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**WORLD INTELLECTUAL
PROPERTY ORGANIZATION**



**INTERNATIONAL UNION
FOR THE PROTECTION OF
NEW VARIETIES OF PLANTS**

**COMMITTEE OF EXPERTS ON THE
INTERFACE BETWEEN
PATENT PROTECTION AND PLANT BREEDERS' RIGHTS**

Geneva, January 29 to February 2, 1990

REPORT

adopted by the Committee of Experts

I. INTRODUCTION

1. Convened jointly by the Director General of the World Intellectual Property Organization (WIPO), as part of the 1990/1991 program of the International (Paris) Union for the Protection of Industrial Property (see document AB/XX/2, item PRG.03(1)), and the Secretary-General of the International Union for the Protection of New Varieties of Plants (UPOV), as part of the 1990/1991 program of that Union (see document C/XXIII/4, item UV.07), the Committee of Experts on the Interface Between Patent Protection and Plant Breeders' Rights (hereinafter referred to as the "Committee of Experts") met for its first session in Geneva from January 29 to February 2, 1990.

2. The following States were represented at the session:

Algeria, Argentina, Australia, Austria, Bangladesh, Belgium, Brazil, Canada, Chile, Czechoslovakia, Denmark, Egypt, Finland, France, German Democratic Republic, Germany (Federal Republic of), Greece, Guatemala, Hungary, Ireland, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Republic of Korea, Senegal, Soviet Union, Spain, Sweden, Switzerland, Tunisia, Turkey, United Kingdom, United States of America, Uruguay, Venezuela, Viet Nam (39).

3. The following intergovernmental organizations were represented at the session:

Commission of the European Communities (CEC), European Free Trade Association (EFTA), European Patent Organisation (EPO), International Seed Testing Association (ISTA), Organisation for Economic Co-operation and Development (OECD).

4. The following non-governmental organizations were represented at the session:

Asian Patent Attorneys Association (APAA), Association of Plant Breeders of the European Economic Community (COMASSO), Committee of Agricultural Organisations in the European Economic Community (COPA), Committee of National Institutes of Patent Agents (CNIPA), European Council of Chemical Manufacturers' Federations (CEFIC), European Federation of Pharmaceutical Industries' Associations (EFPIA), European Federation of Agents of Industry in Industrial Property (FEMIPI), General Committee for Agricultural Cooperation in the European Economic Community (COGECA), Industrial Biotechnology Association (IBA), Institute of Professional Representatives before the European Patent Office (EPI), International Association for the Advancement of Teaching and Research in Intellectual Property (ATRIP), International Association of Horticultural Producers (AIPH), International Association for the Protection of Industrial Property (AIPPI), International Association of Plant Breeders for the Protection of Plant Varieties (ASSINSEL), International Chamber of Commerce (ICC), Pacific Industrial Property Association (PIPA), International Community of Breeders of Asexually Reproduced Ornamental and Fruit-Tree Varieties (CIOPORA), International Federation of Agricultural Producers (IFAP), International Federation of Industrial Property Attorneys (FICPI), International Federation of the Seed Trade (FIS), International Group of National Associations of Agrochemical Manufacturers (GIFAP), Japan Patent Association (JPA), Max Planck Institute for Foreign and International Patent, Copyright and Competition Law (MPI), Union of Industrial and Employers' Confederations of Europe (UNICE).

5. The session was opened by Dr. Arpad Bogesch, Director General of WIPO and Secretary-General of UPOV.

6. The Committee of Experts unanimously elected Mr. Wilhelmus F.S. Duffhues (Netherlands) and Mr. Alec Sugden (United Kingdom) as co-chairmen. Mr. J.-F. Prével (France) chaired on an ad hoc basis the meeting of February, 2, 1990. Mr. Ludwig Baeumer (WIPO) and Mr. André Heitz (UPOV) acted as co-secretaries of the Committee of Experts.

7. Discussions were based on a document prepared jointly by the International Bureau of WIPO and the Office of UPOV entitled "Questions Concerning the Interface Between Patent Protection and Plant Breeders' Rights" (document WIPO/UPOV/CE/I/2), hereinafter referred to as "the Questions". The Committee of Experts also noted a document prepared by the International

Bureau of WIPO entitled "Summary of Comments Received by the International Bureau of WIPO and by the Office of UPOV on document CAJ/XXIV/4" (document WIPO/UPOV/CE/I/3).

8. The Secretariat noted the interventions made and recorded them on tape. The report summarizes the discussions and does not reflect all the observations made, but the main observations and principal conclusions of the discussions are reported below.

II. GENERAL OBSERVATIONS

9. The CHAIRMAN (Mr. Sugden), in inviting delegations to make general observations, requested that individual speakers should identify themselves and say whether or not they spoke for their whole delegation, since it was probably the case that in many countries views on the problems under discussion by the Committee of Experts were still only provisional.

10. (a) Ambassador WALKER (Australia) declared that the joint WIPO/UPOV meeting arose from a series of events reaching back into the past quarter century and beyond, and from developments in technology affecting living matter and plants in particular. In the immediate past a Committee of Experts on Biotechnological Inventions and Industrial Property had met in four sessions from 1983 to 1988 under the auspices of WIPO. Australia had not participated in these meetings since the issues being considered were of academic, rather than practical, interest in the Australian context. Since 1987, UPOV had had a series of four meetings directed to revising the UPOV Convention. Australia, which became a party to the UPOV Convention in 1989, participated in two of these meetings, in April and October 1989. The governing bodies of WIPO and UPOV had given their approval to the convening of this unique meeting as mentioned in the working document WIPO/UPOV/CE/I/2. The interface issue, at least as presented in the working document for this meeting, presented a dual aspect. One aspect was the true interface between the two separate forms of protection--for example, when a plant breeder wished to use a patented gene in a new variety. The other aspect was not so much a question of interface but a question of choice whether only one or both of the two systems should operate in relation to a particular subject matter, having regard to the fact that conceivably both systems could operate cumulatively. For historical reasons, if for no other, the real issue in most instances was the operation of the patent system, since the UPOV system had been especially devised to provide protection in a particular domain, namely, that of new plant varieties. But there may be other instances in which the UPOV revision proposals may be the issue if their effect would be to create new areas of overlap between the two systems.

(b) On a rough count the working document raised some 35 questions for the meeting to consider. Some of the questions were subsidiary in the sense that they were directed to issues that tended to support a conclusion one way or another on a major issue, or that only arose in the event where a conclusion one way or the other was reached on a major issue. The working document did not attempt to show what issues would become irrelevant if the two questions raised in paragraph 8 were to be answered affirmatively. It may be useful for the Committee to devote some of its time to develop such a macro view of the issues raised in the working document. The outcome of the work of the Committee was likely to be educative rather than normative.

(c) In the vein of the big picture approach, the present legal situation in different countries could fit into one of several models. Model A was a country which had both patents and plant breeders' rights

systems in operation, without any limit on the application of either except for the normal limitations of each. Australia and the United States of America were examples of this model. Model B was a country which had both systems in operation, but which limited the patent system to certain genera of plants to which the UPOV system was not applied, the latter system nevertheless applying to many or most genera of plants. Model C was a country which had both systems in operation but which excluded plant varieties from the patent system. Model D was a country which had only one system (typically, the patent system) without limitation. Model E was a country which had only one system--again, typically the patent system--but which excluded from the patent system the protection of plant varieties, which as a result lacked any form of protection.

(d) The WIPO Committee of Experts was merely coming forward with recommended solutions. However, the WIPO Model Law for Developing Countries on Inventions appeared to have led to a number of developing countries falling into the Model E category--that is, with no protection at all for plant and animal varieties. This may well be a matter of some concern that needed to be taken into account. The discussions of this Committee may well be influential as regards the work on revision of the UPOV Convention. Both elements of the interface mentioned earlier arose in this context, that is--first, the interaction of the two systems; and second, the issue whether both systems should be available without exclusion.

(e) As confirmed by a High Court decision in 1983, Australia was a country which fitted into the Model A category. Its patent law was expressed in general terms well known to those familiar with the pre-1977 British patent system. The only provisions specifying exclusions from patentability related to general notions of what constituted an "invention." There was no exclusion of plant or animal varieties. Patent laws existed in Australia dating from the end of the 19th century--that is, before the Australian Federation--and the present Patents Act 1952 was a continuation of those early laws.

(f) Plant breeders' protection was provided under the Plant Variety Rights Act 1987 and conformed to the UPOV scheme. The legislation was achieved only after considerable debate. It reflected, in particular, the interest of plant breeders in the private sector in that form of protection. Patents for plant varieties had been granted since 1983, but it seemed that, where protection was sought for a plant variety per se and no more, the Plant Variety Rights Act would be the medium of choice. That, at least, is the conclusion that had been drawn from the reduction in filings for patents in 1989 for plant varieties per se and no more. Australia became a party to the UPOV Convention in March 1989. Its laws were considered by the UPOV Council prior to this and in accordance with the procedures laid down in the Convention. The Council advised that they were in conformity with the Convention. On the issue of exclusionary provisions in the UPOV Convention, Australia had expressed the view in that forum that the issue of exclusion was one that should be left to national law. It remained the Australian position that, whether or not Australia had two forms of protection, as at present, or whether it moved to a single system, was a matter for national consideration.

(g) The Strasbourg Convention of 1963 permitted the exclusion from patentability of plant and animal varieties and essentially biological methods for the production of plants and animals. These provisions had been quite influential in the framing of laws and Model Laws. The evolution of modern technology had, however, brought those exclusions into question. Australia had not come within the sphere of influence of the Strasbourg Convention and so came to the meeting with a somewhat different starting point from those that had.

(h) In conclusion, Australia attached considerable importance to a range of endeavours that may look to the patent system or the plant breeders' rights system or both for protection. Besides encouraging those endeavours within its own shores, it also wished to have in place systems that left no impediment to the transfer into the country of useful advances made elsewhere or the transfer abroad of its own useful advances. The impeding effects of lack of protection were significant factors that eventually led to acceptance of the plant breeders' rights system in Australia, but the same had always been the case with the patent system as well.

11. Mr. BUCHANAN (Department of Consumer and Corporate Affairs, Canada) said that the Canadian competent authorities had not yet finalized their views on the question of the interface between patent protection and plant breeders' rights. No explicit exclusion from protection of plant varieties existed in the Canadian Law but case law threw doubt upon the patenting of plant varieties as such. In Canada a Bill was before Parliament for protection of plant varieties which was consistent with the UPOV Convention. The Bill was supported by the agricultural community. However, the biotechnology industry would prefer stronger intellectual property protection.

12. Mr. MESSERLI (Intellectual Property Office, Switzerland), speaking for the whole of the Delegation of Switzerland, welcomed the discussions in the Committee of Experts and underlined that the introduction of new technologies in the field of plants had resulted in a change of the interface between patents and plant breeders' rights. Both systems of protection had to be treated on an equal footing. Neither of the two systems should impair the other. Furthermore, each system should define its own limitations. Finally, he stated his support for strong protection in the two systems, which both belonged to the field of intellectual property.

13. (a) Mrs. LOMMI (Board of Patents and Registration, Finland) said that the questions raised in paragraphs 8 to 21 of document WIPO/UPOV/CE/I/2 reflected in a proper way the most important problems existing at present between patent protection and plant breeders' rights. Finland had sent comments on the earlier draft memorandum, document CAJ/XXIV/4, concerning the interface between the two forms of protection. In these comments Finland had expressed the view that the draft memorandum contained a number of misconceptions concerning patent protection. Therefore the Finnish Delegation would like to express in this context the wish that, if document CAJ/XXIV/4 was still being distributed, then the summary of comments given in document WIPO/UPOV/CE/I/3 should always be included in the distribution. This was necessary because traditional plant breeders could in some cases obtain their first knowledge of the patent system through the said document, and therefore not in a correct way.

(b) It seemed clear from the comments of Finland on the interface memorandum that Finnish industry considered double protection inhibition as the most important obstacle to Finnish membership in UPOV. This attitude of industry was reaffirmed as late as last week.

(c) It was necessary to correct the misconceptions on the list presenting the situation of plant breeders' rights in countries submitted by one international breeders' association. According to that list, the Finnish Patent Office exerted strong pressure against plant breeders. The truth was that the Finnish Patent Office was not against the UPOV Convention but considered it honest first to solve in its country the legal protection problems of all breeders and inventors working with different kinds of plants, including trees and fungi, before Finland could become a member of the UPOV Convention.

(d) Although the Finnish Patent Office had not received unanimous answers to the questions raised in document WIPO/UPOV/CE/I/2, it was hoped that the joint WIPO/UPOV meeting would find a proper balance between the two legal systems, forgetting neither the public interests nor those of the farmers.

14. Mr. VUORI (Ministry of Agriculture and Forestry, Finland) confirmed that the views were divergent in his country. The Ministry of Agriculture had undertaken a study and concluded that it would be desirable to introduce a plant variety protection system in Finland. After having consulted the governmental circles concerned, it set up in October 1989 a Committee entrusted with the preparation of a draft law that would conform to the UPOV Convention, in view of the intention to join UPOV. The task of the Committee in Finland preparing the draft of the law was to see to it that it fulfilled the UPOV criteria in such a way that Finland could join the UPOV Union. The draft law should be available within the next few months. As for the question of the prohibition of double protection, the Finnish plant breeders and the Central Union of the Finnish Agricultural Producers accepted it, but they saw that it could also be considered further.

15. Mr. OESTER (Ministry of Agriculture, Sweden) stated that the Delegation of Sweden welcomed the meeting of this Committee of Experts as a step towards the achievement of the present work undertaken within WIPO on the harmonization of patent laws and on the protection of biotechnological inventions and also on the work undertaken within UPOV on the revision of the UPOV Convention. He noted that the comments from Sweden on the questions had not been referred to in the Summary of Comments. In general terms, they were very similar to the comments made by Australia, Finland and Norway, as reflected in the summary. However, the position had not yet been finalized as regards the question of the so-called "double protection." The Delegation of Sweden was looking forward to a fruitful discussion that would contribute to an agreement between the States represented at the session on conclusions concerning the interface between patent protection and plant breeders' rights.

16. Mr. LOSSIUS (Patent Office, Norway), speaking on behalf of the entire Delegation of Norway, pointed out that the Norwegian authorities attached great importance to all questions relating to biotechnology, in particular to the problems connected with legal protection of biotechnological inventions. The initiative to convene the joint WIPO/UPOV meeting was, therefore, very much appreciated. It was sincerely hoped that at least some of the borderline difficulties would be worked out. Norway was not a member of the UPOV Convention, but a proposal for joining that Convention was under consideration in the Norwegian Ministry of Agriculture, and it was hoped that a decision would be taken in the relatively near future. The Norwegian Government was presently preparing a paper on biotechnology in general. This paper, which would deal with all problems connected with legal protection for biotechnological innovations, was to be discussed in the Parliament before the summer. Under those circumstances, it was obvious that any statement made by the Norwegian Delegation would only reflect very provisional viewpoints.

17. Mr. SASAKI (Patent Office, Japan) indicated that, in view of the recent developments in biotechnology, the question of effective and adequate legal protection for this promising technology had been discussed for many years, in particular, within WIPO and UPOV. The Japanese Delegation fully supported the idea to hold a joint meeting of these two organizations. They had carefully examined the questions in document WIPO/UPOV/CE/I/2 from a point of view that there should not be a gap between the patent and plant varieties system and that due consideration should be given to the development of plant breeding. However, no final conclusion had been reached on several topics. The

Delegation of Japan, therefore, would not be in a position to express a definite opinion but was prepared to listen to comments with great care and interest by other delegates and representatives from interested circles. The silence of the Delegation did not mean indifference to these topics. The Japanese authorities would reflect on the various comments and views and would make contributions to promoting further development of biotechnology and improving the international patent and plant breeders' rights systems.

18. Mr. VANDERGHEYNST (Industrial Property Office, Belgium) said that the reflections of the Belgian authorities, which had begun more than a year previously in close collaboration between all the Ministries and groups concerned, had not yet resulted in a definite position on the interface question. However, the competent industrial property authorities considered that it was necessary to study the problems together rather than to take up arms against one another. It was all to the credit of the working document that it was taking that line. Whatever happened, the problems of the interface between patent protection and plant variety protection was not going to be solved by a choreographic pattern of interpretations and permutations regarding the demarcation between two areas, the shifting of which in one direction or the other was bound to be unsatisfactory for both titles of protection involved. As far as the Belgian authorities were concerned, in a field in which the law had to be nothing if not inventive, rules laid down at a particular time earned their justification from technical and historical factors, and could not be the final sanction of certain situations. If the sanctioned situation were to change, it was logical that the law sanctioning it should also follow a particular evolutionary path, with due respect to all the interests at stake. Interested groups in Belgium were keeping a very open mind regarding the way in which document WIPO/UPOV/CE/I/2 presented the interface problem in the question contained in its paragraph 8.

19. Mr. CASADO (Registry of Industrial Property, Spain) stated that the subject matter considered by the Committee of Experts was increasingly important and that the issues under consideration could no longer be avoided. Finding appropriate solutions to the relevant problems would be a long task, and certain principles would have to be taken into account. The first of those principles concerned the need to take into account the "internationalization" of these problems. The work of the Committee of Experts not only involved many countries and international organizations, but those problems were also being discussed in other international fora. Secondly, a principle of "balance" should be taken into account. Each of the two systems of protection for innovations in the field of plants should be maintained independently and with each one's particular features and characteristics, but with the necessary coordination between them so that they may function in parallel on an equal footing. Finally, a principle of "inter-relationship and coordination" between both systems should be a guiding principle, and the dividing line between both systems should be drawn with the mechanisms required to avoid any friction between them. Experience in Spain had demonstrated that both systems of protection may coexist fruitfully where coordination had been established and functioned properly.

20. Mr. RAVN (Patent Office, Denmark) indicated that the Delegation of Denmark could not give a definitive statement on all the points contained in document WIPO/UPOV/CE/I/2. However, any statement made during the meeting would be on behalf of the entire Delegation. Discussions in Denmark were going on at present concerning the interface between patent protection and plant breeders' rights and the fact that Denmark did not comment on document CAJ/XXIV/4 was due to ongoing discussions among the responsible authorities at the time when comments should have been sent in.

21. (a) Mr. KIEWIET (Board for Plant Breeders' Rights, Netherlands) stated that his declarations and the declarations of the other delegates of the Netherlands would present the views of all competent authorities in the Netherlands. Elaborate discussions had resulted in the drafting of a position that was common to the Ministers having competence over the coordination of, or interface between, patent protection and plant breeders' rights, namely, the Minister for Agriculture and Fisheries and the Minister for Economic Affairs. Their common view had been presented in the form of a memorandum to Parliament. Although the latter had not yet discussed it, the Delegation of the Netherlands would base its statements on the issues to be dealt with in this session on the said memorandum, which had been made available to the participants.

(b) The memorandum set out the following, in particular:

(i) The exclusion of plant varieties as such from patent protection should be maintained. This did not imply, however, that parts of plants, for instance genes, or the processes of genetic engineering would also be excluded from patent protection.

(ii) The Government of the Netherlands felt that two elements should play an important role in the definition of the relationship between patent protection and plant variety protection in the case where a patented gene was part of a plant variety protected by a plant breeder's right: on the one hand, the patent holder and the plant breeder's right holder should be able to recover the costs incurred in the development of the patented invention or the protected variety; on the other hand, a situation where the patent holder would have a privileged and protected position in relation to the position of the plant breeder's right holder was to be avoided. On the basis of those considerations, the plant variety protection system would have to be strengthened and the patent system modified.

22. Mr. DENNEHEY (Patent Office, United Kingdom) indicated that due weight should be given to the needs of users of both systems. In the United Kingdom, the competent authorities were still consulting interested circles on these questions and had yet to reach a final view. The definition of "interface" in paragraph 4 of document WIPO/UPOV/CE/I/2 was appropriate in determining the scope of the problem posed. The questions posed in document WIPO/UPOV/CE/I/2 were helpful to focus attention on the problems. Some questions, however, were overlapping while others were not particularly relevant to the heart of the matter. In particular, questions 8, 13, 14 and 18 to 21 touched directly upon the problems under discussion.

23. Mr. BROUER (Ministry of Justice, Federal Republic of Germany), speaking on behalf of the entire Delegation, stated that it was important that industrial property protection be available for living material since otherwise there may be a gap in respect of protection. Under the patent law of the Federal Republic of Germany, plant varieties had been excluded from patent protection insofar as the species they belonged to was included in the list of species annexed to the law on the protection of plant varieties. This exclusion had been justified on three accounts: the difficulty of repeatable description of inventions involving living material, the difficulty of obtaining the required inventive step and, finally, for policy considerations concerning agriculture, which led to the adoption of the breeder's exemption and, furthermore, to the feature widely designated as "farmer's privilege." What now remained was the question of whether the scope of plant variety protection would be appropriate in the Federal Republic of Germany. The discussion on this question had not yet been concluded. The Federal Parliament had, for the time being, decided to maintain the prohibition of

double protection and to improve the protection of plant varieties. In this connection, the definition of plant variety was of particular importance.

24. Mr. HOINKES (Patent and Trademark Office, United States of America) indicated that any statements he made during the meeting were on behalf of the entire Delegation. He pointed out that in the United States of America both a patent and a plant breeder's right could be obtained for a plant innovation as long as the applicable criteria were fulfilled. It was important that both types of protection were available on an equal level and that neither was subservient to the other. He welcomed the discussions in the Committee of Experts, which should be approached with an open mind and might lead to new insights.

25. Mrs. MORELLI GRADI (Patent Office, Italy), referring to the working documents, said that the competent Italian authorities had decided not to send comments on document CAJ/XXIV/4 on account of the discussions that were going on in her country between industry and breeders. At present the Italian Delegation was in a position to impart its thoughts on certain points in document WIPO/UPOV/CE/I/2, in order to make its contribution to the introduction of legal machinery that would not cause difficulties between the two systems, which concerned both the industry and the agriculture of her country. The Italian law (DPR, August 12, 1975, No. 974, as revised by Law No. 620 of October 14, 1985) provided for two types of protection, including a strong, patent-type protection for plant varieties. In particular, all the provisions of the Law On Patents (Sections 2, 14 and 15) were applicable. It was necessary that both systems should exist for the best protection and that they should not operate to each other's disadvantage, but rather strike a fair balance between each other.

26. Mrs. AFONSO (Institute of Industrial Property, Portugal) said that she regarded as very important the possibility provided by the joint WIPO/UPOV meeting of discussing the problems of the interface between protection by plant variety certificates and patent protection. Portugal was not yet a member of UPOV, but draft legislation for accession to the UPOV Convention was in preparation. At present there was no protection for new plant varieties in Portugal; however, the working documents had been examined very closely so that replies could be given in the course of the meeting to the various questions raised. It was desirable that the discussion of the subject should continue at other meetings in the future.

27. Mr. SHITIKOV (State Committee for Inventions and Discoveries, Soviet Union) acknowledged the importance of a "matrimonial union" between patent and plant variety protection but drew attention to the necessity of distinguishing the two types of protection in order to determine the exact borderlines between them. He further stated that a law reform was under way in the Soviet Union. In particular, a draft patent law was under consideration, and a draft law on plant variety protection was under preparation, the latter being based on the UPOV Convention. He finally indicated that in his country plant varieties had been traditionally protected separately from inventions in terms of legal provisions and administrative structure. He considered, therefore, that the elimination of that structure in favor of the industrial property one was untimely.

28. (a) Mr. PREVEL (Ministry of Agriculture and Forestry, France) said that, in the opinion of the Ministry of Agriculture and Forestry, the two legal regimes concerned should, together, make it possible to meet the needs of inventors and breeders regarding the implementation and development of innovations achieved by them. The UPOV Convention should offer users broader

rights in order to assure plant varieties of protection consistent with that enjoyed by innovations in other areas of technology.

(b) The Ministry of Agriculture and Forestry further wished to point out that the plant variety was a concept backed by a complex biological reality. The definition of the plant variety should not be an obstacle in the search for a compromise, but the interface between patent protection and protection by plant variety certificates should probably be analyzed also on the basis of the definition of the material of the variety exploited exclusively by the holder of a plant variety certificate.

(c) Mr. Prével added that the Ministry of Agriculture and Forestry was at present considering the desirability of studying a specific system of protection for animal breeds. Finally, the representatives of the same Ministry wished to take advantage of the present session to examine the effect of new technology on the protection of other elements of the plant kingdom and on the overall balance of agricultural production networks.

29. Miss DARMON (Institute of Industrial Property, France) supported the proposal for the removal of the prohibition on double protection by both patent and plant variety certificate, which would enable the applicant either to use one or other of the two types of protection or to combine them. The amendment would offer two advantages: (i) it would remove the permanent and awkward obstacles that confronted the applicant in his attempts to draw the line between what was patentable and what was not; (ii) it eliminated all the areas of uncertainty regarding protection that were caused by the definition of the variety written into the draft revision of the UPOV Convention.

30. Mr. BOBROVSZKY (Office of Inventions, Hungary) said that in the Hungarian patent system there were practically two forms of protection which were coexisting and complementing each other: the special patent system for plant varieties and the general utility patent system, both being administered by the Patent Office. As far as the special patent system was concerned, it was tailored in accordance with the UPOV Convention. It afforded protection for distinct, new, homogeneous and stable plant varieties defined by their genetically fixed forms. The Patent Office carried out the necessary formal examination, and the Institute for Agricultural Qualifications took care of the necessary DUS tests, which formed the substantive basis for the decision on granting the patent or rejecting the application. The general utility patent system was, in principle, open to all biotechnological inventions satisfying the patentability criteria, especially the requirement of a technical character, except plant varieties, which were covered by the specially designed patent system for plant varieties. The Hungarian Patent Office was also striving to solve the problems resulting from the particular characteristics of living matter, applying, mutatis mutandis, the general principles of the utility patent law to biotechnological inventions. Until now, there was not enough administrative and judicial practice to crystallize these problems and their solutions. That is why document WIPO/UPOV/CE/I/2 was highly appreciated. The document identified in a comprehensive manner the problems and possible solutions from dogmatic and pragmatic points of view as well. As far as the principal issue of the protection system for biotechnological inventions and plant varieties was concerned, the Hungarian authorities were ready to examine the possibility of lifting the prohibition on double protection to grant plant breeders the freedom of choice between the special plant patent system and the general utility patent system for their plant varieties having an inventive level. The resolution of any possible collision of patent rights should be left to the agreement of the parties. Hungary supported the efforts aimed at strengthening breeders' rights within

the framework of the UPOV Convention, mainly by approximating the content of breeders' rights to the patent system and by extending protection to all botanical genera and species.

31. Mr. SIMUNOVIC (Agriculture and Livestock Service, Chile) stated that plant variety protection in Chile was provided for under the Seeds Law which was based on the UPOV Convention of 1961 (Paris Act). There were two legal systems operating in parallel, one for the protection of plant varieties and one for industrial property. The differences between the two systems were such that it was felt appropriate to keep them separate. It was believed that plant breeders' rights should be recognized and respected, but the relevant legislation should be harmonized with needs for agricultural developments in the country. The text of the UPOV Convention, however, seemed to be appropriate and should not be substantially amended, but changes necessary for a better definition of a scope and clarification of its provisions would be in order. In particular, the definition of "variety" could be improved.

32. Mrs. GRUSZOW (EPO) pointed out that the questionnaire appearing in document WIPO/UPOV/CE/I/2 contained the real questions regarding the interface between patent protection and protection under the UPOV Convention. Yet the joint memorandum in document CAJ/XXIV/4 did not contain sufficient information of economic character for an assessment to be made of the implications that patents relating to inventions in the plant world would have for the plant breeding and growing sector from the various angles considered in questions 13 and 15 to 21. The EPO was indeed aware of the considerations of economic philosophy that the discussions on the interface would involve, which were every bit as important as the legal considerations. The EPO was of the opinion that, if the authorities wanted to promote investment in research and development in the plant kingdom, in order to allow society to take advantage of the growth of knowledge in the field of molecular biology and genetic engineering, it was essential to provide strong patent protection. It was however appreciated that breeding circles should feel the need to reinforce the protection available under the UPOV Convention. And yet it seemed that the reinforcement related essentially to the effects of the protection under the UPOV Convention. It would in any event be detrimental to society if any such reinforcement were to have the effect of restricting the protection afforded by patents.

33. Mr. OBST (General Directorate for Agriculture, CEC) referred to the initiatives presently pursued at the level of the European Communities with a view to the adoption of the Commission proposal for a Council Directive (of the EC) on the Legal Protection of Biotechnological Inventions and of a draft proposal for a Council Regulation (of the EC) on Community Plant Variety Rights. Both initiatives aimed at the strengthening of protection in a unified way over the whole territory of the Community. Both systems should be complementary. In that respect, it had also to be ensured that any one of those systems would not hamper the implementation of the other, due account being taken of any other relevant policy decided at Community level. The replies to at least some of the questions put to the Committee of Experts would therefore be material on the further development of the initiatives; the representatives of the Commission would therefore follow the proceedings with great interest.

34. Mrs. KEEGAN (General Directorate for Internal Market and Industrial Affairs, CEC) added that, so far, the CEC had not taken a position in respect of the prohibition of double protection. The relevant draft Directive in its original version could be made available on request.

35. Mr. BROCK-NANNESTAD (FEMIPI) stated that when the impact on society of laws and practices were discussed, the modern approach was the sociological one. In this field, one was often looking for a "sample population;" the United States of America could be taken as such a sample for some of the issues under discussion. For example, it would be very instructive to have a study made of the consequences of the decision to grant patents for plants in the United States of America. The study should be performed under UPOV/WIPO responsibility.

36. (a) Mr. CLUCAS (ASSINSEL) stated that a number of issues continued to be discussed within ASSINSEL, so that the answers which would be given to the questions at the current session would only represent a snapshot of current views. In general terms, the members of ASSINSEL advocated a strengthening of protection under the plant breeders' rights system and supported the principle of making patents available for the protection of genes, parts of plants and processes. However, it considered it essential that the systems be balanced. Clear benefits could be derived from both systems, which would continue to be necessary in future.

(b) According to ASSINSEL, the main issue was to be addressed under question 8. In that respect, the majority within ASSINSEL expressed its preference for the plant variety protection system as the system to be resorted to for the protection of plant varieties, mainly in view of their concerns in relation to the "research exemption" under the patent system. For various reasons, a minority preferred the patent system, possibly as an alternative.

37. (a) Mr. ONO (PIPA) stated that PIPA, consisting of Japanese and United States of America industrial private sectors, had been paying great attention to due protection of biotechnology. The progress and the development of biotechnology was rapid so that an adequate and effective protection system was needed to stimulate research and development. Such a system could help to improve and expand the industrial base and standard of living. Protection of biotechnology under intellectual property protection systems, including the patent system and the plant breeders' rights system was important and the current activities and efforts made by WIPO and UPOV were highly appreciated. These two systems, which had a different nature, should function complementarily but not competitively.

(b) The prohibition of double protection and the exclusion of plant varieties from patentable subject matter was not appropriate. PIPA's position was that protection should be available under both systems and the choice of systems should be free. Furthermore, since the nature and content of rights conferred under the patent system and the breeders' rights system were substantially different, a simultaneous protection under both systems should be available.

(c) Patentable subject matter was one of the items which were now being discussed within the framework of the WIPO Committee of Experts on the Harmonization of Certain Provisions in Laws for the Protection of Inventions. In this connection, the PIPA position was that there should be no discrimination as to the field of technology. If a patent application satisfied the requirements of patentability, a patent should be granted. If not, it should be rejected. There was no reason to expressly exclude plant varieties from patentable subject matter, even though plant varieties were protectable under the breeders' rights system. One of the objectives of the revision of the UPOV Convention was to strengthen plant breeders' rights; PIPA welcomed this objective. However, any attempt to take away something from patent owners and to grant some favor or privilege to a plant breeder's

right holder should be avoided. This would result in the weakening of the whole protection system. Both patents and plant breeders' rights were needed for the appropriate protection of biotechnology.

38. Mr. HUYGENS (EPI) pointed out that EPI shared the view that, as long as an invention met the requirements of patentability, patent protection should be allowed. Exceptions to this principle should be reduced as much as possible. The present exclusion from patent protection for plant varieties in many patent systems, for example under the European Patent Convention, reflected the ideas of earlier years in which there was wide agreement that techniques for producing new varieties could not meet the criteria of patentability. However, technological developments had made it possible to take a fresh look at those earlier assumptions. Leaving aside the difficult question of what constituted a variety, it was EPI's view that, if a variety could meet the patentability requirements, it should be patentable and that it could be protected by both rights cumulatively. Plant breeders' rights protection should be further strengthened, but not to the detriment of the patent system. In this respect, EPI was reluctant to accept the idea of widening the definition of "plant variety," which would remove certain areas of technology from the possibility of patent protection which they now enjoyed.

39. (a) Mr. ROTH (GIFAP) stated that patents and plant variety protection were two systems of industrial property rights which could very well exist side by side and complement each other. Both systems had their advantages and their intrinsic value. There was no need and no justification for a delimitation of the two systems. The inventor had to decide for himself which form of protection to choose for his invention. It could not be allowed to incorporate into one system of protection provisions that trespassed on the other system and thereby restricted the rights of the inventor. All proposals made in draft laws which had as ultimate aim a prohibition of double protection or a restriction of patent rights were, therefore, unacceptable and should be rejected. A so-called "interface" between the two systems of protective rights was unnecessary and superfluous. There was no reason why rights under both systems should not overlap.

(b) Within the patent system it had long been an accepted fact that different patents could be directed to the same subject matter. Such situations had not caused problems and were normally dealt with by reciprocal voluntary license agreements. Compulsory licenses were to be rejected as a matter of principle and should be contemplated only in the case of overriding public interest. No recourse should be made to legal measures which could unjustifiably devalue patent protection. This would be entirely undesirable and also contrary to the current trend towards strengthening patent protection. Any restriction placed on the patent system by the inclusion of other provisions stemming from the plant variety protection system was likewise to be firmly rejected. In conclusion, no delimitation of the patent system and the plant variety protection system was required, and both systems should be able to co-exist without the need of any mutually restrictive or exclusive provisions. In all events, it was to be ensured that the inventor had complete freedom of choice to seek the form of protection most appropriate to his invention, whether it was under one or the other system or under both.

40. Mr. KAMPS (COMASSO) stated that COMASSO was convinced that the "traditional" plant breeder would need the help of the biotechnologist to further the breeding efforts, and, conversely, the biotechnologist would need the help of the plant breeder to incorporate his invention into marketable varieties. There was therefore a need for the two systems under consideration to be available simultaneously and for a balance to be struck between them so as to avoid domination by one party over the other.

41. Mr. ROBERTS (ICC) stated that both systems of protection had separate strength. It was very important to work together harmoniously and to provide for a proper balance. The system of plant breeders' rights should be strengthened without weakening patent rights.

42. (a) Mr. STRAUS (AIPPI) pointed out that AIPPI viewed the joint WIPO/UPOV meeting as an important move for bringing closer both systems of granting industrial property rights in the field of classical as well as modern plant biotechnology. AIPPI hoped that the initiated efforts would eventually result in a truly complementary and efficient protection of the creative mind active in the field of biotechnology for the benefit of society as a whole. AIPPI from the very outset (namely since the Executive Committee Meeting at Ottawa in 1961) had continuously been drawing attention to the common roots of both systems, and had always been advocating the firm opinion that rights granted under the UPOV Convention should be seen within the scope of Article 1 of the Paris Convention for the Protection of Industrial Property.

(b) Bearing in mind some recent discussions of the so-called interface issue, AIPPI, which had for more than fifty years been devoting time and energy to studying and discussing problems which were on the agenda of the present meeting, felt obliged to draw attention to the following:

(i) As to the socio-economic goals and reasons why exclusive rights were provided for, no difference existed between the two systems; both had been designed and established for promoting the technological, economic and social development of the respective society. Both systems attempted to reach those goals by granting exclusive rights to inventors and breeders, as a means for rewarding breeders and inventors as well as for protecting investment. Neither of the systems was established for protecting particular interests, but to further innovation. Both were designed as instruments of market economy.

(ii) This, however, did not mean that the two systems were not specifically tailored according to the needs of technical inventors on the one hand, and classical plant breeders, on the other. Moreover, especially the establishment of plant breeders' rights as well as their design were influenced by the economic, technological and scientific environment of the forties and fifties; economically by the general shortage in food supply of the thirties, forties and the post-war Europe; technologically by the classical breeding methods of selection and crossing and scientifically by Mendel's genetics. It offered evidence that breeding methods had been advanced by new biotechnological techniques. Molecular genetics had revolutionized the whole area, and, at least in the developed world, food shortage was no longer a matter of primary concern but the need was for new and environmentally tolerable as well as commercially interesting products.

(c) Any discussion on the interface between the two systems had therefore to be based on these new circumstances: scientific and technological changes which had taken place in the early sixties and which had been paralleled by improvements of patent law made innovations in the field of plant biotechnology increasingly eligible for patent protection; advances in plant breeding and in the areas of agriculture had reduced, on the other hand, the need of the State to intervene in favor of the "end consumer" in order to secure the food supply. As in other fields of technological and economic activities, also, the principles of market economy should prevail in the area of plant biotechnology.

(d) For reasons mentioned, AIPPI at its Executive Committee's meetings at Rio de Janeiro in 1985 and at Sydney in 1988 had unanimously adopted the position that a prohibition of double protection should neither be maintained nor introduced. Inventors in the field of plant biotechnology should be offered full freedom, not only to choose the form of protection, patent or plant breeders' rights, but also the possibility of having the same subject matter protected by a patent as well as by a plant breeder's right in so far as the requirements of the pertinent laws were complied with.

43. Mr. ROYON (CIOPORA) stated that CIOPORA represented a category of breeders who were among the first to benefit from patent protection in a way similar to that enjoyed by inventors in the field of inanimate matter. Already in 1961, when the UPOV Convention was adopted, CIOPORA had suggested that, subject to minor modifications, the patent system could be used as an efficient and universal tool for the protection of new plant varieties. It still held that it was useless to antagonize the two systems concerned. Breeders were essentially interested in the contents of protection. If the UPOV Convention were revised in accordance with the stated objectives, it would become a very attractive system in relation to the patent system. However, CIOPORA believed that legal, technical and economic considerations would make it premature to exclude the possibility of protecting plant varieties under the patent system. On the contrary, it was strongly in favor of opening up that system to plant varieties through a simultaneous amendment of Article 2(1) of the UPOV Convention and Article 53(b) of the European Patent Convention.

44. Mr. HASHIMOTO (APAA) stated that the two systems of protection served double purposes although both promoted inventions. Patents had a long history in encouraging inventors in all technical fields. The coverage of patents was demonstrated by Article 1(3) of the Paris Convention according to which industrial property had to be understood in the broadest sense and had to apply not only to industry and commerce proper, but likewise to agricultural and extractive industries and to all manufactured or natural products, for example, wines, grain, tobacco leaf, fruit, cattle, minerals, mineral waters, beer, flowers and flour. Therefore patents should be available in all technical fields.

45. Mr. MOUFANG (MPI) said that biotechnology and plant breeding should be promoted in the best possible way. The prohibition of double protection therefore should be abolished, and no rights should be diminished by so-called "collision norms."

46. Mr. YAMASHITA (JPA) said that patents and plant breeders' rights should be available at the same time. Any differences in the scope of protection did not justify an exclusion. Both systems complemented each other.

47. (a) Miss COMTE (IFAP, COGECA and COPA) announced that she was presenting a position that was common to the three international non-governmental organizations that represented agricultural circles at the world level (IFAP) and at the European level (COGECA and COPA). That position had not altered since the fourth Meeting with International Organizations held under the auspices of UPOV on October 9 and 10, 1989. The three organizations were of the opinion that harmonious relations between the patent system and the plant variety protection system were of the utmost importance, not only for the promotion of research, but also to the quantitative and qualitative improvement of products. They considered that only the plant variety protection system afforded effective, balanced protection for plant varieties, whether those varieties were the result of "classical" plant breeding or were genetically engineered. Consequently, the provisions prohibiting double protection should be retained.

(b) Miss Comte added that the rights granted in respect of a plant variety had to extend to all material that enabled the variety to be reproduced, in other words to plants, parts of plants, cells and protoplasts. A collision norm was necessary to define the relations between a patent for a plant element such as a gene or a breeding process and the breeder's right granted in respect of a variety containing that element or resulting from that process. Finally, IFAP, COGECA and COPA were in favor of the strengthening of the rights granted to the breeder. Today, work extended beyond the UPOV framework to the patent. For that reason, it was necessary to come up with a precise definition of the limits to be set to the breeder's right and the patent. In particular, free access to a variety with a view to the creation of new varieties should be guaranteed, also in cases where the first variety contained a patented gene. In addition, the "farmer's privilege" should be retained, and it was desirable to have its limits defined in the UPOV Convention. Those two aspects were extremely important to agriculture in Europe, throughout the world and in developing countries.

48. Mr. ROTH (IBA) indicated that for many of the member companies of IBA their intellectual property represented their most significant assets, so that the strongest possible intellectual property protection was of prime concern to them. In the plant field, the strongest possible protection included the opportunity for overlapping and independent patent and plant variety protection. He underlined the sense of frustration which was felt when a company developed a plant invention which met all of the requirements of patentability, yet it was not eligible for patent protection because the law prohibited patent protection for that invention. If there was an interface, it was an interface of avoidance rather than complementation. It would be better to let the two systems pursue their respective directions rather than trying to merge them in one system, which might end up combining the worst features of both.

49. Mr. HJERTMAN (EFPIA) pointed out that he fully supported the position taken by the representative of ICC on the interrelationship between the patent and the plant breeders' rights system.

50. Mr. ORLANDO (UNICE) said that UNICE took the position that sensible legislation concerning the protection of biotechnological innovations (including plants) should be eventually enacted in the European Community, so as to stimulate cooperation between industry and plant breeders. Suitable cooperation between those parties was therefore expected. Both systems of protection were needed, each for its peculiar protection features. They had to and could co-exist without any conflicts and without aiming at excluding the other. An equitable balance should be achieved and plant varieties protection should be strengthened, but not to the detriment of the patent system.

III. DISCUSSION OF THE QUESTIONS IN DOCUMENT WIPO/UPOV/CE/I/2

Questions in Paragraph 8

51. Mr. SUGDEN (Chairman) indicated that the questions in paragraph 8 of document WIPO/UPOV/CE/I/2 raised a general issue regarding the basic type of protection that was available and suggested that the Committee of Experts should focus on what those questions implied. He indicated that it seemed to be accepted that, in the area of genetic engineering, for example, patents were available. The question was posed as to whether both forms of protection, namely plant breeders' rights and patent protection, should be available for plant varieties as such.

52. Mr. MESSERLI (Intellectual Property Office, Switzerland) indicated that, as regards double protection, two points had to be considered. First, Article 2 of the International Convention for the Protection of New Varieties of Plants specifically prohibited double protection; second, Article 1(a) of the Swiss national patent law and Article 53(b) of the European Patent Convention prohibited the grant of patents for plant varieties. In the context of answering this question, a new definition of "variety" should be considered. In his opinion, the ban on double protection in the UPOV Convention should be removed. This would make possible an examination of the exclusionary provisions in patent laws, including the question of their removal. In what context such an examination should take place, and what the result would be, was a question at present that could not be answered.

53. Mr. WOLF (Patent Office, Austria) said there was general consensus in Austria that adequate protection should be given to plant breeders. A draft law for the protection of new plant varieties was presently under discussion. After its entry into force, Austria would seek accession to the UPOV Convention. It was believed, on the other hand, that the products of genetic engineering and other biotechnological inventions, in particular those relating to parts of plants, should be granted patent protection. Plant variety protection should not extend to parts of plants but be confined to the protection of new varieties of plants defined as such. If patent protection extended to any subject matter for which the standard patent criteria were met, the issue of double protection would in practice become a secondary concern.

54. In reply to a request from the Chairman, Mr. TESCHEMACHER (European Patent Office) explained the contents of Articles 52 and 53 of the European Patent Convention, noting, in particular, that the European Patent Convention did not define what a "variety" was for the purposes of that Convention.

55. Mrs. SLADKOVA (Office for Inventions, Czechoslovakia) indicated that, in Czechoslovakia, patent protection currently was not granted for plant and animal varieties. She further indicated that Czechoslovakia was in the process of preparing a new patent law that would exclude plant and animal varieties and breeding techniques and that a plant variety rights act had come into force as of January 1990 whereby one could obtain a plant breeder's certificate. Processes of gene manipulation could be protected by patents. Czechoslovakia intended to accede to the UPOV Convention; this matter was dealt with by Federal Ministry of Agriculture and Food.

56. Mr. DENNEHEY (Patent Office, United Kingdom) said that the questions raised in paragraph 8 of document WIPO/UPOV/CE/I/2 concerning the availability of double protection for plant varieties implied several issues. Answering those questions required clarity as to what a "variety" as such was, i.e. a description of a plant on the basis of characteristics which satisfied the criteria of distinctness, uniformity and stability. In this respect, "variety" was a general concept rather than a specific entity. Some interested circles in the United Kingdom favored the possibility of a free choice of systems of protection for plant varieties. It needed to be remembered that for a variety as such to be patentable, the usual patentability criteria of novelty, non-obviousness and industrial applicability would have to be met. However, if a variety as such were to do so, it was reasonable to ask why should it then be arbitrarily excluded from patentability. A practical problem might arise if distinctness, uniformity and stability criteria were not met by a patented plant variety. There would then be a potential danger that the plant variety protection system might be weakened; where only a patent and not a plant breeder's certificate were granted for a given variety, that variety would not be known to the

authorities that granted plant variety certificates and would not be taken into consideration when examining distinctness of future varieties for which plant variety protection would be sought. This problem might not arise if a plant breeder's right were also to be granted on a variety protected as such by a patent. If freedom of choice were to be denied to the inventor, it seemed clear that the definitions of "variety" would have to be the same in both the patent law and the law on plant breeders' rights. Cumulative protection of a plant variety by a patent and by a plant breeder's right was possible as those rights covered two different aspects of the same object. A patent covered the technical features of a plant invention whereas the plant breeder's right covered the characteristics which defined the variety as such.

57. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) said that the Federal Republic of Germany had followed in its national laws the standards set by the international conventions by which it was bound. It was, however, true that a majority of interested circles had expressed the desire that any exclusions from patentability in respect of plant varieties be deleted from the law. Applicants from those circles seemed to be in favor of the strong protection afforded by the patent system. In the past, it had been believed that plant breeders' rights were better adapted for protecting plant varieties, and the special provisions of exception to those rights seemed necessary for the benefit of breeders, farmers, consumers and the public in general. Although the Federal Republic of Germany could not at this point take a definite stand on the deletion of the exclusion of plant varieties from patent protection, it did believe that protection for plant varieties under the UPOV Convention had to be strengthened. With respect to the issue of double protection of plant varieties through patents and plant breeders' rights, it seemed that, once the UPOV Convention had been revised in the direction proposed and currently under discussion, the double protection ban would become less of a problem. Finally, he inquired how many patents had been granted for plant varieties as such in countries where patent protection was available for plant varieties.

58. Mr. VANDERGHEYNST (Industrial Property Office, Belgium) said that in principle industrial property rights could be cumulative as long as the person concerned was able to choose the best possible protection for the aims, notably the commercial aims, that he pursued, provided that the conditions for the acquisition of industrial property rights were met. For instance, the same subject matter could sometimes be given both patent and trademark protection, or both patent and design protection. He said that the patent authorities of his country still had an open mind, as they had not yet completed their reflections on the subject. There was a preference for patent protection, however, on account of technological developments that enabled the invention to be adequately described. According to the Belgian patent authorities, the matter of the consequences of cumulative protection had to be considered in greater depth, and answers should first be given to the questions asked in paragraph 9 of document WIPO/UPOV/CE/I/2.

59. Mr. KIEWIET (Board for Plant Breeders' Rights, Netherlands) stated that the essential feature of the plant variety protection system was that it had been designed for the protection of a conceptual subject matter--the variety--represented by plants or plant parts with a certain set of characteristics. That form of protection was to be distinguished from patents for, in essence, plant characteristics or for plants possessing a given characteristic. Patent claims on plant varieties as such would go beyond what was presently considered as patentable and would go too far. There was at present a need for setting up a good protection system under the patent for emerging innovations, and a need for linking that protection adequately with the plant variety protection system. For the time being, exclusions such as

the provision in Article 53(b) of the European Patent Convention should remain untouched.

60. Mrs. AFONSO (Institute of Industrial Property, Portugal) said that her country was receptive to the possibility of double protection at the applicant's discretion, and of cumulative protection by virtue of two titles. Among other things she mentioned that new technology had now provided a solution to the problem of repeatability. She added, however, that there were gaps in the definition of the plant variety according to the UPOV Convention in its present form.

61. Mr. SUGDEN (Chairman) indicated that several trends could be seen running through the arguments thus far. One was that inventions in genetic engineering, such as gene splicing, should be protectable by patents. In taking into consideration plant variety rights as such, one had to consider the unit of plant material in question and the totality of its characteristics that was the protected subject matter. Some parties indicated that there should be freedom of choice in choosing which title of protection could be employed to cover plant varieties, some indicated that it might not be a large problem area while others insisted on the strict exclusions of varieties from patenting. The Chairman observed that the notion of cumulative protection could relate to different aspects of the same object or to the same aspect of one object, such as two forms of protection directed at protecting the same unit of plant material with its list of characteristics. It was the second type of cumulative protection that had to be addressed.

62. Mr. VUORI (Finland) stated that the Finnish plant breeders and the Central Union of the Finnish Agricultural Producers felt that patents should not be available in respect of plant varieties. They stressed that a variety was represented by a complete set of genes, and that an isolated gene was only valuable as part of such a set. They recognized that patents might be granted for genetic processes. However, plants and parts of plants containing a patented gene should, in their view, fall outside the scope of the patent.

63. Mrs. MORELLI GRADI (Patent Office, Italy) said that she was in favor of the removal of the prohibition on double protection. She added that cumulative protection implied freedom of choice for the applicant between the two systems of protection, according to criteria that could coexist. She nevertheless said that there would have to be certain reservations as long as the UPOV Convention had not been revised.

64. Mr. HOINKES (Patent and Trademark Office, United States of America) informed the meeting that his answer to the first question in paragraph 8 was "yes", noting that such was the system currently in place in the United States of America. In this regard, he indicated that the United States of America was in favor of the exercise of rights in a cumulative fashion and that an inventor should be entitled to pursue different titles of invention. He pointed out that, for either title of protection, different criteria had to be met before protection was granted. In the case of plant variety rights, the requirements of distinctness, uniformity and stability (DUS) had to be met and care had to be taken to ensure that the requirements for protection in the various regimes were not confused. In agreeing with the opinion put forward by the Delegation of Switzerland, he indicated that it was difficult to reply to the question under the present parameters since Article 2 of the UPOV Convention prohibited such double protection and the European Patent Convention excluded plant varieties from patent protection. Therefore, as a first step, the prohibition of double protection had to be removed.

65. Mr. SUGDEN (Chairman) then put two questions to the Delegation of the United States of America. The first question was whether there was a gap in protection in the practice of the United States of America as between plant variety rights and patent protection. Secondly, in the case where a party had accumulated rights in the same object, the question arose whether such a party could bring an action to enforce such rights in the same object and whether there would be cumulative penalties.

66. Mr. HOINKES (Patent and Trademark Office, United States of America) indicated that patents were not granted based upon the requirements of plant variety protection. Specifically, no matter how distinct a plant was, there had to be utility, non-obviousness and novelty, the standard requirements for meeting the utility patent requirements. He observed that there was no gap in protection under the laws of the United States of America because, provided that the requirements for patentability and/or plant variety protection were met, one or both titles of protection would be available to an inventor. As to the second question, he indicated that in the United States of America a person could bring an action for infringement of both plant variety rights and patent rights. Such an action could be brought in one joint action before the same court, and the amount of damages would be determined as a whole.

67. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) asked how many utility patents for plant varieties had been granted by the United States Patent and Trademark Office.

68. Mr. HOINKES (Patent and Trademark Office, United States of America) indicated that no figures were available from the United States Patent and Trademark Office directed to the number of utility patents for plant varieties because statistics were not established for patents on varieties specifically. He indicated, however, that figures were available of United States patent applications filed directed to plant subject matter. In particular, he stated that, in fiscal year 1986, 73 patent applications directed to plant subject matter were filed for utility patents and 340 for plant patents; in fiscal year 1987, 137 utility patents and 425 plant patents were applied for; in fiscal year 1988, 235 utility patents and 400 plant patents were applied for; and in fiscal year 1989, 325 utility patent and 390 plant patent applications were filed.

69. Mr. HADDRICK (Patents, Trade Marks and Designs Office, Australia), speaking on behalf of the entire delegation, told the Committee of Experts that both systems of protection were available in Australia. As to the question of cumulative protection, Mr. Haddrick indicated that it should be left to each country to determine the advisability of allowing or banning it. In this regard, he noted that it should be a matter of concern that countries did not have laws that provided for the protection of plant varieties. Such a position was validated if there was a prohibition against patents for plant varieties. In Australian practice, there was no exclusion in patent law for plant varieties, and, since 1983, patents had been granted for plant varieties. He further stated that in Australia the plant variety system was relatively new and had been well received.

70. (a) Mr. ESPENHAIN (Plant Novelty Board, Denmark) stated that Denmark was in favor of maintaining the principle embodied in Article 2(1) of the UPOV Convention, among others, in view of the practical implications of an opening of the patent system for the protection of plant varieties, as explained earlier by the Delegation of the United Kingdom. On the other hand, it was found essential in Denmark that inventions in the field of plants should be protectable under patents; such protection was not prohibited by Article 2(1) of the UPOV Convention.

(b) Mr. Espenhain wished to revert to the references, made earlier during the debate, to the limitative effect which the definition of "plant variety" currently proposed in the framework of the revision of the UPOV Convention was purported to have on the availability of patent protection in the field of plants and plant material. Mr. Espenhain stated that his Delegation did not consider that the concerns were justified. The proposed definitions would merely state what a plant variety and propagating material were in practice. In this connection, the overlap between the two protection systems in the area of plant cells was recognized; it was to be accepted as a fact that both systems would sometimes cover the same subject matter. However, where plant cells were used to produce plant varieties, protection should be sought under the plant variety protection system; where the plant cells contained a patented gene, the patent system should be resorted to with respect to that specific subject matter. It was also to be acknowledged that cumulative protection was possible, e.g. in the case of a variety protected by a plant breeder's right and containing a patented gene. However, in such cases, protection related to different subject matter or entities. Finally, the Delegation noted that most plant variety protection laws did not cover all genera and species of the plant kingdom at the present time, this resulting in protection gaps. The delegation supported the proposed revision of the UPOV Convention in that respect.

71. Mr. CASADO (Industrial Property Registry, Spain) said that in Spain the patent system and the plant breeder's rights system coexisted without interference. Biotechnological processes for obtaining plant varieties could be protected by patents, whereas a variety as such, obtained by that process, would be protected as a plant variety under the relevant law. In that sense, a plant breeder had two different routes for protecting his innovation, namely, patents for processes and plant variety rights for the varieties obtained by the process. The answer to the questions raised in paragraph 8 of document WIPO/UPOV/CE/I/2 necessarily depended on the answer given to questions raised in paragraph 14 of that document in respect of the definition of "plant variety." There was no objection to amending the definition of "variety" with a view to clarifying its meaning, but doubts were expressed as to the convenience of expanding the scope of the definition. This latter option did not seem appropriate at the present time. Rather than expanding the definition of "variety," expanding the lists of species for which plant breeders' rights were available could be envisaged. The Delegation of Spain was not at present in a position to support cumulative protection for one same object. While accepting the principle of free choice of protection, it should be borne in mind that both systems were substantially different and national legislation in each country would have to establish the conditions for obtaining protection under one system or the other.

72. Mr. LOSSIUS (Patent Office, Norway) stated that the prevailing view in his country was that patents should not be granted for higher life forms. Only one form of protection should be allowed for plant varieties. Therefore, the answer to the questions relating to the possibility of double protection should be in the negative. In this respect, support was expressed for the statement made previously by the Delegation of the Netherlands.

73. Mrs. NUORLAHTI-SOLARMO (Board of Patents and Registration, Finland) could not support the ban on double protection for plant varieties and proposed such ban should be lifted. The same subject matter should, in principle, be protectable under both the patent and the plant breeders' rights systems.

74. Mr. OESTER (Ministry of Agriculture, Sweden) stated that no strong need was seen in Sweden for both protection systems being simultaneously available. The current position, however, was open to argument. In that

respect, an important element would be whether the deletion of the provisions prohibiting double protection would facilitate or discourage the accession of current non-member States of UPOV to the Convention. Finally, Mr. Oester stated that his Delegation generally felt sympathy for the views expressed by Mr. Espenhain (Denmark).

75. Mr. BYRNE (Department of Agriculture and Food, Ireland) stated that it was considered in Ireland that the plant breeders' rights system provided the best protection system for plant varieties as such. Like the United Kingdom, Ireland was open to the possibility of occasionally granting a patent for a variety demonstrating non-obviousness, but on the condition that the requirements of distinctness, homogeneity and stability were also met. One of the reasons for this was the link with the catalogue of varieties admitted to trade. For Article 53(b) of the European Patent Convention to be deleted and such occasional patenting to be made possible, it would be necessary to include the requirements of distinctness, homogeneity and stability as further conditions for the grant of a patent, and to adapt the exhaustion principle to the particular features of the subject matter concerned. The definition of "variety" would have to be the same for both protection systems. Finally, no problem was seen in Ireland in respect of cumulation of patent protection for a gene and plant breeders' rights protection for a variety.

76. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) stated that all comments made by him were on behalf of New Zealand and that a working group comprising officials from the Patent Office and the Plant Variety Rights Office and representatives of the various interested circles had examined the Questions. Concerning the question in paragraph 8, there was general agreement that both forms of protection should be available, and that they should be so alternatively or cumulatively. Problems, if any, could be addressed by adjusting both systems.

77. Mr. SIMUNOVIC (Agriculture and Livestock Service, Chile) noted, in connection with the possibility of opting between different systems of protection, that account should be taken of the fact that some countries did not produce many new plant varieties but were rather in the position of protecting new varieties coming from abroad. The country receiving such varieties would be expected to grant plant breeders' rights to both nationals and foreigners on an equal footing, independently of what protection was given to those varieties in the foreign country of origin. It was also noted that it did not seem logical from a legal point of view to speak of two titles of protection where in practice only one legal action could be undertaken on the basis of those titles. If, as was explained previously by the Delegation of the United States of America, the holder of two titles would be required to join any actions under those titles, the fact of having two titles of protection would not have much practical effect.

78. Miss DARMON (Institute of Industrial Property, France) confirmed that her supervisory authority was in favor of the removal of the prohibition on double protection.

79. Mr. PREVEL (Ministry of Agriculture and Forestry, France) mentioned that the Ministry of Agriculture and Forestry and other competent ministries were for the time being of the opinion that, in view of the objectives of the revision of the UPOV Convention, the plant breeders' rights system was the best means of protecting plant varieties.

80. Mr. TESCHEMACHER (EPO) stated that, historically, due to repeatability problems, the patent system was not widely used for the protection of living matter. In recent years, due to unforeseen technical changes, solutions to

the problem of repeatability had been found, and, therefore, living matter such as plants became subject matter of patent applications. He stated that exclusions from patent protection had always caused problems in that exclusions turned out to be obstacles due to later technical changes. It therefore was necessary to examine the issue in the present context. With respect to plant varieties the maintenance of the ban on double protection might only be justified if it did not result in gaps and loopholes in protection. This meant that developments not restricted to a specific phenotype should be eligible for patent protection. In case the ban on double protection was lifted, it had to be taken into consideration that the applicant had a legitimate interest to apply for both types of titles at the same time because he did not know the result of the procedure in advance. If cumulative protection was not considered appropriate, the applicant should be allowed to make his choice at the end of the procedure.

81. Mr. DEBOIS (OECD) drew attention to the links that existed between the protection of intellectual property in the field of plant varieties and the maintenance of varieties, in which the OECD had important responsibilities in connection with variety and seed certification systems.

82. Mr. OBST (Directorate General for Agriculture, CEC) referred to a previous intervention by Mrs. Keegan, from the CEC Delegation, concerning the fact that, as long as there would be exclusion provisions in the UPOV Convention and the European Patent Convention, the European Communities would base their legal instruments thereon. In that respect, the time factor became of primary importance. Solutions to the questions raised by the interface between patent protection and plant breeders' rights would have to be found within a short period of time, before a deletion of the exclusion provisions could be contemplated. If they were deleted, the initiatives currently pursued within the European Community would have to be reconsidered in the light of the new situation.

83. (a) Mr. KOCH (AIPH) stated that AIPH members were not favorable to patents being granted for living matter and proposed that a balance be struck between the interests of breeders, users of varieties, consumers and the Third World. In general, the views of AIPH were close to those underlying the proposed EC Regulation on Community Breeders' Rights and the Danish plant variety protection legislation.

(b) As to the question of how to link the two protection systems concerned, Mr. Koch observed that in the case of ornamentals, it was often difficult to describe a significant technical progress (inventive step). AIPH requested that plant varieties should be protected exclusively by plant breeders' rights. It could accept that biotechnological inventions, e.g. genes and processes, be patented, provided that the usual requirements were met and that no double protection took place. Furthermore, AIPH sought a balanced system of compulsory licenses to make plant varieties available to users and consumers, and also to ensure the availability of patented material for breeding work.

84. Mr. STRAUS (AIPPI) was in favor of both plant variety protection and patent protection for the same object, either alternatively or cumulatively. He further indicated that any international convention should establish only minimum standards of protection, leaving the rest to national laws. He supported the views expressed by the Delegations of Australia and the United States of America that nothing should be excluded from patent protection. Speaking on the practical consequences of a possible overlap of patents and plant breeders' rights, he did not think that such a potential overlap warranted great concern. He further observed that the grant of a patent did

not, per se, give the patent owner the authority to market a product. In that regard, procedures similar to those adopted for market clearance of pharmaceutical products existed in respect of new plant varieties. He asked the UPOV Secretariat as to why Australia and Japan had legal systems that allowed double protection, in apparent derogation of Article 2 of the UPOV Convention, while being admitted to the UPOV Union.

85. Mr. HASHIMOTO (APAA) stated that patent protection should be available for every field of technology, and therefore supported the possibility of having cumulative protection for plant varieties under two different systems. He noted that such possibility already existed in the field of industrial property where, for example, the same product could be protected under patent law and under industrial design law, provided the criteria established by each of those laws were met. A similar solution could be applied in respect of plant variety rights and patents, with a view that inventors may have a choice as to the sort of protection they preferred for their technological achievements.

86. Mr. GUTMANN (FICPI) said that the discussion on the possible choice of applicable means of protection, and on the possible interface between the areas of technology to which those means of protection could apply, would have to take due account of the actual technical subject matter of protection, even if that subject matter consisted of living material. He added that a plant variety was linked to the whole of the genetic information that it carried, and that each element of that information was usually inseparable from the others. In the UPOV system, that was reflected by forms of protection that applied to varieties with a high degree of specialization in their characteristics as a whole. The barriers separating the distinct varieties, and even plant species, had been swept aside by the advent of genetic engineering technology: the same genetic information could often be transferred by a process that was both repeatable and susceptible of description in numerous species. He made it clear that in such cases the production and deposit with competent authorities of all the varieties capable of being produced could not be considered, any more than the verification, by those authorities, of the varieties' conformity to the standards of distinctness, uniformity and stability prescribed by UPOV. Under those circumstances, there was reason to wonder why one should not apply methods developed under the patent system whenever a description of characteristics was required for the protection of genetically transformed plants that might comprise an equivalent number of new varieties. He added that, with regard to the protection of a new plant variety, the new character of which was the result of a repeatable technique susceptible of description, a patent claim should be able to relate to that variety and not solely to a genetically transformed plant. He wondered whether one could prevent an inventor from restricting his claims to the new variety that he might have produced if he considered that his invention had consisted mainly in the improvement of a previously known variety. He laid stress moreover on the importance of the notion of a patent claim determining the right conferred by the patent, namely the exclusive right to work it, including the right to prevent the counterfeiting of the invention by third parties. With regard to the question of cumulative protection, he said that his organization was in favor of the principle of the inventor's freedom of choice between the two forms of protection, in either alternative or cumulative form, and therefore felt that the prohibition on double protection should be removed. He did wonder, however, whether the dividing line that would be drawn between the subject matter eligible for patent protection and the subject matter eligible for plant variety protection would not become questionable after 20 years, when the technological context would be different, as indeed it had been 30 years previously. He said that the latter remark should not be construed as

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opposition to the introduction of the principle of cumulative protection. In practice a patent application would be filed long before an application for a plant variety protection certificate, notably on account of the very different nature of the novelty criteria applicable to the two systems of protection. The filing of the plant variety protection certificate application might even occur after the publication of the patent, and he wondered about the effect of that published application on the inherent originality of the subsequently filed application for a plant variety protection certificate. Finally he mentioned that, under a system of double protection, the existence of two titles of protection would not, in the event of an infringement, have any bearing on the sanctions or on the amount of damages, which would be awarded according to the damages actually sustained and not according to the number of titles protecting the rights involved.

87. (a) Mr. BROCK-NANNESTAD (FEMIPI) recalled that the original reasoning behind the ban on double protection was the notion that the breeding of a plant variety could not be repeated to meet the repeatability requirement under patent law. This original reasoning was no longer applicable. Nowadays, however, the ban on double protection had become politically useful in the struggle between farmers and industry; it had become a political issue. The major difference between patents and plant variety rights was in the information that they provided to mankind. Patents gave information and teaching on how to obtain a given result, whereas under the plant variety rights system, only the resulting end product was made available to mankind. As an example, a non-exhaustive list of 24 patents was referred to, all issued by the Patent and Trademark Office of the United States of America. These patents related to plant varieties, all of which would in principle be eligible for plant breeders' right. Those patents contained a wealth of knowledge on how to obtain the plants described therein, and such information went beyond the mere showing of a plant or the reproductive material of a plant for which no information was given on how to obtain them. He made a list of the noted patents available to the secretariat.

(b) He suggested that a study could be undertaken as to claim style and information content of patents granted in the United States of America, such study to be undertaken preferably by the EPO. He indicated that the EPO was experienced in such studies and cited the EPO technology series in this regard. He offered the cooperation of his organization in this matter.

88. Miss COMTE (IFAP, COGECA and COPA) endorsed the statement made by Mr. Koch on behalf of the AIPH. She recalled the position of the organizations represented by her, which was on the one hand that plant breeders' rights were the only suitable means of protecting plant varieties, and on the other hand that the provisions prohibiting double protection should be retained.

89. (a) Mr. LE BUANEC (ASSINSEL), referring to the statements made by some of the earlier speakers, pointed out that one could not have confrontation between economic agents (breeders and genetic engineering experts) or between economic sectors (agriculture and industry), but only distinctions between categories of subject matter to be protected. Many of the firms represented within ASSINSEL worked towards their main goal, namely the creation of varieties, by engaging in activity in all relevant directions and by calling on all the technology at their disposal. Consequently, the aim should be to provide the best possible protection by means of plant breeders' rights, patents, and both instruments simultaneously where they overlapped in relation to the subject matter concerned.

(b) Mr. Le Buanec went on to say that ASSINSEL's position was not yet final but depended on the outcome of the revision of the UPOV Convention and on the work in progress on patent protection. A minority of the ASSINSEL membership were in favor of freedom of choice regarding the system of protection and the availability of both systems, with an obligation to choose or the possibility of combining them. The majority were in favor of the maintenance of the provisions prohibiting double protection, in view of the fact that the variety creation process based on crosses and recombinations could not be conceived without free access to genetic variability, in accordance with the principle set forth in Article 5(3) of the UPOV Convention; that genetic variability was made up mainly of the most recent varieties, which in general were protected. Mr. Le Buanec added that the progress connected with the development of plant improvement theories and processes likewise entailed the use of varieties already in existence, so that the principle set forth in Article 5(3) of the UPOV Convention was still fully relevant. However, ASSINSEL was in favor of limitation of that principle in the case of varieties essentially derived from an existing variety, and in the case of the use of a biotechnological invention protected by a patent.

90. Mr. TAKAKURA (Japan) relayed to the Committee of Experts that his Government was still considering whether the prohibition on double protection should be maintained or banned. The opinions for prohibiting double protection expressed that new plant varieties per se should be protected only by plant breeders' rights from the viewpoint of securing legal certainty. The opinions for allowing double protection relied on the observation that both forms of protection were directed to different purposes and had different requirements to secure such protection.

91. Mr. ROBERTS (ICC) said that both patents and plant variety rights should be available alternatively or cumulatively to plant breeders, and complete freedom should prevail in this respect. It was believed that, in practice, few plant varieties would be patentable and thus the issue could be regarded as a small problem. Nevertheless, the possibility of double protection should exist because of the danger of leaving gaps in one system or the other that could result in a given technological contribution not being protected at all. Although the ideal situation would be to separate the two systems so that there were neither gaps nor overlaps, in practice it was necessary to have overlaps if gaps were to be avoided. Refusing a patent for a plant variety was undesirable if the only reason for such refusal was the fact that it was a "plant variety."

92. (a) Mr. ROYON (CIOPORA) stated that if the problem of the protection of new plant varieties were addressed for the first time, the patent system would appear as being the sole viable solution. For various reasons (improved possibilities for describing plant varieties, possibility of depositing plant material, proposed improvement of the UPOV Convention, situation in some States where two systems of protection were available), the two systems of protection concerned should be made available simultaneously. This was also advisable to facilitate accession to the UPOV Convention of States where no protection was currently available for plant varieties and where the patent system could easily be resorted to. Consequently, Article 2(1) of the present text of the Convention should be deleted, the attempt made in the Administrative and Legal Committee of UPOV to totally suppress patent protection discouraged, and Article 53(b) of the European Patent Convention reviewed.

(b) Concerning the question of the conditions under which the two forms should be available, a liberal and pragmatic approach should be adopted in CIOPORA's view. Concerning plant varieties as such, a choice between the two

systems would be sufficient once the UPOV Convention had been revised. Under present conditions, however, a breeder might also have an interest in applying for a patent in addition to the plant breeder's right to cover products which were not covered by the scope of the protection afforded by the latter. Concerning genetic information, biotechnological inventors might have an interest in the protection under the patent being extended to varieties incorporating that information. There was therefore a need for cumulative protection in the form of a patent for the genetic information and plant breeders' rights for the varieties. However, if patent protection was extended to the varieties, it would be cheaper for the inventor to seek only one title, namely the patent, provided that the varieties would meet the patentability requirements.

(c) With respect to the remarks made by Mr. Byrne (Ireland) and Mr. Debois (OECD), Mr. Royon finally drew attention to the independence of the intellectual property systems from the certification systems, which, in addition, would not apply to ornamental plants.

93. Mr. ROTH (GIFAP) pointed out that both systems of protection should be available and that an inventor should be allowed to freely choose which system he desired to protect his invention. In this regard, he supported the position taken by the Delegation of the United States of America.

94. Mr. YAMASHITA (JPA) told the Committee of Experts that it was the position of his organization that both systems of protection should be made available and both should be allowed to apply cumulatively.

95. Mr. BESSON (FIS) said that the Bureau of FIS unreservedly endorsed the carefully-worded position expressed by ASSINSEL. He also pointed out that a study should be made of the implications of any alteration of the legal regime on the international variety and seed trade.

96. Mr. KOSHIBE (FIS) stated that the Japanese Seed Association strongly supported the positions of ASSINSEL and FIS. That association felt that a clear demarcation between the patent system and the plant breeders' rights system was necessary to avoid any conflicts. Mr. Koshibe added that the establishment of a special system of protection for plant varieties in Japan, through the revision of the Seeds and Seedlings Law, was the result of the finding by the agricultural and horticultural circles in Japan that the patent system was inappropriate. He could, consequently, not support a system of "double protection."

97. Mr. HUYGENS (EPI) said that both systems of protection should be available for plant varieties. Normally such protection would cover different aspects of the same object, but, if a plant variety were to meet the criteria of patentability, it should be possible to obtain a patent. On the other hand, although the possibility of double protection should be accepted for cases where this was possible, this could not mean that the holder of those rights was entitled to collect damages twice in case of infringement.

98. Mr. LAIRD (UNICE) stated that biological science was capable of great innovations and that for the public to benefit from such innovations it was necessary to provide adequate protection. He suggested that patents and plant variety rights protection covered different aspects of plant science and that it should be left to the breeder to decide which form of protection he wished to use. Either or both forms of protection should be allowed in a cumulative fashion. He submitted that, while reference had been made to practical difficulties in providing for cumulative protection, difficulties in not affording such cumulative protection were even greater. In particular, it

would be difficult to determine what was or was not a variety and, therefore, which form of protection to pursue.

99. Mr. GROSS (CEFIC) expressed support for what had been said by the representatives of AIPPI and UNICE. He recalled that plant breeders' rights were established at a time when plant breeders could not obtain patents. Plant breeders' rights, however, were bound to continue as a system of protection for plant varieties because it would still be needed in the future. Nevertheless, if a breeder could meet the patentability requirements under the relevant legislation, he should be able to obtain a patent. For these reasons the ban on the possibility of obtaining double protection for a plant variety should be lifted.

100. Mr. WINTER (COMASSO) stated that, in COMASSO's view, because of its specially designed provisions, the plant variety protection system was the most appropriate form of protection for plant varieties as such. This view, however, was subject to the completion of the proposed improvement of the UPOV Convention. It was based not only on political considerations, as described by Mr. Brouër (Federal Republic of Germany), but also on the vital need of plant breeding for the so-called "breeder's exemption" being maintained with the necessary adjustments concerning varieties essentially derived from protected varieties, on the one hand, and varieties containing patented subject matter, on the other. He further stated that the concept of "research exemption" in the patent system did not ensure the same needed possibilities as the "breeder's exemption" in the proposed revised UPOV system did.

101. Mr. MOUFANG (Max Planck Institute) stated that plant varieties should not be banned from protection by patents in deference to plant variety protection certificates. Many States made such a choice available to the plant breeders, others were planning to do so. Therefore, no limitations in that respect should be introduced or maintained on the international level. He further considered that UPOV should not condition the admittance of its new members by the ban on double protection. He mentioned as a negative consequence of the ban on double protection an eventual appearance of double standards and cited as an example the participation in the UPOV Union of the United States of America, a State not bound by the ban on double protection.

102. Mr. ROTH (IBA) indicated that his organization was concerned by discussions on the free availability of germplasm. He further observed that, in the development of a hybrid, one could keep the inbred lines secret and thereby obtain a plant breeder's right on the hybrid. In this way, a breeder could receive double or cumulative forms of protection in both the trade secret and in the plant breeder's right. He also observed that one advantage of the patent system, if patentability requirements could be met, was that, at the end of the period of monopoly, anyone was free to use the disclosed invention. In this regard, he further observed that only the patent system required an enabling disclosure. He concluded by stating that the prohibition on the patentability of varieties should be removed.

103. Mr. HJERTMAN (EFPIA) supported the position taken by UNICE and CEFIC.

104. Mr. ARDLEY (Plant Variety Rights Office, United Kingdom) stated that the position was not yet final in the United Kingdom. Referring to the observations made by some speakers from the international non-governmental organizations on the previous statement of his Delegation and the statement by Mr. Byrne (Ireland), he observed that problems arising out of the availability of two systems of protection were not so much connected with the variety listing and seed certification systems, but rather with the conditions of protection under the plant variety protection system, in particular with the

requirement of distinctness. If varieties were protected by patents, it would be difficult in some instances to determine whether a given variety met the criterion of common knowledge. One possible means of overcoming this problem would be if the requirements of distinctness, homogeneity and stability were also applied to patented varieties. This could then be a step forward and make the deletion of the provisions prohibiting double protection more acceptable.

105. (a) Mr. DUFFHUES (Chairman) summarized the discussions on the first part of the questions in paragraph 8 as follows:

(i) It was generally understood that developments in biotechnology had led to changes in the relations between the patent system and the plant variety protection system.

(ii) A trend could be observed towards a more unified approach to those relations.

(iii) A number of States (in particular non-European countries) and of organizations (in particular in the field of patents) were in favor of the deletion of the provisions prohibiting double protection.

(iv) There was general agreement, including among States and organizations in favor of maintaining the provisions concerning double protection, about the acceptability of patenting elements of plants and plant varieties and processes.

(v) There was a need to further examine the matter, in particular in the light of the comments made by Mr. Simunovic (Chile) and in the light of the question whether it would be easier for current non-member States of UPOV to become a member of that organization on the basis of their patent law.

(b) Concerning the conditions under which the two forms of protection should be available, Mr. Duffhues stated that there was a tendency expressed in the interventions to give complete freedom to the applicant. However, practical circumstances might well force the applicant to choose between the two systems, and in most cases the system to be chosen would be the plant breeders' rights system because, for plant varieties as such, it would offer better protection under easier conditions.

Questions in Paragraph 9(b) and (c)

106. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) stated that the main question of subparagraphs (b) and (c) of paragraph 9 was to apply plant variety protection to plant varieties and not to parts of plants like genes, or to processes. He expressed the view that the main question was that of the farmer's privilege while ensuring the rights of plant breeders and free access of third parties to genetic material. He wondered whether, in the opinion of those who favored the availability of patents for plant varieties, a farmer's privilege should apply to such patents or whether some kind of compulsory license should be available.

107. Mr. HOINKES (Patent and Trademark Office, United States of America) stated that those countries that advocated lifting the ban on double protection had thought about the farmer's privilege. That privilege was seen as a nettlesome problem in that abuses had occurred in the United States of America, so much so that serious consideration was being given to curtailing the privilege in the United States of America and also to curtailing the exemption within the UPOV Convention. There was as yet no definitive answer

in the United States of America as to how to deal with this problem. With regard to exemptions in the patent system, they were seen as not appropriate to that system and going against its general purposes. He stated the opinion that, when one exclusion was allowed pertaining to one particular interest group, other interest groups in other areas of technology also would desire exclusions. This was seen as leading to an inexorable erosion of the value of the patent grant. In this context, he indicated that it was difficult to define a variety for the purposes of exclusion or inclusion. The problem was especially acute in countries that presently prohibited the patenting of plant varieties because applications were filed that met all the requirements for patentability, but the relevant examining authority said that the claimed subject matter fell within the definition of plant variety and that the application did not, therefore, recite patentable subject matter.

108. Mr. KIEWIET (Ministry of Agriculture and Fisheries, Netherlands) stated that no justification was seen in the Netherlands for a "farmer's privilege" in either system. The permission to use seed of a protected variety for more than one generation could be given by the holder of the right. This permission would find its expression in the level of the royalty. Farmers in the Netherlands shared that view on the condition that farmers in other countries would be subject to the same conditions of competition.

109. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) stated that there was a consensus in New Zealand, including in farmers' organizations, in favor of the argument that, in logic and theory, it was difficult to justify the denial wholly of the exercise of intellectual property rights in the situation referred to. However, in practice, the tradition of farmers retaining part of the crop and using it as seeds in the case of some agricultural crops had to be taken into consideration. A partial limitation was therefore possibly justified for those crops. It could be achieved through a derogation that would be subject to certain conditions, in particular to payments of a royalty and other reasonable conditions, such as audit, quality control and notification of use.

110. Mr. MESSERLI (Intellectual Property Office, Switzerland) stated that none of the two systems of protection should provide for particular limitations because of the general nature of biological material. If limitations should be retained for other reasons, it should be taken into account that intellectual property rights should provide for fair compensation to researchers and breeders for their efforts, thus providing an incentive for new developments. He further indicated that patent law offered no justification for the farmer's privilege. Therefore, it should be examined whether the privilege should be maintained for plant breeders' rights when revising the UPOV Convention.

111. Mr. PREVEL (Ministry of Agriculture and Forestry, France) recalled that the terms of the relevant French law had provided breeders with case law against farmers who had produced farm-saved seed with the assistance of contract seed processors. That had resulted in a rather difficult political situation. Negotiations between the parties concerned under the auspices of the Ministry of Agriculture and Forestry had produced a provisional agreement under which farm-saved seed produced without the intervention of contractors was tolerated. Mr. Prével pointed out that the prevailing situation had highlighted the strength of the right granted to the breeder, and the need to progress with the revision of the UPOV Convention. The position of the breeders, irrespective of the origin of their varieties, had to be strengthened, and their rights should not be weakened by an excessive privilege which would cause the stagnation of research investment and ultimately the stagnation of the qualitative and quantitative level of

agricultural production. In this connection Mr. Prével pointed out that the supervision of the use made of a protected variety was more or less easy depending on the species concerned.

112. Mrs. AFONSO (Institute of Industrial Property, Portugal) stated that biotechnological inventions for plants or plant varieties had to be dealt with in the same way as other inventions in order to ensure strong patent protection in all technical fields. She added that the monopoly afforded by a patent could be counterbalanced by a system of compulsory licenses as referred to in paragraph 20 of document WIPO/UPOV/CE/I/2.

113. Mr. HADDRICK (Patent, Trade Marks and Designs Office, Australia) stated that, under the Australian Patent Act, the patent owner obtained a broad monopoly but case law had established that licenses to use the invention were to be implied depending on the circumstances of each particular case. Although the farmer's privilege could be admitted as an implied license under a patent for a plant variety, in principle the patent owner was entitled to refuse such license. The establishment of standard type agreements could be envisaged also as a possible solution to the farmer's privilege situation. Although farmers would, before a court, presumably have the benefit of current practices, such practices could change in the future. There were, however, no plans to amend the patent law at present. The recently enacted Plant Varieties Act provided for the farmer's exemption in line with the UPOV Convention.

114. Mr. RAVN (Patent Office, Denmark) stated that it was necessary to distinguish between plant variety protection and patent protection, in order to answer the question properly. In the case of plant variety protection, such as under the UPOV Convention, it might be necessary to retain the system of farmer's privilege for political reasons. With respect to patents, there should, in principle, be no limitation for any special technical area and, in this regard, reference was made to the comments by the Delegation of the United States of America. In this connection, the Delegation identified several practical problems, e.g., when the farmer's privilege applied to a protected plant variety in which a patented invention was incorporated. In such cases, plant variety protection should dominate over patent protection, as it was understood that the owner of the patent would take account of this situation when drawing up contracts with the breeder in question.

115. Mr. ARDLEY (Plant Variety Rights Office, United Kingdom) stated that the tradition of saving seeds for the next season was still permitted as a consequence of the present wording of Article 5(1) of the UPOV Convention. There was no need to control the situation as long as that tradition was not prejudicial to other interests, in particular as long as the proportion of seeds on which the breeder could recoup his investment was not decreasing. The introduction on the market of varieties originating from biotechnology might change the situation, however: for perfectly justified reasons, such varieties might be more expensive and this would therefore create a greater incentive to the production of farm-saved seed. Discussions were continuing in the United Kingdom on the question whether, and to what extent, if any, the "farmer's privilege" should be maintained in the plant breeders' rights system. The outcome therefore could not be predicted so far in view of the sensitivity of the matter. However, there was no current equivalent of farmer's privilege in patent law and it was inconceivable that one would be introduced.

116. Mrs. MORELLI GRADI (Patent Office, Italy) stated that her country did not consider it justified to restrict industrial property rights as a function of the protected material. She explained that if there were to be

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limitations on the owner's rights, that would have to be the result of an abuse of rights and not the fact of belonging to a certain sector of the economy. She concluded by stating that the scope of the farmer's privilege depended on the outcome of the revision of the UPOV Convention, but that such a privilege could not exist under the working of a patent for invention.

117. Mr. GOMEZ (Industrial Property Registry, Spain) believed that the farmer's privilege should be maintained in view of a certain number of reasons that justified that exemption. Firstly, there was a reason based on agrarian tradition whereby the farmer's privilege was a right widely recognized and used by farmers. Secondly, there were legal reasons based on the fact that plant breeders' rights laws already recognized that privilege today and that patent legislation recognized a similar principle in the doctrine of exhaustion of patent rights. Finally there were practical reasons to the extent that the farmer's privilege had inherent limitations which, in practice, reduced the impact of that exception. This was true, in particular, as regards hybrid seed or where reduced vigor and variations in the genotype of the variety resulted from resowing of farm-saved seeds or contamination by the pollen of other varieties. Moreover, it should be recalled that the farmer's privilege was limited to the possibility of resowing seed within the farmer's own land since the commercialization of seed would in any case be prohibited under the plant variety right. It could be envisaged to establish the farmer's privilege only in respect of certain types of plant varieties and limit or exclude the application of that privilege in respect of other varieties.

118. Mr. OESTER (Ministry of Agriculture, Sweden) stated that his Delegation felt sympathy with the views expressed by Mr. Ravn (Denmark), but was uncertain about the consequences of the non-existence of the "farmer's privilege" in patent law. It was to be asked whether a difference would or could be made under patent law between farm-saved seeds produced using solely the farm's own equipment and farm-saved seeds produced by resorting to contractual cleansing. The problem of movable seed cleaners was presently under consideration in Sweden.

119. Mr. LOSSIUS (Norway) indicated that Norway was in favor of maintaining the farmer's privilege and that remedies for abuses should be inquired into.

120. Mr. SHITIKOV (State Committee for Inventions and Discoveries, Soviet Union) expressed himself in favor of the farmer's privilege, noting its importance. That issue was particularly acute for his country in that it was presently departing from the system of inventors' certificates for plant varieties for a system providing for the protection of exclusive rights in respect of plants. He noted, however, that the farmer's privilege should not be unnecessarily wide. Finally, he stated that his country was closely watching the activities of UPOV in order to properly embody the latest developments in its national law.

121. Ms. SISSON (Agriculture Canada, Canada) recalled that a plant breeders' rights Bill, that conformed to the present Convention, was presently before Parliament. It provided for a "farmer's privilege," except for ornamental plants. Support for the proposed legislation had been obtained from the major farmers' organizations on the condition that the "farmer's privilege" would be recognized.

122. Mr. BUCHANAN (Department of Consumer and Corporate Affairs, Canada) noted that, if plant varieties were to be patented, several questions would immediately arise in respect of the farmer's privilege. In this respect, three main options seemed to be possible, namely, (i) remove the farmer's

privilege from plant breeders's rights laws; this would give rise to problems on the grounds that such privilege existed in a number of laws and had been accepted as a limitation; (ii) insert the farmer's privilege in patent laws: this would also give rise to problems, in particular along the lines of those mentioned by the Delegation of the United States of America in respect of unjustified discrimination on the basis of a particular field of technology; and (iii) retain the existing situation where the farmer's privilege was recognized in plant breeders's rights legislation but not in patent legislation.

123. Mrs. LOMMI (Finland) indicated that the aim of the patent system was to provide an exclusive right to the inventor and, thus, exclusions should be limited. She supported the views expressed by the Delegation of the United States of America in this connection.

124. Mr. VUORI (Ministry of Agriculture and Forestry, Finland) stated that Finnish plant breeders and the Central Union of Finnish Agricultural Producers had agreed that the "farmer's privilege" should be maintained. This agreement was based on the fact that the purchase of seed was for purposes of exploitation, including propagation. Under present circumstances, it would be unrealistic to remove that "privilege" in Finland.

125. Mr. BYRNE (Department of Agriculture and Food, Ireland) stated that the issue was politically sensitive, but that abuse of the "farmer's privilege" was a matter of concern. Discussions were ongoing and it was possible that farm groups, seed cleaners, etc. would be licensed for the production of farm-saved seed, subject to royalties being paid to breeders. It was vital that breeders receive equitable remuneration, and the proposed EEC Regulation concerning Community Breeders' Rights might help to overcome the political issues involved.

126. Mr. SIMUNOVIC (Agriculture and Livestock Service, Chile) believed that the first question contained in paragraph 9 of document WIPO/UPOV/CE/I/2 should not refer to "any limitation" but specifically to the limitations contained in subparagraphs (a) to (e) of that paragraph, since all rights had some limitations. It also seemed inappropriate to focus on property in respect of "plants" since plants were material, movable objects which could be possessed like any other item of property. One should rather refer to plant varieties which were the proper object of the rights under consideration. Finally, it seemed that the farmer's privilege should be treated differently depending on the type of variety protected by the plant breeder's right. The farmer's privilege could not be applied in the same manner for varieties which could be reproduced by seed, such as cereals, and to varieties which were susceptible of being propagated vegetatively, such as fruit trees or vines, since in the first case to prevent the resowing of seed was practically impossible.

127. Mr. DUFFHUES (Chairman) noted that a number of States were in favor of maintaining the "farmer's privilege" in view of its traditional nature and the practicalities of enforcing breeders' rights in relation to farm-saved seed. He further observed that it would be important in that connection to consider what was a farm and a farmer. A number of States were opposed to the privilege while others questioned its rationale and economic justification.

128. Mr. OBST (Directorate General for Agriculture, CEC) stated that historical precedents could not be discarded out of hand but had to be acknowledged; this led to the question of the existence of any justification of a removal of the "farmer's privilege." There was no problem in eliminating

abuses, and the initiative related to Community Plant Variety Rights went in that direction.

129. Mr. STRAUS (AIPPI) expressed the view that there existed no valid economic reasons for introducing limitations in the form of a farmer's privilege into patent law.

130. (a) Mr. LANGE (ASSINSEL) referred to the introductory part of question 9 and stressed that the only justified limitation was the so-called "breeder's exemption" provided for under Article 5(3) of the UPOV Convention. That principle was of extreme importance for plant breeding and was to be applied equally, whether a variety was protected by a plant breeder's right or a patent, in view of the fact that plant breeding was an activity that required the use, and therefore the availability, of pre-existing varieties. That was the reason why the majority of ASSINSEL members was against patent protection for plant varieties, since the patent system did not guarantee, with absolute certainty, such availability. On the other hand, ASSINSEL was in favor of a limitation of the "breeder's exemption" in the case where a variety had to be used repeatedly in the commercial production of another variety, as contemplated in the second sentence of Article 5(3) of the UPOV Convention, in the case of varieties that were essentially derived from another protected variety, as proposed in the framework of the revision of the UPOV Convention, and in the case where a variety contained patented genetic information. In the latter case, the patent should not be affected and the authorization of the patent holder should be required where the patented information was to be used in a breeding program.

(b) Concerning subquestion (b), ASSINSEL considered that there was no justification for a "farmer's privilege," for which there was no express provisions in the Convention. Such a limitation existed only in certain national laws. It would not be appropriate to strengthen the UPOV Convention and, at the same time, weaken it through recognition of a "privilege." Finally, in view of its position, ASSINSEL felt that subquestion (c) was irrelevant.

131. Mr. BESSON (FIS) said that it was essential to know the degree of use of farm-saved seed to determine the scale of the losses suffered by breeders in the form of unpaid royalties and by seed producers in the form of unexploited markets. In the case of small-grain cereals, for instance, the percentages were the following: Australia: 89%; Spain: 85%; Canada and United States of America: 70%; France: 45%; United Kingdom: 30%; Ireland: 25%. In the case of potatoes the percentages were 40% in the Federal Republic of Germany and 20% in the United Kingdom.

132. (a) Mrs. BEHAGHEL (IFAP, COGECA and COPA) pointed out that European farmers were unanimously in favor of being given the possibility of retaining their own seed from a crop for sowing in the following growing season. That opinion was shared by IFAP. That tolerance of the retention of seeds by farmers for resowing was not a new one and had never been prohibited. It had sometimes even been written into national legislation; it was derived from the right to dispose freely of the product of the soil. If the UPOV Convention had introduced an exception it related to the right of commercialization and not to the right of multiplication. If the farmer was very attached to the practice of producing farm-saved seed, knowing as he did that such seed did not afford the same guarantees, that was partly to enable himself to make optimum use of his time.

(b) Mrs. Behaghel recalled that seed cleaning by a specialized contractor had given rise to judicial developments in France which were

exemplary in that they illustrated the delicate nature of the problem. COPA and COGECA had endeavored to draw the necessary conclusions from the ruling of the first-instance court of Nancy, upheld on appeal and currently pending before the Court of Cassation, and from the agreement concluded under the auspices of the Ministry of Agriculture and Forestry. The two organizations were aware of the role of research and of the need for adequate financing. They considered that a "farmer's privilege" limited to seed cleaning at the farm would make it possible to take due account of the realities of the agricultural world in both developed and developing countries. That opinion had been followed by the Commission of the European Communities in its proposed Regulation on Community Plant Variety Rights. Such a "privilege" should be provided for in the framework of both the plant variety protection system and the patent system. Mrs. Behaghel ended with a reference to the practical difficulties encountered in the collection of royalties from thousands of growers. The collection mechanism could prove out of proportion to the benefits that could be expected.

133. Mr. WINTER (COMASSO) stated that COMASSO had considered the question as put before it. It shared the view expressed by Mr. Lange (ASSINSEL) that the only justified limitation was the "breeder's exemption" in the plant variety system. To ensure the progress, breeders had to use all existing material and genotypes that had proved to be the best in existing varieties. He saw the interdiction of free access as leading to a dependency pyramid that would make any dependency system practically unworkable. The unavailability of protected raw material would significantly hamper the genetic progress in relation to agricultural products. He did not understand the "breeder's exemption" as a means to overrule the necessary consent of the holder of a patent on an incorporated gene. Concerning the patent system, COMASSO had not found any justified limitation not consistent with the basic aim of the system. Concerning subquestions (b) and (c), it also shared the view expressed by Mr. Lange that there was no justification for a limitation in favor of a particular profession.

134. Mr. HUYGENS (EPI) said there seemed to be no reason for establishing special limitations to industrial property rights. There was no justification for exceptions in favor of farmers, and in that respect he shared the views previously expressed by the Delegation of the Netherlands. He pointed out that the farmer's privilege could in practice give rise to considerable losses in remuneration for the holders of titles of protection for plant varieties.

135. (a) Mr. ROYON (CIOPORA) stated that there was no justification for limitations or restrictions and that the plant variety protection system had to be placed on the same footing as other intellectual property systems. Growers would become more and more industrial and would directly benefit from the innovations made by plant breeders; they should therefore be treated in the same way as other industries. Any other system would be detrimental both to innovators and users.

(b) Concerning the proposed revision of the UPOV Convention, Mr. Royon stated that the present Article 5(3) should be limited to the free availability of a protected variety for the purpose of creating new varieties, through deletion of the phrase "or for the marketing of such varieties." A system of dependency should be introduced as proposed and the exemption should be modeled against the corresponding provisions in patent law. The general principle should be that research activities would not be covered by the intellectual property right and that the product of such research would have to be evaluated as to whether it constituted infringement or not of the original protected product.

136. Mr. YAMASHITA (JPA) said that rights protecting plant varieties should be treated in the same manner as rights protecting innovations in other fields of technology. There was no reason to favor farmers, and a farmer's privilege did not seem justified. He noted that, if a farmer used a new plant variety, he obtained an advantage which justified the payment of a royalty to the owner of the right in that variety. As regards the use of a plant variety for experimental or research purposes, it was believed that free use of the variety should be permitted for those purposes.

137. Mr. ROBERTS (ICC) expressed support for the views put forth by the representatives of ASSINSEL and COMASSO, to the effect that only the breeder's exemption was justified. If, however, a farmer's privilege were to be retained, its scope should be much more limited than it was today.

138. Mr. BROCK-NANNESTAD (FEMIP) noted that the farmer's privilege could be substituted by contracts between buyers and merchants of seed. The question arose, however, whether a contract could be used to circumvent the farmer's privilege in case that exemption were seen to be a matter of public order. He recalled that using a crop to produce more seed went beyond the patent exhaustion principle, since producing seed amounted to making or producing the patented product and such protected acts were not exhausted by the act of sale of the seed. In this respect a patent right should be enforceable against any farmer re-using or saving seed for further production. The justification of the farmer's privilege as being a private use of seed was not correct, since private use would mean using the seed only for the survival of the farmer and his family. Re-sowing of saved seed went beyond the proper scope of private use and would therefore infringe a patent on a plant variety.

139. Mr. DUFFHUES (Chairman) concluded the discussions and noted that there was no common opinion. He observed that the "farmer's privilege" being tainted with political issues, it was for politicians rather than experts to find a solution. The general tendency was that, if there were to be a "farmer's privilege," it had to be restricted.

Questions in Paragraph 9(d) and (e)

140. Mr. KIEWIET (Board for Plant Breeders' Rights, Netherlands) stated that it was justified, if not essential, for intellectual property rights to be restricted in relation to research and development of new varieties. The subject matter of protection should be accessible free of charge, without authorization being required for research purposes.

141. This view was shared by Mr. RAVN (Patent Office, Denmark), Mr. LOSSIUS (Patent Office, Norway), Mr. VUORI (Ministry of Agriculture and Fishery, Finland), Mrs. MORELLI GRADI (Patent Office, Italy), Mr. SHITIKOV (State Committee for Inventions and Discoveries, Soviet Union), Mr. PREVEL (Ministry of Agriculture and Forestry, France), Mr. O'FARRELL (Patents Office, Ireland) and Mr. HADDRICK (Patents Trade Marks and Designs Office, Australia).

142. Mr. HOINKES (Patent and Trademark Office, United States of America) agreed with the Delegation of the Netherlands insofar as the research exemption applied to plant breeders' rights, stating that it was a historical feature of that title of protection. He asserted, however, that the question raised before the Committee of Experts was broader in scope, since it applied not only to plant breeders' rights but extended to all intellectual property rights, including patents. He indicated that, in the case of patents, the research exemption was a little bit more difficult to deal with. If the research was undertaken only to satisfy scientific curiosity then there were few objections to applying the exemption. If, however, the patented invention

was used in an economic activity in competition with the inventor, it presented problems because it diminished the exclusive right obtained in the patent. He stated that one could not, in the area of patent protection, single out one field of technology by statute to which experimental use exceptions should apply. Rather, such exceptions should be dealt with on a case-by-case basis. He provided information about the jurisprudence of his country which dealt with the experimental use exemption on a case-by-case basis and stated that they had not experienced great problems.

143. Mr. BUCHANAN (Department of Consumer and Corporate Affairs, Canada) suggested that the relevant provision contained in the draft Treaty for the Harmonization of Patent Laws could be taken as a basic model for the proposed research exemption in connection with protected plant varieties.

144. Mr. SCHAEFERS (Deputy Director General, WIPO) explained that the last version of the draft Treaty for the Harmonization of Patent Laws did contain a limited exemption for research purposes. The provision in that text referred to use of the invention for "purely experimental purposes or for scientific research."

145. Mr. GOMEZ (Industrial Property Registry, Spain) expressed support for the research exemption. Research activity should be free from any obstacles deriving from industrial property rights and should be undertaken without any requirement of prior authorization nor the payment of any royalties. Any provision to the contrary could have dangerous effects and repercussions in research activities and on the advancement of science and technology. Cases of abuse of the research exception would have to be determined on a case-by-case basis by the competent judicial authorities.

146. Mr. ARDLEY (Plant Variety Rights Office, United Kingdom) stated that the United Kingdom supported the continued existence of the "breeder's exemption" in the plant variety protection system. The increases in yield and quality during recent years were due to a large extent to the possibility of using the best available varieties as a source for further genetic progress. With the advent of biotechnology and the possibility of genetically manipulating a variety, there was a good case for providing a remuneration to a breeder whose variety had been so manipulated. This was to be dealt with in the UPOV Convention under the "dependency" concept. No final position had been established yet in the United Kingdom concerning the precise wording and precise scope of the corresponding provision.

147. Mr. DENNEHEY (Patent Office, United Kingdom) indicated that his Delegation supported the patent law principle which allowed acts to be done for experimental purposes relating to the subject matter of the patented invention. The question of infringement should be dealt with at the point of commercialization of the results of the experiment. He further stated that, at least in this respect, inventions in the field of technology being considered by the Committee of Experts should be dealt with as in all others.

148. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) supported the views expressed by Mr. Hoinkes (Patent and Trademark Office, United States of America).

149. Mrs. GRUSZOW (EPO) stated that one of the aims of industrial property protection was to promote technical progress, implying that a protected article could be used for experimental purposes. She added that it could not be claimed that patents granted in the field of genetic engineering led to a restricted access to genetic material. On the contrary, a patent had to disclose the invention and, 18 months after the date of the patent

application, or where applicable the priority date, the application was laid open for public inspection according to the European Patent Convention. In the biotechnological field, the description could, and frequently had to be, accompanied by a deposit which was also accessible to the public. Consequently, in the field of patents, that situation led to enriched access to genetic resources and not to a limitation on public information. She stated that the situation was different in the case of plant variety certificates where new varieties were not made available to the public during the certification procedure. Particularly in the case of hybrids, firms were not required to make the parent lines available to the public.

150. Mr. HOERNER (IBA) questioned whether the assumption that breeding progress needed the free availability of germplasm was really true. Available evidence, in particular the comparable rates of progress in self-pollinated species such as wheat and in species such as maize where hybrid varieties were produced, suggested the contrary. The free availability of germplasm further tended to lead plant breeders to develop their activities on a narrow genetic variability, with the risk of increasing the susceptibility of crops to diseases.

151. Mr. HUYGENS (EPI) underlined that it would be dangerous to establish a research exemption for a particular technological sector. It was a basic principle of patent law that all technological sectors receive equal treatment.

152. Mr. BROCK-NANNESTAD (FEMIP) pointed out that, if a research exemption was to be established, it would first have to be defined what was to be understood by "research." Precommercialization should not be regarded as research. The information obtained by analysis of a non-exhaustive list of 24 patents granted in the United States of America for plant inventions was of utmost interest. He indicated that the numbers of those patents could be obtained from the secretariat.

153. Mr. LANGE (ASSINSEL) observed that there was no reason for providing for an authorization to use plants or plant varieties for research purposes and that subquestion (e) was therefore irrelevant.

154. Mr. ROBERTS (ICC) indicated that both patents and plant breeders' rights should be made available cumulatively, and looked forward to the day when complete freedom of choice would be allowed in all countries. He suggested that if the problem of cumulative protection was a small one, as suggested by the Delegate from the Federal Republic of Germany, then such problem could be easily eliminated by eliminating the ban on cumulative protection. He stated that, in an ideal world, there would be no gaps and no overlap in protection, but that in a real world situation one had to choose between the provision of gaps or overlaps. He further stated that it was undesirable to have a patent office deal with plant variety rights and, related to this, that it was undesirable to have a patent office decide whether or not a patent related to a plant variety or not.

155. Mr. ROTH (GIFAP) supported the views of the Delegations of the United States of America and the Federal Republic of Germany.

156. Mr. WINTER (COMASSO) concurred with the view expressed by Mr. Lange in the name of ASSINSEL.

157. Mr. ROYON (IFAP, COGECA and CIOPORA) stated that CIOPORA supported the views expressed by Mr. Roberts (ICC) and the explanations and clarifications given by Mrs. Gruszow (EPO). Concerning the perceived difference between the "research exemption" under patent law and the "breeder's exemption" under

plant variety protection law, he recalled that the purpose of the changes proposed by CIOPORA in relation to the UPOV Convention was precisely to eliminate misconceptions. According to those proposals one paragraph should be devoted to the exemption proper and the question of the exploitation of the result of the research should be dealt with elsewhere.

158. Mrs. BEHAGHEL (IFAP, COGECA and COPA) said that nothing should be allowed to obstruct innovation in the research and development stage. Moreover, ethics likewise called for great freedom of access to living matter.

159. Mr. LAIRD (UNICE) stated that no one wanted to prevent genuine research. However, there should not be a provision to the effect that infringement of intellectual property rights could be automatically avoided. The UPOV Convention not only provided for a research exemption but also for the free use of the product. This was a serious shortcoming of that convention. When a patent had been granted, everybody was free to make experiments in respect of the invention which had been disclosed to the public through the patent. If as a result of such experiments a further invention was made, a patent application could be filed in respect of that invention and a patent could be granted for it. The first patent only had an impact on commercial activities with respect to the second invention, if the use of that invention was to be considered as an infringement of the patent. Therefore, if a variety created through research on the basis of a patented invention fell within the scope of protection of that patent, this was to be considered as infringement.

160. Mr. GROSS (CEFIC) supported the views expressed by Mr. Laird.

161. Mr. STRAUS (AIPPI) supported the views expressed by Mr. Roberts and Mr. Laird.

162. Mr. ROTH (IBA) supported the position taken by the ICC. He expressed the opinion that the question arose as to whether the strongest possible intellectual property protection was not as great a factor in promoting the development of new ideas as the free availability of germplasm.

163. Mr. LE BUANEC (ASSINSEL) referred to the observations made by Mr. Roth (IBA) on the subject of the scale of genetic progress in the case of self-pollinating plants--for which varieties were freely available for variety creation purposes on account of the way in which they were exploited--and in the case of hybrid varieties--which benefited from strong "biological" protection. He pointed out that, at least in Europe, the progress made in the case of wheat (self-pollinating species) had been at least as great as in the case of maize (species exploited in the form of hybrid varieties). It was moreover very difficult to make progress with hybrid varieties if there was not sufficiently broad access to genetic variability. For the time being the conditions of access were somewhat unclear and, in the opinion of Mr. Le Buanec, the question called for examination in greater depth.

164. Mr. DUFFHUES (Chairman) concluded the discussions on the questions in paragraph 9(d) and (e) and noted that all participants were unanimous in considering the importance of research taking place as freely as possible. Only differences in detail could be noted among the various statements.

Question in Paragraph 9(a)

165. No comment was made on this question.

Questions in Paragraph 14(a) and (b)

166. (a) Mr. GREENGRASS (Vice Secretary-General of UPOV) stated that the notion of "variety" was to be considered in the framework of question 14 in the general context of national laws containing an exclusion of plant varieties as such from patent protection. The "variety" was an abstract concept which had been developed by users of plant varieties, such as agriculturalists, and researchers, such as botanists and taxonomists, to assist in the classification of plant material. The concept was not a concise one. It had no existence on its own. Since it related to living material, it presupposed an element of constraint to avoid changes in the plant material through cross-pollination, mutation or mixtures. Since it related to living material also, changes in the outward appearance through changes in environmental conditions had to be accommodated. Many rules had been established to define the unit of plant material that would be considered as a variety, mainly in terms of the mechanism used for reproduction or propagation. Vegetatively propagated species and self-pollinated species enabled the development of varieties that could be propagated or reproduced with great precision. In the case of cross-pollinating species, selfing was either impossible or led to inbreeding depression. The various varieties of those species therefore had to have an in-built variability, and precise rules were needed to control their reproduction and maintenance. Finally, the hybrids were a special case involving components (mostly inbred lines, governed by the rules relevant to the respective reproduction or propagation system) and crosses between them (again governed by relevant rules).

(b) The definition of the notion of "plant variety" was necessary to define the field of application of the plant variety protection system. However, when protection of a given variety was involved, one was essentially concerned with the conditions for protection. In that respect, it was essential to understand that if the conditions were not met, it was not possible to conclude that the subject matter of the application was not a variety: it could be a non-protectable variety.

(c) Turning to the questions put before the Committee of Experts, Mr. Greengrass stated that the purpose of the main question and subquestion (a) was essentially to identify gaps and overlaps in the case where different definitions were applied in the two protection systems concerned. In relation to subquestion (b), the criteria of distinctness, homogeneity (uniformity) and stability ("DUS") were the indispensable minima necessary to define a unit of plant material to which a practically enforceable legal right was to attach. Questions had arisen concerning the meaning of "plant variety" in relation to provisions excluding plant varieties from patent protection. According to one point of view which had been expressed, the provision applied solely to varieties meeting in full the DUS requirements for protection under the UPOV Convention. Consequently, varieties not meeting any one of those requirements would not be excluded from patent protection. This could lead to a situation where an entity would be patentable that, in the eyes of those familiar with the notion of "plant variety," could not be described with the precision required for effective legal enforcement. Moreover, a breeder could, at least in theory, choose to produce material that would not meet the requirements of plant variety protection law in order to open up for himself the patent route.

167. Mr. WOLF (Patent Office, Austria) stated that under the Austrian Patent Law--which was quite similar to the EPC--plant varieties were not eligible for patent protection. He indicated that protection of genes, cells and other parts of plants as a form of plant variety was not a good idea; they should be eligible for patent protection if the criteria therefor were satisfied.

The term "plant variety" should have the same meaning in patent laws and plant variety protection laws. Therefore, he replied in the affirmative to the questions put in subparagraphs (a) and (b) of paragraph 14.

168. Mr. MESSERLI (Intellectual Property Office, Switzerland) supported the approach to the definition of plant variety expressed by the Delegation of Austria and added that the inclusion of parts of plants in that definition would create difficulties. If an exclusion of some kind was to be maintained in patent laws, then possibly a new concept might have to be adopted. Possibly that concept could differ from the object of protection of plant variety protection laws.

169. (a) Mr. ESPENHAIN (Plant Novelty Board, Denmark) stated that the first question was whether the UPOV Convention and national laws thereunder should contain a definition. In that respect his Delegation considered that the notion indeed needed clarification to avoid misunderstandings.

(b) Concerning subquestion (a), Mr. ESPENHAIN stated that there should be only one definition. In relation to subquestion (b), it was more difficult to give a precise answer. In any event, reference should be made not only to the conditions for protection under the UPOV Convention, but also to relevant provisions in other systems such as the laws governing the admission of varieties to trade. The fact that a variety would not meet the statutory conditions did not imply that it became patentable, since it could still represent a variety. Where plant material contained an invention, the subject matter of patent protection would not be a variety, and that case had to be clearly distinguished in considering the question under discussion.

170. Mr. VANDERGHEYNST (Industrial Property Office, Belgium) stated on behalf of the Belgian patent authorities that if the possibility of a free choice between the two systems was provided, the problems of the boundary between them would no longer arise. The establishment of such a boundary caused problems since it would never be definitive. He added that it was difficult to define a plant variety since it existed only as a function of the conditions to be met to obtain a plant breeder's certificate. Likewise, in respect of patents, an invention only existed through the requirements for its patentability. He stated that for as long as the prohibition on double protection was maintained, and taking into account Article 53(b) of the European Patent Convention, the potential scope of protection under patent law could not accommodate the definition of plant variety as unilaterally extended within the revision of the UPOV Convention. He concluded that it was preferable for the definition of plant variety to be the same in both systems of protection.

171. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) stated that it was desirable to have only one definition. He observed that the question raised was not relevant if plant varieties were not excluded from patent protection. Where there was an exclusion, the definition proposed in subquestion (b) would be acceptable in his view.

172. Mrs. LOMMI (Board of Patents and Registration, Finland) indicated that the European Patent Convention provided definitional difficulties in this regard, in particular with respect to Article 53(b) of that Convention. She indicated that the ban on protection of plant varieties, in Article 53(b), should be abolished which would eliminate the need for a definition of plant varieties in patent legislation.

173. Mr. KIEWIET (Board for Plant Breeders' Rights, Netherlands) stated that there should be only one definition and that, for the reasons explained by

Mr. Greengrass (Vice Secretary-General of UPOV), the definition proposed in subquestion (b) was not acceptable for the purpose stated therein.

174. Mr. PERIZONIUS (Patent Office, Netherlands) added that account should be taken of plant varieties (e.g. yeasts) that were products of microbiological processes and therefore patentable under Article 53(b) of the European Patent Convention.

175. Mr. HOINKES (Patent and Trademark Office, United States of America) pointed out that his office was not handicapped by Article 53(b) of the European Patent Convention. He expressed sympathy, however, with those who had the difficult task of trying to define a variety for the purposes of exclusion in patent legislation. In this regard, he supported the Delegation of Belgium in that it was difficult to answer the question as stated. He proposed that one ought to come up with a definition that met the needs of the plant variety protection and of the patent system. He expressed the opinion that a variety was a variety whether protectable or not, to the same extent as an invention was an invention whether or not it was patentable. He stated that the requirements of distinctness, uniformity and stability under the UPOV Convention and the requirements of novelty, non-obviousness and utility under patent legislation had little to do with whether a plant was a variety or not. In conclusion, he said it did make sense to define "variety" in both systems in the same manner but could offer no opinion as to how it should be done.

176. Mrs. MORELLI GRADI (Patent Office, Italy) went along with the statement made by Mr. Vandergheynst on behalf of Belgium. She added that the definition of a plant variety should be the same in both systems. She stated that the definition as proposed in the revision of the UPOV Convention was very broad and seemed to go beyond what was protectable as a new plant variety since it extended to parts of plants such as cell lines or genes. She added that the definition also seemed to depart from the criteria of distinctness, uniformity and stability so far laid down by UPOV.

177. Mr. OESTER (Ministry of Agriculture, Sweden) stated that his Delegation supported the declaration made by Mr. Espenhain (Denmark) in general terms. There should be only one definition and there was a need for further proposals.

178. Mr. DENNEHEY (Patent Office, United Kingdom) stated that the whole Delegation of the United Kingdom noted the observation that the discussion presupposed that the exclusion of the patenting of plant varieties was to be retained. He indicated that, if free choice was allowed, the need for a definition with regard to the interface between patents and plant variety protection was not needed. He stated that if the ban was retained, however, one had to ensure that no grey areas or gaps existed between the two forms of protection. In this regard, he answered the question posed in paragraph 14(a) as "yes." He answered the question posed in paragraph 14(b) by saying that, if the requirements of distinctness, uniformity and stability were made of a variety for the purposes of plant breeders' rights protection but not for the purposes of an exclusion from patentability, there could be gaps between the two forms of protection in respect of non-uniform, non-stable varieties. He concluded by stating that the questions relating to varieties that arose as a result of patentable processes would need to be considered in reference to the questions in paragraph 13.

179. Mr. SASAKI (Patent Office, Japan) indicated that his Government had not yet reached a final position on the questions contained in paragraph 14 but that two opposite opinions on the answer to the question could be discerned in his country. He stated that the first opinion was that identical definitions

may be necessary for both systems to avoid gaps or overlaps in protection between the two forms of protection and that, in such a case, the definition of a variety should be based upon specific characteristics fixed by its genetic code. He stated that the second possible approach to answering question 14 was that plant variety inventions should not be excluded and that, in such a case, the definition of a plant variety or a group of plants should be equivalent to the requirements of distinctness, uniformity and stability and be an individual unit for the purposes of cultivation, as provided in the UPOV Convention.

180. Mr. SHITIKOV (State Committee for Inventions and Discoveries, Soviet Union) replied in the affirmative to the question in subparagraph (a). He was not ready to make a final judgement in respect of the question in subparagraph (b) since it was presently under consideration in the Soviet Union.

181. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) stated that "plant variety" should be defined for the purposes of plant variety protection. He replied in the affirmative to the question in subparagraph (a) and to the question in subparagraph (b), adding that the latter definition was not quite sufficient for the purposes of plant variety protection law. He said that his Delegation was unable at present to come out with a definition of "plant variety."

182. Mr. LOUDON (Plant Variety Rights Office, Australia) observed that Australia did not exclude plant varieties from patent protection. He further observed that, for countries having no specially designed plant variety protection system, it was very difficult to introduce such a system without having the benefit of a precise definition to minimize lack of understanding and afford enforceable rights.

183. Mr. HADDRICK (Patent, Trademarks and Designs Office, Australia) indicated that the questions under consideration should be a matter for each country to decide and that a need for definition arose only in situations where there was an exclusion from patenting. He stated that it was difficult to deal with the concept of exclusions from patenting because it placed one in a negative frame of mind when excluding subject matter and then back to a positive frame of mind when determining what subject matter fell outside the scope of the exclusion. With respect to subparagraph (b), patent examiners would have problems in assessing the requirements of distinctness, uniformity and stability to determine whether a claimed invention was susceptible to an exclusion or not.

184. Mr. LOPEZ DE HARO (Certification and Registration of Plant Varieties, Spain) stated that there was no definite position in Spain, especially concerning subquestion (b). Whereas the definition proposed therein would be acceptable in principle, Mr. Lopez de Haro shared the concerns already expressed by a number of speakers. Concerning subquestion (a), it was considered advisable to have only one definition.

185. Mr. O'FARRELL (Patents Office, Ireland) stated that it was desirable to have a common definition. He supported the views expressed by the Delegation of Australia. A definition of subject matter to be excluded as in Article 53(b) of the EPC would always create problems.

186. Mrs. MAHER (Patent Office, Canada) stated, with respect to the question in paragraph 14(b), that for an examiner, the definition in paragraph 14(b) excluding varieties from patent protection would be difficult to apply. She stated that biotechnological inventors may start from a transformed cell to

create a plant without trying at the outset to prove the requirements of distinctness, uniformity and stability. The onus, therefore, would fall upon the examiner to prove that the requirements of distinctness, uniformity and stability could be met by the claimed invention to show that it fell under the exclusion.

187. Mr. SIMUNOVIC (Agriculture and Livestock Service, Chile) said that for the purposes of UPOV a definition of "variety" was required as well as a definition of the conditions of protection.

188. Mr. LOSSIUS (Patent Office, Norway) stated that it was desirable that the definitions be the same with respect to both forms of protection but felt, for reasons given by Mr. Greengrass (UPOV), that it would be difficult to formulate a definition applicable in both regimes.

189. Mrs. AFONSO (Institute of Industrial Property, Portugal) approved the position taken by the Delegation of Spain.

190. Mrs. KEEGAN (Directorate General for the International Market and Industrial Affairs, CEC) stated that the Commission had structured its proposed directive concerning biotechnological inventions in a way that was in conformity with the EPC. Therefore, the provision of Article 53(b) of that Convention could stay as it was. However, it should be interpreted in a narrow manner so that only varieties which fulfilled the requirements of protection under plant variety protection laws would be excluded, as stated in the Ciba Geigy decision of the EPO. The proposed directive had been prepared prior to the work on the revision of the UPOV Convention. That work and any conclusions adopted within the framework of WIPO would be taken into account for the finalization of the Directive.

191. Mr. GUGERELL (EPO) noted that the UPOV Convention, like the European Patent Convention, did not contain a definition of plant variety. In the new draft of the UPOV Convention such a definition was proposed. He considered it to be too broad. He expressed the view that the definition of the term "plant variety," as opposed to the right conferred by a plant variety protection certificate, should not cover parts of plants. He further suggested the following draft definition of "plant variety":

"Variety is a group of plants within a species which is to be regarded as a unit according to its properties in respect of the criteria of distinctness, homogeneity and stability, even if the requirements are not fully met, in order to register the variety according to the applicable law on plant variety protection."

The second part of the definition was aimed at meeting the concern expressed by the Vice Secretary-General of UPOV that the breeder should not be given the free choice between protection via a plant variety protection certificate and a patent for virtually the same subject matter by deliberately not fulfilling the requirements of distinctness, homogeneity and stability.

192. Mr. ROBERTS (ICC) recalled that it was the object of the meeting to discuss the interface between patents and plant breeders' rights. He stated that the definition of "variety" was a matter for UPOV to consider and the present discussion occurred solely because of the ban on double protection. He then stated that any definition had to be reasonably acceptable on a theoretical basis to the patent system, and not unduly exclusive to inventions, and had to be capable of being applied by patent offices in practice. He further endorsed the comments made by the Delegates from Belgium and the United Kingdom.

193. Mr. SUGDEN (Chairman) indicated that the text suggested by the EPO did not come from the member States or the Organization itself but was only prepared by the Office.

194. Mr. GUTMANN (FICPI) stated that, logically, a single definition should concern a single type of object or group of objects. He added that he could not go along with the idea that plants which were incapable of classification by botanists, taxonomists or farmers, and which would therefore be incapable of use under normal growing conditions, could be protected by a patent. It was difficult for him to envisage a definition of "plant variety" as long as no decision had been taken on maintaining or lifting the prohibition on double protection. He explained that if the prohibition was lifted, the definition of "plant variety" could be revised and extended. However, if the prohibition were to be maintained, the definition of plant variety would have to remain narrow and could not be extended, particularly in the form of the informal proposal submitted by the EPO.

195. (a) Miss COMTE (IFAP, COPA and COGECA) said that the organizations represented by her were in favor of the retention of the provisions prohibiting double protection and advocated the use of a single definition in order to avoid problems of loopholes and overlaps.

(b) With regard to subquestion (b), she referred to the explanations given by Mr. Greengrass (Vice Secretary-General of UPOV) and stressed that the definition should cover all reproductive or other propagating material, in other words plants, parts of plants, cells and protoplasts.

196. Mr. HASHIMOTO (APAA) supported the statement made by the Representative of the ICC. He further stated that any definition as a demarcation between plant breeders' rights and patents should not be made. He stated that, if a definition was needed, it should only be established for the purposes of the UPOV Convention and that inventions should not be excluded by such a definition.

197. Mr. LE BUANEC (ASSINSEL) recalled that the majority of the ASSINSEL membership were in favor of maintaining the provisions prohibiting double protection. It had been considered necessary to have a single definition for the purposes of the interface between patent protection and protection by plant variety certificate. For the purposes of the exclusion of plant varieties from patentability, the definition proposed in subquestion (b) was acceptable but insufficient, as Mr. Brouër (Federal Republic of Germany) had mentioned. On the other hand, one could not reply in the affirmative to subquestion (b) without examining subquestion (c). In a general comment, Mr. Le Buanec said that the questions asked in paragraph 14 gave the impression of some confusion between protection criteria, the subject matter of protection and the scope of protection, so that it was sometimes difficult to give replies.

198. Mr. ONO (PIPA) stated that cumulative protection should be available under patents and plant breeders' rights systems and that the concept of a plant variety should only be defined under the plant breeders' rights system.

199. Mr. YAMASHITA (JPA) indicated that plant breeders' rights and patent protection should be permitted to overlap. Thus, no answer to the questions posed in paragraph 14(a) and 14(b) had to be made. He further stated that any definition of "plant variety" should be made only for the purposes of UPOV.

200. (a) Mr. ROYON (CIOPORA) stated that CIOPORA considered that question 14 was not relevant to it since it was in favor of both protection systems being

available. In addition, Mr. Royon found that the question was disturbing, that it prejudiced the outcome of the session and the future solutions, and that it was biased in favor of one system.

(b) Mr. Royon stated that CIOPORA supported the views expressed by Mr. Vandergheynst (Belgium) and was opposed to any definition of "plant variety" putting biotechnology into the realm of UPOV. CIOPORA had made specific proposals in connection with the revision of the UPOV Convention. In general terms, protection at the variety level and at the level of genetic information should not be confused.

201. Mr. LAIRD (UNICE) indicated that the definition of variety in patent law, if at all there was a need for such a definition, should be a matter of interpretation of law and not determined in a different forum. He stated that it had been suggested that patent protection should apply if an inventor failed to obtain a plant breeder's right; in this regard, he noted that one should not worry about the grant of patents to material that failed to meet the requirements under a plant breeders' rights system. In such a case, it was the patent owner's problem that he had expended the time and energy to secure rights that might be of little value.

202. Mr. WINTER (COMASSO) stated that COMASSO replied in the affirmative in relation to both subquestions (a) and (b), under the condition that the definition proposed in subquestion (c) should also be considered.

203. Mr. KOCH (AIPH) stated that AIPH was not in favor of changes in the UPOV Convention leading to the possibility of double protection. All developments in the field of plants which led to identical plants had, in AIPH's view, to fall under the plant variety protection system. Consequently, AIPH replied in the affirmative to both subquestions (a) and (b), under the condition that the definition proposed in subquestion (b) would also extend to material such as cell lines.

204. Mr. HUYGENS (EPI) indicated that he was in favor of lifting the ban on double protection and that the ongoing discussion was a further argument in favor of lifting the ban. Specifically, he stated that the new definition of "plant variety" proposed for the UPOV Convention introduced substantial grey areas between the protection afforded by patents and that provided by plant breeders' rights. He expressed the view that it was desirable to have the same definition in both systems for plant varieties.

205. Mr. GROSS (CEFIC) supported the position taken by the Representative of EPI and expressed himself in favor of lifting the ban on double protection. Since the ban still existed he replied in the affirmative to the question in subparagraph (a), noting that any definition should be considered as a legal one but not as a scientific one.

206. Mr. ROTH (GIFAP) indicated that he was in favor of one definition for "variety." He stated that if Article 6 of the UPOV Convention was to be broadened, then all patent laws had to be reviewed. He further stated that the definition of "plant variety" under the UPOV Convention could not be changed unless Article 2 of the UPOV Convention and Article 53(b) of the European Patent Convention were abolished. He also stated his support for the positions taken in this regard by CIOPORA and the Delegations of Belgium and Switzerland.

207. Mr. STRAUS (AIPPI) stated that the two systems of protection should not compete. They should be considered from a macroeconomic point of view as supplementing each other in the realm of plant varieties and biotechnological

achievements. He considered an attempt to create equivalent definitions of "plant variety" for patent and plant variety protection purposes to be rather dangerous. He supported the ideas expressed by the Delegations of Belgium and Switzerland and the Representatives of FICPI, APAA, CEFIC and GIFAP.

208. Mr. HOERNER (IBA) indicated that without the prohibition of double protection there would be no definitional problem.

209. Mr. BROCK-NANNESTAD (FEMIPI) was in favor of the strongest possible plant breeders' rights, but not at the expense of patent protection. He further stated that a broad definition of plant variety coupled with a ban on double protection would obviate the need for qualified work in patent offices.

210. Mr. HJERTMAN (EFPIA) indicated his support for the position taken by the Delegates from UNICE and CEFIC.

211. Mr. DUFFHUES (Chairman) concluded the discussions on the introductory question and subquestions (a) and (b) and noted that most comments were given in the light of the statements made in relation to question 8. Against that background, most speakers were in favor of a unified definition of "plant variety." Concerning subquestion (b), a number of speakers considered that the definition proposed therein was acceptable subject to further elements being drawn from the definition proposed in subquestion (c).

Question in Paragraph 14(d)

212. Mr. GREENGRASS (Vice Secretary-General of UPOV) stressed that this subquestion was asked in the context of an exclusion of plant varieties from patent protection. The practical problem addressed therein was whether it was possible to seek a patent by calling the subject matter concerned a "plant" rather than a "plant variety" where that subject matter was exploited essentially as a plant variety.

213. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) stated that his country maintained exclusions in respect of plant varieties. Therefore, his Delegation could not accept circumventing the exclusion by claiming in fact a plant variety in the form of plants or parts thereof containing the entire genetic information of the variety.

214. Mr. LOSSIUS (Patent Office, Norway) indicated his support for the position taken by Mr. Brouër.

215. Mr. VERSCHURE (Ministry of Economic Affairs, Netherlands) also expressed support for the position taken by Mr. Brouër.

216. Mr. HADDRICK (Patent, Trademarks and Designs Office, Australia) indicated he was taking a contrary view to the previous delegations.

217. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) stated that, in the context of an exclusion, the answer from his country to subquestion (d) would be in the affirmative.

218. Mr. HOINKES (Patent and Trademark Office, United States of America) indicated his agreement with the position taken by the Delegate from Australia.

219. (a) Mr. ESPENHAIN (Plant Novelty Board, Denmark) reiterated his view that the revision of the UPOV Convention did in no way imply a change in philosophy and practice. The same applied as far as the Danish national legislation was concerned.

(b) Turning to subquestion (d), his Delegation was of the opinion that it was to be replied to in the affirmative. The Danish plant variety protection legislation already provided that any part of a plant which was capable of producing a new plant was propagating material. Nevertheless, parts of plants and processes concerning plants were patentable if they did not constitute a plant variety. However, the patent was limited to the part or process concerned.

220. Miss DARMON (Institute of Industrial Property, France) stated on behalf of her supervisory authority that she supported the position of the Delegation of Denmark.

221. Mrs. LOMMI (Board of Patents and Registration, Finland) indicated her support for the position taken by the Delegate from Denmark.

222. Mr. O'FARRELL (Patent Office, Ireland) indicated his support for the comments and answer provided by the Delegate from Denmark.

223. Mr. DENNEHEY (Patent Office, United Kingdom), in agreeing with much of what had been said by the Delegate from Denmark, stated that plant cells and other parts of plants were not excluded from patent protection merely because they may represent a variety.

224. Mr. VUORI (Ministry of Agriculture and Forestry, Finland) stated that the agricultural circles in Finland advocated a negative reply to subquestion (d).

225. Mr. SHITIKOV (State Committee for Inventions and Discoveries, Soviet Union) supported the position expressed by the Delegation of Denmark.

226. Mr. OESTER (Ministry of Agriculture, Sweden) stated that his Delegation supported the views expressed by Mr. Espenhain (Denmark) and Mr. Dennehey (United Kingdom).

227. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) clarified his position in respect of subparagraph (d) given earlier to the extent that it should not be interpreted as excluding patent protection of genes, cells, protoplasts, etc. He understood the question in subparagraph (d) to be in respect of a possibility for a patent applicant to seek protection for a part of a plant or a plant as such in fact representing a plant variety. That should not be possible.

228. Mrs. MORELLI GRADI (Patent Office, Italy) supported the positions taken by the Delegations of Denmark and the United Kingdom.

229. Mr. YAMASHITA (JPA) stated that plants or parts of plants should be patentable subject matter.

230. Mr. LE BUANEC (ASSINSEL) stated that ASSINSEL was not opposed to the protection of plants or parts of plants by patents. However, that possibility should not constitute an indirect means for obtaining a patent for an object that constituted, in fact, a variety.

231. Mr. ROBERTS (ICC) indicated that it was vital and essential to provide patent protection for plant parts and that exceptions should be kept to a minimum. He further indicated that it was essential to keep a distinction between the variety as such and material of the variety. He stated that if plant breeders' rights were provided to protect the variety, then patents should be directed to the material of the variety.

232. Mr. GROSS (CEFIC) indicated that his answer to the question posed in paragraph 14(d) was "yes" if the ban on double protection was maintained. He further indicated that the inventor's freedom of choice between systems of protection should not be curtailed.

233. Mr. ROTH (GIFAP) indicated that his answer to the question was "yes."

234. Mr. ROTH (IBA) indicated that he agreed with the positions taken by the Delegates from Denmark and the United Kingdom. He stated that biotechnological interventions in plants and plant cells could result in a new plant as well as a new gene, and that such inventions would often be applicable across variety, species and genus boundaries. In such a case, to restrict the inventor to plant breeders' rights would be to give too low a protection to the invention.

235. Mr. KOCH (AIPH) stated that AIPH was of the opinion that genes and protoplasts should be patentable and that other parts of plants should fall under the plant variety protection system.

236. Mr. ENGHOLM (EPI) indicated he supported the position taken by the Representative from the ICC and the Delegations from the United Kingdom and Denmark in answering "yes" to the question.

237. Mr. WINTER (COMASSO) stated that the limitation proposed by Mr. Brouër (Ministry of Justice, Federal Republic of Germany) was justified: the possibility of obtaining patent protection for plants and plant parts should not permit the exclusion of plant varieties from patent protection to be circumvented.

238. Miss COMTE (IPAF, COPA and COGECA) recalled that, according to the organizations that she was representing, the definition of "plant variety" should include plants, parts of plants, cells and protoplasts. Such elements should qualify for plant variety protection if they constituted reproductive or vegetative propagating material of a variety. If not, they should be governed by the patent system. Miss Comte moreover endorsed the statement made by Mr. Le Buanec (ASSINSEL) on the subject of circumventing the provisions excluding plant varieties from patentability.

239. Mr. ROYON (CIOPORA) referred to his earlier remark concerning question 14 and stated that CIOPORA was in favor of the possibility of obtaining patents for plants or parts of plants containing the complete genetic information of a plant.

240. Mr. HASHIMOTO (APAA) indicated that his answer to the question was "yes."

241. Mr. BROCK-NANNESTAD (FEMIPI) said that, given the ban on double protection was maintained, he agreed with the Delegation from the United Kingdom. He further indicated that it was difficult to put the patent office to the task of determining what was or was not a variety. He stated, in concert with the position taken by the Delegation of the Federal Republic of Germany, that deliberate attempts to patent varieties should not be permitted. In conclusion, he answered "yes" to the question.

242. Mr. DUFFHUES (Chairman) concluded the discussions on subquestion (d) and noted that the great majority of delegations gave an affirmative reply to it, with some of them introducing a limitation.

Question in Paragraph 14(f)

243. (a) Mr. GREENGRASS (Vice Secretary-General of UPOV) recalled that, in the reproduction or multiplication stage, plant varieties were essentially exploited in the form of plant parts such as seeds or cuttings, grafts, layers or other vegetative propagating material. Such parts expressed or were able to express the complete identity of a whole plant; they contained the complete genetic information necessary for the regeneration of a whole plant. With modern technology, the plant parts used in vegetative propagation tended to become smaller, with single cells being used in techniques such as in vitro propagation or the production of artificial seeds. Subquestion (f) addressed more specifically the question of the scope of protection of a plant breeders' right in that relation.

(b) He added that future documents of UPOV would no longer contain the proposals for the revision of the Convention which had been questioned in this and earlier meetings because of the overlap between the definition of "plant variety" and the definition of the material to which the right under the UPOV Convention would relate. However, it should be stressed that it was clear from the discussions within UPOV that any plant part containing the complete genetic information necessary for the regeneration of a whole plant was considered as propagating material or, in view of the totipotency of plant cells, potential propagating material. Any smaller element, in particular genetic sequences, neither was propagating material nor represented a plant variety; it was therefore outside the scope of plant variety protection.

244. Mr. PERIZONIUS (Patent Office, Netherlands) wondered whether dead parts of plants should be included.

245. Mr. ESPENHAIN (Plant Novelty Board, Denmark) stated that his Delegation considered that the plant breeder's right should extend to the elements contemplated in subquestion (f), under the condition, however, that they contained the entire genetic information necessary for the regeneration of whole plants and that the plant variety could be derived from such elements.

246. Mr. OESTER (Ministry of Agriculture, Sweden), Mrs. DARMON (National Institute of Industrial Property, France), Mr. VUORI (Ministry of Agriculture and Forestry, Finland), Mr. LOSSIUS (Patent Office, Norway), Mr. KIEWIET (Board for Plant Breeders' Rights, Netherlands) and Mr. SHITIKOV (State Committee for Inventions and Discoveries, Soviet Union) stated that their respective delegations shared the views expressed by Mr. ESPENHAIN (Denmark).

247. Mr. BYRNE (Department of Agriculture and Food, Ireland) stated that his Delegation gave a positive reply to subquestion (f).

248. Mrs. MORELLI GRADI (Central Patent Office, Italy) wondered whether one should not talk of "genetic information of the plant," rather than "genetic code of the plant." She could further accept extension of breeders' rights only in those cases in which the part of the plant enabled reproduction of the whole plant, that is to say, contained the whole genetic information.

249. Mr. ARDLEY (Plant Variety Rights Office, United Kingdom) stated that his Delegation would also give an affirmative reply to subquestion (f), without prejudice, however, to the patentability of such plant parts.

250. Mr. HADDRICK (Patent, Trade Marks and Designs Office, Australia) indicated that under plant breeders' rights protection the breeder should have protection against persons using the parts of the plants to reproduce the variety.

251. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) stated that if the question in subparagraph (f) referred to reproductive material, his answer was quite positive; if it referred to plants or other end products, his answer was also, in principle, in the affirmative.

252. Mr. LOPEZ DE HARO (Certification and Registration of Plant Varieties, Spain) stated that his Delegation shared the views expressed by Mr. Ardley (United Kingdom).

253. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) indicated that his answer to the question was "yes" if the only parts referred to were parts from which plants could be reproduced.

254. Mr. HOINKES (Patent and Trademark Office, United States of America) pointed out that there seemed to be some inconsistency in the replies given by many delegations to the questions raised in paragraph 14(d), on the one hand, and in paragraph 14(f), on the other hand, since the majority of such replies had been in the affirmative in respect of both questions. An affirmative reply to the question contained in paragraph 14(d) implied that a patent could be obtained for an invention consisting of a plant or a part of a plant containing the complete genetic information of the relevant plant, including, for example, a plant cell or a protoplast. An affirmative reply to the question contained in paragraph 14(f) implied that a plant breeder's right on a given plant variety would extend to any part of the relevant plant incorporating the complete genetic information of such plant variety. He therefore wondered how an affirmative reply to one question squared with an affirmative reply to the other, since in such case patent rights and plant breeders' rights referring to a same plant or plant variety would seem to interfere with one another.

255. Mr. HADDRICK (Patent, Trade Marks and Designs Office, Australia) clarified that the Australian Delegation had given an affirmative reply to the question contained in paragraph 14(f) because it was believed that plant breeders' rights should effectively protect the breeder against any use of the reproductive material of the protected variety, and the parts of plants referred to in that question were understood to be propagating material of the protected variety.

256. Mr. ESPENHAIN (Plant Novelty Board, Denmark) stated that his Delegation understood that subquestion (d) related to inventions embodied in biotechnological products such as genes, or processes such as crosses between species giving rise to plants or plant parts that did not represent a variety. In his Delegation's view, such inventions would clearly be patentable. Subquestion (f), on the other hand, related to material which constituted a plant variety.

257. Mr. LAIRD (UNICE) explained that parts of plants such as cells, cell lines and meristem cuttings were considered as propagating material for the purposes of plant breeders' rights. This was relevant in connection with the scope of protection afforded to a plant breeder by virtue of a plant breeder's right. That did not, however, mean that those parts of plants were the object of protection under the plant breeders' rights system. Cells, cell lines, protoplasts and other parts of plants could, however, be the object of protection under patent law and should not be excluded. The Committee of Experts had already expressed its agreement in this respect. A distinction should be made between the object of protection under plant breeders' rights and patent rights and the scope of such protection under those rights. A plant variety was protected as such on the basis of the full set of characteristics that constituted its phenotype. Once that right was

established, the protection would cover all reproductive or vegetative propagating material of that variety, whether it be whole plants or parts thereof if they were commercialized in a way that infringed the plant breeder's right.

258. The views expressed by the Representative of UNICE were supported by Mr. ROTH (GIFAP), Mr. STRAUS (AIPPI), Mr. ROBERTS (ICC), Mr. ENGHOLM (EPI) and Mr. GUTMANN (FICPI). Mr. ROBERTS (ICC) also shared the concerns expressed by CIOPORA and ASSINSEL.

259. Mr. SCHWARZENBACH (ISTA) referred to earlier declarations tending to the creation of a new notion of "variety" which would not be agronomic but legal in character. ISTA established certificates relating to the quality of seeds. Such certificates referred to genera, species and varieties on the basis of the established principles of nomenclature at the botanical or variety level. Mr. Schwarzenbach considered that it would be difficult to accommodate a new concept within the context of the existing framework. Should one be created, then the International Union of Biological Sciences (IUBS) should be consulted.

260. Mr. ROYON (CIOPORA) regretted once again the bias introduced into the debate by the questions in paragraph 14. He welcomed the proposed extension of the rights granted under the plant variety protection system and suggested that the possibility of relating those rights to any commercial exploitation of the variety be considered.

261. Miss COMTE (IFAP, COPA and COGECA) said that the organizations that she represented replied in the affirmative to subquestion (f).

262. Mr. LANGE (ASSINSEL) stated that ASSINSEL replied in the affirmative to subquestion (f). He considered subquestion (d) to relate to the protectable subject matter and subquestion (f) to the scope of the protection afforded.

263. Mr. URSELMANN (COMASSO) stated that COMASSO shared the view expressed by Mr. Lange (ASSINSEL). He added that, as explained by Mr. Greengrass (Vice Secretary-General of UPOV), cells constituted propagating material and were already subject, under the present text of the UPOV Convention, to the right granted to the breeder.

264. Mr. BROCK NANNESTAD (FEMIPI) felt that the structure of question 14 demonstrated the illogical implications of having a ban on double protection and referred to the comments by the Delegation of the United States of America in respect of question 14(f).

Question in Paragraph 14(e)

265. Mr. GREENGRASS (Vice Secretary-General of UPOV) stated that subquestion (e) would be clearer if "which are not intended to be regenerated into whole plants" were substituted for "in relation to which no claims are made for a whole plant." He repeated that there was no intention on the part of UPOV to extend the plant variety protection system inconsiderately into the world of industrial processes. Subquestion (e) addressed the possibility that cells of a variety protected by a plant breeder's right would be the form under which the variety was exploited. It called for views as to the desirability of covering such varieties by plant variety protection.

266. Mr. ESPENHAIN (Plant Novelty Board, Denmark) stated that if the cell lines were considered as propagating material, then the reply would also be affirmative.

267. Mr. HADDRICK (Patent, Trade Marks and Designs Office, Australia) said that a distinction should be made between, on the one hand, what subject matter was protected by a given right and, on the other hand, what rights were given by the title of protection. The object protected and the scope of the right were two different things. He believed that cell lines which were not used for regenerating a complete plant of a protected variety should not be covered by the relevant plant breeder's right.

268. Mr. LOUDON (Plant Variety Rights Office, Australia) stated that the current plant variety rights scheme of Australia tended to reward breeders of varieties meeting the requirements of distinctness, homogeneity and stability. It was not intended for the rewarding of industrial processes, and it was difficult to see how that could be possible on the basis of the present operation of the scheme.

269. Mr. OESTER (Ministry of Agriculture, Sweden) stated that his Delegation would give a negative reply to subquestion (e).

270. Mr. SASAKI (Patent Office, Japan) said that, at present, two different opinions prevailed in Japan. According to the first opinion, cell lines incorporating the complete set of genetic information of plants should be representative of a plant variety and should be excluded from patent protection. The other opinion was that for the purposes of plant variety protection, plant varieties should be defined as a plant or a group of plants which were considered to satisfy the definition of a variety, meet the criteria of distinctness, homogeneity and stability and to be an independent unit for cultivation purposes. This definition would exclude parts of plants and also exclude cell lines to be used only for industrial processes. The proposition would be denied that plant breeders' rights should extend to any parts of plants incorporating genetic information of the protected variety.

271. Mr. GOEBEL (Patent Office, Federal Republic of Germany) believed that meristems and cell lines could be included in the concept of plant variety, and in this respect the question contained in paragraph 14(e) could be answered in the affirmative. It could also be justified to draw the borderline of the definition of "plant variety" at the cell level or at the point where the plant material was no longer viable, for example, when the material was used for industrial processes. The rights in the plant variety should subsist in the plant material as such, irrespective of the use made thereof.

272. Mr. HOINKES (Patent and Trademark Office, United States of America) inquired whether the question that had been addressed related to subject matter to be excluded from patentability. If the purpose was to exclude matter such as cell lines from the possibility of patent protection, then his Delegation would find it difficult to follow that proposition. In his view, cell lines used for reproducing a protected plant variety were covered by the relevant plant breeder's right. On the other hand, the use of cells of the protected plant variety for industrial purposes would not be covered by those rights.

273. Mrs. MORELLI GRADI (Central Patent Office, Italy) said that the reply would have to be in the negative if the question implied extension of the definition of "plant variety." If the question concerned extension of breeders' rights, there could be a conflict of rights between the breeder and the user of cells who used them exclusively in an industrial process.

274. Mr. KIEWIET (Board for Plant Breeders' Rights, Netherlands) stated that subquestion (e) related to the scope of protection provided under the plant

variety protection system rather than to the definition of "plant variety." Cells of a protected variety comprising the complete genetic information capable of regenerating whole plants should fall within the scope of protection granted in relation to propagating material. On the other hand, the process for the exploitation of such cells should also be patentable, with a conflict of rights (to be settled by agreement between the parties) possibly arising. The problem of settlement of conflicts, however, was to be dealt with elsewhere.

275. Mr. ARDLEY (Plant Variety Rights Office, United Kingdom) stated that his Delegation could support the views expressed by Mr. Kiewiet (Netherlands). A line of cells containing the complete genetic information that was characteristic of a protected variety represented that variety. The current proposals for the revision of Article 5 of the UPOV Convention raised the question of whether the right should also cover multiplications in industrial processes. That would have to be considered further.

276. Mr. ESPENHAIN (Plant Novelty Board, Denmark) noted that the scope of the protection to be afforded under the UPOV Convention was still under discussion.

277. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) stated that he supported the views expressed by Mr. Kiewiet (Netherlands). He saw breeders' rights with respect to cells as being similar to the rights applying to wheat seed, for example, which could be used both for reproductive and non-reproductive purposes (particularly processing and feeding).

278. Mr. GUGERELL (EPO) reiterated that the definition of the term "plant variety" should be distinguished from the right conferred by the protection of new plant varieties. It should also be borne in mind that the exclusion from patent protection contained in Article 53(b) of the European Patent Convention was followed by a second sentence in the same provision to the effect that an exception was made to that exclusion. Such exception implied that processes for the production of plant varieties may be patented to the extent that they were microbiological processes. The application of cell lines in an industrial process could therefore be patented as an invention. This could, however, give rise to a contradiction if the question contained in paragraph 14(e) were answered in the affirmative in respect of the definition of the term "plant variety."

279. Mr. ENGHOLM (EPI) gave a negative answer to this question.

280. Mr. WINTER (COMASSO) stated that COMASSO had favored an extension of the scope of protection afforded under the UPOV Convention, both in relation to the material and the acts to be covered. That meant that COMASSO advocated in practice that the cell lines contemplated in subquestion (e) be covered by the desired scope of protection. However, COMASSO still wished to consider whether that was a desirable development.

281. Mr. LANGE (ASSINSEL) stated that the cell lines contemplated in subquestion (e) should not be an object of protection under the UPOV Convention, but rather an object to which the scope of protection was to be extended. Such cell lines were the subject of industrial exploitation of a variety.

282. Mr. ROBERTS (ICC) said that he would favor extending the rights for plant breeders provided such extension did not diminish the rights of patent holders. He enquired whether plant breeders really needed protection for cell lines. He believed that plant variety rights were established to reward years of work to produce a variety understood as a total combination of properties,

complying with the requirements of distinctness, uniformity and stability. If plant cells were used instead of whole plants, only one or a few of the characteristics or properties of the plant variety would actually be used. Moreover, the characteristics of plant cells were bound to change in cell cultures to the point that they would no longer meet the DUS criteria established in the first place.

283. Mr. ONO (PIPA) referred to specific situations concerning the use of plant cells and inquired as to the extent plant breeders' rights would be applicable. He asked, if plant cells were produced that could be considered to be a new product, for example, hybrid cells, but which were not yet recognized as a plant variety, but those cells were nevertheless useful in industrial processes, whether plant breeders' rights should cover such cells. He believed that plant breeders' rights should not cover the use of plant cells for industrial purposes.

284. Mr. YAMASHITA (JPA) believed that the question contained in paragraph 14(e) should be answered in the negative. Plant cells were patentable matter and should therefore not be covered under plant breeders' rights. Those rights should be limited to the traditional concept of plant variety which was limited in scope. Plant breeders' rights did not seem suitable for the protection of parts of plants. Those parts should not be included in the definition of "plant variety" under discussion in the revision of the UPOV Convention.

285. Mr. GROSS (CEPIC) stated that his answer to the question contained in paragraph 14(e) was "no."

286. Mr. ROYON (CIOPORA) stated that the ambiguity of the subquestion made an answer difficult. If the question related to the scope of protection, reference was to be made to subquestion (f). Mr. Royon reiterated the position of CIOPORA that the scope of protection under the UPOV Convention should extend to any form of commercial exploitation of the variety.

287. Mr. LAIRD (UNICE) referred to the comments made by the Delegation of the Netherlands. He noted that if plant variety rights extended to the use of plant cells of the protected variety in an industrial process, and such process were patented in favor of another person, there could be a conflict of rights because a third party using such process would have to obtain two separate licenses from the holders of the two different titles of protection. He enquired whether this was not a situation of double protection which supported the position that the ban on double protection should be lifted.

288. Mr. GOEBEL (Patent Office, Federal Republic of Germany) stated that cell lines and processes relating to plant cells should remain patentable subject matter.

289. Mr. GUTMANN (FICPI) stated that subparagraph (e) constituted a case where cumulative protection should be authorized. He further expressed his agreement with the Delegation of the Federal Republic of Germany and with the representatives of the EPO and UNICE.

290. Mr. HOERNER (IBA) said that the IBA could not endorse any interpretation in connection with the definition of "plant variety" which would narrow the scope of patentable subject matter.

291. Mr. ROTH (GIFAP) gave a negative answer to the question contained in paragraph 14(e) because an affirmative answer would imply a narrowing down of the field covered by patents.

292. Miss COMTE (IFAP, COPA and COGECA) recalled that, according to the organizations that she was representing, cell lines were amenable to patent protection, but that, if they were used or usable for the reproduction of a variety, they had to be subject to breeders' rights.

293. Mr. STRAUS (AIPPI) said that his organization did not want any extension of the exclusions to patent protection, so the answer to the question contained in paragraph 14(e) should be "no." He pointed out that it should, in any case, be considered that recognizing plant breeders' rights in respect of cell lines could give rise to problems because of the longer duration of protection which those rights might confer when compared to the duration of patents.

294. Mr. BROCK-NANNESTAD (FEMIP) stated that his answer was "no" to the questions contained in paragraph 14(e), noting that there were many industrial processes which used plant cells and parts of plants and wondered where the concept of "agriculture" ended and where the concept of "industry" began. The borderline between the two fields was getting narrower with the advances of modern technology and this fact had to be taken into account.

295. Mr. HADDRICK (Patent, Trade Marks and Designs Office, Australia) said that from the viewpoint of the patent system he attached great importance to the disclosure and publication of patents and the information contained therein. The balance which the patent system provided in the public interest should not be overlooked or upset.

296. Mr. SUGDEN (Chairman) noted that the Committee had dealt with both the object of protection and the scope of protection. As regards the object of protection under plant breeders' rights, most delegations seemed to accept that a cell line could be subject matter for protection if it contained the full genetic information and could be regenerated into a full plant of the variety in question. With respect to the scope of protection, considerable differences of opinion still remained among delegations as to how far the protection would extend with respect to cells, cell lines and other parts of plants.

Question in Paragraph 14(c)

297. Mr. GREENGRASS (Vice Secretary-General of UPOV) stated that the definitions proposed in the document submitted to the Fourth Meeting of UPOV with International Organizations had been discussed by that meeting and in the subsequent session of the Administrative and Legal Committee. They did not reflect current thinking. There was no relation between those definitions and subquestion (c), except that the latter took account of the observations made in the said meetings.

298. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) stated that the definition of "plant variety" as given in paragraph 14(c) was not acceptable as it would cover also subject matter which was eligible for patent protection. The informal proposal of the EPO, though not fully acceptable in the wording presented, might be an appropriate basis for further consideration.

299. Mrs. MORELLI GRADI (Central Patent Office, Italy) wondered about the links that existed between the definition proposed in subparagraph (c) and the definition of "plant variety" as given in the revision proposal for the UPOV Convention which ended with the words "or any other form of utilization" which were not to be found in the subparagraph (c) under examination.

300. Mr. SIMUNOVIC (Agriculture and Livestock Service, Chile) stated that the Chilean plant variety protection legislation distinguished between the variety as subject matter of protection and plants and plant parts as material representative of the variety. He had the impression that the attempts to use the same term to denote different objects led to complications in the discussions. He felt that each term should be clarified with more technical input.

301. Mr. LOUDON (Plant Variety Rights Office, Australia) recalled that plant varieties were not excluded from patent protection in Australia. In his view the main objective for UPOV should be to establish a definition of "plant variety" that would be useful in the implementation of the plant variety protection system. Most issues raised in this meeting were concerned with exclusion provisions.

302. Mr. OESTER (Ministry of Agriculture, Sweden) stated that his Delegation shared the views expressed by Mr. Brouër (Federal Republic of Germany).

303. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) stated that subquestion (c) was useful in clarifying the difference between cells and genes. Although he would have criticism of details of the drafting, he could agree in a general sense with the definition as proposed.

304. Mr. HOERNER (IBA) indicated that the definition may lead to gaps in protection such as where it excluded an invention from patentability, which invention did not ultimately meet the requirements for plant breeders' rights. He further indicated that the definition should be adapted to the special form of protection, namely plant breeders' rights, but not in derogation of the general form of protection, namely patents.

305. Mr. LANGE (ASSINSEL) stated that the definition proposed in subquestion (c) was acceptable, but that the proposal made in the document of UPOV submitted to the Fourth Meeting of UPOV with International Organizations was perhaps more suitable. A truly acceptable definition could be an intermediate between those proposed in subquestion (b) and subquestion (c), and the informal suggestion made by Mr. Gugerell (European Patent Office) seemed to go into the right direction.

306. Mr. ROTH (GIFAP) gave support to the position taken by the Representative of IBA.

307. Mr. BROCK-NANNESTAD (FEMIP) suggested that priority had been given in the selection of questions to those turning on the amendment of the UPOV Convention. He asked the Chair why the definition of "plant variety" in the UPOV Convention was being changed. He further asked what abuse of breeders' rights UPOV wished to prevent.

308. Mr. STRAUS (AIPPI) expressed his support for the positions taken by IBA and GIFAP.

309. Mr. GROSS (CEFIC) supported the position expressed by the Representative of IBA, replying in the negative to the question in subparagraph (c).

310. Mr. WINTER (COMASSO) stated that COMASSO shared the views expressed by Mr. Lange (ASSINSEL).

311. Mr. ROTH (IBA) cited a document of the Administrative and Legal Committee of UPOV and indicated that some doubts were expressed as to having a definition of "variety" in the UPOV Convention. He then queried whether it was necessary to have a definition which might confuse the issue.

312. Mr. GREENGRASS (Vice Secretary-General of UPOV) stated that the majority of States in UPOV was of the view that there was no general definition of "plant variety" in the 1978 text of the Convention, and not even in the 1961 original text.

313. Mr. BROCK-NANNESTAD (FEMIP) asked why it had been necessary to have Article 53(b) of the European Patent Convention if there was no definition of a "plant variety."

Questions in Paragraphs 18 to 20

314. Mr. SCHAEFERS (Deputy Director General, WIPO) indicated that the question of dependency licenses had been discussed by the Committee of Experts on Biotechnological Invention and Industrial Property convened by WIPO. This question was dealt with in Suggested Solution No. 11 contained in document Biot/CE/IV/3 entitled "Revised Suggested Solutions Concerning Industrial Property Protection of Biotechnological Inventions." He indicated that the underlying concept of a dependency license concerned an invention protected by a patent and a plant variety protected by a plant breeder's right in cases where the owner of the plant breeder's right performed acts concerning his variety which of necessity infringed the patent. In such a case, it may be necessary to provide for a non-voluntary license. Non-voluntary licenses were a well-known instrument mentioned, for example, in Article 5 of the Paris Convention and national laws that provided for non-voluntary licenses. In referring to Suggested Solution No. 11, second paragraph, in document Biot/CE/IV/2, he indicated that the provision for a cross license in favor of the patent owner would balance the corresponding compulsory license provided in the first paragraph. He concluded by stating that views had been divided in this area and it appeared relevant and necessary to put the question to the Committee of Experts to see where views stood.

315. Mr. HOINKES (Patent and Trademark Office, United States of America) indicated that, while compulsory licenses may be well-known, they were not necessarily commendable. With respect to the question contained in paragraph 18 he stated his answer as "no." He further stated that compulsory licenses severely diminished the right of patent holders to enjoy or control exclusive rights in the patented invention. He also expressed his opposition to cross compulsory licenses, providing a license from the holder of plant variety rights to a patent holder and vice versa. With respect to the question in paragraph 19 he stated his answer was "no" as the legal license referred to effectively diminished the rights of plant breeders. He also said that there was uncertainty about the definition of the term "essentially derived." He relayed some knowledge of how compulsory licenses were applied in some countries, stating that at times an insignificant second invention was patented and then granted a compulsory license to a more important dominant patent. With respect to the question in paragraph 20, he stated that the rights holder should be able to negotiate freely, and he specifically stated with respect to (i) the answer was "no." With respect to (ii) concerning public interest, national emergencies, adjudicated violation of competition laws and use for government purposes might be acceptable reasons for compulsory licenses. He then stated that compulsory licenses were an anathema to patent owners or plant breeders and that reciprocal licenses presupposed that both parties had an ability to make use of the invention, which was not true in all cases. He stated that it was difficult to understand what was meant by a "significant technical advance" referred to in paragraph 20(iii). In this regard, he stated that, even if a "significant technical advance" was made over a basic invention, the owner of the basic invention should still retain exclusive rights in his invention.

316. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) replied in the negative to the questions in paragraphs 18, 19 and 20(i) and (iii), and in the affirmative to the question in paragraph 20(ii) indicating that only public interest might justify non-voluntary licenses.

317. Mr. MESSERLI (Intellectual Property Office, Switzerland) stated that he referred not only to paragraphs 18 to 20, but to paragraph 21 as well. He expressed the view that each system of protection should deal with its own objects and that none of those systems should seek to dominate the other. Therefore, he opposed the idea contained in Article 5(5), of the draft UPOV Convention which was dealt with in the question in paragraph 21. He believed that, where the rights overlapped, there should be a system of voluntary licenses. Compulsory licenses should only be considered as an ultima ratio.

318. Mr. RAVN (Patent Office, Denmark) said with respect to the question in paragraph 19 that it was safe to say that interested circles in Denmark were wide apart on that question. However, a compromise had been worked out that compulsory licenses should be made available from a patent owner to a plant breeder, and that cross licenses should be available. The conditions were not agreed upon but aspects such as public interest and the level of improvement were part of the considerations. With respect to the question in paragraph 19, he stated that "the protected variety" could include both patents and plant breeders' rights protection and there would be different answers for each type of protection. With respect to patents, he stated that if an essentially derived variety used a patented invention, then the answer given with respect to paragraph 18 applied. Turning to plant breeders' rights, he stated that a license between two breeders may be such that it extended also from the new breeder to the original breeder. He indicated that conditions for such licenses had not been finalized in his country. The Delegation further indicated that the principle of free access to plant materials was still to be maintained.

319. Mr. OESTER (Ministry of Agriculture, Sweden) stated that the preliminary view in Sweden was similar to the view expressed by Mr. Brouer (Federal Republic of Germany). The answers were therefore: "no" to question 18; "no" to question 19; "yes" to question 20 with "no" to item (i), "yes" to item (ii) and "no" to item (iii).

320. Mr. VUORI (Ministry of Agriculture and Forestry, Finland) stated that the agricultural circles in Finland favored, on the one hand, the principle of dependence proposed in the framework of the revision of the UPOV Convention with a right of prohibition on the exploitation of the dependent variety (Alternative 1 in relevant earlier UPOV documents) and, on the other hand, compulsory licenses in the situation described in question 20 only if public interest so required.

321. Mr. LOSSIUS (Patent Office, Norway) agreed with the observations made by the Delegate from Denmark.

322. Mr. VERSCHURE (Ministry of Economic Affairs, Netherlands) stated that the system of plant variety rights (PVR) protection was good but could be improved. Specifically, the farmer's privilege should be deleted, the requirement of minimum distance should be strengthened, and a dependency system should be established. One condition for the above-mentioned amendments to the PVR system was that a compulsory license under the patent should be granted if the exploitation of the plant breeder's right would infringe a patent. The balance between the patent and the plant variety right had to be found in the level of royalties.

323. Miss DARMON (National Institute of Industrial Property, France) stated on behalf of the French Delegation that it should be possible to negotiate licenses freely where there was dependency between a patent and a plant breeder's right, with the possibility of refusing to grant licenses (paragraph 18). As regards paragraph 19, she replied in the negative and explained that there should not be automatic licensing in respect of derived varieties. As for paragraph 20, she stated that a non-voluntary license could not be granted in all cases, but only after negotiations for the grant of a voluntary license had failed and solely if significant agricultural progress were involved and the public interest so demanded.

324. Miss BUSTIN (Committee for the Protection of New Plant Varieties, France) pointed out that agreement had been achieved between the competent authorities in France on the basis of the principle that agricultural progress could not be taken into account in connection with the grant of compulsory licenses short of what was dictated by the general interest.

325. Mr. MIYATA (Ministry of Agriculture, Forestry and Fisheries, Japan) said that no final decision had yet been arrived at in Japan on the questions contained in paragraph 18. It was believed, however, that dependency licenses should not be automatic but be the subject of negotiations between the interested parties. With respect to the question contained in paragraph 19, contracts regarding the commercial exploitation of an essentially derived variety should be able to be freely negotiated and settled by the parties concerned. Such a variety could not be commercially exploited without obtaining the consent of the holder of the plant breeder's right. With respect to the questions contained in paragraph 20, the same rules should apply, namely, that parties should be able to negotiate freely any licenses regarding their intellectual property rights.

326. Mrs. MORELLI GRADI (Patent Office, Italy) stated with reference to the first question in paragraph 18 that the reply was affirmative, and with reference to the second question that dependency licenses should be the result of freely-negotiated agreements, and if possible subject to equitable payment. As for paragraph 19, the reply was affirmative, but not in all cases: she explained that the condition was that the genetic information had to be contained and expressed in the derived variety to be exploited. She added that, if the dependency system had to be extended to the plant variety protection regime under the UPOV Convention, it was necessary that the essentially derived variety be capable of reproducing in exactly the same way as the original variety, and therefore that it contain the genetic information that produced the same morphological characteristics according to the principles of distinctness, uniformity and stability inherent in the system under the UPOV Convention. With regard to paragraph 20, provided that the concepts of dependency and of essentially derived varieties were to be interpreted according to the earlier comments on paragraphs 18 and 19, the owners of patents and plant variety certificates could freely negotiate licenses, but the licenses should not be automatic. A compulsory license could be envisaged if the following conditions were met: (i) it had to be dictated by the general interest; (ii) at the same time, the invention had to constitute considerable technical progress or the new plant variety had to represent an improvement that was substantial and therefore useful to the agricultural economy of the country concerned.

327. (a) Mr. ARDLEY (Plant Variety Rights Office, United Kingdom) stated that the question of dependence was to be considered from two angles: there was, on the one hand, the dependence between two varieties where one was essentially derived from the other and, on the other hand, the dependence of a variety upon a patented product or process.

(b) Concerning the first situation, he observed that the currently applicable text of the UPOV Convention did not provide for a dependence system. Cases of essential derivation could arise through traditional processes such as repeated back-crossing or through genetic manipulation. The United Kingdom agreed to the introduction of special provisions into the Convention to regulate the relations between plant breeders' rights in such cases. Three alternatives relating to the conditions under which a dependent variety could be exploited were currently under consideration: the dependent variety could be freely exploited, subject to equitable remuneration being paid to the breeder of the original variety; the dependent variety could be exploited only with the express consent of the breeder of the original variety; the consent of the breeder of the original variety could be demanded compulsorily if the dependent variety constituted a substantial improvement over the original variety. The United Kingdom authorities considered it essential that the rate of progress achieved through the principle of free access to the genetic variability currently enshrined in Article 5(3) of the UPOV Convention should not be prejudiced; it would therefore prefer a less restrictive system.

(c) A further point for consideration was the potential relationship between the two kinds of dependency, i.e. should the patent holder whose product was used in a new variety and the breeder on whose original variety a new one was based be treated any differently? In deciding what the final system should be, the United Kingdom hoped that this consideration would be taken into account.

328. (a) Mr. DENNEHEY (Patent Office, United Kingdom) stated that the question of dependency of patents vis-à-vis plant breeders' rights had to be considered in the light of the underlying issues. He suggested that it was worth reflecting on what would happen if the interests of two patent owners were involved, such as where the proprietor of a second patent was unable to work his invention in the absence of a license granted by the owner of the first patent. He indicated that the patent laws of many countries suggested that under such circumstances a compulsory license might be available to the second patent owner. Most laws that provided for compulsory licenses were for inadequate working or if working of the patented invention were insufficient to meet demand. He stated that, while such provisions were rarely used, they did establish a climate for voluntary licensing. Turning to the question of patents and plant variety rights, he noted a number of different situations in which dependency may arise. He gave as an example a patent on gene (X) for disease resistance and a plant variety right for a plant that incorporated gene (X). He suggested that one could not market the plant variety without a patent license to gene (X).

(b) He continued by considering if there was a legal, economic or moral justification for non-voluntary licensing for dependent plant breeders' rights, that is, whether patents in the field of living matter should confer rights which were more limited than those in the inanimate world. He suggested that the view that a non-voluntary license should be available to the holder of a dependent plant breeder's right stemmed from the expectation in the plant breeding industry that breeders should be able to make unfettered use of plant material for further breeding. In contrast, he stated that, if a compulsory license was granted, it did reduce the value of the patent since the patent owner would be unable to determine how the patent would be exploited or by whom.

(c) He continued by stating that if the answer to the question posed was "no," then the matter could be left to be settled by negotiation of a voluntary license between the two parties. An argument could be made that, if

the patented gene was incorporated in the variety protected by a plant breeder's right in such a way that it met a demand in the market, the patent owner would be encouraged by commercial forces to conclude a licensing agreement. He suggested that in such a situation the bargaining position of a patent owner was likely to be considerably stronger than that of the owner of the plant breeder's right and the interests of the latter were therefore more likely to suffer. He noted that some delegates had said that a compulsory license should only be granted in the public interest. He stated that he saw public interest as the underlying basis for compulsory licensing but that it was still necessary to define more specifically the grounds under which such a license would be granted. He stated that in the case of dependent plant breeders' rights one possibility was a situation where the new plant variety represented "significant technical progress." He indicated that this definition had problems vis-à-vis plant breeders' rights, however. Specifically, he asked whether the significant technical progress was to be compared with the patent or other varieties. Further, he suggested that there were problems in defining what was "significant" in the context of plant breeding. The difficulties with this phrase might be somewhat overcome by using the phrase "substantial contribution to the art." He stated that another possibility that had been suggested was that compulsory licenses should be granted to the plant breeder's right holder where refusal to do so would unfairly prejudice the establishment or development of commercial activities. Still others had suggested that compulsory licensing was warranted where the variety protected by the plant breeder's right constituted an agriculturally significant advance.

(d) He then stated that each of these possibilities could be placed on a continuum stretching from the complete absence of compulsory licenses, that is, voluntary licensing, to granting licenses to holders of plant breeders' rights as a matter of right. In the latter instance there would be no element of discretion in the decision to award a license except for the level of royalty to be paid. In such a case, the interest of the patent owner was severely prejudiced since he had no effective control over the exploitation of his invention. He further stated that the question of the grant of back or cross-licenses should be considered and under what circumstances. The United Kingdom had no firm view on the matter of dependency licenses from an owner of a patent to a plant breeder's right holder, but could see that there may be attractions in providing that under some suitable circumstances the plant breeder's right holder should be entitled to a compulsory license. It might well be that free negotiation would solve all licensing difficulties but that this could be backed up by compulsory licensing provisions. He then offered to the Committee of Experts copies of a discussion paper provided to the European Commission on this point.

329. Mr. GOMEZ (Industrial Property Registry, Spain) said that non-voluntary licenses could be accepted as a solution to solve problems arising from situations of dependency between intellectual property rights. This could apply in cases where a plant breeder's right was in a dependency relation in respect of an earlier patent. In respect of the questions contained in paragraph 18, his Delegation could reply in the affirmative. It was believed to be fair that a compulsory license could be obtained by a plant breeder who could not exploit his plant variety because an earlier patent would be infringed, provided a fair and reasonable remuneration was paid to the holder of the patent. The granting of a non-voluntary license, however, should necessarily be preceded by voluntary negotiations with a view to arriving at a contractual license. National laws had to provide for the possibility of granting compulsory licenses as a safeguard to correct or prevent an abuse committed by the holder of a patent right. Such an abuse could occur, for example, when the holder refused to grant a contractual license on reasonable

terms. In respect of the questions contained in paragraphs 19 and 20, dependency licenses should never be automatic. Certain conditions should be met and specific circumstances established before such licenses could be awarded. Public interest, however, should not be taken as the only possible criterion or reason for granting a compulsory license. In typical situations where dependency licenses were required, it was private interests which were at stake, not the public interest or interests of a general nature. On the other hand, there would in practice be great difficulty in granting non-voluntary licenses exclusively on grounds of public interest because, in Spain, that would require a royal decree. The criteria of "significant technical advance" and "substantial improvement" were legal criteria of undetermined scope, which would have to be assessed on a case-by-case basis depending on the circumstances. Those criteria, however, could effectively serve as guidelines for administrative and judicial authorities entrusted with the granting of compulsory licenses.

330. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) stated that a consensus could be found in New Zealand between the various interested parties. Concerning question 18, it was suggested that dependency licenses in favor of the plant breeder should be primarily negotiated by the parties, with their terms and conditions being adjusted to the circumstances of the case. Concerning question 19, the developer of an essentially derived variety should not be invariably entitled to exploit that variety; he should only be able to obtain a non-voluntary license where a substantial improvement was involved. Concerning question 20, it was essential that innovation should not be prevented; consequently, the interested circles in New Zealand could only envisage non-voluntary licenses in the case where this was justified by a significant technical advance or a substantial varietal improvement. Public interest had been found too vague to serve as the basis for the granting of compulsory licenses.

331. Mrs. LOMMI (Board of Patents and Registration, Finland) stated that in Finland it was possible to obtain both compulsory and dependency licenses in the patent field, but that that possibility had only been used once. She indicated that in that case, the compulsory license was not granted. She observed that in Finland voluntary licensing worked well. The effect of dependency licenses between two different legal systems needed more study and the answer to the question posed depended upon the revision of the UPOV Convention. She concluded by saying that at present the answer to question 18 was "no," the answer to question 19 was "no" and the option provided in paragraph 20(ii) was preferred.

332. Mr. SHITIKOV (State Committee for Innovations and Discoveries, Soviet Union) expressed an affirmative reply in respect of question (ii) in paragraph 20. He further noted that at present his Delegation did not wish to exclude other grounds as well.

333. Mrs. AFONSO (National Institute of Industrial Property, Portugal) explained that the Portuguese Patent Law and also the draft revision of that Law provided for three types of compulsory license, i.e., in the event of failure to work or insufficient working of the patent, in the case of interdependency of patents and, finally, in the public interest. In the case of patent interdependency, a compulsory license could only be granted after it had been ascertained that a voluntary license could not be achieved. As for the public interest, it was necessary for the invention to be a basic invention and a compulsory license required intervention on the part of the State. In view of those facts, she stated that a reply could be given in the affirmative to the question in paragraph 18 on condition that there was reciprocity. As for paragraph 19, the reply was affirmative depending on the

case and for paragraph 20 a compulsory license could not be granted unless the invention represented significant technical progress or if the new variety constituted a substantial improvement (item (iii)).

334. Mr. FOLEY (Patents Office, Ireland) said that, in respect of the questions contained in paragraph 18, the answer was "yes," but compulsory licenses should be considered as a last resort. The answer to the question contained in paragraph 19 was "no." The first question contained in paragraph 20 was answered in the affirmative. The answer to the question in subparagraph 20(i) was "no"; and the answers to the questions in subparagraph 20(ii) and (iii) was "yes."

335. Mrs. SLADKOVA (Office for Inventions, Czechoslovakia) replied in the negative to the question contained in paragraph 18. The answer to the question in paragraph 19 was "no". The questions in paragraph 20 and 20(ii) were answered in the affirmative.

336. Mr. HADDRICK (Patent, Trade Marks and Designs Office, Australia) said that the Australian patent legislation did not provide for compulsory dependency licenses where dependency occurred between two patents. It was, however, possible to grant a compulsory license when the legitimate demands of the public were not met, i.e. when the holder of the patent was not complying with his part of the bargain with the State inherent in the patent system. The Australian plant breeders' rights law contained equivalent provisions. Compulsory licenses were, therefore, possible and in any case an equitable remuneration would have to be accorded to the holder of the patent or plant breeder's right. He further indicated that a start had been made in Australia on looking at the precise issues raised in the questions and an initial reaction had suggested a tendency to rely solely on market forces and commercial negotiation. However, further consideration was required. It should be noted that in the copyright field equitable remuneration had often been criticised as not being an appropriate solution in resolving disputes between rights holders and those seeking access to the subject matter of protection. Also the rights owners tended to regard their negotiating positions as having been weakened by the availability of a license.

337. Mr. WOLF (Patent Office, Austria) stated that his country did not have legislation protecting plant breeders' rights, therefore, it was difficult for him to comment on paragraphs 18 to 20. He expressed the view that dependency licenses should be granted on a voluntary basis. Finally, he replied in the negative to the questions in paragraphs 18, 19 and 20(i) and (iii), and in the affirmative to the question in paragraph 20(ii).

338. Mr. BOBROVSZKY (Office of Inventions, Hungary) said that in cases of dependency of intellectual property rights, compulsory licenses should be resorted to as a last solution, and only when a contractual agreement could not be obtained and the license was required in the public interest.

339. Mrs. KEEGAN (Directorate General for the Internal Market and Industrial Affairs, CEC) said that where a plant breeder's right depended on a patent, this dependency should be solved by negotiation. If negotiations were to fail, a non-voluntary license could be considered as a last-resort solution. The criterion of "significant technical progress" would have to be satisfied before such compulsory licenses could be granted. The underlying rationale in these cases was the agricultural significance or importance of a specific new variety and the desirability that it might become available to the public under the best conditions possible.

340. Mr. OBST (Directorate General for Agriculture, CEC) observed that the question of dependency licenses had not been addressed in the draft proposal for a Council Regulation on Community Plant Variety Rights.

341. Mr. GRÉENGRASS (Vice Secretary-General of UPOV) observed that the question of compulsory licenses to be granted in cases of dependency between patents and plant breeders' rights had not been discussed at all within UPOV.

342. Mr. ONO (PIPA) favored the possibility of granting dependency licenses where a dependency situation existed between patent rights and plant breeders' rights. Dependency licenses should, however, be the subject of free negotiations between the interested parties. Public interest should be admitted as grounds for the granting of compulsory dependency licenses but the standard of public interest should be a high one. The same high standard of public interest should be applied for any sort of compulsory license, regardless of whether such license was issued to solve a situation of dependency.

343. Mr. LANGE (ASSINSEL) stated that ASSINSEL had not yet reached final conclusions on questions 18 to 20. However, it felt that it was essential that there be a balance between the two protection systems concerned. Questions 18 and 19 should therefore receive the same reply. The general tendency within ASSINSEL was against automatic licenses; the current answers were therefore as follows: "no" to question 18; "no" to question 19; "yes" to the first question in paragraph 20, with compulsory licenses to be granted only if public interest so required. Concerning the substantial varietal improvement, ASSINSEL felt that it was not appropriate as a condition for the granting of compulsory licenses because it was very difficult to assess, not least because of the influence of environmental conditions.

344. Mr. YAMASHITA (JPA) stated, with respect to the question in paragraph 18, that the UPOV Convention should not provide for dependency licenses. With respect to the question in paragraph 19, he stated the answer as "no." With respect to the question in paragraph 20, he said the answer was "yes." With respect to the question in subparagraph (i) of paragraph 20, he stated the answer was "no," to the question in subparagraph (ii) he gave the answer as "yes" and with respect to subparagraph (iii) of paragraph 20, he stated the answer was "no."

345. Mr. ROBERTS (ICC) stated his agreement with the position taken by the Delegate from the Federal Republic of Germany. He stated the answer to the question in paragraph 18 as "no" and the question in paragraph 19 as "no." As regards the question in paragraph 20, compulsory licenses should only be granted in the public interest. He further stated that it may be necessary to clarify the public interest. He gave three objectives for compulsory licenses: (i) to encourage voluntary licensing, (ii) to establish equality between patents and plant breeders' rights and (iii) to avoid litigation. In regard to the last point he indicated that the experience in patents was that the easier it was to obtain a compulsory license, the more litigation resulted. The remuneration provided was rarely seen as adequate either to reward the research investment or to compensate for lost commercial opportunities. He further stated that the denial of exclusive rights for important new commercial developments was of serious concern to industry, and discouraging to both scientists and investors.

346. On behalf of the AIPH, Miss COMTE (IFAP, COPA and COGECA) pointed out that the AIPH considered that dependency licenses under patents for biotechnological inventions were necessary to ensure the continuity of research and development, and also plant breeding where a patent related to a

gene. Provisions on the subject should be written into the UPOV Convention. That type of license was also recommended as a means of avoiding conflict in cases of dependency in relation to two patent owners. With regard to question 19, the breeder of a variety containing a particular gene would have to protect that variety with plant breeders' rights and not with a patent. As for question 20, non-exclusive compulsory licenses should be available to the owners of plant breeders' rights where the new variety represented a significant improvement in agricultural terms, and where refusal to grant a voluntary license would prevent the marketing of the variety. Generally speaking, the variety industry had to have access, by way of compulsory licenses, to varieties protected by plant variety certificates or covered by patents relating to genes.

347. On behalf of IFAP, COPA and COGECA, Miss COMTE then said that the organizations that she was representing considered that question 18 should be answered in the affirmative where the protected variety represented significant technical progress or afforded an indication of a noticeable improvement and subject to an appropriate and equitable fee. The same reply was necessary for question 19 where the basically derived variety showed signs of noticeable improvement. As for question 20, it should be possible to freely negotiate licenses in all cases where the protected variety constituted a significant technical advance or showed substantial improvement.

348. Mr. ROTH (GIFAP) expressed support for the views put forward by the Delegation of the Federal Republic of Germany and the Representatives of PIPA and ICC.

349. Mr. ORLANDO (UNICE) said that the question of dependency licenses between two different legal systems of protection could pose some juridical problems of uncertainty since this field had scarcely been explored. With regard to the questions contained in paragraph 18, if a situation of dependency occurred, a patent owner should not be deprived of his right to choose his licensee. Rather than resorting to compulsory licenses, voluntary license negotiations should be encouraged as was normally done in other technological fields. With regard to the question contained in paragraph 19, the answer was "no." With regard to the general question contained in paragraph 20, the answer was "yes." The answer to the question contained in subparagraph (i) was "no"; the answer to subparagraph (ii) was "yes"; and the answer to subparagraph (iii) was "no". Reference was also made to Article 14 of the proposal for a Council Directive on the legal protection of biotechnological inventions presented by the Commission of the European Communities. In respect of that provision, the position of UNICE was that a compulsory license could be justified only by actual reasons of public interest. If a new plant variety represented a remarkable advance in the art (with its consequential economic implications) it was obviously in the interest of the biotechnology patent owner to have his invention exploited in the plant variety by a voluntary license.

350. Mr. WINTER (COMASSO) stated that COMASSO was definitely in favor of a balance between the two protection systems and of the possibility of freely negotiating licenses. Compulsory licenses should only be considered where public interest so required.

351. Mr. ROTH (IBA) agreed with the comments made by the Delegation of the United States of America, and was troubled by the narrow, unbalanced view which the questions contained in paragraphs 18 to 20 seemed to take of biotechnology. A biotechnology company could, for example, develop and patent a gene for a human pharmaceutical compound and for a transformed bacterium containing that gene. It could contemplate producing that pharmaceutical

compound in its own factory. Normally, it would be able to do so to the exclusion of its competitors. Under the concept of the dependency license, however, other pharmaceutical companies could, by calling themselves plant breeders, exploit that patented gene which they had not invented and produce the drug in plants. This would have multiple effects on the holder of the patent right. First, his right to exclude, as originally provided in the patent, would have been converted into a right to receive some compensation. This compensation would be a function of the success of the compulsory licensees and not of his own success. At the same time, return for his own commercial activity would be reduced because he would have to compete with his own original invention in the marketplace. These returns would not compensate him for the lost profits, nor would the compensation provided for under the dependency license take into account the many unsuccessful experiments which preceded the successful invention. This would effectively remove the incentive which the inventor may have had to engage in research in the first place. It was a fundamental basis for the granting of exclusionary rights for inventions that technological innovation was not like a rising tide that lifted all boats. It was based rather on the principle that society as a whole benefited most when companies competed for technological success at the risk of economic loss if they should fail to innovate. As pointed out by the Delegation of the United Kingdom, there was a difference between dependency licenses under two comparable rights such as patents, and two dissimilar rights such as patents and plant breeders' rights. He enquired how would "technical advance" be evaluated when technologies were as dissimilar as those given in the example. For those reasons, the answers given to the questions contained in paragraphs 18 to 20 were answered in the negative, with the exception of that contained in paragraph 20(ii).

352. Mr. GROSS (CEFIC) stated his agreement with the position taken by the Delegate from the United States of America and the Federal Republic of Germany with respect to the questions in paragraphs 18, 19 and 20.

353. Mr. JACKSON (CNIPA), also speaking on behalf of CEFIC, agreed with the positions taken by Austria, Finland, Sweden, France, Czechoslovakia, Hungary, the United States of America, the Federal Republic of Germany and others, including GIFAP and PIPA.

354. Mr. BROCK-NANNESTAD (FEMIPI) stated that dependency questions were the only questions that could properly be termed "interface" between patent protection and plant breeders' rights. He further commented that it now took a shorter and shorter time to develop new varieties and that perhaps the dependency license was proposed to be introduced in order to get sufficient remuneration. He endorsed the position taken by ICC.

355. Mr. ENGHOLM (EPI) stated, with respect to the questions in paragraph 18 and 19, that the answer was "no." He further stated that, with respect to the question in paragraph 20, EPI supported free negotiations and that a compulsory license was acceptable only if public interest so required.

356. Mr. HJERTMAN (EFPIA) supported the position taken by CEFIC and UNICE.

357. Mr. SUGDEN (Chairman), summing up the discussions, noted that most of the delegations and organizations had expressed the view that dependency licenses should be voluntary in principle. However, there did not seem to be a significant agreement with respect to the conditions or grounds which should qualify a dependency situation before a compulsory license could be granted.

Question in Paragraph 21

358. Mrs. MORELLI GRADI (Patent Office, Italy) said that the breeder's means of defense derived from the validity of his certificate, as indicated in the reply that she had given to the question in paragraph 20 to the effect that the protected variety had to represent a substantial improvement. She added that the Article 5(5) proposed in square brackets in connection with the revision of the UPOV Convention should be deleted unless there were some provision in that Article for machinery whereby acts relating to varieties could be made subject to a form of reciprocal treatment comparable to that envisaged in paragraphs 18, 19 and 20.

359. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) referred to difficulties which lay behind the issue of a collision norm. He stated that before 1969 a similar provision had existed in the breeder's right law but had never been used. Later, Article 53(b) of the EPC excluded plant varieties from patent protection. He considered that the problem of eventual overlap of plant variety protection and patent protection should still be discussed first with the interested circles in his country. For the time being he was unable to come up with a proposal in respect of the question in paragraph 21, but he was not satisfied with the proposed draft Article 5(5) of the UPOV Convention.

360. Mr. HOINKES (Patent and Trademark Office, United States of America) stated that the situation in paragraph 21 was to be considered an act of expropriation and therefore it was fundamentally unacceptable.

361. Mr. MIYATA (Ministry of Agriculture, Forestry and Fisheries, Japan) indicated that, concerning the collision norm for the UPOV Convention, there were two options presently being discussed in Japan. The first option called for the question to be answered in the negative since the proposal was equivalent to forfeiture of the patent. The second proposal was to answer the question in the affirmative because plant breeders' rights should not be limited.

362. Miss DARMON (Institute of Industrial Property, France) stated on behalf of her supervisory authority that the provisions contained in the draft Article 5(5) for the revised UPOV Convention and reproduced in paragraph 21 of document WIPO/UPOV/CE/I/2 was unacceptable within the framework of patent legislation.

363. The Delegations of AUSTRALIA, NEW ZEALAND, FINLAND (Mrs. Lommi, Board of Patents and Registration), SWEDEN, the UNITED KINGDOM, FRANCE, the NETHERLANDS and IRELAND indicated, in a show of hands, their agreement with the position of the UNITED STATES OF AMERICA. In addition, a number of non-governmental organizations such as AIPPI, APAA, COMASSO, EPI, FEMIP, GIFAP, IBA, JPA and PIPA also indicated their agreement. Delegates from NORWAY and DENMARK indicated that they were still examining the matter while Finland (Mr. Vouri, Ministry of Agriculture, Finland) indicated that the entire Union of Agricultural Producers in Finland thought a "collision norm" to be necessary.

364. Mr. OBST (Directorate General for Agriculture, CEC) referred to the common view within the Commission that question 21, as drafted, was to be given a negative reply. Further consideration was to be given to the underlying issue in the framework of the preparation of the Council Regulation on Community Plant Variety Rights, in particular on the basis of the explanations given by Mr. Brouer (Federal Republic of Germany). However, there was no question of expropriation through limiting the contents of patent rights.

365. Mr. LANGE (ASSINSEL) stated that ASSINSEL also gave a negative reply to question 21, as drafted. However, as long as the two systems of protection concerned were not balanced, a collision norm might be necessary or desirable. The underlying considerations in favor of such a norm related not only to the different scopes of protection, but also to the essential principle of the "breeder's exemption."

Question in Paragraph 13

366. Mr. WOLF (Patent Office, Austria) stated that, in accordance with Article 53(b) of the EPC, if a process for breeding of plants was essentially biological, it was excluded from patent protection in Austria. He also recalled that, before October 1987, foodstuffs as such, pharmaceuticals as such and chemical compounds as such were excluded from patent protection in Austria. However, processes for the production of such products had been patentable. Finally, he replied in the affirmative to the question in paragraph 13, because for inventions in the field of biotechnology, the same requirements should be applied as for inventions in other technical fields.

367. Mr. WHITMORE (Plant Variety Rights Office, New Zealand) stated that there was no reason not to extend patent protection in the way described in question 13, assuming that the normal patentability criteria were met.

368. Mr. DENNEHEY (Patent Office, United Kingdom) noted that the issue of whether or not a patent on a process for the production of a plant variety should also cover that variety would not be a problem if inventors and breeders were given freedom of choice as to the title of protection to protect their innovations. The United Kingdom supported the principle of a product-by-process protection even where the product in question was a plant variety. It was important to note, however, in relation to the presence of the word "directly" in the question, that plant material produced as the product of a patentable process was self-replicable so that in practice it was not necessary to repeat the initial patented process to obtain more of the plant variety. The Delegation tended to the view that protection for a patented process should extend to all subsequent generations of the plant variety initially obtained directly by that process.

369. Miss BUSTIN (Committee for the Protection of New Plant Varieties, France) said that she was answering question 13, on behalf of the whole Delegation, just as it was asked, without concerning herself with the matter of whether a variety could be considered a product directly obtained by a process, the matter of the way in which the principle of the exhaustion of rights applied under the circumstances in question, or other similarly complex matters. The reply was affirmative, on the understanding that the variety was not, as such, the subject of a claim and therefore of a right that was immediately applicable to it.

370. Mr. RAVN (Patent Office, Denmark) said that there was no reason why the usual scope of protection should not apply to processes for the production of plant varieties and thereby the patent protection extend to the directly obtained product, i.e., the variety obtained by the said process. The protection should also cover differentiated forms in which the invention was present. Further considerations were needed with respect to implications in relation to the "farmer's privilege". The question contained in paragraph 13 could be answered in the affirmative.

371. Mr. HOINKES (Patent and Trademark Office, United States of America) agreed with the previous speakers in the sense that plant variety inventions should be treated like inventions in any other field of technology, so that

patent protection for a given process should extend to the product directly obtained by that process regardless of whether it was a plant variety or not. In that respect, the fact that a plant variety was not susceptible of being patented was irrelevant.

372. Mrs. AFONSO (Institute of Industrial Property, Portugal) stated that if it was placed within the framework of the planned revision of the Portuguese patent law, the response was in the affirmative.

373. Mr. MESSERLI (Intellectual Property Office, Switzerland) stated that the Swiss Federal Court had ruled that protection conferred by a process patent also extended to products directly obtained by that process that per se were not patentable. In the current procedure to amend the Swiss Patent Act, the Government of Switzerland had adopted this view with respect to plant varieties. In that procedure, it was also proposed to extend the protection to material obtained by multiplication of the direct product of the patented process.

374. Mrs. MORELLI GRADI (Patent Office, Italy) pointed out that the question seemed in principle to be closely linked to the exhaustion of rights problem (see Suggested Solution No. 10 in WIPO document BioT/CE/IV/3). Without going into the question whether a variety could be considered a patentable product, the assessment of the extension of process patent protection to the product directly obtained by means of that process--even where that product had the characteristics of a plant variety--had to be positive if one considered the question according to the criteria specific to the patent system (novelty, inventive step and industrial applicability). Moreover, the rights deriving from the patent protection of the process extended also to the product in question.

375. Mrs. SERIÑA (Registry of Industrial Property, Spain) indicated that she supported the position taken by the Delegate of France.

376. Mr. OESTER (Ministry of Agriculture, Sweden) stated that his Delegation supported the position expressed by Mr. Dennehey (United Kingdom).

377. Mr. BROUER (Ministry of Justice, Federal Republic of Germany) replied in the affirmative to the question in paragraph 13, indicating that this did not answer the question of the extension of such protection to the progeny of the product directly obtained from a patented process and the question of the reversal of the burden of proof in proceedings.

378. Mr. O'FARRELL (Patents Office, Ireland) indicated that he was in favor of the position taken by the Delegate from the United Kingdom.

379. Mr. VERSCHURE (Ministry of Economic Affairs, Netherlands) said that the use of a patented process itself required the authorization of the patent holder. Process patents relating to plant material were focused on very specific characteristics of a plant. The plant as a whole, with all its characteristics, could not be regarded as the direct result of the process, and so fell outside the scope of the process patent.

380. Mr. MIYATA (Ministry of Agriculture, Forestry and Fisheries, Japan) said that two opposite opinions prevailed at present in Japan. According to the first opinion, patents for biotechnological processes should extend to the product directly obtained thereby, in the manner indicated in WIPO's Suggested Solution No. 8 in document BioT/CE/IV/3. According to the other opinion, the said Suggested Solution No. 8 was inappropriate and plant varieties should be protected only by plant breeders' rights in order to avoid any circumventing

of the ban on cumulative protection of plant varieties by plant breeders' rights and patent rights.

381. Mrs. LOMMI (Board of Patents and Registration, Finland) said that the question contained in paragraph 13 could be answered in the affirmative.

382. Mr. VUORI (Ministry of Agriculture and Forestry, Finland) stated that the Finnish plant breeders and the Central Union of the Finnish Agricultural Producers considered that a process patent could only afford exclusive rights in relation to the direct product of the process. Patent claims should therefore stop at the point where the embodiment of the invention ended, for example at the first protoplast, cell or plant tissue obtained. In relation to Article 53(b) of the European Patent Convention, the said circles considered that the phrase "microbiological process" ought to be given a narrow interpretation. They could not accept an interpretation whereby the product of a microbiological process would be a genetically manipulated plant variety.

383. Mr. LOSSIUS (Patent Office, Norway) said that the situation in Norway at present was similar to that in Japan, as explained previously by the Delegation of that country. Therefore, Norway could not offer a final reply at this time with respect to the question in paragraph 13.

384. Mr. HADDRICK (Patent, Trade Marks and Designs Office, Australia) said that under his national patent law it was possible to have a patent claim to cover a known product when produced by a new inventive process, notwithstanding that the product per se was not new or inventive. The same principles should apply where the product in question was a plant or a plant variety. Accordingly, the question in paragraph 13 could be answered in the affirmative.

385. Mrs. KEEGAN (Directorate General for the Internal Market and Industrial Affairs, CEC) said that for the purposes of the scope of protection of a patent on living matter, all subsequent progeny of the initial material produced by the patented process was considered as a "direct" product of that process.

386. Mr. LANGE (ASSINSEL) also wished to distinguish between the scope and object of protection. Concerning the scope of patent protection, ASSINSEL had no objection against such protection extending to plant material. Concerning the object, it could not imagine a situation where a plant variety would be the product directly obtained by a process of the kind described. The majority of ASSINSEL members, being in favor of retention of the provisions prohibiting double protection, was also keen to see that those provisions were not circumvented by resorting to patent protection for products as such through the protection of processes.

387. Mr. ONO (PIPA) said that he could answer the question in paragraph 13 in the affirmative. He added that the interpretation of the notion of "directly obtained" would be very important in this connection. Further generations of a plant variety directly obtained by a process should be covered by the patent protection for that process. Otherwise, patent applicants would be forced to draft their patent claims in such a way that the extension of protection could operate in practice.

388. Mr. ROBERTS (ICC) and Mr. ROTH (GIFAP) expressed support for the views put forth by the Delegation of the United Kingdom.

389. Mr. YAMASHITA (JPA) indicated that his answer to the question was "yes." He further indicated that plant variety by process included first and all subsequent generations. He also indicated that the variety included an entire cycle, that is seed to plant and back to seed again; thus, all generations were one unit of a plant variety.

390. Miss COMTE (IFAP, COPA and COGECA) wished to return to question 21 and to say that the organizations that she was representing were in favor of the introduction of a collision norm. On the subject of question 13, the organizations considered that it would be highly regrettable if protection were extended as indicated in the question, in view of the fact that plant breeders' rights were the only suitable form of protection for plant varieties.

391. Mr. JACKSON (CNIPA) indicated that his answer to the question as being generally "yes." In this regard, he supported the position taken by the United Kingdom on subsequent generations. He further stated that more consideration should be given to the definition of the term "directly obtained."

392. Mr. WINTER (COMASSO) stated that COMASSO shared the views expressed by Mr. Lange (ASSINSEL), mainly on the ground that the prohibition of double protection was to be safeguarded.

393. Mr. HASHIMOTO (APAA) indicated his answer to the question was "yes."

394. Mr. BROCK-NANNESTAD (FEMIPI) indicated that his answer to the question was "yes." He further indicated that the list of US patents issued in this area of technology, that he had already provided to the Committee, showed examples of novel combinations of traditional breeding processes with new forms of biotechnology.

395. Mr. SUGDEN (Chairman) summed up, noting that a majority of Delegations and organizations seemed to have replied in the affirmative to the question as to the extension of patent protection to the product directly obtained from a process, but that several countries were amending their laws to reflect that rule. He further indicated that, as to protection afforded subsequent generations of products made by a patented process, several Delegations were considering the situation.

IV. ADDITIONAL GENERAL OBSERVATION

396. Mr. KIM (Permanent Mission, Republic of Korea) stated that the Korean Delegation had listened with satisfaction to interventions of many State delegations, intergovernmental organizations and representatives of interest groups, not only on the interface between patent protection and plant breeders' rights but also on the two systems themselves and other related subjects. His Delegation believed that all those views would greatly help to develop an efficient system for the protection of varietal improvements in plants in the Republic of Korea, where the patent law presently provided for protection for inventions in asexually propagated plants, but no legal system of protection was available for many important sexually-propagated agricultural and horticultural crops. It was recognized that the systems of protection had been influenced by the traditional situation prevailing in each country and by the interests of different sectors involved in the relevant fields in each country. It would have to be remembered, however, that the main subject underlying the discussions of this meeting was the stimulation of investment and research in the area of plant breeding and related technologies in plant crop species, for the interest and the welfare of the public at large

and the agricultural sector in particular. Advocating either or both systems of protection and managing ways to deal with the interface between those systems should be justified only when they were meant to achieve that goal.

V. FUTURE WORK

397. The representatives of several non-governmental organizations expressed the wish that a further meeting should be organized by WIPO and UPOV, during which the discussions of the Committee of Experts could be continued. Such a further meeting should be planned taking into account the preparatory work for the revision of the UPOV Convention.

398. The Secretariats of WIPO and UPOV indicated that they would examine the possibility of organizing such a further meeting, in which not only non-governmental organizations, but also government delegations and intergovernmental organizations could participate, and that the date of such a meeting would depend on the progress made with respect to the revision of the UPOV Convention.

399. Mr. HOINKES (Patent and Trademark Office, United States of America) observed that the work that had been discussed by the Committee of Experts was of interest to a number of organizations and governmental agencies, despite the fact that it was done by two different international organizations. However, it seemed that some of the UPOV documents that may have been of interest to government agencies that were outside departments of agriculture in respective countries had never reached such government agencies. He inquired whether it would be possible that documents (especially those concerning the revision of the UPOV Convention) be sent at least to the government officials and government agencies represented at the meeting of the Committee of Experts.

400. Mr. GREENGRASS (Vice Secretary-General of UPOV) stated that UPOV documents were routinely sent to a list of experts in member States (which was not a closed list) and that the question raised by Mr. Hoinkes (Patent and Trademark Office, United States of America) would be examined.

401. This report was unanimously adopted by the Committee of Experts on February 2, 1990.

[Annex follows]

LISTE DES PARTICIPANTS/LIST OF PARTICIPANTS

I. ETATS/STATES

(dans l'ordre alphabétique français des noms des Etats/
in the French alphabetical order of the names of the States)

ALGERIE/ALGERIA

Mohamed YOUNSI, Chef du département des inventions, Institut algérien de normalisation et de propriété industrielle (INAPI), Alger

ALLEMAGNE (REPUBLIQUE FEDERALE D')/GERMANY (FEDERAL REPUBLIC OF)

Dirk BROUËR, Referatsleiter Patentrecht, Bundesministerium der Justiz, Bonn

Wolfgang BURR, Ministerialrat, Bundesministerium für Ernährung, Landwirtschaft und Forsten, Bonn

Elmar HEINEN, Ministerialrat, Bundesministerium für Ernährung, Landwirtschaft und Forsten, Bonn

Frank-Peter GOEBEL, Leitender Regierungsdirektor, Deutsches Patentamt, München

Henning KUNHARDT, Abteilungsleiter, Bundessortenamt, Hannover

Walter RUTZ, Referatsleiter, Bundessortenamt, Hannover

Sigmund J. HUBER, Regierungsrat, Deutsches Patentamt, München

ARGENTINE/ARGENTINA

Hector A. ORDONEZ, Adviser, Secretariat for Agriculture, Livestock and Fisheries, Buenos Aires

Antonio G. TROMBETTA, Second Secretary, Permanent Mission, Geneva

AUSTRALIE/AUSTRALIA

Ronald Alfred WALKER, Ambassador, Permanent Representative, Permanent Mission, Geneva

Murray HADDRICK, Deputy Commissioner of Patents, Patent, Trade Marks and Designs Office, Woden, A.C.T.

Benjamin Joseph LOUDON, Registrar, Plant Variety Rights, Plant Variety Rights Office, Department of Primary Industries and Energy, Canberra

Noel Joseph BYRNE, University Professor, Queen Mary College, Faculty of Law, University of London, London

John HANNOUSH, First Secretary, Permanent Mission, Geneva

AUTRICHE/AUSTRIA

Karl WOLF, Diplom-Ingenieur, Österreichisches Patentamt, Wien

BANGLADESH

Mohammed Ishaq TALUKDAR, Minister (Economic Affairs), Permanent Mission, Geneva

BELGIQUE/BELGIUM

Walter J.G. VAN ORMELINGEN, Ingénieur agronome, Ministère de l'agriculture, Bruxelles

Dominique VANDERGHEYNST, Conseiller adjoint, Office de la propriété industrielle, Bruxelles

BRESIL/BRAZIL

Norman NEUMAIER, Technical Head, EMBRAPA - CNPSO, Londrina, PR

Paulo Roberto de ALMEIDA, First Secretary, Permanent Mission, Geneva

CANADA

James BUCHANAN, Policy Analyst, Department of Consumer and Corporate Affairs, Ottawa

Effat MAHER (Mrs.), Section Head, Patent Office, Department of Consumer and Corporate Affairs, Hull

Valerie SISSON (Ms.), Examiner, Plant Breeders' Rights, Agriculture Canada, Ottawa

CHILI/CHILE

Yerko SIMUNOVIC, Lawyer, Agriculture and Livestock Service of Chile, Santiago de Chile

Pablo ROMERO, First Secretary, Permanent Mission, Geneva

DANEMARK/DENMARK

Flemming ESPENHAIN, Chairman, Plant Novelty Board, Plant Directorate, Lyngby

Niels RAVN, Deputy Director General, Danish Patent Office, Taastrup

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