

Thursday, 7 November 1957,
at 10.50 a.m.



NEW YORK

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Chairman: Mr. Djafal ABDUH (Iran).

Order of discussion of agenda items (A/C.1/792 and Add.1) (continued)^{1/}

1. The CHAIRMAN invited the Committee to consider the order in which it wished to deal with the items of the agenda which would remain after the conclusion of the debate on the item entitled "Effects of atomic radiation" [item 57*].
2. Mr. SLIM (Tunisia) suggested that the Committee, having concluded its work on the item before it, should take up the Korean question [item 23*], which was the first item on the Committee's agenda, as originally listed (A/C.1/792 and Add.1). But before proceeding to debate that question, it should decide the order in which it wished to consider the remaining items allocated to it.
3. Mr. KUZNETSOV (Union of Soviet Socialist Republics) said that, although all the items remaining on the Committee's agenda were important, the one entitled "Declaration concerning the peaceful coexistence of States" [item 66*] immediately and directly affected the interests of all peoples. All States should solemnly declare their intention to conduct their international relations on the basis of the principles of peaceful coexistence proclaimed at the African-Asian Conference held at Bandung in 1955. Accordingly the question of peaceful coexistence should be considered first.
4. The question of Korea was being artificially maintained on the agenda by certain States attempting to use the United Nations as a cover for their aggressive policies. It did not deserve priority consideration; indeed, such consideration would have the effect of aggravating the situation in Korea. On the other hand, the Soviet Union had no objection to giving priority to the question of Algeria [item 59*].
5. The CHAIRMAN asked the Committee to vote on the Tunisian suggestion that the next item of its agenda should be the question of Korea.

The suggestion was adopted by 46 votes to 9, with 8 abstentions.

AGENDA ITEM 57

**Effects of atomic radiation (A/3614 and Add.1,
A/C.1/L.183)**

6. Mr. DAVID (Czechoslovakia) emphasized the dilemma confronting the world as a result of the dis-

* Indicates the item number on the agenda of the General Assembly.

^{1/}Resumed from the 865th meeting.

covery of atomic energy, which could be used either to bring about undreamed-of prosperity for all peoples or their total destruction. At the same time as the peaceful uses of atomic energy were being developed and expanded, the threat of the use of atomic weapons was growing. Moreover, apart from that threat, mankind was already being exposed to the effects of atomic radiation, the amounts of which were constantly increasing as a result of nuclear test explosions. The General Assembly had recognized the seriousness and urgency of dealing with the question of the effects of atomic radiation when it had included the item in its agenda without discussion (682nd plenary meeting). It was a question directly affecting people everywhere irrespective of their political, geographical, social and other conditions, and more and more people were wondering how atomic radiation would affect man's health and the development of future generations.

7. Scientists agreed that, apart from natural background sources of radiation, radio-active elements were released either as a result of the peaceful use of atomic energy or as a result of nuclear test explosions. In the first case, those elements could be controlled; appropriate equipment and safety measures could prevent the contamination of air, water and the earth's surface by the radio-active products of fission. On the other hand, the dissemination of radio-active products from test explosions of nuclear and hydrogen weapons could not be so controlled. The radio-active particles thus released were deposited in the troposphere or in the stratosphere. As a result of the hydrogen bomb tests carried out in the Pacific in 1954, for example, there was a constant increase in levels of radio-activity in the upper strata of the troposphere for a period of ten months after the explosion of the bombs. The lighter radio-active particles were carried by air currents around the globe, while the heavier particles gradually descended to earth.

8. Scientists had distinguished three types of fall-out: local fall-out occurring for some ten to twenty hours after the explosion in the vicinity of the test site; intermediary fall-out occurring within the first weeks following the explosion; and delayed fall-out which lasted for years and contained essentially strontium-90 and caesium-137. During the bomb tests at Bikini in March 1954, the radio-activity of surface waters in the vicinity of the island had been found to be a million times higher than the natural radio-activity. Four months following the explosions, the natural radio-activity of the waters at places 2,200 kilometres away from the test site had been found to have increased thirteen times, and thirteen months after the explosions, the area of contaminated water measured more than 2 million square kilometres.

9. Delayed fall-out, which was not uniformly distributed over the earth's surface, could be particularly dangerous in some parts of the world owing to concentration of descending radio-active particles. The

strontium-90 released into the stratosphere by a test explosion remained there for an average of ten years and then gradually descended to earth. The strontium released by testing up to early 1955 was coming down at an average yearly rate of 0.5 to 1 millicurie per square kilometre, but the rate had considerably increased as a result of continued testing since that time. Strontium penetrated into the earth's crust and water, and thence into the vegetation and the human organism. According to information recently published by Columbia University, small amounts of strontium-90 would soon be found in all individuals regardless of age or place of residence. The strontium content in the bodies of small children was three to four times higher than in adults, and there were substantial variations in the amounts of strontium among individuals. It was highly probable that, as a result of further nuclear tests in 1957, the strontium content in some individuals would have reached dangerous limits. Scientific evidence supported that probability, and it was therefore misleading to say that the average amount of strontium present in human bones was negligible. Even if all nuclear tests were immediately suspended, the strontium released by previous explosions would continue to descend to earth in ever-increasing amounts which would reach the maximum some time in 1980.

10. Strontium-90 caused great harm to the human organism by emitting beta rays which penetrated bone tissue; even small amounts, remaining as they did for a long time in the human body, could cause cancer, as in the case of radium. A special commission of British atomic scientists had estimated that the test explosions carried out thus far had placed 50,000 persons in serious danger of developing bone cancer. Strontium irradiation also was harmful to bone marrow and might be responsible for leukaemia. Finally, Professor Linus Pauling had recently estimated that tests of nuclear and hydrogen weapons carried out thus far were responsible for a 1 per cent increase in the total number of cases of mentally retarded or deformed children.

11. It had been argued that a so-called "maximum permissible dose" of radiation produced no harmful effects either immediately or in later life or in future generations. While there was a considerable difference of opinion on that subject, more and more scientists were accepting the view that any dose of radiation was harmful. In their view, leukaemia and genetic mutations were to some extent the result of natural radiation. There was all the more reason, therefore, for preventing further increases in levels of natural radiation. It was also significant that during the past two decades, the tolerable dose of radiation for professional workers had been progressively lowered. All that indicated that, while knowledge of the effects of strontium-90 was far from complete, it was safe to anticipate that future research would show that any amount of that radio-active element was dangerous. Moreover, alarming findings had been made regarding the accumulation of radio-active elements in waterfowl caught in waters penetrated by local fall-out, again indicating probable harmful effects to human beings consuming the animals as food. Thus, in the present stage of knowledge of the problem, there was no point in speaking of a maximum permissible dose.

12. The crux of the problem was that knowledge of chemistry, physics and technology was lagging behind knowledge of biology. It was no longer possible to apply

simple physical criteria to the complexity of biological processes, and everything should be done to reduce all irradiation by various types of ionizing radiation to the minimum.

13. Radiation could also cause genetic mutations and give rise to disorders such as blood diseases, blindness, deafness and dumbness, and defects in mental development. It might also cause premature death of the individual in either the pre-natal or post-natal period. It had been found that every dose of radiation surpassing the natural level of radiation augmented the percentage of genetically harmful mutations. As early as 1956 scientific study groups such as the Study Group on the Effect of Radiation on Human Heredity established by the World Health Organization had reached the conclusion that from the genetic point of view any additive radiation was harmful.

14. There were strong grounds for believing that most genetic effects were very closely additive, so that a small amount of radiation received by each of a large number of individuals could do an appreciable amount of damage to the population as a whole. In genetics, more than in any other field, the greatest possible caution was imperative. The Summary-Analysis of Hearings before the Joint Committee on Atomic Energy of the United States Congress^{2/} contained a statement that it was not possible to establish a safe limit to the amount of radiation which would not be injurious to human health and, in the opinion of all scientists heard, even a small amount of radiation augmented the rate of mutation in the human organism.

15. In a reply to the Czechoslovak News Agency international survey, Professor Yasushi Nishivaki had said that one of the striking points of radiation injury was the existence of a long latent period, sometimes several months and sometimes more than twenty years. Genetic injuries would not be known for at least several generations and when those genetic effects became manifest it would be too late to take action. Therefore the nuclear bomb tests must be stopped before those effects became manifest. No part of the world could escape the damage.

16. Many scientists from various countries had replied to the survey of the Czechoslovak News Agency and, with only one exception, all regarded the danger of atomic radiation as serious and expressed apprehension over the continuation of test explosions and the increase in the levels of atomic radiation.

17. Scientific evidence proved that persons who during their lifetime underwent major exposure to radiation had a decreased life expectancy.

18. The present dangerous situation had led a number of eminent scientists to warn Governments and world public opinion of the deleterious consequences of continuing nuclear test explosions. Organizations throughout the world had been mobilized to fight for the suspension of the tests of atomic and hydrogen weapons. Daily reports testified to the universal demand for immediate discontinuance of the tests.

19. In their attempts to justify the continuation of the

^{2/}United States Congress, Joint Committee on Atomic Energy, Summary-Analysis of Hearings May 27-29, and June 3-7, 1957, on the Nature of Radioactive Fallout and its Effects on Man, 85th Congress, 1st Session (Washington, Government Printing Office)

tests of nuclear weapons, the representatives of the ruling circles of the United States now advanced the theory of the so-called "clean" bomb. In his statement of 10 October 1957 (866th meeting), the United States representative had gone so far as to state that those tests must be pursued in order to make possible production of atomic weapons with a smaller amount of radio-active products. That assertion, however, was refuted by United States official authorities themselves. The Summary-Analysis of Hearings before the Joint Committee on Atomic Energy of the United States Congress made it clear that all nuclear explosions could be expected to produce some radio-active materials. Although there was no such thing as an absolutely "clean" bomb, the amount of radio-activity produced could be substantially altered in relation to the size of the explosion. The explosive power of nuclear weapons had risen by thousands of per cent since Hiroshima and Nagasaki. The number of test explosions amounted to dozens in a year. The absolute amount of harmful radio-active substances in the atmosphere thus continued to increase.

20. United States experts who were members of the Atomic Energy Commission's General Advisory Committee had stated that if the tests were to continue at the rate of the last five years, there would be a noticeable increase in genetic defects, in the destruction of the reproductive cells of future generations, and in the number of deaths caused by leukaemia, and a certain life shortening.

21. The attempts of some United States politicians to prove that there was no need to fear continued tests were dictated by United States military and strategic policies founded on the use of nuclear weapons.

22. It was no consolation to know that the strontium fall-out affected the entire population of the world. While elaborate safety measures were taken to protect persons working with radio-active materials against exposure, the earth's surface was being flooded by uncontrollable amounts of dangerous radio-active substances the effects of which were generally regarded by scientists as deleterious. If the nuclear test explosions continued at the present rate, the danger might even affect the present generation.

23. Clearly the peoples of the world were fully aware of the danger and were clamouring for action to prevent further increase in the risk. The voice of the peace-loving nations of the world must be heeded; agreement for the immediate and unconditional suspension of tests would be received by the entire world with genuine relief. The people and the Government of Czechoslovakia unanimously urged suspension of the tests and fully supported the USSR proposals to that end. Immediate cessation of tests would not only prevent further increase in the levels of radiation but would also halt the race for further perfection of those weapons and constitute a significant step toward the complete prohibition of such means of mass destruction.

24. It was regrettable that, because of the Western Powers, the disarmament talks had failed to bring about a partial agreement on the suspension of test explosions. That state of affairs could not be allowed to continue. The General Assembly must spare no effort to achieve an immediate and unconditional suspension of tests of nuclear weapons. The Czechoslovak delegation would do its utmost to help attain that goal.

25. Facts showed that, in the matter of radio-activity, mankind was threatened by an acute danger the extent of which could hardly be foreseen. It was contrary to the tradition of scientific progress to augment the risk of a harmful agent if the extent of its effects was not as yet fully known. Every effort must be made to dispel the uncertainty still prevailing about problems such as the question of the maximum permissible dose. Intensive scientific research was necessary but it was equally important to ensure the proper co-ordination of research activity. For those reasons the Czechoslovak delegation was submitting a draft resolution for the convening of a conference on the effects of atomic radiation on the health of mankind (A/C.1/L.183) which would enable scientists from all over the world to express their views on the question in a wide international forum.

26. The idea of obtaining the views of scientists on a question of such vital importance was not entirely new. The existence of the United Nations Scientific Committee on the Effects of Atomic Radiation was proof that States Members of the Organization had realized the necessity for an expert judgement of the question more than two years ago, at the ninth session of the General Assembly. Now, as a result of a constant rise in the levels of radiation, it was necessary to complete the work of that Committee by the views of scientists from all parts of the world.

27. The most appropriate forum for such an exchange of views would be a scientific conference convened under the auspices of the United Nations not later than at the beginning of 1959. A number of scientists and statesmen of great repute had expressed themselves in favour of such a conference.

28. Experience gained in the preparation of the two international conferences on the peaceful uses of atomic energy showed that the preparation of a scientific conference was no simple matter, both as regards its technical and organizational aspects and its scientific coverage in particular. If the conference was to be convened early in 1959, it was essential to make the decision at the current session of the General Assembly and thus enable the Secretary-General to prepare, in consultation with the Scientific Committee on the Effects of Atomic Radiation and other organs, the programme and technical facilities for the conference.

29. In July 1958 the Scientific Committee's report would be published. The conference would thus be enabled to utilize that documentation as a basis for its discussions.

30. In the course of the preliminary discussions on the convening of the conference, the view had been expressed that it would be preferable to postpone the decision until the forthcoming session of the General Assembly, after the report of the Scientific Committee had been published. Such a postponement, however, would only result in undesirable delay in the convening of the conference, which could then not be held before 1960. In that case, world public opinion would be forced to conclude that the United Nations had failed to do everything in its power to promote progress on that important question.

31. The conference was in no wise intended to take over the work of the Scientific Committee or the activities of the respective specialized agencies. On the contrary, on the basis of the results of that conference,

the Scientific Committee would be better able to continue its work and to concentrate its efforts on the tasks entrusted to it under resolution 913 (X) which thus far it had been unable fully to discharge, such as the submission of annual summary reports on the levels of radio-activity on a global scale and effects of radiation on man and his environment.

32. The Czechoslovak delegation was submitting its draft resolution in an earnest desire to focus the attention of the United Nations on a serious problem: the need to find ways and means to prevent the growing hazard involved in the constant rise in the levels of atomic radiation. In the general inquiry into the harmful effects of such radiation, the United Nations might render great service by further developing and intensifying its activities in that field.

33. Mr. WADSWORTH (United States of America) said that, because the United States had long been concerned with the effects of atomic radiation on man and his environment, it welcomed the opportunity to discuss the subject in the United Nations. Any discussion which would help the people of the world to learn the facts of the nuclear age and to act wisely in the light of that knowledge was to be welcomed.

34. The statement of the Czechoslovak delegation, in its explanatory memorandum on the item (A/3614/Add.1), that the United Nations could not remain inactive in the face of the growing hazard of atomic radiation was hard to understand, since the United Nations had for the past two years been acting purposefully and constructively on the matter. Following a proposal originally made by the United States (A/3022 and Corr.1), the General Assembly had, during its tenth session (550th plenary meeting), unanimously approved the establishment of the Scientific Committee, which had been assigned the task of collecting, reviewing, evaluating and publishing reports from Governments on observed levels of ionizing radiation and on the effects of that radiation on man and his environment. The Committee, which consisted of eminent scientists from fifteen countries, had been at work for the past two years and had considered a wide range of subjects, including the effects of radiation on the individual and on heredity, levels of natural background radiation, exposure from industrial uses of radiation, contamination of the environment by man-made radio-activity, and the responsibilities of physicians in using X-rays. As one aspect of its work, it had helped to begin an expanded world-wide programme to collect and analyze samples of radio-active fall-out from the earth's atmosphere, a programme which had resulted in the establishment of an extensive world-wide fall-out sampling system. The Scientific Committee had had the co-operation of many Member States and three specialized agencies. It represented a real mobilization of international scientific resources.

35. The United States had contributed to the work of the Scientific Committee by submitting more than thirty reports on such topics as the biological effects of atomic radiation, fall-out, natural background radiation, the genetic effects of radiation, radiation hazards in various occupations, and disposal of radio-active waste in the oceans. It had also extended technical assistance to other nations in establishing fall-out collection stations and in methods of analysing the samples collected. In that connexion, the United States now reaffirmed its offer of assistance to any Member

of the United Nations or the specialized agencies for the collection and analysis of atmospheric dust to determine its degree of radio-activity. The United States had also made available to the United Nations standard samples of strontium-90 for use by other countries.

36. The fall-out analysis programme deserved special emphasis because it was directly concerned with fall-out from nuclear test explosions, about which there had been so much discussion and concern in the world. The concentration of the United States and the Scientific Committee on that highly technical field should make it clear that both were extremely mindful of the world's concern and were making every effort to increase their knowledge of the facts and to reach more precise conclusions. The United States had, indeed, been particularly active in carrying out fall-out studies for some years. Its Atomic Energy Commission had since 1953 supported a project primarily devoted to the study of that subject on a worldwide basis, and all the information on fall-out obtained in that project had been made public and submitted to the United Nations Scientific Committee.

37. The United States had undertaken that scientific effort for the same reasons which had led it to propose the establishment of the Scientific Committee. It believed that when a danger appeared to exist the right course was neither to ignore it nor to allow it to be magnified into a source of unreasoning fear, but to establish the facts as clearly as possible and to act reasonably and purposefully on the basis of those facts.

38. It might be imagined from the Czechoslovak representative's speech and his delegation's draft resolution that fall-out represented an imminent danger to humanity and was the only source of harmful radiation in the world. The First Committee had thoroughly discussed the question of fall-out in connexion with disarmament and had just voted overwhelmingly to recommend orderly and constructive steps toward an agreement to stop nuclear tests as part of an over-all approach to the disarmament problem. However, since the question had been raised again, the United States would sum up its position by stating that: first nuclear testing was one of the obligations imposed on it by its efforts to provide a strong defence for itself and other countries in a world in which experience showed that weakness invited aggression; secondly, it was well aware that there was some atmospheric contamination from all nuclear tests; thirdly, because there was world concern over that fact, it wished to see tests stopped in the only way which would not endanger the defence of free countries, that is, as part of the first stage of an over-all disarmament programme; fourthly, in its current testing activities the United States was moving toward the development of nuclear weapons which produced much less radio-active fall-out; and fifthly, nuclear tests were only a minor source of the ionizing radiation which was harmful to human beings.

39. The last point was important. Human beings had always received a fairly constant amount of genetically harmful atomic radiation from outer space, the earth's crust and even their own bodies, and that radiation had always been an important source of inherited physical defects. The United States National Academy of Sciences had estimated in 1956 that in the previous five years all the nuclear-weapons testing in the world had increased the natural radiation level for the United

States population by less than one-eighth, and probably by no more than one-fortieth, while medical X-rays had increased it by about two-thirds. Moreover, it was even questionable whether there would be a measurable drop in genetically harmful radiation if all nuclear weapons testing were immediately stopped forever, since weapons testing was only a minor element in a constantly changing situation in the field of radiation. The small reduction in radiation which would result from the cessation of tests could be more than wiped out by more widespread use of medical X-rays or inadequately controlled industrial use of radiation. Those facts suggested that radiation should not be a cause for panic, but rather something to be watched and studied in an orderly scientific fashion so that whatever action was taken would be guided by scientific knowledge.

40. The United States considered that much further scientific work on radiation would have to be done by the United Nations, but felt that the logical time for the General Assembly to decide on further steps in the field would be in 1958, after it had received and studied the Scientific Committee's summary report.

41. The Czechoslovak draft resolution proposed that a scientific conference should be convened on the ground that the question of radiation hazards required the widest study and collection of the views of as many scientists as possible, but it was hard to imagine how a wider study could be made than the one the Scientific Committee was already making, or how it would be possible to carry out a more extensive or more systematic collection of the views of scientific specialists all over the world. It was strange that the General Assembly should be asked to conclude, even before the Committee it had itself established had finished its work, that that work was not good enough and must

be supplemented by some other means.

42. Moreover, if the reference in the Czechoslovak draft resolution to the need for "the broadest collection of views of as many scientists as possible" meant the collection of expert views and findings of scientists in fields relating to radiation and its effect on man, that was precisely what the Scientific Committee was already doing, while if it meant a propaganda conference in which scientists would be asked to express opinions outside their specialized fields, it was an unscientific idea which, if carried out, would be a great waste of scientific talent. Scientific truth had nothing to do with political issues and could not be discovered by taking opinion polls among scientists.

43. As the world moved into the nuclear age, the problems of radiation safety were becoming increasingly vital. The results of all basic research, such as that which was the concern of the Scientific Committee, were only partly predictable. It should be remembered that the Scientific Committee, like any truly scientific enterprise, might lead to positive results which were scarcely dreamt of as yet. The United Nations should therefore respect the scientific integrity of the Committee and encourage it in its work, rather than attempt to devise new means to replace or duplicate it or to confuse its work.

44. For those reasons, the United States believed that the Czechoslovak draft resolution represented an incorrect approach to the question. However, it felt that the debate would give the General Assembly an opportunity for constructive action, and, together with a number of other delegations, it would shortly submit a draft resolution on the subject embodying another approach.

The meeting rose at 12.25 p.m.