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Chairman: Mr. Eduard MEZINCESCU (Romania).

AGENDA ITEM 83

Main trends of inquiry in the natural sciences, dissemination of scientific knowledge and application of such knowledge for peaceful ends (A/4461,* A/C.3/L.854, A/C.3/L.893, A/C.3/L.895) (continued)

1. Mr. MALITZA (Romania) recalled that the Third Committee had been preoccupied with matters relating to science and the promotion of international scientific co-operation since the eleventh session of the General Assembly. At each session since then there had been a fruitful exchange of views, and useful resolutions had been adopted on the subject. In devoting part of its activities to the question, the Committee was merely reflecting the general concern aroused by the current rapid development of science. The natural sciences, which could be the good fairy of human progress, appeared today more in the guise of a destructive giant. By diverting science from its original objectives, the arms race had channelled man's intelligence into the search for more effective means of mass destruction, and each year enormous sums were poured into military research. What was more, technological progress tended to increase the cost of each successive weapon. The production of the latest United States bomber, for instance, required 15 million engineer-hours, seventy times more than had been needed for the Flying Fortress bomber of the Second World War.

2. A number of theories had been advanced seeking to justify the existing state of affairs on the basis that there were civilian uses for the discoveries and inventions made initially for military purposes. It was the Committee's duty to reject all such attempts to justify the militarization of science. The civilian

and peaceful applications of military research were an infinitesimal and necessary product, and nothing to be compared with the results that could be achieved if military research was ended. Furthermore, many discoveries were kept from being put to practical use because of their military significance. He recalled that descriptive geometry, at the outset, had been held in military secrecy for decades because its creator, the mathematician Monge, had been a French officer.

3. The only way out of that situation, and one that would eliminate the possibility of war and at the same time put an end to the monstrous waste of human energy, intelligence and resources, was general and complete disarmament. It was clear that the terms of the General Assembly resolution on that subject (resolution 1378 (XIV))—and particularly the words "to put an end completely and forever to the armaments race which places a heavy burden on mankind, and to use resources thus released for the benefit of mankind"—contained special implications for the development of science. Mere control of armaments or partial disarmament measures would certainly not free scientific research from its heavy militarist burden, for they would only increase the pressures on scientists to offset the resultant loss of military strength by seeking new destructive devices. Only general and complete disarmament could offer science the wide and uncluttered field it needed to answer the pressing demands of contemporary society.

4. The survey now before the Committee (E/3362 and Corr.1 and Add.1) was a thorough and useful piece of work which merited the most serious consideration. It had the incontestable virtue of providing a living picture of scientific research today, and it added the new element of viewing science not as a static phenomenon but as a dynamic activity. It showed clearly that science was no longer the concern of a restricted circle of people dedicated to seeking the truth, but a complex social phenomenon which needed financially well-endowed institutions gathering together great numbers of specialists and conducting activities on the basis of long-term plans. Work in the sciences had taken on remarkable dimensions: there were some 200,000 scientists in the world; it was estimated that scientific activity was doubling every ten years; there were ten times as many scientific reviews today as there had been at the beginning of the century.

5. The survey presented a synthesis of current themes and trends in a great many branches of science and in that respect it was especially useful, since the specialization of their work often caused scientists to lose sight of the field as a whole. It reviewed the major subjects of research which held out great promise for peaceful application, such as plasma phenomena, the physics of solids, molecular biology, the use of soils, etc. The survey further re-

* Note by the Secretary-General transmitting document E/3362 and Corr.1 and Add.1.

ferred to the rapid development of electronic computing devices, which were being put to use in such varied fields as economic research, automatic translation, control of industrial processes, etc. It became quite clear from reading the survey that in many of those fields international co-operation was indispensable, either because the project called for research in several countries or because it required material and staff which were available only at the regional or international level.

6. The problems of scientific documentation were particularly acute in view of the enormous volume of published material. Duplication and overlapping were a source of great waste, and the development of a universal system for the rapid and accurate referencing of a given scientific topic would be of inestimable value.

7. His delegation would not make detailed comments on the survey at the current stage, since the document was now being discussed by the General Conference of UNESCO and would be before the Economic and Social Council at its thirty-second session. Subsequent action would benefit, however, from any general directives which the Committee might formulate. It must be noted that the survey did not equally meet the three stipulations made in General Assembly resolution 1260 (XIII): (1) that it should review the main trends of scientific inquiry; (2) that it should study the dissemination and application of scientific knowledge for peaceful ends; and (3) that it should report on the steps which might be taken to encourage the concentration of such efforts upon the most urgent problems, having regard to the needs of the various countries. Unfortunately, less than one-tenth of the survey was devoted to the latter two questions, although they were of paramount importance for promoting international scientific co-operation and meeting the most urgent needs of the day.

8. One of the most striking features of the deliberations at the current session of the General Assembly was the presence of a large number of newly independent countries. Science should be regarded as an important tool for those countries' economic and social development. In his delegation's view, the structure of the international organizations concerned should be modified so that they would be in a position to meet the assistance needs of developing countries promptly and objectively. Above all, Governments should be made aware of what had already been done in a given branch of science or technology and should have the benefit of the experience gained in other parts of the world. His delegation would like to see more proposals made on such important problems and it considered that the USSR delegation's proposal to establish under United Nations auspices an international centre for the exchange of scientific and technical information represented a significant contribution to the formulation of positive action in the matter.

9. It was the policy of many Governments with limited capital to concentrate first on building up their educational system, and the scientific and technical branches in particular, and on carrying out surveys of national resources, those activities being viewed as an indispensable condition of a sound national economy. Turning to the situation in his country, he explained that the activities of the National Academy were directly tied up with Romania's

economic life. The Academy, with its two subsidiary bodies, twenty-nine institutes and ten permanent commissions, examined fundamental problems in science, technology, literature and art, and studied the possibilities of harnessing the country's resources for the benefit of the people. To ensure an adequate base for current and future scientific work, the Romanian educational system had been subjected to important reforms. During the present year, some 25,000 out of a total of 63,000 students were attending technical faculties. Between 1955 and 1959 more than 54,000 specialists had been trained, and in the past two years more agricultural engineers had graduated from Romanian schools than during the thirty years preceding the war.

10. One of the outstanding features of scientific activity in his country was the desire to widen international ties in a spirit of reciprocity and for mutual benefit. In that connexion, the survey now before the Committee could have given a better illustration of the principle of international co-operation: the list of 268 national research organizations consulted (E/3362 and Corr.1, annex 5) contained only eight organizations in socialist countries.

11. Another matter giving rise to concern was the slowness with which General Assembly resolutions were implemented; an example of that was offered by the present survey. The resolution calling for the survey had been adopted in 1958 (General Assembly resolution 1260 (XIII)), and study of the survey by the Economic and Social Council would take another year. Yet, as the survey itself pointed out, scientific developments were moving very rapidly, and it was possible that in 1961 the Committee would be discussing scientific trends which were several years out of date. Something on the same order had happened with regard to the survey of international relations and exchanges in the fields of education, science and culture (E/3352 and Corr.1 and Add.1), which had been the subject of three General Assembly resolutions and was still awaiting discussion by the Economic and Social Council.

12. His delegation considered that the presence of a separate agenda item on scientific trends was an excellent opportunity for the Committee to reaffirm the principle that science should serve man's progress and not bring about his destruction; that scientific research should, without delay, make its vital contribution to the economic and social development which was so urgently needed in vast regions of the world; and that science should, both for its own benefit and to bring peace and harmony to the world, open the door wide to international co-operation.

13. Miss DOBSON (Australia), replying to the question regarding the sponsorship of the eight-Power draft resolution (A/C.3/L.854) asked by the Saudi Arabian representative at the previous meeting, explained that many delegations had been consulted, and that some of them had indicated their willingness to co-sponsor the draft resolution but had wanted time for reflexion. Her delegation had wished, however, to submit the draft resolution by 17 October 1960 in order to respond to the appeal made by the Chairman at the 991st meeting. It had therefore submitted its text jointly with those delegations that had already agreed to sponsor it at that time, but had indicated to those interested that it would welcome other co-sponsors.

14. She had not yet been able to consult all the co-sponsors, but those she had been able to consult had been favourable to the amendments proposed by the Saudi Arabian representative (A/C.3/L.893). She herself had no objection to the new preambular paragraph he proposed, although she did not think it was absolutely necessary; many General Assembly resolutions, including resolution 1387 (XIV), which had originated in the Third Committee, started with a direct statement of the subject matter and had no other preamble. Similarly, the proposed insertion in operative paragraph 3 was not absolutely necessary, but she had no fundamental objection to it.

15. Several delegations had stressed the need for immediate action in view of the fact that the last resolution on the present item—General Assembly resolution 1260 (XIII)—dated from 1958. It would be a mistake, however, to take precipitate action on the survey merely because the material it contained was becoming out of date. What the Committee was being asked to do was to lay down the lines for future action with regard to the recommendations at the end of the survey. It must ponder well the directives it wished to give, as they would affect all the future work on the present item.

16. Mrs. ESHEL (Israel) paid a tribute to Professor Auger and the many organizations and individuals throughout the world who had participated in the production of the survey (E/3362 and Corr.1 and Add.1) which described and summarized trends in basic and applied sciences in a form that was useful and interesting both to the scientist and to the uninitiated layman.

17. In the less developed countries throughout the world political freedom had not been accompanied by a parallel liberation of people from their social and economic ills. Few of the newly independent countries had a balanced, diversified economy. Their natural resources remained inadequately developed and diseases continued to debilitate the people and keep their productive capacity low. The lack of momentum in their educational movement prevented a wider acquisition of scientific knowledge and technical skills; yet, as their leaders were well aware, the key to higher living standards for their people lay precisely in that knowledge and in those skills.

18. From its establishment, the State of Israel had given the highest priority to both basic and applied research. It recognized that in order to become fully independent economically and politically it had to adopt the most up-to-date techniques and methods. The main task of the National Council of Israel for Scientific Research and Industrial Development was to act as a co-ordinator of activities relating to the scientific and technological development of the country. Many of the activities and studies carried out in Israel were of international importance and there was a constant flow of information between Israel scientists and research institutes and their counterparts in other parts of the world. A number of international scientific conferences had been convened in Israel; one such conference had dealt with the causation of cancer and another with the structure of the atom.

19. Since a recent publication on medical and biological research in Israel had been sent to chairmen of delegations to the current session of the General Assembly, she would not go into any details about

research in those fields but would only mention some recent achievements in other branches of science. The results so far achieved with regard to solar energy and its diversified application as a source of power were very promising. Encouraging results had also been obtained with a special process for the desalination of sea water at a considerably reduced cost. The Arid Zone Research Institute of Beersheba was doing work which would be of great value to many other countries. Those examples showed that irrespective of its size, location and resources a country could undertake research of universal importance and application in a wide range of subjects.

20. Unfortunately, owing to the lack of international co-ordination of scientific work, there had been inadequate research into problems which were of special importance to some under-developed areas of the world just because they were of less immediate interest to highly developed countries; one example was sleeping sickness, which had long been one of the endemic diseases retarding progress in certain regions of Africa.

21. An international conference had been convened at the Weizmann Institute of Science at Rehovoth, Israel, in August 1960 to explore the capacity of science and technology to advance the life of the developing nations. It had been attended by statesmen and leading scientists from forty nations, more than half of them Asian and African. The conference had adopted a declaration, known as the Rehovoth Declaration, and had also resolved to establish a standing committee to maintain contact with the participants in the Conference and other Governments and institutions supporting its general aims. The committee would serve as a clearing-house for requests and suggestions from developing States and scientific workers and would try to promote fruitful contacts.

22. She regretted that the whole question of the dissemination of scientific knowledge was being discussed in such a hurried manner, as she believed that it deserved thorough and immediate study by the General Assembly, the Economic and Social Council and the specialized agencies concerned. The survey before the Committee would rapidly become out of date and, moreover, the recommendations needed to be implemented as soon as possible since they were intimately connected with the material in the body of the document.

23. In her view, the eight-Power draft resolution (A/C.3/L.854) was too general in character and by merely recommending the wide dissemination of the survey, which her delegation fully supported, it endorsed the further postponement of thorough consideration of the survey both by the Council and by the General Assembly. The present text would, she thought, be improved by the inclusion of an indication to the Council of the urgency and importance which the Committee attached to the examination of the survey. Some of the recommendations made in it were of interest to all countries, while others were of particular interest to young, developing countries. She thought that higher priority should be given to the latter group and that a provision to that effect should be included in the draft resolution.

24. Mr. SAMUEL (India) expressed appreciation of the survey and observed that while scientific research had grown enormously during the past century,

it had unfortunately grown more rapidly in some countries than in others, and that the benefits of science and scientific research did not reach the vast mass of mankind. Dissemination of scientific knowledge in the less developed countries was essential not only for the general advancement of science but also to strengthen peace. Poverty anywhere was a danger to prosperity elsewhere.

25. He wished to indicate his Government's general views on the subject of scientific research and explain what had been done in that respect in India. Early in 1958 his Government had adopted a resolution on scientific policy, which laid down its aims. He quoted from the resolution to show that India fully appreciated the value and necessity of scientific research and was determined to foster the cultivation of science in all its aspects in order to secure for its people all the benefits that science could bring. A Ministry of Scientific Research had been established for that purpose. He wished to make it clear that India's scientific policy was designed to serve peaceful ends.

26. Science knew no frontiers. To fail to disseminate scientific knowledge would therefore be a disservice to humanity and to science itself. There was now no agency in the United Nations concentrating on international aspects of technology, applied research and industrial developments, but the survey appeared to hint at the need for establishing either an appropriate service within the United Nations family or a new organization for that purpose. Should such an agency come into existence, it could receive papers on the latest discoveries, inventions, patents and technological questions from Member States, collate the material and publish it at regular intervals. It would thus provide authoritative source material for further scientific research and, through very wide dissemination, eliminate duplication of work and wasteful effort in seeking solutions for problems which had already been solved. In addition to the basic task of dissemination of scientific knowledge it could also serve as a documentation centre and provide an information service on current research work. He thought it would be advisable to concentrate all such activities in a single agency.

27. He was convinced that regional scientific and technical training institutes, as suggested in the survey, would prove invaluable not only in the dissemination of scientific knowledge but also in promoting the technological progress of the less industrialized countries. They could train new research and teaching staff and provide short refresher courses for the existing staff. He was not sure, however, that the joint operation of such institutes by several countries in a given area would work satisfactorily. International scientific conferences provided another forum for the dissemination of scientific knowledge and the Indian Science Congress, which held annual sessions, was attended by eminent scientists from all over the world. There was also much to be said for maintaining a central registry of all bilateral and multilateral agreements and conventions concerning international scientific co-operation between Member States, purely for information purposes.

28. His delegation agreed with the approach adopted in the eight-Power draft resolution (A/C.3/L.854). In 1958 it had expressed its doubts of the advisability of submitting the survey to the Economic and Social

Council and it was now clear that it had been right, since the consideration of the survey had been delayed for a year. However, there was now no alternative to awaiting a report from the Council and he would therefore support the draft resolution. He suggested that operative paragraph 1 should contain a reference to the views and comments which were to be received from Member States. The Saudi Arabian amendments (A/C.3/L.893), in his view, added to the usefulness of the draft resolution and he hoped that all the sponsors would be prepared to accept them.

29. Mr. BAHNEV (Bulgaria) fully agreed with preceding speakers on the importance of the item now under consideration, an item which had a direct bearing on the progress of mankind. That point was well brought out in the survey (E/3362 and Corr.1 and Add.1), which offered convincing proof that international co-operation in scientific research could provide solutions to many acute problems, including the accelerated development and industrialization of the less developed countries. It should not be overlooked, at the same time, that scientific collaboration on a world scale would bring considerable benefits to technically advanced countries as well.

30. The second aspect of the item which gave it such great importance was expressed in the survey's title—"application of such knowledge for peaceful ends". In the survey itself, however, that aspect was not adequately developed.

31. One of the recommendations included in the survey was that States should maintain appropriate policies in matters of science and scientific research. His delegation believed that recommendation to be particularly pertinent, for the fate of mankind depended in a large measure on whether Governments employed the results of scientific research for peaceful or for war-like purposes.

32. Economic and Social Council resolution 804 B (XXX), which accompanied the survey, contained a number of shortcomings. First, it made no reference to the original General Assembly resolution (1260 (XIII)) on the basis of which the survey had been prepared. Secondly, it was too formal and technical in nature and demonstrated that directives from the General Assembly were needed with regard to future action on the matter.

33. With respect to the eight-Power draft resolution (A/C.3/L.854), his delegation fully supported the Czechoslovak amendment (A/C.3/L.895), which expressed more clearly the purposes set out in the original General Assembly resolution. Lastly, his delegation supported the proposal regarding the establishment of an international centre to facilitate and promote co-operation and exchange of information in the field of science.

34. Mr. JORDAN SANDOVAL (Bolivia) said that the survey was a most valuable piece of work which was of special interest to the under-developed countries. It was of course impossible to give such a long document anything approaching a thorough analysis in the five meetings which the Committee had allocated to it. In any event, the material it contained was too specialized to be properly evaluated by the Committee. However, without being scientists, representatives could at least express the view that scientific research should continue for the benefit of the less

developed countries, to give them the tools they needed to build their future.

35. In the view of his delegation, there were three ways in which UNESCO could assist the under-developed countries in that respect. It could: (1) continue to provide technical assistance for scientific research and the planning of short- and long-term programmes to be financed with the help of the International Bank for Reconstruction and Development; (2) grant fellowships for the specialized training of promising undergraduate students in appropriate universities; and (3) grant fellowships for post-graduate training in more advanced institutions.

36. Like many other Latin American countries, Bolivia possessed a wide range of natural resources, including radioactive materials and water power. It also produced a great variety of agricultural crops. Bolivian scientists had published the results of their investigations in different fields and those might be of use to other countries. Two of the scientific institutions in Bolivia deserved special mention. The first, the Regional Institute of Geology, founded in 1955, trained Bolivian and foreign geologists for the mining and oil industries and for water development. The United Nations granted fellowships for study at the Institute and paid the salaries of its teaching staff, while Bolivia bore the other costs. The second was the Cosmic Physics Laboratory at Chacaltaya, which received assistance from UNESCO and functioned in co-operation with the Brazilian National Research Council. It was doing research, particularly on meteorology, which might be of use to other countries. Agricultural extension centres and experimental stations, which were working satisfactorily, had been established at different altitudes under a bilateral agreement between Bolivia and the United States.

37. He supported the draft resolution (A/C.3/L.854) because he felt that every effort should be made to stimulate research for peaceful ends and for the benefit of the under-developed countries.

38. Mr. KANO (Nigeria) emphasized the importance of applying scientific knowledge for peaceful and not for war-like purposes. His country, which maintained the West African Institute of Economic and Social Research, was particularly interested in research for peaceful ends. One point which was essential to that research and which clearly emerged from the survey was the necessity for a completely free exchange of scientific information between all parts of the world. The United Nations could do a great deal to facilitate such exchange.

39. There were a number of fields in which research might be very useful and would cost less than, for instance, in the case of ballistic missiles or earth satellites. One of those fields was geriatrics. It was

a well-known fact that there were people in Pakistan who lived to be well over a hundred. The rest of the world would be glad to know what conditions contributed to the attainment of such an age.

40. Another useful field of research, and one moreover in which Africa could make a contribution, was the causes and cure of tooth decay. In Nigeria, where dental decay was practically unknown, people did not use tooth paste but used instead what was known as "chew sticks", twigs containing some antiseptic substance that prevented tooth decay. It would be of use to humanity in general to discover exactly what that substance was.

41. Nigeria was particularly interested in research into how to prevent the ravages of the white ant. Most Nigerian houses were built of wood, with the result that they were vulnerable to attacks by that species of ant.

42. A point on which the Committee might reflect was the relation between the dissemination of knowledge for the benefit of mankind and the use of knowledge for commercial ends. There could easily be a conflict between the two. Scientific discoveries that would place certain products on the market at a fraction of the current price were often stifled by commercial interests to the detriment of the consumers.

43. He was inclined to vote for the eight-Power draft resolution (A/C.3/L.854), but he would like to be assured that it would really further the application of scientific knowledge for peaceful ends.

AGENDA ITEM 12

Report of the Economic and Social Council (chapters V, VI and VII (section II, paragraph 645 only, and sections IV and V)) (A/4415, A/C.3/L.852/Rev.1, A/C.3/L.882) (concluded)**

CONSIDERATION OF DRAFT RESOLUTIONS (concluded)

44. Miss IMRU (Ethiopia) announced that the sponsors of the draft resolution on training and education in countries in process of development, especially in Africa (A/C.3/L.852/Rev.1), had decided not to introduce their text until the First Committee had completed its work on the item "Africa: a United Nations programme for independence and development". They were aware that that decision might delay the consideration of their draft resolution or even postpone it until the following session, but they were willing to take that risk.

The meeting rose at 12.50 p.m.

** Resumed from the 999th meeting.