France was insisting on detonating a bomb in the Sahara. Despite the many appeals and protests from African States and from countries far removed from the test site, indeed, despite the deep concern with which the whole world viewed a continuation of testing, France was going ahead with its preparations. Presumably France was actuated by considerations of prestige, that is, the desire to be classified as a nuclear Power. If that was true, there was no assurance that the explosion of an atomic bomb in the Sahara would not lead to a wholesale testing of nuclear weapons in that region until France had achieved parity with the other nuclear Powers.

5. The only assurances the African States had received so far were that the bombs would not be large ones, that the radiation fall-out would not be great, and the sites selected for such tests would be far removed from inhabited areas.

6. It had been claimed that the French test was justified as a measure of defence which would act as a deterrent to any potential aggressor. Yet, as eminent scientists had asserted, there was no effective deterrent to nuclear weapons; peace was the only alternative to a nuclear war of annihilation. The world admired France, not so much for her military prowess, as for her culture, arts, science, and her love of liberty which she had with great sacrifices defended in two world wars.

7. Quoting from a pamphlet entitled Unmeasured Hazards and from another publication of the World Federation of Scientific Workers, he emphasized that, on the basis of present inadequate knowledge of the effects of nuclear test explosions, future dangers to human health could not be predicted with any degree of accuracy. Despite the elaborate precautions taken at Bikini by the United States, persons on the atoll as far as 250 miles from the testing site had been seriously injured. Scientists were still in the initial stages of discovering the effects of radioactivity and the amount and spread of fall-out from nuclear tests. Although the spread of fall-out presumably depended on the type of bomb exploded and the height at which it had been detonated, all agreed that there was a danger that human beings thousands of miles from the test site might absorb radio-active substances in food or drink. After the explosions at Bikini, fish caught as far as 1,500 miles from the test area had been found to be heavily contaminated. Lastly, the genetic effects of atomic radiation were not fully understood and there was a considerable body of opinion to support the view that radiations might deleteriously affect future generations.

8. In the circumstances, it would seem difficult for the Foreign Minister of France, Mr. Couve de Murville, to justify his statement that "the precautions which will be taken will absolutely eliminate any risks whatsoever" (814th plenary meeting, para. 89). The peoples of Africa owed much to France for, despite

Chairman: Mr. Franz MATSCH (Austria).

AGENDA ITEM 68

Question of French nuclear tests in the Sahara (A/4183, A/C.1/L.238) (continued)

GENERAL DEBATE (continued)

1. Mr. BENVIMHA (Morocco), exercising his right of reply, said that he had referred, in his statement at the previous meeting, to irrefutable and as yet unrebutted scientific findings regarding the possible dangers to the population resulting from the projected French nuclear tests in the Sahara. He had not, as the French representative had contended (1043rd meeting), based his argument on hearsay or on erroneous deductions from scientific data. The authority of the scientists whom he had quoted was well established; their number included many renowned Frenchmen. To assert that his explanation of the scientific effects of the explosion of an atomic bomb should be dismissed as erroneous deductions was to cast doubt on his intellectual honesty. Indeed, he had drawn attention to legal and political factors which France could not afford to ignore without peril to and to scientific considerations which had been corroborated by reputable scientists.

2. While he accepted Mr. Moch's assurances that the maximum security precautions would be taken in the test area, he had no assurance concerning the long-term effects of radio-active fall-out, regardless of the size of the bomb to be exploded. Men, women and children were still dying in Japan from the effects of the first atomic explosions, and Mr. Moch was certainly not unfamiliar with the studies conducted by the brilliant French geneticist Philippe Lheritier, on the effects of radiation on hereditary characteristics.

3. The French representative had observed that responsible statesmen should not be mislead by the emotional tenor of public opinion and should not let it influence rational thinking, particularly in an international forum. He would point out that the Governments protesting in the United Nations against the French test assumed full responsibility for their views and were prepared to defend them. The Moroccan Government was conscious of its responsibility towards public opinion in its country; surely, its sensitivity to that opinion was the earmark of democracy.

4. Mr. COOPER (Liberia) found it regrettable that, despite the prospect of an agreement on the discontinuance of nuclear tests by the three nuclear Powers,
the hardships they had endured under colonial rule, France had greatly improved the conditions in which they lived. For their part, they had come to France's assistance in its struggles against military aggression. It did not seem too much to ask France not to inflict unknown terrors on those peoples. The site selected by France for carrying out the test, the Sahara, was swept at certain times of the year by the strong harr-mattan wind which was felt over the entire African continent. Could France guarantee that the wind would not blow at the time of the bomb test or that its course could be directed? Moreover, in the tropics, the walls of dwelling places were much thinner and provided far less protection against external radiation than the brick and stone walls of houses in Europe, and some radio-active elements continued to emit ionizing radiation for many months or even years.

9. The clamour for a cessation of nuclear tests was world-wide. While the Sahara was for the moment a land of desolation, as the French representatives contended, it had vast potentialities for sustaining life. It was therefore futile to argue that a small bomb would not be a threat to the people living in and around it. Mr. Moch himself had admitted in the debate on general and complete disarmament that only a few pounds of nuclear matter would destroy millions of beings and would prohibit all life within thousands of square miles (1030th meeting). How then could Mr. Couve de Murville assert that the precautions taken with regard to the projected test would absolutely eliminate all risks?

10. Mr. ORMOSBY-GORE (United Kingdom) said that, since the Moroccan representative had stated at the previous meeting that his delegation had no objection to France's becoming a nuclear Power, it appeared that the Moroccan intention was that discussion would be confined to the specific effects that the projected French nuclear test would have in the Sahara and the surrounding countries. His Government had a special interest in protecting the people in Africa who had not yet attained independence and for whose welfare it was responsible, and it had taken every step to satisfy itself that no one would be endangered by the French test. He proposed to examine briefly the Moroccan representative's assertion that a test conducted near Reggane in the Sahara was certain to have harmful effects on human health. Before doing so, however, he wished to emphasize that, as the French representative had pointed out at the previous meeting, the weapon to be exploded by France was an atomic bomb, which was far less powerful than a hydrogen bomb and produced far less radio-active matter.

11. It should be remembered that the nearest town to the Maralinga site in Australia, where the United Kingdom had conducted nuclear tests, was only 62 miles distant, whereas the nearest population centre to the French site was situated at about the same distance as that which separated the city of Las Vegas from the Nevada test site in the United States, i.e. slightly less than 75 miles. It was significant that radio-activity decreased sharply as the distance from the explosion site increased, dropping within seven hours to one-tenth, within two days to one one-hundredth, and within two weeks to one one-thousandth of the level of radio-activity found one hour after the explosion.

12. The heavy debris drawn up by the explosion, which was contained in the so-called stem of the atomic mushroom formation, fell back to earth almost at once within a few miles of the point of detonation. The debris had travelled so short a distance at Maralinga that measured radio-activity at the living quarters situated less than 20 miles from the test site had not been sufficient to require precautionary measures of any kind. It was to be noted that Nigeria, the nearest Territory under United Kingdom administration, was fully 900 miles from the Reggane site; the fact that the harr-mattan wind blew westward from the Sahara from October to January gave his Government a particular reason for wishing to satisfy itself that Nigeria would suffer no harmful effects from the French nuclear test.

13. Turning to the question of the mushroom cloud, whose microscopic dust particles contained most of the radio-activity produced by a nuclear explosion, he noted that in Australia highly sensitive airborne instruments had ceased to detect radio-activity within four to ten hours after the explosion, by which time the cloud had travelled 100 to 400 miles from the explosion site. The radio-active particles drifted slowly to earth, constantly losing their radio-activity at the rate referred to earlier; since the prevailing winds at 20,000 to 30,000 feet—the height to which the mushroom cloud produced by the French test explosion would rise—were westerly in the Sahara throughout most of the year, the French cloud would move in that direction. At a point 900 miles downwind from the explosion site—although, in fact, Nigeria would not be downwind from Reggane—a man would be exposed to 8 milliroentgens units of radiation, absorbing two of them in the first year and the remainder in diminishing amounts over the rest of his life. However, the natural radio-activity absorbed annually by everyone on earth averaged between 100 and 150 units, and the accepted safe dose of radio-activity for the general population, including young and unborn children, was 500 units per person per year.

14. The French representative had already referred to the valuable information provided by the United States nuclear tests in Nevada. The Soviet Union had also carried out tests in fairly close proximity to large population centres; the Soviet representative would doubtless wish to inform the Committee that the tests conducted by his Government had in no way endangered the lives of Soviet citizens, thus reassuring those countries in Africa and elsewhere which had expressed concern about the proposed French test.

15. Mr. QUAIN-SACKEY (Ghana) drew attention to the fact that the African countries had brought the question of French nuclear tests in the Sahara before the General Assembly (A/4183) only as a last resort, after having approached the French Government in vain. Far from wishing to embarrass the French delegation, Ghana merely hoped that the discussions in the Assembly would serve to induce France to reconsider its proposal which had caused so much anxiety in Africa.

16. An attempt had been made to reduce the issue of nuclear tests in the Sahara to a test of sovereignty over a territory on which the nuclear experiment was to be conducted. As far as Ghana was concerned, the question was not mainly one of French sovereignty over the area in which the experiment was to be conducted. For that point was, to say the least, debatable since sovereignty gained through imperialism could not be accepted without reservations and, in the case of the Sahara, the question was already being debated between the French armed forces and those of the provisional government of Algeria.
17. The truly relevant issue was the threat to the human species occasioned by nuclear explosions. The representative of France had provided a wealth of figures to show that the effect of the proposed tests would be negligible. His arguments were based on the premise that the radiations produced by the nuclear tests conducted since the war were less than those naturally absorbed by the human body from cosmic, terrestrial and artificial sources. He had also suggested that, owing to the deflection of winds, the French tests would produce less radiation in the atmosphere in the Sahara area than had been occasioned in the test areas used by other Powers. However, other competent scientists had provided equally convincing evidence that the dangers inherent in nuclear explosions were greater than Mr. Moch suggested.

18. The conclusions of the United Nations Scientific Committee on the Effects of Atomic Radiation (A/3838), for example, were far more cautious and less optimistic than those of the scientists quoted by the French delegation. They indicated that man might prove unusually vulnerable to ionizing radiations, mainly because of his long life. Present knowledge concerning the long-term effects of radiation and of their correlation with the dose received did not permit of a precise evaluation of the possible consequences of exposure to low radiation levels. Many of the effects of irradiation were delayed and often could not be distinguished from the effects of other agents. Even a slow rise in environmental radioactivity in the world, whatever its source, might eventually cause appreciable damage to large populations before that damage could be definitely identified as due to irradiation. It was therefore important to avoid any tendency towards underestimation of the possible effects of radiation. The Committee had accordingly concluded that all steps designed to minimize irradiation of human populations would act to the benefit of human health and that such steps should include the avoidance of unnecessary exposure resulting from the peaceful uses of radio-active substances as well as the cessation of contamination of the environment by nuclear explosions. The Committee's report had further emphasized that even the smallest amounts of radiation were liable to cause deleterious genetic, and perhaps also somatic, effects.

19. Thus the attempt of the French Government to justify its proposal was not borne out by other independent and uncommitted investigations. Dr. Linus Pauling had given figures of casualties to be expected from radio-active carbon-14 which had subsequently been accepted by the United States Atomic Energy Commission. Dr. Albert Schweitzer had also pointed out the catastrophic effects of radiations and in particular the wide-spread genetic effects that could result from nuclear tests.

20. Basically the representative of France was arguing that, although the atmosphere was being poisoned, the poison was to be administered in small doses. To Africans, that argument was far from convincing since they were concerned, not over the dosage of poison, but over the fact that they should be expected to absorb it at all. As there was still a large area of doubt concerning the possible effects of artificial radiation, especially as the genetic effects could be determined only after one or two generations, it would surely be wise to err on the side of caution rather than the side of optimism and avoid risks altogether.

21. The representative of France had implied that his country, which was allegedly contributing so little to the pollution of the atmosphere, had been called to account in the United Nations while the nuclear Powers which had been responsible for most of the artificial radiation produced since the Second World War had gone unchallenged. Yet the three nuclear Powers were so alive to the dangers of nuclear fall-out that they had entered into negotiations for the cessation of tests and had actually desisted from conducting tests since 1958. In the circumstances, it was inconceivable that the French Government should declare its intention of continuing nuclear tests in the Sahara. Such an action would be bound to complicate the task of the members of the ten-Power disarmament committee at Geneva. It was unfortunate that Mr. Moch, who had been praised for his contribution to disarmament in the debate on the previous item, should now appear such a forceful advocate of rearmament.

22. Mr. Moch had made the reassuring announcement that the proposed tests would add only two thousandths of one unit (millirad) to the average of 150 units of the total radiation to which man was exposed. But it was known that fall-out was not uniformly introduced into the atmosphere or uniformly distributed. Thus, to claim that the French explosion would contribute as much fall-out to, say, Australia as it would to Morocco was hard to accept. Furthermore, to take the figures for artificial and natural radiation together was thoroughly misleading. While individuals might absorb some radiation from X-rays in the course of a year, they did so on a purely voluntary basis and, in any case, they derived benefits from the rays which could be offset against the deleterious effects. Yet the inclusion of such figures in the world average gave the impression that the whole world population normally and involuntarily absorbed medical X-rays. Those figures would obviously minimize the effect which an additional explosion would have on the natural radiation to which the human race was subject.

23. As to the contention that the effects of the radiation deriving from the French test would be negligible in proportion to the effects of the total explosions carried out to date, the Scientific Committee on the Effects of Atomic Radiation had emphasized that any increase in radiation, however small, represented an increase in injury to human beings. It should also be appreciated that, while the average damage might be slight, some persons would suffer severe injury and others none at all. The French delegation had stated that the major African population centres were almost twice as far removed from the proposed test site as San Francisco was from the Nevada proving grounds. Yet the winds in the Sahara might carry radioactive clouds in any direction and the amount of fall-out and the distance it travelled could be determined only long after the explosion.

24. Thus, despite the arguments put forward by the French representative, Ghana was convinced that the test would subject the population of the entire African continent to incalculable hazards. If countries like Italy were concerned over the possible effects of the ensuing fall-out, it was easy to understand the apprehension of the African States. The French Government had offered to take precautions to safeguard the populations bordering on the test area from undue danger. The people of Africa would prefer the test not to be conducted anywhere on the African continent.

25. It should be emphasized that the African countries had been unanimous in protesting against the holding of tests in the Sahara. The protests had not been confined to the independent States of Africa, but
had also been voiced by the Non-Self-Governing Territories. The Prime Minister of the Federation of Nigeria had on 14 July 1959 stated that the people of Nigeria had the right to protest and a resolution had been submitted to the United Kingdom Government with the request that Nigeria's apprehensions should be conveyed to the French Government. On learning that France proposed to proceed with its tests regardless of the Nigerian protest, the Prime Minister had expressed the hope that the United Kingdom Government would renew its representations on the subject. So far, no reassurance had been forthcoming from the Governments of France or the United Kingdom.

26. Careful consideration of the statement made by the French representative led to the conclusion that the Sahara test was designed merely to make France a nuclear Power and an equal partner in the councils of the great Powers. If so, that would be a sorry gesture, for real greatness surely lay, not in the mere trappings of power, but in the exercise of the finer human qualities and of resourcefulness directed towards constructive ends, in which France itself had always excelled. In fact, persistence in the proposed course would serve only to set France back in the estimation, not only of Africa, but of the world.

27. It must be generally recognized that Africa's destinies could no longer be decided by extraneous parties or by the unilateral action of colonial Powers. If French nuclear tests were necessary, France's allies might provide it with the necessary testing grounds.

28. The twenty-power draft resolution (A/C.1/L.238) reflected the anxieties of the peoples of the world regarding the dangers attendant on nuclear tests everywhere, and particularly in the Sahara. The hopes of millions of Africans were centred on the Committee's deliberations and it could not fail them merely to appease the ambitions of one Power. Nor could it equivocate on an issue on which, in the past, it had always taken a clear stand.

29. Mr. ZEIN EdDINE (United Arab Republic), exercising his right of reply, said that he had listened with considerable interest to the statements made on the question and particularly to that made by the representative of the United Kingdom, which in many ways supported the views put forward by the representative of France. It would seem that, far from being physically harmful, the proposed explosions would actually result in so many moral and political advantages as to be positively desirable. However, the United Arab Republic could not subscribe to that view. In the first place, for example, there was a considerable difference of scientific opinion regarding the timing and direction of the winds which might carry atomic fallout. An error in meteorological calculations in such a case could have irremediable consequences. Even if the fears of physical damage from such an explosion were to prove groundless, a number of other, and far more important, considerations remained: the question of limiting the use and possession of nuclear weapons, the possibility of alignments between the Powers which possessed the atomic bomb and those which felt its possession was essential, and all the other consequences of the French test which had not been sufficiently emphasized.

30. It had been alleged by Mr. Moch that Sub-Committee A of the WHO Regional Committee for the Eastern Mediterranean was an Arab sub-committee and that its two resolutions had consequently not been impartial. To begin with that Sub-Committee included a number of non-Arab countries, among them France, Italy and the United Kingdom. Although not all the members had voted for the resolution, the Sub-Committee's composition was certainly not exclusively Arab and, even if it had been, it was still an international body.

31. Comparisons had been made between the French tests and those conducted by other countries. The French test was in a class apart because, unlike the tests carried out in the Soviet Union and Australia, it was to be conducted at the expense of another people and without their consent. It was well known that the French weapon was an atomic, and not a hydrogen, bomb. But small atomic bombs could lead to the construction of far more destructive weapons, which would represent a great moral, political and physical danger to the people concerned.

The meeting rose at 12.10 p.m.