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CONTENTS

Chairman: Mr. Djalal ABDOH (Iran).

AGENDA ITEM 57

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

1. Mr. PEIVE (Union of Soviet Socialist Republics) said that the peoples of the world, already conscious of the dangers involved in the stockpiling of weapons of mass destruction, were deeply concerned with the more imminent peril of the fall-out of radio-active particles from nuclear test explosions.

2. As the number of explosions increased year by year, the level of radio-activity in the atmosphere and on the surface of the globe grew steadily. Radio-active strontium-90 was deposited on the surface of the earth and absorbed by plants; with the food it entered the human body, where it could cause extremely serious damage. The harmful effects of even a small increase in radio-activity might not appear until after a long interval.

3. At the tenth session the delegations of the United States and India, with the support of the Soviet Union and others, had brought the question before the General Assembly (A/2931, A/2949 and Add.1), which had by resolution 913 (X) appointed the Scientific Committee on the Effects of Atomic Radiation. The Scientific Committee's report would no doubt serve as a basis for measures to be taken by the United Nations, but the question demanded study at the current session, as the delegation of Czechoslovakia had proposed (A/3614 and Add.1).

4. By the end of 1956 the deposit of strontium-90 on the earth's surface had risen from an average of 2.9 to 12.7 millicuries per square kilometre, and the rate of deposit was tending to rise.

5. It would be wrong to look for reassurance in the thought that the increase in radio-activity was relatively small compared with the level of natural radiation. Scientists believed that organisms had adapted themselves, to some extent, to an environment of a particular level of radio-activity. Now, for the first time in the history of life on earth, increase in the radio-activity to which living organisms were exposed had been observed. There was no proof that they were capable of adjusting to increased radio-activity.

6. Moreover, the slight increase of radio-activity was an increase in an average. Strontium-90 did not fall everywhere in the same amounts. In the medium latitudes of the northern hemisphere, in the most densely populated part of the globe, the fall-out was 1.7 times the average, and in some areas it was as much as 10 times higher.

7. The particular danger of strontium-90 was that it entered the biological cycle in association with calcium, a necessary element in nutrition. If radio-active strontium-90 entered the organism, it caused excessive irradiation of the cells, with the most harmful effects.

8. The ratio of one micromicrocurie of strontium-90 to one gramme of calcium was designated a "sunshine", or strontium, unit. By now the soil's average content of strontium-90 was twenty-five to fifty strontium units. If the fall-out of radio-active strontium was evenly distributed over the earth's surface, the number of strontium units would vary inversely to the calcium content of the soil. There were large areas where the soil had a low calcium content, and in some parts of the United States and the United Kingdom the rate of concentration of strontium-90 was 480 to 490 units. The absorption of calcium by plants was affected by various factors; sometimes a plant had a higher ratio between strontium and calcium than the soil.

9. Since radio-active strontium entered the organism through plants, the danger increased with the vegetable content of the diet. In some countries, particularly in the East, rice and vegetables were the main sources of calcium. The absorption of strontium through food was higher in countries where the staple diet was fish, since strontium-90 was easily absorbed from water by the fish.

10. Strontium-90 was deposited in the bones. It could be transmitted to a baby through milk; the accumulation of strontium-90 in the bones of newborn babies was now 2 to 2.5 times greater than that in the bones of adults. Children were both more exposed and more sensitive to the effects of atomic radiation than adults. The absorption of radio-active strontium varied from person to person.

11. If explosions continued at the prevailing rate, they would produce a considerable rise in the amount of radio-active strontium-90 in the bones of human beings. The period of half-life of strontium-90 was about twenty-eight years; if its absorption by the organisms continued, the dose of radiation would increase accordingly.

12. Strontium remained in the tissues for a long time. Its distribution in the human skeleton was extremely uneven; for example, its concentration in the vertebrae was as great as in the skeleton as a whole. It affected some sections of a bone more than others, so that the cells of those sections absorbed a stronger dose; in that way, tumours might grow. Radiation could have other malignant effects, such as provoking cancer of the blood and damaging the reproductive cells.

13. Increased radiation could lead not only to genetic mutations but also to the shortening of the life-span, to untimely aging and to a lowering of the resistance to unfavourable environmental factors such as infections. Beta rays emitted by strontium-90 could, in addition, cause opacity of the crystalline lens of the eye. To those extremely harmful effects should be added the deficiencies of the nervous system resulting from excessive radiation on the cells of the growing embryo. Consequently, there was a danger of an increase in schizophrenia, haemophilia and other diseases in future generations.

14. Despite all those considerations, the representatives of the United States and the United Kingdom were at pains to belittle the importance of the increase in the level of radio-activity resulting from the explosions of nuclear weapons. It was not true to say, as Mr. Dulles, United States Secretary of State, had asserted (680th plenary meeting), that the decrease in the percentage of radio-activity would make it possible to carry out tests without raising the world's level of radio-activity. In fact, radio-activity was increasing on the earth's surface owing to the fall-out of strontium-90 which had accumulated in the upper strata of the atmosphere.

15. So-called "clean" bombs would not improve the situation; their explosion would likewise considerably add to the radio-activity of the environment.

16. The United States representative had said (866th meeting) that the radiation due to fall-out was less important than that caused by other sources such as the luminescent dials of watches. That was not the opinion of the scientists of a great many countries, and world opinion was legitimately alarmed. The references to luminous watches were meant to camouflage the grave threat to humanity.

17. The United Kingdom representative had said (869th meeting) that radiation due to weapons testing was so small compared to natural radiation as to be negligible. It was, however, an established fact that the level of radio-activity in the environment had been raised by the tests. And it had been scientifically demonstrated that even the smallest dose of radiation was capable of producing genetic mutations. In the matter of radiation there was no such thing as a "threshold of tolerance". The effects of radiation were cumulative.

18. Even if the incidence of hereditary diseases increased by only 1 per cent in each generation, ultimately the number of persons affected by such diseases would be so vast that one should think about the problem without delay. British scientists themselves had proved that, during recent years, the amout of strontium-90 in the soil, plants, meat and milk in the United Kingdom had increased as a result of nuclear tests. In the United States, Professor Linus Pauling had estimated that, in consequence of the explosion of fifty megatons of fissionable materials, 10,000 people had died or would due of leukaemia.

19. In effect, then, there was no such thing as a "threshold of tolerance" to radiation; radio-activity had already reached a dangerous level and the continuation of tests would seriously impair the health of present or future generations. That was the opinion of many scientists and leading personalities of various countries, including the United States; he cited extracts from the opinions expressed.

20. Most of the thirty-three American scientists questioned by the Joint Committee on Atomic Energy of the United States Congress had confirmed that nuclear tests were injurious to human beings and could not be continued without imperilling the population of the world. Scientists from other countries had expressed a similar opinion. Professor Yoshio Hiyama, a distinguished Japanese scholar, had stated that the tests of nuclear weapons were progressively saturating man's environment with strontium-90, and that the level of radio-activity might very soon, if the tests continued at the current rate, exceed the tolerable limit. According to another Japanese scientist, Professor Mitsuo Taketani, one of Japan's leading nuclear physicists, the assertion that nuclear tests involve no danger to human life constituted a crude lie intended to hide the risks to which mankind was being exposed. Eighteen outstanding German physicists, specialists in atomic studies, had stated that the so-called "tactical" atomic weapons were as destructive as an ordinary atomic bomb and that one tactical atomic bomb could completely wipe out a small town. Furthermore, in their view there were no technical means of providing reliable protection to large groups of population against the noxious effects of atomic radiation. Mr. A.N. Nesmeyanov, President of the Soviet Union's Academy of Sciences, had said that, as the testing of nuclear weapons continued, one could observe an increase in the amount of radio-active isotopes in the atmosphere and on the earth, in particular of strontium-90 and of caesium-137. Strontium-90, falling out in the form of radio-active dust, was particularly dangerous; it contaminated some parts of the earth and oceans and penetrated into living organisms.

21. The scientists of the Soviet Union had called for a large international conference of scientists to consider what urgent and effective measures were required to prevent the use of the greatest scientific achievement for military purposes. Their warnings had caused concern among the public in all countries and dozens of organizations representing millions of people with different political and religious views were now making a similar worldwide appeal.

22. In that connexion, he referred to an article published in May 1957 in the United States periodical The New Republic; to the appeal launched by the World Council of Peace at its Berlin and Colombo sessions; to the resolutions of the African-Asian Conference held at Bandung in 1955; to the appeal of the World Council of Churches; to the letter addressed to Mr. Eisenhower, President of the United States, by the Society of Friends of the United States; to the decisions of the British Trades Union Congress; and to the decision of the Third International Conference against Atom and Hydrogen Bombs and for Disarmament held at Tokyo in August 1957—at which twenty-six countries and ten international organizations had been represented—to appeal to the United Nations and to the Governments of all countries for the discontinuance of nuclear and thermo-nuclear bomb tests.

23. During the current session, Mr. Krishna Menon, the representative of India, had given the First Committee (873rd meeting) conclusive evidence of the

injurious effects of the atomic radiation released by nuclear weapons tests.

24. The First Committee should give serious thought to the Czechoslovak draft resolution, for it was constructive. His delegation supported it unreservedly; a large scientific conference to consider the effects of atomic radiation should be convened not later than 1959.

25. Mr. MOCH (France) said that the debate should be limited and free of all political considerations. It should not, for example, deal with the discontinuance of nuclear weapons tests, for that subject had been disposed of in the Committee's earlier discussion.

26. The representative of the Soviet Union should realize what had already been accomplished by the Scientific Committee on the Effects of Atomic Radiation. The problem of strontium might be summed up in the proposition that the radio-activity of strontium, like all forms of radio-activity, decreased in an exponential curve. It declined very rapidly, and the curve flattened out. The result of the two opposing factors—natural decrease and artificial increase caused by explosion—depended on the frequency, number and nature of the explosions.

27. He observed that he had noticed a difference of opinion concerning a particular point. Whereas the Czechoslovak draft resolution recommended the convening of a scientific conference without specifying a date, the representative of Czechoslovakia proposed (894th meeting) that the conference should meet early in 1959, the Soviet representative had just said that it should be held not later than 1959, and the United States representative had stated (894th meeting) that nothing would be gained by interfering with the Scientific Committee's work programme and that a conference in 1958 or 1959 would be premature.

28. The French delegation considered that such a conference would be useful if the results of atomic experiments in that field were kept secret for military or technical reasons. In that case, an international conference would be a most valuable forum for the exchange of information as the International Conference on the Peaceful Uses of Atomic Energy held at Geneva in 1955 had been. In the matter of atomic radiation, however, the Scientific Committee had, for twenty months, enabled experts throughout the world to become acquainted with each other and to exchange material which was in no way kept secret. There were no military secrets and no industrial proprietary rights involved. The Scientific Committee, consisting of the representatives of the countries most advanced in nuclear physics, was in constant touch with all other bodies and was now preparing a comprehensive report on the knowledge accumulated. It had already prepared reports of great value to the specialized laboratories. Those laboratories should, he thought, have time to digest the data in the Committee's report before a large scientific gathering was scheduled which could yield useful results. At the moment the conference would be premature; it would merely give prominence to existing differences of opinion, which in turn reflected moral or political interpretations of scientific achievements; it would not be conducive to scientific progress, whereas the Scientific Committee was making a gradual contribution to progress.

29. Besides, other scientific conferences were already planned for 1958, in particular the second international conference on the peaceful uses of atomic energy, which would consider, among other topics, the biological effects of radiation. At that Conference scientists would have an opportunity for discussing the Scientific Committee's final report.

30. Accordingly, the question whether a large conference should be arranged to deal exclusively with the effects of atomic radiation should be held over to the Assembly's thirteenth session.

31. Mr. PEIVE (Union of Soviet Socialist Republics) proposed that the list of speakers, originally to be closed by 6 p.m. on 7 November, should be kept open until 8 November, 1 p.m.

It was so decided.

The meeting rose at 4.30 p.m.

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