues being retained.

B. Sanitary Food Production

- (1) As in the General Principles of Food Hygiene.
- (2) Sanitary techniques
- (a) Any live poultry holding section and attendant processes such as egg collection should be quite separate from the slaughtering and poultry packing section. This applies particularly to the disposal of refuse and storage of poultry feeding stuffs.
- (b) To protect against the risk of cross contamination, domesticated birds including chickens, turkeys, ducks, geese, guinea-fowl, or pigeons should be processed completely separate from one another either in time or place. Where the separation is one of time the processing areas should be cleaned thoroughly before the introduction of a different species of bird to the processing area.

- (c) The premises should be cleared of all live poultry at least once weekly to facilitate complete and thorough cleansing. Birds should normally be slaughtered within 24 hours of arrival and any water fed to them should be of potable quality.
- (3) Removal of obviously unfit materials. It is recommended that unfit birds should be segregated prior to delivery to the processing plant. Similarly, on arrival, unfit birds should be removed as soon as possible and segregated for disposal in an appropriate manner.
- (4) Protection of product from contamination. Suitable precautions should be taken to protect the birds from being contaminated by animals, insects, vermin, other birds, chemical or microbiological contaminants or other objectionable substances during handling and holding.

C. Transportation

- (1) Facilities. Conveyances and crates for transporting the live birds from the production area should be adequate for the purpose intended and should be of such material and construction as will permit thorough cleaning and should be so cleaned and maintained as not to constitute a source of contamination.

SECTION IV - PLANT, FACILITIES, AND OPERATING REQUIREMENTS

A. Plant Construction and Layout

(1) Location, size, and sanitary design

- (a) As in the General Principles of Food Hygiene, Section IV A (1), with the addition of the following: Whether existing buildings are being adapted or new premises are being built, early consultation with the appropriate official agency is essential.

A proper work flow is necessary to secure good hygiene standards. An example of a suitable work flow with physical separation of the processes is illustrated in Fig. 1 which can be adapted, according to requirements.

- (b) Roadways and yards. Roadways and yards in the immediate vicinity of and serving the premises should have a hard, paved surface which is suitable for wheeled traffic, and should have provision for thorough cleaning where necessary and adequate drainage.
- (c) Walls, ceilings, and floors. Walls should be finished to a smooth, non-absorbent, washable surface, be light in color, and the junction between walls and floor should be coved or splayed to facilitate cleaning. Ceilings should be so constructed and finished as to minimize condensation, mould development, flaking and the lodgement of dirt. Floors should be of durable, impervious non-slip material, free from cracks and open joints and laid to an even surface properly sloped to an adequate drainage system.

Building should preferably have lined roofs but where these are unlined they should be constructed and finished to minimize condensation, mould development, flaking, and dirt, in order to protect against contamination of the product.

- (d) Woodwork, doors, and windows. Internal woodwork should be kept to a minimum, being of simple design, easy to clean, and be tight fitting to wall surfaces. Doors and jambs should, where necessary, be fitted on both sides with non-corroding metal or other suitable materials as a protection from impact damage, and doors where necessary should be fitted with self-closing devices. All external openings and doors and openable external windows should be equipped to exclude flying insects. Windowsills should be splayed at an angle.

(2) Sanitary facilities and controls

- (a) As in the General Principles of Food Hygiene, but changing the words "raw materials" to read "birds".
- (b) Water supply. An ample supply of both hot and cold water should be available of the potable quality referred to in the General Principles of Food Hygiene, Section IV, A (2) (b). The water used during the preparation, handling, packing and storing of poultry, carcasses, poultry parts and other edible material should be potable. Where in-plant chlorination of water is used, the residual content of free chlorine should be maintained at no more than an effective level.
- (c) and (d) As in the General Principles of Food Hygiene.

- (e) Plumbing and waste disposal. As in the General Principles of Food Hygiene, with the addition of the following: Sumps or solid matter traps included in the drainage system within the plant should be emptied and cleaned frequently and at the end of every working day. Every inlet into the drainage system should be trapped and no drain ventilation pipe should open into any room.
- Any internal open channelling should be rounded and of sufficient width to allow for easy cleaning, and of minimum efficient depth. Covering grids should be easily removable for cleaning. Channels should be flushed frequently during processing and thoroughly cleaned at least once daily.
- (f) Lighting and ventilation. As in the General Principles of Food Hygiene, with the addition of the following: Lighting should have an overall intensity of not less than 325 Lux (30 foot candles), and in inspection areas this should be increased to not less than 540 Lux, (50 foot candles) should not affect colours and be properly directed onto the bird.
- (g) and (h) As in the General Principles of Food Hygiene.
- (i) Accommodation for clothing and footwear. Suitable and sufficient accommodation for keeping clothing and footwear not worn during working hours should be provided. Such accommodation should be separate from any processing room.

B. Equipment and Utensils

- (1), (2) As in the General Principles of Food Hygiene.
- (3) Equipment and utensils used for condemned, inedible or contaminating materials should be so identified and should not be used for handling edible products.
- (4) Bleeding and blood collection. Bleeding equipment, including blood tunnels and blood containers, should be constructed of non-corrodable metal or other suitable material which is easy to clean. They should be thoroughly cleaned after major breaks during working periods and at the end of the day. Blood tunnels which are of solid wall construction should be properly tiled or otherwise smooth surfaced with impervious material, suitably drained, and of sufficient width and construction as to facilitate thorough cleaning. Metal tunnels should be fitted with side and head shields easily removable for cleaning and the base trough should have a suitable fall to a blood container which can be easily emptied and cleaned.
- (5) Processing Equipment
- (a) Scalding should preferably be carried out by more hygienic methods than by the use of scalding tanks. Where such tanks continue to be used for immersing poultry the rate of flow of water into these tanks should provide for a continuous replacement of the water so as to protect against a build-up of contamination and preferably, where practicable, in such a way that the water flow should be in the opposite direction to that in which poultry is travelling, so that the scalded poultry is pulled out on that side of the scalding tank on which clean hot water enters the tank. Tanks should be emptied at regular intervals and at least once every working day. Scald agents where used should be approved by the official agency having jurisdiction.
- (b) Plucking machines should be designed to control the scatter of feathers as much as possible. The removal of feathers from the site should preferably take place continuously or as often as necessary, throughout the working day. Feathers should be stored in suitable clean containers which should be removed at least once daily. Feathers conveyed by continuous running water should be removed from the water which should preferably be run to waste.
- (c) Perforated metal drainage surfaces should be reversible for cleaning purposes.
- (d) Evisceration troughs should be constructed of stainless steel or other suitable material. The main water flow should be in the opposite direction to that in which carcasses are travelling so that the carcass arrives for cooling at the point where clean water enters the trough. Additionally, trickle jets of clean water should be provided along both sides of the trough, and supplies of running water should also be provided over the trough for hand rinsing. The troughs should be arranged to limit the travel of inedible material by the insertion of outlets and containers at strategic points in addition to the main outlet. The number and placing of the outlets should prevent build-up of material in the troughs and should be commensurate with the rate of flow of production, the design of

equipment and other relevant variable factors. Particular attention should be paid to the provision of adequate outlets where the trough is longer than 10 metres.

- (e) Storage containers for inedible material should be leak proof, constructed of metal or other suitable impervious material which is easy to clean, and be covered with close-fitting lids. Where chutes or other continuous disposal methods are used they should be so constructed as to protect against contamination or offensive odours.
- (f) Equipment used for chilling the carcasses and edible material should be constructed of stainless steel or other suitable material and should be so operated as to protect against the build-up of microorganisms. Alternative methods of chilling to some presently in use or improvements to them should be developed.
- (g) Compounds used in spray or immersion freezing procedures should be acceptable to the appropriate official agency.

C. Hygienic Operating Requirements

- (1) Sanitary maintenance of plant, facilities, and premises. As in the General Principles of Food Hygiene, Section IV, C (1), with the addition of the following:
 - (a) Cleaning routine. Cleaning, rinsing and disinfection of premises, equipment and utensils should be carried out at such intervals and by such methods as are approved by the appropriate official agency. Continuous review of the effectiveness of these procedures is recommended.
 - (b) To avoid the risk of cross-contamination, blood and feathers should be kept away from the plucked poultry as they go on for the next stage of processing.
 - (c) Each process should be carried out in its own clearly defined area.
 - (d) Poultry which is received rough plucked for the next stage of processing, should be hung singly or arranged in single layers on racks or similar type of equipment.
 - (e) When finishing and cleaning the poultry, the vestigial feathers (hair or down as the case may be) should be removed; feed should be removed from the crop and the faecal material from the cloaca by such means as will protect against contamination, e.g., by suction. These operations should be completed prior to, or during, the final washing.
 - (f) Wax dipped poultry should be handled so that the set wax and removed feathers will fall into a suitable container. Only clean wax which has been stored in a clean place should be used for wax dipping. Feather separation sieves included in wax dipping machines should be removable and cleaned once daily. At the close of the working day reclaimed wax should be heated (a temperature of not less than 80°C (176°F) for a period of not less than 20 minutes, has been found to be effective), skimmed, washed, and filtered or passed through a centrifugal cleaning machine and afterwards stored in a clean place.
- (2), (3), (4), (5) As in the General Principles of Food Hygiene.
- (6)(a) All persons working in a food plant should maintain a high degree of personal cleanliness while on duty. Personnel working with live birds, feeding stuffs or unfit materials should not be permitted in other sections of the premises where poultry is being processed unless adequate cleansing measures are taken by such personnel to prevent contamination. Clothing including suitable headdress should be appropriate to the duties being performed and should be kept clean.
- (b) As in the General Principles of Food Hygiene.
- (c) Spitting, eating and the use of tobacco or chewing gum or chew-sticks should be prohibited in food handling areas.
- (d), (e), (f) As in the General Principles of Food Hygiene.

D. Operating Practices and Production Requirements

(1) Inspection and sorting

- (a) In order to maintain good hygienic conditions and to prevent hazards to the consumer, ante-mortem and post-mortem inspections should be carried out by the appropriate official agency.

(b) Independent of ante-mortem and post-mortem inspection procedures it is recommended that unfit poultry or poultry suspected of disease be removed as soon as possible and segregated for disposal in an appropriate manner.

(2) Washing or Other Preparation

After evisceration and inspection carcasses should be washed. Water used for such purposes should not be recirculated unless suitably treated to maintain it in a condition as will not constitute a public health hazard.

(3) Preparation and Processing

(a) As in the General Principles of Food Hygiene, Section IV, D.(4).

(b) Temperatures, and cooling and freezing procedures. Temperatures and procedures which are necessary for cooling and freezing carcasses and all edible portions thereof, should be in accordance with operating practices which ensure the prompt removal of the animal heat and preserve the condition and wholesomeness of the carcass and all edible portions thereof.

(i) General cooling requirements. After preparation there should be no delay in cooling the carcass to an internal body temperature of 4°C (39°F) or less. The temperature should not exceed 10°C (50°F) during processes such as cutting up where this does not take place within one hour as part of the slaughter process, and should immediately be followed by cooling to 4°C (39°F) or less.

(ii) Cooling giblets. Giblets should be chilled to 4°C (39°F) or lower within 2 hours from the time they are removed from the bird.

(iii) Chilling procedures. Any chilling procedures which will achieve the temperatures quoted above and the objectives set out in IV. B (5) (f), may be used.

(iv) Refrigeration. Premises where poultry, carcasses, poultry parts, and other edible material are kept should have adequate refrigerated storage.

The temperature in the storage area where non-frozen poultry, carcasses, poultry parts, and other edible material are kept should preferably be as close to 0°C (32°F) as possible and under no circumstances exceed 4°C (39°F).

Poultry, carcasses, poultry parts, and other edible material should be so stored that they are protected against deterioration and mould growth. They should be regularly inspected and dispatched in strict rotation.

Cold rooms used for bulk storage should preferably be fitted with automatic defrosting equipment. Care should be taken to avoid the transference of dirt into the rooms.

(v) Preservation by freezing. Carcasses, poultry parts, and other edible material which are intended for preservation, by freezing, should be frozen as soon as possible and should not be held chilled for more than 72 hours.

(vi) Ice-pack containers. When poultry or carcasses are ice-packed in barrels or other containers, the barrels and containers should be covered and should have an adequate number of drain holes to permit the water to drain out. Wooden barrels or containers should not be used for this purpose.

(4) Packaging of finished product

(a) As in the General Principles of Food Hygiene, Section IV. D(5) (a).

(b) Techniques. Packaging should be done under conditions that preclude the introduction of contamination into the product including separate wrapping of giblets.

(5) Preservation of finished product. As in the General Principles of Food Hygiene, Section IV. D(6).

(6) As in the General Principles of Food Hygiene, Section IV. D(7)

E. Sanitation Control Programme

As in the General Principles of Food Hygiene.

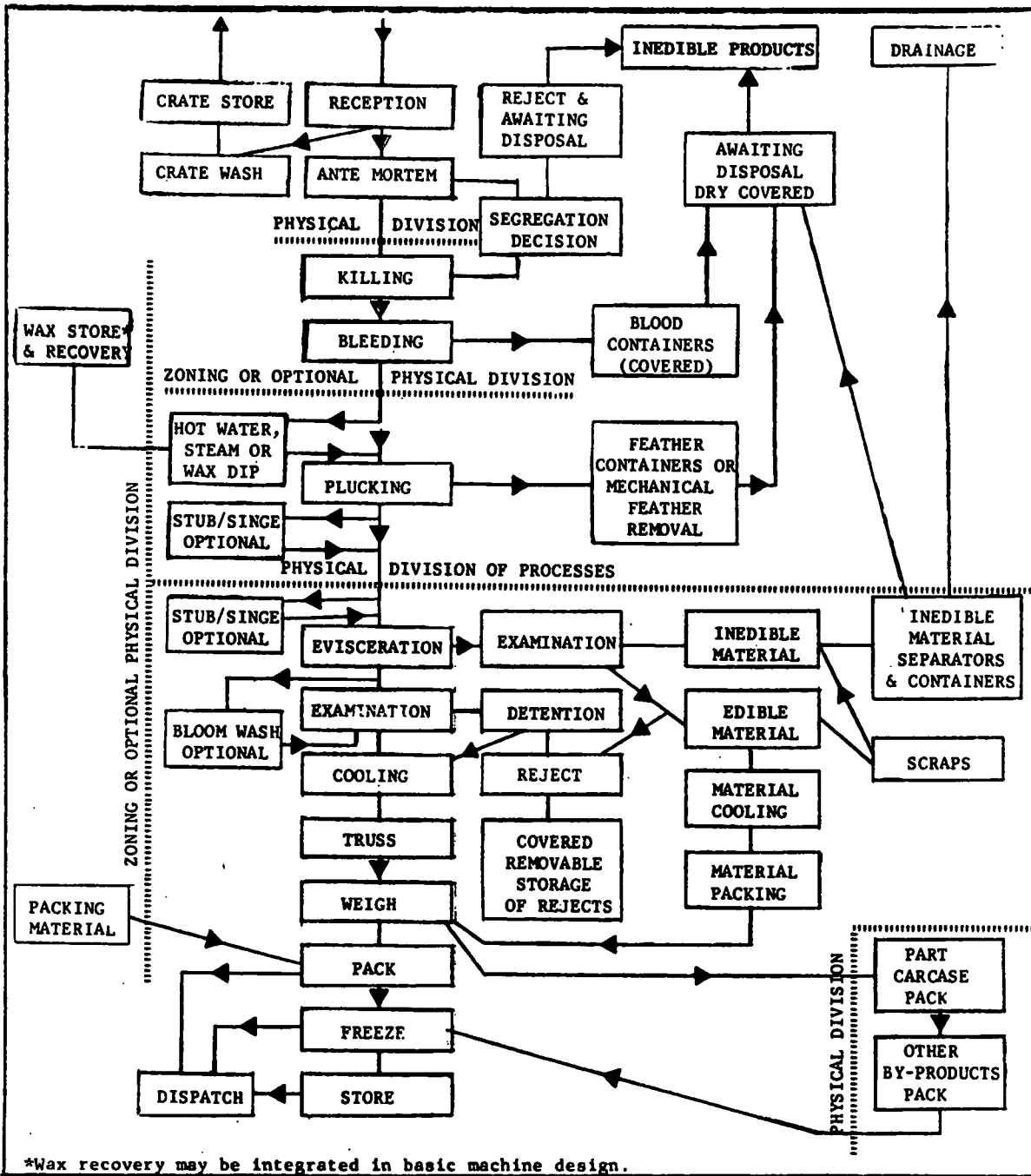
F. Laboratory Control Procedures

As in the General Principles of Food Hygiene.

SECTION V - END-PRODUCT SPECIFICATIONS

- (1) To the extent possible in good manufacturing practice the product should be free from objectionable matter.
- (2) The products should comply with the requirements set forth by the Codex Alimentarius Commission committees on pesticide residues and food additives contained in permitted lists or relevant Codex commodity standards.

FIGURE 1



SUMMARY OF ORAL REPORTS TO THE 9TH SESSION OF THE COMMITTEE ON
ACTIVITIES IN THE ELABORATION OF MICROBIOLOGICAL METHODS APPLIED TO FOODS
BY REPRESENTATIVES OF VARIOUS INTERNATIONAL BODIES

A - ACTIVITIES OF THE INTERNATIONAL COMMISSION ON MICROBIOLOGICAL SPECIFICATIONS FOR FOODS

Keith H. Lewis, Ph.D., Director
Office of Food Sanitation, Bureau of Foods
Food and Drug Administration
U.S. Department of Health Education and Welfare
Washington, D.C. 20204 - USA

I. Organization and Purpose

A. Auspices - ICMSF was formed in 1962 by the International Association of Microbiological Societies (IAMS) at the request of its Committee on Food Microbiology and Hygiene (Dr. Morris Ingram, U.K., was Chairman at the time).

B. Purpose - The overall purpose is to appraise public health aspects of foods, particularly those of international interest, and to make appropriate recommendations to aid in establishing, internationally, analytical methods and guides to interpretation of the significance of microbiological data.

C. Composition - The Commission currently consists of 22 members from 15 countries who have been selected on the basis of their technical competence and interest rather than as national representatives. Dr. F.S. Thatcher and Dr. D.S. Clark have been Chairman and Secretary, respectively, since the group was formed. Regional Subcommissions have been established in Latin America and the Balkan-Danubian areas to assist the Commission in getting the cooperation of countries and disseminating information about food safety of countries in these areas. The Commission also has a panel of consultants including statisticians, laboratory specialists, food technologists and veterinarians who are familiar with important commodities such as fish, canned foods, etc.

D. Support - Funds for meetings and technical activities have been contributed by both industrial and governmental organizations. In addition to the many groups who have paid the travel expenses and salaries of their staff members while participating in the Commission's activities, the U.S. Dept. of Agriculture has provided funds for comparative study of analytical methods, DHEW has arranged PL 480 funds for meetings in Yugoslavia, and WHO has given the Commission limited financial support for at least four years. Recently, a small income from royalties on publications has become available. About 25 corporations have contributed to a sustaining fund.

II. Mode of Operations

A. Structure - The Commission functions as a work party, not as a forum for reading papers. Its meetings are largely devoted to debating and reaching consensus regarding reports on assigned topics submitted by subcommittees on the following subjects:

1. Disease Severity and Epidemiology (Ingram)
2. Dried Foods (Mossel)
3. Fish and Fishery Products (Shewan)
4. Frozen Foods (Lewis)
5. Milk and Milk Products (Mocquot)
6. Raw and Processed Meats (Hobbs)+(Simonson)
7. Sampling Plans for Salmonellae (Ingram)
8. Statistics (Bray)
9. Shellfish (Lewis)
10. Vegetables (Niven)

The Commission appoints additional subcommittees as needed for editing, administrative or technical purposes.

B. Basis for establishing microbiological criteria for foods

1. Assessment of the significance of particular organisms in foods (indicators of insanitation, infectious agents, toxigenic microorganisms.
2. Evidence that sanitary safeguards are employed to protect the public health.
3. Analysis of food by standardized methodology.
4. Use of sampling plans that will permit valid interpretation of analytical data.

C. Functions of the Commission (agreed IAMS Program)

1. Recommend limits of tolerance for significant categories of microorganisms in specific foods.
2. Define appropriate methods for sampling and analysis of foods including collaborative testing of procedures to establish their validity.
3. Promote channels to assist international studies relating to the mission of the ICMSF.
4. Work towards establishment of an international system of reporting foodborne disease outbreaks and microbiological data on foods.
5. Formulate judgmental statements concerning the significance of various pathogenic microorganisms in foods.
6. On request, offer consultation and advice to international agencies on the public health aspects of microorganisms in food.
7. Forward recommendations through IAMS to requesting agencies.
8. Maintain liaison with allied organizations such as Codex Alimentarius Committees.
9. Recommend areas of research on specific problems relating to the microbiology of foods.

III. Accomplishments

A. Education

1. Identification of regional differences in training, laboratory methodology, technological practices, sampling practices and concepts of microbial quality of foods.
2. Development of working relationships within the Commission and with other organizations such as WHO, FAO, International Atomic Energy Agency, National Academy of Sciences (of the U.S.), AOAC, and selected Codex Committees that have been effectively maintained on an accelerating basis for ten years.
3. Dissemination of information through participation in training courses, seminars and international meetings.
4. Recognition of the need for more comprehensive consideration of the many factors that determine the microbiological quality of foods.

B. Publication of the book entitled "Microorganisms in Food - Their Significance and Methods of Enumeration" (compiled and edited by F.S. Thatcher and D.S. Clark) 1968, University of Toronto Press, 234 pp. (\$12.50).

Part I - Pathogenic Organisms in Foods

Part II - A Selection of Methods for the Microbiological Examination of Foods

Part III - Specifications for Media Reagents and Ingredients

C. Conduct of international comparative and evaluative studies of laboratory methods for microbiological examination of foods.

1. Salmonella - Alternative procedures for enrichment - Corporate vs. separate samples
2. Coliform, Fecal coliforms and E. coli methodology applicable to fresh, frozen or dried foods.
3. Staphylococcus methodology.

D. Currently, the Commission is engaged in a study of sampling plans for microbial analysis of foods.

1. The second draft will be discussed and revised by the Commission at its next meeting (September 25 - October 4, 1972, Langford, England)
2. Publication in 1973 is expected.
3. Includes consideration of principles and specific application of these principles to particular foods including fish, shellfish, raw meat, processed meat, milk and milk products, vegetables, dried foods and frozen foods.

E. Planned Activities

1. Revision of book on methodology
2. Continuation of comparative studies on methodology
3. Complete book on sampling plans and extend concepts to other products
4. Establish a system for collection and computerized analysis of data.

B - W.H.O. ACTIVITIES RELATED TO THE ELABORATION OF MICROBIOLOGICAL METHODS TO BE APPLIED TO FOODS

L.R.R. Reinius, Ph.D., Food Hygienist
Veterinary Public Health, Division of Communicable Diseases
World Health Organization
1211 Geneva 27 - Switzerland

The WHO/FAO programme in food hygiene has always been based on the principle that due attention has to be paid to all conditions and measures necessary for the production, processing, storage and distribution of food to ensure wholesome products for human consumption. This has a bearing also on the elaboration of microbiological methods applicable to various foods under a variety of conditions.

In the field in question, WHO sustains a close collaboration with the International Commission on Microbiological Specifications for Foods. Work covers the unification of microbiological procedures for examination of foods, including sampling methods, examination techniques and the evaluation of results as well as microbiological specifications for a number of food products, particularly for those which are traded internationally. Inter-laboratory studies on methods for detection of the most important food-borne pathogen which are supported by WHO, are well advanced. The collaborating team consists at the moment of 15 laboratories (coordinator - Dr. F.S. Thatcher, Chairman, ICMSF, RR3, Merrickville, Ontario, Canada). Another team, consisting of 9 laboratories, is specifically devoting its efforts to the unification of methods for detection of Salmonellae in foods (coordinator - Professor Dr. E.H. Kampelmacher, Head of the Laboratory for Zoonoses and Food Microbiology, Rijks Instituut voor de Volksgezondheid, P.O. Box 1, Bilthoven, Netherlands). The results of these tests are published in the WHO Bulletin and excerpts are available through the coordinators. The results are also used for the standardization of Salmonellae isolation from meat and meat products as laid down in an ISO draft recommendation.

In addition, the WHO supports work on the detection and identification of viruses from various food products and on the effects of processing on the stability of viruses in foods. The Third Consultation on Food Virology took place in Brno and Geneva in June and July 1971. The work of the two expert teams consisting in total of more than 20 scientists is in good progress; data are being collected both on the presence of viruses in raw meat and milk (coordinator - Dr. J. Mensík, Veterinary Research Institute, Brno-Medlanky, Czechoslovakia) and on processed food (coordinator - Dr. D.O. Cliver, Associate Professor, Food Research Institute and Department of Bacteriology, University of Wisconsin, Madison, Wisconsin 53706, U.S.A.).

Aspects of specific microbiological methodology are also dealt with in the recently published Fifth Report of the Joint FAO/WHO Expert Committee on Brucellosis (WHO Technical Report Series No. 464) and a new edition of the monograph "Laboratory Techniques in Brucellosis" is planned to be published in early 1973. Furthermore, it might be of interest to note that regarding research on Brucellosis, within the framework of a WHO Project in Mongolia it was proved that in koumiss preparation from fresh milk the high acidity obtained during the fermentation process inactivates all Brucella organisms within 24 hours.

In addition to what is mentioned above, WHO has paid continuous attention to the research going on in the important field of chemical characterization of mycotoxins and the possibility of detecting these by chemical methodology in food. WHO's support to research on this subject is being increased. Laboratories in Copenhagen and in Moscow are collaborating in the programme concerned (respective coordinators - Dr. P. Krogh, Mycology Laboratory, Institute of Hygiene and Microbiology, Veterinary Faculty, Royal Veterinary and Agricultural University, Copenhagen, Denmark (Head of the Department, Professor A. Jepsen) and Dr. V.J. Vasilieva, Department of General Epidemiology, Gamaleja Institute of Epidemiology and Microbiology, Academy of Medical Sciences, Moscow D-98, USSR).

C - THE WORK OF ISO WITH REGARD TO THE ELABORATION OF MICROBIOLOGICAL METHODS OF ANALYSIS OF FOODS

M. van Schothorst, Ph.D.
Chief, Food Hygiene Department
Rijks Instituut voor de Volksgezondheid
Anthonie van Leeuwenhoeklaan
Postbus 1, Bilthoven (Netherlands)

The International Organization for Standardization (ISO) whose central secretariat is in Geneva, 1 rue de Varembé, Switzerland, is the federation of National Standardization Institutes of 54 countries from all parts of the world; ISO has also some 20 corresponding member countries.

The actual standardization work is done by 150 technical committees whose goal is the development of international standards. The work of the technical committees is divided between several subcommittees and within the subcommittees between working groups.

In their preliminary status the standards are developed as drafts in the technical committees, subcommittees or working groups. Once these drafts have been completed in the technical committee they are sent to the ISO central secretariat and distributed to all ISO member countries for comment as draft international standards. After the comments have been discussed in the respective technical committees the amended draft international standard becomes an international standard, which is available to all member countries. Countries participate in the work because of their interest in the particular field.

The ISO methods are meant to be referee methods which can be used for international trade in general and within the framework of the Codex Alimentarius. The official languages used are English, French and Russian.

Technical Committee 34 deals with standardization of methods of analysis of foods; the secretariat of TC 34 is located in Hungary.

One of the subcommittees (SC 6) is concerned with meat and meat products including poultry meat; the secretariat of SC 6 is located in the Netherlands (Nederlands Normalisatie Instituut, Rijswijk). Fifteen countries participate in SC 6 and an additional twelve countries are observers. Several chemical methods have been elaborated as well as one microbiological method which has reached the status of an international standard (ISO 2293 Meat and Meat Products, aerobic count at 30°C). Draft standards for Coli and Coliforms, Enterobacteriaceae, Salmonella, Staphylococcus aureus, Clostridium perfringens as well as for raw materials and sampling plans are at an advanced state of development.

Liaisons between ISO and other international organizations are established in many ways, such as contacts between ISO TC 34 and the Joint FAO/WHO Food Standards Programme, ISO TC 34/SC 6 and the Codex Committee on Processed Meat Products, and also through a number of scientists with regard to the work of ISO and activities of the ICMSF. The principal differences in the method of work between the ICMSF and the ISO are that in the work of ISO, countries are asked to participate and therefore countries are responsible for sending experts in the methodology of a particular food and that the membership of ICMSF is made up of experts in their personal capacity.

With regard to the particular problem of the Codex Committee on Food Hygiene in accepting a certain method for the detection of Salmonella in egg and egg products, the secretariat of SC 6 believes that the ISO method elaborated for the detection of Salmonella in meat and meat products can easily be adapted for the isolation of Salmonella from egg and egg products. The basis of this Salmonella document is the method developed in the international test carried out in nine European laboratories under the auspices of WHO. The SC 6 secretariat is not aware of any other method on the isolation of Salmonella which has been accepted in such a detailed form by such a variety of countries.
