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Held at Headquarters, New York
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Chairman: Sir Leslie MUNRO (New Zealand)

Peaceful uses of atomic energy [18] (continued)

(a) The International Conference on the Peaceful Uses of Atomic Energy: report of the Secretary-General

(b) Progress in developing international co-operation for the peaceful uses of atomic energy: reports of Governments

Statements were made by:

Mr. Brohi	(Pakistan)
Mr. Schurmann	(Netherlands)
Mr. McIntosh	(New Zealand)

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PEACEFUL USES OF ATOMIC ENERGY [Agenda item 18] (continued)

(a) THE INTERNATIONAL CONFERENCE ON THE PEACEFUL USES OF ATOMIC ENERGY: REPORT OF THE SECRETARY-GENERAL

(b) PROGRESS IN DEVELOPING INTERNATIONAL CO-OPERATION FOR THE PEACEFUL USES OF ATOMIC ENERGY: REPORTS OF GOVERNMENTS

Mr. BROHI (Pakistan): The two items, namely a review of the International Conference on the Peaceful Uses of Atomic Energy, and the progress in developing international co-operation for the peaceful uses of atomic energy, have been before the Committee for quite some time now. We have listened to the statements in this debate which were made by the representatives who spoke on behalf of the major Powers. We have listened to them with respect, with attention and with a great deal of admiration. It would be idle for me to go over the ground which has already been so very ably covered by these representatives, but there are one or two remarks which I think we ought to make so that the debate might be placed in its proper perspective. We consider that those remarks need some stressing, because unless they are stressed, in our humble judgment, much of the point of purpose involved in the consideration of the two items before the Committee will not have been productive of that much immense good which is expected of it.

I would like at the outset to make it clear that in so far as the position of my delegation with regard to the actual draft resolutions that are the subject of consideration by the Committee is concerned, we reserve our position thereon. The members of the Committee will readily see that there is some point of wisdom in that reservation, because the main sponsors of those draft resolutions have not yet been heard in amplification of the texts of those resolutions, and it would be premature, in our opinion, to embark upon the offering of an opinion which may be based on a complete misunderstanding of the scope of the resolutions. I think there will be time enough, on a more appropriate occasion, for my delegation to intervene in an attempt to assist the deliberations of the Committee with a view to reaching a satisfactory solution as regards the adoption of any recommendation which the Committee is likely to make.

(Mr. Brohi, Pakistan)

Much praise has been bestowed on the work of the Secretariat of the United Nations, and in particular compliments have been showered upon the spirit and manner in which they were able to organize the work of the scientific technical conference convened at Geneva. I do not have the words with which to improve upon the quality of those compliments. I would like to echo, support and confirm almost every good word that has been said thus far with regard to the merits, the elegant manner, and the precise organizational structure in which the deliberations of the Geneva Conference were conducted, and I do not have the slightest doubt that posterity will record its righteous admiration for the good work that has been done there.

Any time, therefore, that I would normally be tempted to use in adding to those compliments would be more than useless because I would not be able to improve either upon the sincerity of the compliments which have thus far been paid or upon the language employed to indicate the applause and the approbation with which the work of the Conference has been greeted.

(Mr. Brohi, Pakistan)

I would therefore like to advert to matters of more thoughtful or substantial consideration. I think there is no better beginning to be made for the ultimate assertion of a point I have at the back of my mind than to recall for the gentlemen of the Committee here the wise words of the great President of the United States of America uttered by him on 8 December 1953. All the delegations that have spoken so far have very rightly referred to that statement. When the historian of the future will begin to write an account of the emergence of the atomic era from the chaos of the past, I have not the least doubt that he will see in the words used by that great President, words that were used on an occasion os fitting as an intervention before the General Assembly, something which is comforting, something which is hopeful and something which augurs well for humanity. It is necessary to repeat them lest we forget that we should have them before us. A continual reminder of those great words would set the pace and create the intellectual climate with which to assess, appreciate and enjoy almost all that has happened subsequent thereto. The President said:

> "To pause there would be to confirm the hopeless finality of a belief that two atomic colossi are doomed malevolently to eye each other indefinitely across a trembling world. To stop there would be to accept helplessly the probablity of civilization destroyed, the annihilation of the irreplacable heritage of mankind handed down to us from generation to generation, and the condemnation of mankind to begin all over again the age-old struggle upward from savagery towards decency, and right, and justice. Surely no sane member of the human race could discover victory in such desolation. Could anyone wish his name to be coupled by history with such human degradation and destruction? Occasional pages of history do record the faces of the 'great destroyers', but the whole book of history reveals mankind's never-ending quest for peace and mankind's God-given capacity to build." (A/PV.470, paragraph 96)

They are remarkable words and ensure perfect elegance and sincerity of conviction which they seek to convey. There is hardly anything half so memorable in the total range of twentieth century literature. Then, it goes on further to emphasize a point, the making of which becomes an essential part of my burden in these proceedings. He talks of Asia, and he says:

(Mr. Brohi, Pakistan)

"...Beyond the turmoil and strife and misery of Asia, we seek peaceful opportunity for these peoples to develop their natural resources and to elevate their lot.

"These are not idle words or shallow visions. Behind them lies a story of nations lately come to independence, not as a result of war, but through free grant or peaceful negotiation. There is a record already written of assistance gladly given by nations of the West to needy peoples and to those suffering the temporary effects of famine, drought and natural disasters. These are deeds of peace. They speak more loudly than promises or protestations of peaceful intent." (Ibid., paragraphs 104 and 105)

Therefore the President of the United States of America, in summing up the possible consequences of the fruitful application of the energy released by the atom for peaceful and constructive purposes never forgot the peculiar case of Asia.

You will recall that the struggle to wrest the secret of the atom from the hands of nature is a long story. It is a story which goes as far back as dear old Democritus of Greek philosopher fame. He was the first man, if I remember aright, who was of the opinion that the ultimate constituents of which the universe was composed were the atoms. Of course, the conception which he had as to their structure or the role that they play in making up the core and firmature of the universe was rather primitive. After all, he was a creature of the age. But from generation down to generation, mankind has struggled in an attempt to resolve for itself the mystery of the atom.

To come nearer home to our own times, the medieval philosophers and the chemists thought that the ultimate constituents of which the universe was made could be reduced to 92 elements, each unique and distinct and interchangeable. Progressively, the number has been reduced on an ideological perimeter until we come to 1905 when a certain picture resulted from an equation of mathematical import stated by Einstein. It was the following up of that picture and the consequent experiments that were rendered possible within the framework of that picture that made it possible for us to discover for ourselves what untapped reservoirs of energy lay wrapped up in the tiny little thing which nobody has seen called the atom.

(Mr. Brohi, Pakistan)

The picture of the atom which resulted from the Rutherford-Bohr picture of 1919 was that the atom was more or less like a tiny solar system condensed into the minutest possible proportions. Nevertheless, around a central core there were revolving other elements more or less resembling or corresponding to interplanetary movements that go on around the sun.

It was in Berlin in 1935, to be precise, that Strassmann and Hahn were able to go ahead and make substantial progress with respect to a further constituent analysis of the structure of the atom, little realizing that the fissure that they were able to erect into the heart of the atom would be responsible for the release of that prodigious outpouring of energy, the control of which would become the subsequent concern of mankind. Therefore, the story of the atom is a story of the intellectual development of mankind for the last two thousand years. They have gone on, and the story has not been completely told.

(Mr. Brohi, Pakistan)

I do not propose to present my credentials before this Committee as to why I am talking as though I were a bit of a scientist myself. If I had been tempted to present my credentials, I think that I might have succeeded in creating that impression. But I shall not attempt anything so unwise, for the simple reason that I am content to proclaim before this Committee that I am as ignorant of the subject as anyone around this table, except probably that I have read a great deal of what has been said about the structure of the atom and about the possibilities that are inherent in the exploitation of its constituent forces.

I am not the only man who is proud of professing such ignorance. I shall read out a remark, and a very wise remark, that was made by a gentleman who had been called upon to speak about the economic consequences of atomic energy. This is taken from Sir Halley Stewart's lectures of 1948. R.F. Harrod also felt apologetic before his audience for having taken upon himself the pretense of speaking as though he were an invincible scholar upon the subject of the atom. If I am quoting him at all, it is because I cannot improve upon his language. He stated -- and I should like to adopt his words:

> "I have consented to address you on 'The Economic Consequences of Atomic Energy', a subject on which I am totally ignorant. In exculpation of the seemingly conscienceless act, I can plead that the difference between nescience and the knowledge possessed by the highest experts is not very great."

In a subject so gravely beset with uncertainty, there might be some advantage in the reflections of one who looks at the matter in an entirely detached way, free from preconceptions of all kinds. I am still of the opinion that in the year 1955, the best of those who state that they are scientists and pretend that they are authorities to make pronouncements on what the atom is, possess knowledge of the atom which differs only in degree but not in kind from the knowledge possessed by those who are careful readers of what has actually been reported in the national Press of any country or in any scientific treatises that exist on this subject. Therefore, I am not apprehensive that I am taking too much upon myself.

(Mr. Brohi, Pakistan)

I wish that the Committee had the patience and that I had the time and inclination to review some of the bold dogmatic assertions that have been made as to what precisely are the ultimate constituents of the atom and whether or not we have actually succeeded in breaking it. I remain profoundly unconvinced that anyone has yet broken the atom. What has been done is that the outer cover has been peeled off, just as one peels off the outer cover of an orange or a banana. But ultimately, it remains where it was, unchanged and irremovable.

Of course, I hope that in the ages that are unborn, the possibility of making further progress in unravelling the secret of the atom will become a practical possibility. I am not, therefore, dogmatic at all, but there is at least one thought which, with the permission of the Committee, I should like to stress.

If one scientific lesson can be learned from what has so far been done concerning research in the heart and soul of the atom, it is that it has demolished the concept of quantitative power. In human relationship, for the first time a very peculiar phenomenon has emerged. It is the non-recognition of that phenomenon that miscarries the point which normal men make when they begin to talk with amazement and wonderment as to what has overtaken mankind today. For example, when gunpowder was first discovered, the person who became possessed of the secret of gunpowder had an unquestioned monopolistic advantage over his enemy, who did not know how to deal with him at a distance. But when knowledge of the secret of gunpowder was broadcast to all quarters, then the question became one of a quantitative concept, namely, if you had more gunpowder you were in a more advantageous position, and if you had less gunpowder you were in a less advantageous position -- and this could go on indefinitely.

A well-known historian has said that all the revolutions that have been brought about in the history of warfare were brought about by the coming into being and the subsequent exploitation of gunpowder. But he was wise enough to limit it to the idea that it was a monopolistic privilege so long as the other man did not know how to make gunpowder. The man with the gunpowder had an advantage over the man with the arrow. But once this knowledge got to the other man, then more gunpowder meant more advantage on that side.

(Mr. Brohi, Pakistan)

Now this is not true regarding the secret of the atom. It is true that when for the first time someone discovered the colossal and limitless expanse of energy that could be released from the atom, he was in an extremely advantageous position to dictate his terms. He could say to his opponent, "I have a certain superior instrument of destruction; listen to me; obey me; sign on the dotted line." But once the secret of the atom reached the other side, then it was no longer a question of stockpiling atoms. It was not that I have thirty and you have one, and therefore I am in a relatively more advantageous position than you, because the tremendous destructive potential of the atom is such that it is outside the concept of quantitative destructive potential. This is a point which has not been appreciated, but I should like to illustrate it by relating a short story which is rather familiar in my part of the world.

There was a merchant who became engaged in a very nefarious trade called the sale of the scorpion. You know what a scorpion is and you know what it does to you when you touch it indiscriminately. In the shop of this merchant you would find big scorpions, small scorpions and medium-sized scorpions. But he was shrewd enough to sell them all at the same price. Someone who wanted to have some mathematical understanding of this equalization of the price said to him, "But you are a bit of a fool; you should charge twice as much for the large scorpions as for the small ones." The merchant replied, "Very well, my friend, but you touch any one of them and then we shall settle on the price."

It is the touching of the scorpion rather than how many scorpions you touch which is the point that I am making in considering the tremendous destructive potential of the atom, or its progeny, if you like, the hydrogen bomb and company, or other things that are likely yet to be created.

I wish to say frankly and without the least attempt at equivocation or what is known as quiboling, that if the monopoly of atomic power had rested with a single world Power, the type of general conference which took place and the type of deliberations which we are now having would not have been a practical possibility. It was only because somehow the forces of life got the upper

(Mr. Brohi, Pakistan)

hand and the peculiar process by which somebody learned what it was that was locked up in the heart of the atom came to be shared, that the possibilities with which we are anxiously concerned exist today and the holding of a technical conference on the sharing of knowledge is possible.

It is not in a spirit of practising Christian virtue or charity, it is not even in a spirit of compassion or in a spirit of fellow-feeling -- it is the compelling logic of the situation, namely, that it is no longer the exclusive reserve of someone to know about the atom and about the exploitation of its energy and the harm which could result to everyone, that we have the present situation. It is because everyone understands that this is not the monopoly of one particular Power.

(Mr. Brohi, Pakistan)

And from this I draw an important deduction, and it is of a very interesting character so far as we all here are concerned: that the more widespread becomes knowledge of the atom, the greater is the possibility that it will not be abused. The more you share it -- with the man in the street, shall I say, with the smaller Powers, shall I say--the more you make it available for the understanding of the students of contemporary thought, and the greater is its immunity, its protective value. It is the only defence mechanism that I know of that can possibly act as a deterrent against its abuse because this again reminds me of the story of the man who was selling scorpions. What can be said against anything need not be said against everything. What can be argued against one position need not be argued against any position.

The use of the atom by one and all is the only possible way in which knowledge of it can possibly be employed for the purpose of preventing its destructive exploitation by other people. That brings us to the peaceful uses of atomic energy.

The compelling logic of a historic predicament has resulted in the present position, and when the historian of the future settles down to write what the dawn of the atomic era was like, he will not pay any tall compliments to the people of the twentieth century; I am perfectly positive about that. But he will certainly be grappling with the nascent situation which has arisen by which we are on the crossroads of history, and the crossroads of history involve a choice. The making of this choice has already been more or less indicated on the pages of history. We are now here busy debating and discussing the peaceful uses of atomic energy. That is my first thought.

The second is this -- and I think it is equally important -- and it in fact flows from some of the things that I have said so far, that there should be a wise suspension of our judgment. There should be a wise tardiness in the realization of our ambition to switch on nuclear energy for what are called peaceful purposes. Undue enthusiasm in that direction is bound to be catastrophic because we are experimenting with a stuff about which we at present know very little, and any reckless or indiscriminate or thoughtless use of this tremendous energy which we have been able to tap is bound to be followed up by concomitant conditions which may augur ill for humanity.

(Mr. Brohi, Pakistan)

To remind you of what happened in recent times, I may recall to you how the principle of the jet airliner was immediately absorbed for commercial and industrial purposes in the building of the Comet. It was a simple practical principle contrasted with the type of principle which is involved in the exploitation of the energy inherent in the atom. Relatively speaking, it is something in the nature of elementary physics. No more than that, but yet, nevertheless, injudicious, thoughtless, speedy and reckless use of that very simple principle on a large and unprecedented scale, in the sense that it was applied to commerce and industry for building the Comet, was responsible for the destruction of numerous valuable lives, and the greatest Commission of Enquiry that ever sat on this planet to investigate the reasons for the destruction of the jet airliner has today exhibited before us at least one symptom: that it was a matter of fatigue. It was because of this matter of fatigue that the Comet was not able to hold its own at supersonic speed, and it was because of this that it burst, with a resultant loss of life which some of us have been mourning.

Just as this example illustrates the indiscriminate or rash use of a principle, the precise operation and application of which we know very little, this application in the sphere of aeronautics, which brought about a catastrophic and unprecedented disaster to humanity, so also -- some of the crude experiments, shall I use the word "crude" or perhaps you have a better word to suggest to me; I should not like to change the word because the experiments remain crude; anyhow, that is my judgment -- we do not know precisely what is the nature of atomic radiation. We do not know what repercussions it will have on the agricultural soil of this planet. We do not know about the possibility that fission may bring about an oxidation of the existing elements in the atmosphere, which may prevent the possibility of human life surviving at all, of its being able to carry on its career on this planet. Surely this is the possibility which can be seen. These are not dreams; I am not talking "through my hat", but these things are now very well known. I would therefore plead that, in our anxiety to switch over to the new El Dorado, the new Kingdom of Heaven, which is supposed to be around the corner, we should exercise a wise, tardy restraint over ourselves. Not until we are completely satisfied that we have grasped

(Mr. Brohi, Pakistan)

the tactical principle which is to be exploited in releasing the energy inherent in the atom, or the constructive and peaceful purposes for which its fruitful application can be sought, will it be wise and consistent with elementary prudence for us to embark upon a perilous career?

I am of the opinion that a situation may arise when, not merely in the words that have been chosen and employed by the great President of the United States of America, human civilization may be exterminated, but there will, in my opinion, be a practical possibility of the very planet itself getting completely dislocated from its orbital power as the result of nuclear fission reaction. It may be sent hurling into a void, to an eternal void. It is a possibility which no physicist who knows his business can possibly eliminate.

Here then are steps in the role of the United Nations. I would not be making that point unless I knew what could be said about it. I think the United Nations owes a duty to humanity at large, and that duty can be fulfilled in several ways. The United Nations is already beginning to be the last restraint on earthly powers. It is beginning to be the last solace of earthly misery. But it can be very much more than that, and it can be that much also so that it may give us inner resources through the ethical aspects, through traditional considerations with which the history of mankind has been able to make us so familiar, within the framework of which the modern scientist works. Certain modern scientists approach nature in a spirit of conceit and arrogance as though they were the conquerors, and they approach nature not in a spirit and manner which is worthy of them a spirit in which they should be the lovers of nature and have some sort of a mystical reverence for it andshould be able to carry on their work. I may have to say a few words more about this in a subsequent place if it is necessary. I do not want to waste the time of the Committee.

I would certainly be content with summing up my position with regard to this matter in citing all the work which was done at Geneva -- and of that we have heard a very scientific and concise report that was given by our Chairman of that conference, Dr. Homi Bhabha. A note of caution is also equally necessary. Praise by all means and pay compliments by all means. All of a sudden we have begun to discover that we are capable of discussing the peaceful uses of atomic energy as if any other uses consistent with human

(Mr. Brohi, Pakistan)

dignity should be sought, as if the Son of Man who went on the Cross two thousand years ago lived in vain, as if "Thou shalt not kill" was an injunction that had no meaning, as if that most peaceful of prophets, the ancient Buddha, twenty-five centuries ago, said in vain, "If hate is answered by hate, how shall hate be conquered at all?" If violence is answered by violence, how shall violence be conquered at all? In the context of all of this historic traditional heritage which belongs to mankind, it is rather ironical that we should be sitting here and talking about the peaceful uses of atomic energy as if it were something very wonderful that we had been able to discover, as if anything else was worthy of us, we who were created in the image of God Himself. But then the story of human development is replete with the story of human wickedness, of human greed, of human violence. The recent past does present a spectacle which sends a shiver down the spine. Let us be grateful for small mercies. Let us be grateful that after ten years, after what we did in Hiroshima and Nagasaki, we are in a small way paying a deep debt of gratitude to that cosmic power that once again has been able to bring humanity up to its present perception.

(Mr.Brohi, Pakistan)

Strangely enough, the first atomic bomb was released round about 6 August 1945 in Hiroshima. If you cross the international date line you will be somewhere round about the eighth, and ten years thereafter you have the Geneva Conference debating the peaceful uses of atomic energy. A good ten years had to pass after the wounds that were inflicted on humanity -- this was not a case of Japan; it was a case of humanity. When once I was talking to a Japanese friend, and I said, "Well, in the application of the atom bomb was there any option? You people were obstinate, and humanity had to be saved. The lives of so many British and American soldiers had to be saved. How can I blame these people who were able to release by their application of the secret of the atom in the manufacture of the atomic bomb and victimize you with it?", he made a characteristic remark, and I wish I knew the answer. Probably there is an answer, but I am such an ignorant person that, although I have spent many sleepless nights considering this problem, I have not been able to find an answer. He said, "But why didn't they use the same atomic bomb over Germany?"

And so I get back to the position at which I was. It was a wound inflicted on humanity itself, and we in our own small way are trying to find out if, for any constructive purposes, we should be able to apply the wisdom which modern science has made available.

Lest I should be sounding pedantic, or what might be called primitive in my thinking, I should like to summon the testimony of one of the greatest scientists that I know of. This is a 1947 publication, but it was actually printed in 1948, and thereafter I have actually a book which was written in 1954, so that if anyone wants to enter into an argument with me he will be able to confront me with contemporary findings also. I beg the leave of the Committee to read out one paragraph because it is able to sum up my position, which I would not be able to indicate to you even if I were to take three remaining hours of your valuable time. It is the last paragraph, and he is talking about the economic consequences of atomic energy. He says:

(Mr. Brohi, Pakistan)

"May I summarize my conclusion? While no doubt humanity would gain some advantage in the diversion of nuclear energy into power for economic purposes, it is not at present a priori probable that the advantage would be great. If one allows the creation of power for economic purposes in the various countries, its creation for warlike purposes can only be prevented by a very thorough-going and oppressive system of international control".

I will revert to this point presently, but let me continue the quotation:

"Unhappily, international relations are now such as to make it unlikely that nations will consent to this. I suggest that the proposal should be put forward that all nations should agree to forego the use of nuclear energy for the generation of industrial power for a term of years. I suggest that the Atomic Energy Commission should be asked to formulate precisely the nature of the inspection that would be needed to ensure the enforcement of this agreement. It might well prove to be the case that a far milder form of inspection would be acceptable to all the nations."

In his very learned address to us, Dr. Bhabha, after reviewing the industrial consumption of the mechanical power or, as it is now being described in the jargon of science, the "conventional power" -- I do not know why it should be called "conventional power"; we may call it the "pre-atomic power", but it is not conventional in any sense of the term at all -- comes to the following conclusions:

"The important conclusion to be drawn from what has been said above is, first, that our civilization cannot continue indefinitely on the basis of the conventional fuels alone" -- and I think this is correct -- "and, secondly, that uranium and thorium can support progressively expanding world power programmes for many centuries. Thus, even if the widespread use of atomic energy for peaceful purposes faces us with political and military problems, we have no option but to solve these problems".

(A/C.1/PV.760, page 12)

And I do agree with Dr. Bhabha. He then goes on further to warn us, and says:

(Mr. Brohi, Pakistan)

"Papers were also communicated to the Conference describing in general terms two fast neutron reactors that are being built, and prototype power stations based on them. Any one such reactor may be estimated to require several hundred kilograms of concentrated fissile material, depending upon its size; that is, enough fissile material to make several atomic bombs. This and the previous examples illustrate the close connexion there is between the peaceful and military applications of atomic energy and the safeguards that will be necessary to ensure against misuse." (A/C.1/PV.760, page 17)

In substance he agrees with the argument which was contained in the last paragraph of the book to which I referred just now.

It is true that if we were to take up an indefinite span of time on pure mathematical evidence we should be able to demonstrate that the existing or pre-atomic sources of power are capable of reaching an ultimate end and that, thereafter, we shall have no power to go on with. We do not require involved or calculated mathematics for the purpose of demonstrating this, but I certainly do not agree that this situation, of which our pessimists speak so vociferously, is so close at hand that it is just around the corner -- twenty-five, thirty or fifty years hence -- so that we may hereafter embark upon an examination of the possible bases on which nuclear power can be made available for industrial application. I am not prepared to accept that, and I do not think that it is a correct statement of fact.

That reminds me of what happened once in London. At an astro-physical conference one of the greatest astro-physicists was lecturing to ordinary common people and was talking to them about what is called the second law of thermo-dynamics. Those of you who are acquainted with elementary physics know what the second law of thermo-dynamics is. In effect, it says that although the mathematical sum total of the energy in the universe is constant, nevertheless the available energy which can be utilized for the purpose of practical application, for doing work, is running down, so that this is a universe which is running down. Thus although, until the last day when humanity will be confronted with a very peculiar situation in which there will be no available energy to work with, mathematically that energy will be constant,

(Br. Brohi, Pakistan)

it will not, however, as I say, be energy with which we shall be able to work, and then the whole of humanity will perish, and the future for mankind is pitiless and dark.

An old lady who was sitting there during this lecture was disturbed because she thought that the prospect was quite close, and she had to be told, "That will not take place until millions of years hence". Thus I feel that this is a situation with which we also have to be rendered more or less familiar. It is true that one day the pre-atomic resources of power will become exhausted, but that is a distant prospect; it is not just round the corner so that we must rush about in a mad hurry and say, "Unless we are able to do this and do it very speedily we are bound to perish, and so on and so forth". That is not altogether a correct statement of fact.

Then, as Dr. Bhabha has very rightly said, this and the previous examples illustrate the close connexion that there is between the peaceful and the military applications of atomic energy, and the safeguards that will be necessary to ensure against misuse. There is a feeling -- an uncanny feeling -- in some parts of the world, that, after all, the application of this energy may not be in the nature of the advent of the Trojan horse and that, as one writer has very recently characterized it, it may not perpetuate an era of atomic imperialism. And I hope that this Committee will take care to see that we should not become parties to the ushering in of that era.

These are the general remarks that I wished to make on the first sub-item. That, incidentally, should render it easier for me to sum up my position on the second sub-item. The statute -- the charter -- is under consideration by the various Governments, and I have not the least doubt that they will transmit their reports, as will the Government of Pakistan, on whose behalf I am speaking. The kind of agency that might be set up may be a subject of controversy at this stage, but I do hope and pray that it may be possible for us all to go to work towards an agreed solution, because in a momentous problem of the sort with which the Committee is at present engaged it would be disastrous to have any major differences. Almost every writer I know of who has cared to think at all about the problem of the control of atomic energy and its diversion for

(Mr. Brohi, Pakistan)

constructive human purposes has come to the conclusion that it has to be controlled by an international agency. And surely we are not going to create an international agency which is a one-sided agency in the sense that some of the major, pioneering Powers are not parties to it, or that some other Powers which feel that they have an equal interest and an equal say in the matter, are excluded.

(Mr. Brohi, Pakistan)

It may be that, if the differences are not resolved, I may even plead with this Committee, at a more appropriate stage, to appoint a sub-committee to study this question and decide whether or not it is possible to narrow down the area of disagreement and to arrive at a resolution acceptable to all. For the evolution of this agency, its specific internal arrangements, its external relationship with any specialized agency, the contractual arrangements that it may have with any organs of the United Nations, the relationship that it may have with the General Assembly: all of these are complicated questions on which many different views are possible -- and those views are being entertained honestly and with some amount of seriousness. It would be impolite to accuse anyone of wanting to shipwreck or stultify this agency, or obstruct its establishment in any way. I do not think that such language could be used.

I do hope that the major Powers, which have the major interest in this question, which are doing the pioneering work -- what I call the human work, for which we are all grateful -- will take stock of the situation and realize that there are other viewpoints, equally valid, which must be reconciled with their own.

Before I close, I should like to leave with the Committee a little story, the moral of which is quite pertinent at this time. The story may be known to some representatives. It is to be found somewhere in the writings of Carlyle; I read it many years ago and, therefore, am not able to give the exact source. As I have said, however, I think that it is a story which is pertinent and which has a message for all of us. The story is this: There was a very poor man, and by the side of his house there was the house of a very rich man. It so happened that the only son of the poor man contracted typhus. The poor man was not able to summon medical aid, since that would have required a great deal of money. He did not want to lose his son, so he rushed to the house of the rich man and said to the rich man: "My friend, will you be able to give me some aid? My son is dying. He is my only son. I am told on competent medical advice that, if he can be treated in time, his life can be saved." "But I have nothing in common with you," said the rich man, "that would make me want to give any money to you." And the poor man said: "We have all been created by God, and we are all brothers. After all, you have so much already and parting with

(Mr. Brohi, Pakistan)

a few coins is not going to make any appreciable difference to you." But the rich man insisted, saying: "Oh, no, I have blue blood in my veins, and you have a different colour in yours. I have nothing in common with you, so out you go." The poor man came away, disappointed. Carlyle concludes the story in this way: In two days' time, the typhus germ, wanting to establish the law of human brotherhood, flew out the door, went to the house of the rich man and quietly injected into the rich man's son the very poison which had been responsible for the disease that had overtaken the poor man's son. Not only did the rich man's son fall ill and die, but the rich man's son and the poor man's son were buried in one and the same cemetary, thus establishing once again that death is the great leveller.

I think that the same sort of relationship exists on the planet today. I need not be more specific. It is merely a matter of self-defence. The world has become an alarmingly small place to live in. The days of splendid isolation are gone. Gone are the days when people could live all by themselves. Today anything that happens anywhere happens everywhere. Hence, today, the responsibility of those who are rich is certainly considerably greater than they think it is. The logic of history is far more compelling than any ethical considerations.

If I have taken the Committee's time today, it is because I have certain convictions, which I have attempted to share with the Committee for what they are worth. My remarks have not been uttered in any spirit of dogmatism or supererogation. For all that I know, I may not be right. For all that I know, there may be some fallacy somewhere in my argument. But, if that is the case, representatives who are much more wise than I am should want to find out where the fallacy is, and, if I am able to keep the Committee engaged even in such a search, it will have done great good to humanity.

I thank members of the Committee very much for their patient attention.

Mr. SCHURMANN (Netherlands): During the ten years of its existence, the occasions when the United Nations could rejoice in the unqualified success of an achievement have been rare. The unstinted praise which has been given to the working as well as to the results of the International Conference on the Peaceful Uses of Atomic Energy, held at Geneva this year, cannot fail, therefore, to be welcome to the organizers of and the participants in the Conference -- and no less to all Members and well-wishers of the United Nations.

Our gratitude is due, above all, to the Secretary-General and his staff and to the able and distinguished members of his Advisory Committee. Even in this age, when we have become familiar with large numbers, the task of ensuring that in the short span of twelve days so many delegates and observers should be able to consider no less than 1,067 scientific papers, and listen to the presentation of 450 of them, was a prodigious one and its completion was something that no other organization in the world could have accomplished.

What is perhaps even more admirable is that a subject that held implications of such overwhelming political importance to the world could have been frankly and openly discussed by delegates from seventy-three different countries in an atmosphere free from suspicion and bickering. The only tension that prevailed at the Conference was that created by the consciousness of all the delegates that they were taking part in an event of unprecedented moment for the future of civilization.

When we try to assess the value of what the Conference has accomplished, there are, I think, three aspects that merit our special attention.

Firstly, a subject that was hitherto veiled in secrecy has been openly debated in the full light of international science and publicity. The fact that those countries which had gained an advance on others in their physical, chemical and technological knowledge of the structure of matter and the means to utilize it have not hesitated to make a large number of their findings available to the scientists from all over the world is an encouraging sign that the solidarity between nations -- a solidarity that leaves so much to be desired in some fields -- is making progress in other fields. Our gratification at this favourable development must be tempered, however, by the sobering thought that what we hail as a salutary new trend after a long period of schism should

(Mr. Schurmann, Netherlands)

really be the rule rather than the exception. Universal access to scientific data and free exchange of knowledge are features of an ancient tradition -- a tradition that should be upheld in the interest of mankind.

Secondly, the disclosures made at the Conference have brought to the world the realization that the inestimable benefits of this new science, not only for the production of energy, but also in such various fields as medicine, agriculture and many others, may be placed within our reach sooner than some of us had expected.

(Mr. Schurmann, Netherlands)

In the third place, the Conference has made manifest the impact which the application of nuclear science can have on conditions of life in all parts of the globe, and, consequently, the necessity for continuing and extending organized international co-operation in this field under the aegis of the United Nations, which initiated it. One form in which such co-operation can be realized is that of the holding of more conferences of the same kind, and we therefore welcome the suggestion made by the President of the Conference, Dr. Bhabha, and repeated in his impressive statement before this Committee, that another conference should be convened in two or three years' time.

The speed of the progress in nuclear science as well as the multiplicity of the subjects affected by that science might, however, make it expedient to arrange for a number of international meetings of scientists on a smaller scale, to be held within that period, at which particular sectors of the subject matter could come up for discussion. Several other representatives, I know, have made similar suggestions and that seems to indicate that our scientists have all advised us in the same manner.

Permit me now to say a few words on what has been done in the field of atomic energy in the Netherlands. In 1946 a group of scientists started to deal with this subject. They created the Foundation for Fundamental Investigation of Matter, in which, until recently, all research in pure and applied science in the field of nuclear energy was concentrated. Early this summer, a new organization become the focal point of this research work, the Netherlands Reactor Centre, a foundation established by the Government. In this foundation, four parties co-operate -- the Government, science, industry and the public utilities for conventional power. The Reactor Centre is a private organization, but the Government appoints the chairman of the board of governors and has special powers over the foundation's activities in respect of foreign relations, public health, safety of persons and property, and security.

The provisional programme of the foundation calls for an investment of 28 million guilders, half of which is to be furnished by the Government. This amount is at present available to the foundation. Among the items that figure on the programme are the construction of a material-testing reactor and the development of a suspension reactor. The development of this "suspop" -- the

(Mr. Schurmann, Netherlands)

atomic energy of France, Germany, Italy, Belgium, Luxembourg and the Netherlands. This report will be the result of three months of study and discussion in Brussels, thanks to which the problem is now ripe for decision on the political level. My Government attaches the greatest importance to these wide possibilities of European integration.

Turning now from bilateral and regional co-operation to the prospects of world-wide co-operation in this field, I may remind this Committee that the General Assembly at its ninth session resolved that an international atomic energy agency should be established without delay to facilitate the use by the entire world of atomic energy for peaceful purposes.

In pursuance of this resolution, as we all know, the Governments of Australia, Belgium, Canada, France, Portugal, the Union of South Africa, the United Kingdom and the United States have recently transmitted to all the Members of the United Nations and the specialized agencies, through the intermediary of the Secretary-General and on a confidential basis, a draft of the statute for the international atomic energy agency. On this draft, formulated by the eight Powers in possession of fissile material, the other States were invited to give their comments. My Government will be happy to avail itself of this opportunity to comment on the draft and I shall not, of course, anticipate these comments but, as we are to discuss under section (b) of the item under debate the progress in developing international co-operation for the peaceful uses of atomic energy, I should like to make a few remarks of a general nature concerning the ideas by which we shall be guided in our appraisal of the proposals that have been made.

The initiative taken by the President of the United States of America, to render available to the world at large both the material and the knowledge needed to enable other countries to play their part in the scientific and practical development of this new source of energy, has filled us with gratitude, and we are equally grateful to those Governments which have since then taken the first steps to give effect to this co-operation. If we have some reservations to make concerning the way in which they envisage the method by which the international atomic agency should be established and the manner in which it should operate, these reservations stem not from a will to criticize, but from the desire to assist in achieving results that will do justice to the generous vision evoked by the President's address to the General Assembly on 8 December 1953.

(Mr. Schurmann, Netherlands)

That vision contained two outstanding traits. One was that there should be the largest possible amount of international co-operation in this field, and the other was that the use of atomic energy for peaceful purposes should be facilitated for the entire world. These two aims should, in our opinion, remain ever-present in our minds.

Application of the first principle of real and effective international co-operation demands that the co-operation should take place, so far as possible, on a basis of equality. The agency should, therefore, be set up in such a way that, instead of emphasizing the difference between the countries that have at their disposal the material and technological means for the practical use of atomic science and those which are still deficient in either of these two respects, it should embody the common and equal interests of all countries in this venture.

(Mr. Schurmann, Netherlands)

The difference between the possessors and the aspirants obviously exists, but it is not a difference that is fundamental nor one that seems likely to continue for long without change. Uranium, thorium or other fissile material may be discovered in countries that are now unaware of its presence in their soil. Moreover, scientists are already looking forward to the days when no such basic materials will be needed in the process. An agency based, as to the method of its establishment, the composition of its governing body and the contracts into which it will be expected to enter, on an inequality between have's and have-not's, would, therefore, be obsolete before it had even begun to operate.

With regard to the second principle, namely, that the agency should promote the use of atomic energy for peaceful purposes by the entire world, this seems to us to imply two consequences: that the agency should be more concerned with the distribution of knowledge than with that of material, and that it should be closely linked to the United Nations.

The speakers who have preceded me in this debate have made it abundantly clear that a brisk trade in fissile material is already being done on a bilateral basis. It cannot be the object of the agency to interfere with this trade or to try to establish some kind of monopoly for this commodity. Too much emphasis on the exchange of material would not aid but would hamper the universal character that we wish to impart to the agency. Where the intermediary of the agency is indispensable, however, is for the purpose of providing the countries in need of it with the scientific and technical knowledge and skill required to make the use of atomic energy available to the entire world. The essential task of the agency would, therefore, seem to be that of rendering technical assistance in the domain of atomic energy.

Technical assistance is a familiar field of activity of the United Nations, and experience has taught us that it is one where it can best exert its beneficent influence. Would it not, then, be prudent to establish the relationship between the United Nations and the agency on the lines of the pattern that has proved its usefulness in matters of technical assistance in other fields?

My delegation earnestly hopes that our debate here will result again in a unanimous confirmation of the high purposes which have thus far guided the United Nations in this vitally important new field of action. I am convinced that every one of us will try to reconcile the divergent views laid down in the various

(Mr. Schurmann, Netherlands)

draft resolutions already before us. In the opinion of my delegation, such a unanimous decision must rest on the principles which I have mentioned just now; principles which, to a large extent, are echoed in draft resolution A/C.1/L.131, introduced by the delegation of India. We are particularly attracted by the suggested creation of a committee which will act on behalf of the General Assembly as a liaison with the powers which are negotiating the establishment of the agency.

I do not think that this general debate is the place for further elaborating these thoughts. We may revert to them, however, when the draft resolutions concerning this item come up for discussion.

Mr. McINTOSH (New Zealand): At the beginning of this debate we heard statements from representatives of countries which have taken the lead in the development of atomic energy for peaceful ends. These speakers described in some detail the achievements of their own countries in bringing about what is, in effect, a second industrial revolution. The spectacular speed with which this has taken place is all the more remarkable because in recent years nuclear research has proceeded not on a world-wide basis, but within individual countries or small groups of countries. For reasons which are well known, the results of this national research have in many cases been veiled in secrecy. The participants in the recent International Conference on the Peaceful Uses of Atomic Energy, we are told, were interested to learn how nearly the researches of scientists in other countries had duplicated their own, and how close they were to the same results. It is, perhaps, not surprising that discovery ran on parallel lines in different countries; but the very fact that this had not been known to the scientists themselves shows how far the world had departed from the concept of world-wide co-operation and free exchange of information which in the past was characteristic of almost all fields of scientific endeavour.

The Conference held at Geneva was therefore a landmark. At that point international co-operation replaced national interest as the dominant theme in peaceful atomic science.

(Mr. McIntosh, New Zealand)

The great volume of knowledge which flooded out into the public domain will undoubtedly be of tremendous value, but the significance of the Conference lay even more in the reversal of a retrograde trend towards the restriction of scientific knowledge. As the New Zealand representative pointed out in this Committee last year, international co-operation in this field is not an original development. Nuclear science, indeed, was born in an international atmosphere. Without ever losing their sense of national identity, but equally without any narrow or exclusive patriotism, scientists worked wherever their services could best be used. Thus Ernest Rutherford, who was born and educated in New Zealand, did the work for which he became famous, first in Canada -- as Mr. Martin mentioned the other day -- and then in the United Kingdom. My countrymen take pride in him not merely as a famous New Zealander, but as a scientist who was honoured throughout the world -- in the Soviet Union, for example, of whose Academy of Science he was elected an honorary member -- without any thought of ideological difference or national rivalry.

The International Conference at Geneva marked a return to this spirit of scientific freedom. It was preceded in the same city by a political meeting which, we all hope, was the beginning of a new era in international relations. The International Conference may be regarded as the first of the concrete steps which are needed to make the "Geneva spirit" a reality. The Assembly may take credit, therefore, for its far-sighted action last year in arranging for the holding of this Conference. We owe a debt also to the Government of the United States, which first suggested that it be held; to our Secretary-General, to his Advisory Committee and to the Conference secretariat, who were collectively responsible for the smooth running of one of the largest and most complex international gatherings ever held; and to Mr. Homi Bhabha, who presided over the Conference with distinction, and who in illuminating and simple terms explained its accomplishments and significance to this Committee on Wednesday, 12 October.

(Mr. McIntosh, New Zealand)

A moment ago I referred to a return to a spirit of international co-operation in scientific matters. The conference of scientists gave an initial push in this direction. It is important that the momentum thus created should not be lost. We therefore welcome the proposal that the Secretary-General's Advisory Committee should be kept in being, and that it should with him draw up plans for a further scientific conference or conferences. Several speakers have suggested that it might be more convenient to have a series of specialized conferences rather than another all-inclusive gathering, because of the wide range and complexity of the problems arising in this field. On first sight, this seems to us a sensible proposal. We understand that a conference on power technology might usefully be held in about three years' time. I shall not now take up the question of the effect of radiation on human health, which is a separate question for the later consideration of this Committee, and which may require more urgent action.

Previous speakers have described the astonishingly manifold uses to which atomic energy can be and is being applied by various countries in different parts of the world. In New Zealand we have similar needs and similar plans. It is true that we have neither the raw materials nor the industrial base which would permit us to be pioneers in the commercial development of nuclear power. Nevertheless, we have embarked, in conjunction with the United Kingdom, on a large-scale programme for the simultaneous production of heavy water and electricity from our extensive geo-thermal resources. The heavy water we propose to export. New Zealand is already a heavy consumer of electric power, and the demand is rapidly increasing. Most of our electricity is generated by water power at a lower cost than at present seems possible in nuclear plants. Nevertheless, our hydro-electric resources are limited, particularly in the North Island. We are therefore watching with close interest the commercial development of atomic power, especially in the United Kingdom, with which we have close and valuable relations in this field. We have noted with interest that even with the techniques now envisaged it should be possible in certain circumstances to produce power from nuclear fuel on a competitive basis with high cost conventional fuel; and that, whereas the cost of conventional power production over the years is likely to increase, the cost of nuclear power, as techniques improve and fissile material becomes more plentiful, may be expected to decline.

(Mr. McIntosh, New Zealand)

We do not, of course, expect to start building power reactors in New Zealand tomorrow or the next day. The development of power technology is, nevertheless, of direct interest to us, and we shall follow it closely.

We have a more immediate interest in radio-isotopes, which we are already using in considerable quantities and hope to use even more extensively in the future. New Zealand is predominantly an agricultural country, and it is to agriculture that much of our scientific research is devoted. The value of radio-isotopes in this field is, of course, well known.

We hope to make available to others, through the Colombo Plan and other technical assistance programmes, the knowledge that we acquire in our research with radio-isotopes. This applies particularly to our Asian neighbours, some of whose agricultural problems we have already been helping to solve.

There is one other way in which New Zealand has contributed to the development of atomic energy for peaceful purposes. This is in the training of nuclear physicists, some of whom have earned international repute. Rutherford I have already mentioned. New Zealand physicists have worked and are working in the United Kingdom and Canada, and two New Zealanders hold key positions in the atomic energy programme which is being energetically prosecuted by our neighbour Australia. This export of special talent will not, we feel, be unrequited. On the contrary, it is by international co-operation, we believe, rather than by individual effort, that progress can be made most rapidly.

I should not wish to conclude my remarks on New Zealand's activities in this field without paying tribute to the generous co-operation we have received from a number of countries with advanced atomic energy programmes. With the United Kingdom, as I have said, we are partners in a heavy water project and have the closest relations in the atomic field. From Canada we have been offered generous assistance in the training of our nuclear scientists. The United States has given us one of the atomic energy libraries to which Senator Pastore referred at the beginning of this debate. New Zealand may therefore be added to the forty countries which have benefited from American generosity in this and other ways.

(Mr. McIntosh, New Zealand)

There are two general conclusions which may be drawn from our own experience. The first is that to divide the countries of the world into donors and recipients, even in this most specialized field of technical knowledge, is an over-simplification. Such a division tends to obscure the fact that every nation has potentially something to contribute, as well as some benefit to gain. The second is that all countries, large and small, highly developed and less developed, have potentially an equal interest in the development of this new source of energy. This consideration holds good even though, as a number of representatives have correctly pointed out, the new applications of atomic energy are likely to be of much more immediate benefit to the highly industrialized countries than to those which, like New Zealand, are industrially under-developed.

These two conclusions may, in our view, serve as useful criteria for those principally concerned in the drafting of a statute for an international agency. The draft statute is not before this Committee, and I cannot, of course, comment on its terms. My remarks will, therefore, be entirely general.

One of the factors which determines our attitude to this question is our belief that the value of the agency will depend primarily on the generosity and far-sightedness of those nations which have gone furthest in developing the peaceful uses of atomic energy. It was they who took the initiative in proposing that international co-operation in this field should be extended from a bilateral to a multilateral basis, and it is still upon them than we must rely to make the agency truly effective.

My delegation is glad to learn that the sponsoring Powers have made substantial progress towards agreement on the terms of a draft statute. We, for our part, consider that the negotiations should continue along the lines they have proposed.

We have no doubt that the sponsors fully recognize the nature of the responsibility which they have assumed. Large areas of the world, as the representative of Burma pointed out in our debate last year, were passed over by the industrial revolution. It is to this agency that the nations in those areas will look in the first instance to ensure that the new atomic revolution does not similarly bypass them. It is already clear that, if the agency is to have the

(Mr. McIntosh, New Zealand)

confidence and active co-operation of these countries, it must be established on the basis of partnership between the advanced and the less advanced, and should not perpetuate, or even appear to perpetuate, a donor-recipient relationship. Countries cannot be classified simply as those with something to give or those with something to gain. Some, of course, have very much more to gain than to give, and the reverse is also true. This situation, moreover, is likely to persist for a very long time, no matter how rapidly the less developed countries can accelerate the training of scientists and the development of their industries. Nevertheless, it should be the objective of the agency to assist in this process of acceleration as one means of ensuring that the present disparity between the standard of living of the developed countries and that of the less developed is progressively reduced.

(Mr. McIntosh, New Zealand)

That objective will not be helped if the internal structure of the agency too obviously reflects, and thus gives an air of permanence to, a division between contributing and recipient States. The emphasis should be on partnership, which we hope will be permanent, rather than on disparity, which we hope will be temporary.

This consideration will, my delegation feels confident, be given due weight by the sponsors of the agency as they carry the negotiations on the statute to what we all hope will be an early and successful conclusion.

We have heard different views on the nature of the relationship which should exist between the agency and the United Nations. To us it would seem premature for the General Assembly to offer a definitive opinion on this point at this session. It may be that this relationship should be along the lines of those existing between the United Nations and its specialized agencies. Even these are not, of course, identical in all cases, and it might be possible to devise a closer form of relationship than any so far established. We are inclined, however, to doubt the advisability of subordinating the agency to a political body like the General Assembly. Still less do we think that it should be subordinated to the Security Council. It is possible that in the course of the agency's operations questions affecting international peace and security might arise. Any such question could be put on the agenda of the Council in the usual way. This, however, is quite a different question from the establishment of a formal relationship between the agency and the Council. If therefore we are to use such phrases as "within the framework of the United Nations", it should be clear that the phrase is to be construed in its broadest sense as meaning the whole United Nations complex, which includes the specialized agencies.

Finally, I would add that the relationship between the agency and the United Nations is a question in which the Secretary-General has a proper and legitimate interest. Should he desire assistance in studying this problem, we should consider sympathetically any suggestions that might be made to that end. We should also, of course, give careful attention to any views that he might wish in due course to express.

I do not propose to discuss now the four draft resolutions before the Committee. Before concluding, however, I should like to lay some emphasis on

(Mr. McIntosh, New Zealand)

what my delegation regards as our most important objective. That objective, we believe, should be the preservation of the unanimity which was attained last year, and which paved the way for the considerable measure of success subsequently achieved in establishing the machinery of international co-operation in this field. Unanimity was not reached last year without effort. It was rather the result of skilful and patient negotiation combined with a willingness to subordinate differences for the common good. Admittedly this is a political committee, in which political differences may be properly aired. But the allocation of this item to a political committee can only be justified if it thereby becomes easier to reach agreement. If on the other hand we allow the peaceful development of atomic energy to become bedevilled by political controversy, we shall have made a serious mistake, and indeed shall have done a good deal less than our duty to humanity.

The New Zealand delegation trusts therefore that the reconciliation of differences which was achieved last year will be repeated at this session. Unanimity does not, of course, mean merely the agreement of a powerful few, although that agreement is, of course, essential. All legitimate interests and all honest views should be taken into account; but none, we trust, will be pressed beyond the possibility of agreement, and thus of the performance of our duty.

The CHAIRMAN: I have no other speakers on my list. Under these circumstances, the Committee will adjourn until 3 p.m. next Monday when I hope as many speakers will inscribe themselves on the list as possible. The Committee will recall that I propose to close the list of speakers on Monday evening.

The meeting rose at 4.45 p.m.