CHGO-14: UNCSAT - or -
Was one scientist in the bush
worth two in Geneva?

27 Lugard Road, 1/floor,
Hong Kong.

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Dear Mr. Nolte,

Since I got back to Hong Kong people have been asking me about the United Nations Conference on the Application of Science and Technology for the benefit of the less developed countries (UNCSAT for short) which was held in Geneva last month. "What sort of conference was it?"; "Was it a success?". I find it hard to give an objective answer. Certainly it was one of the most interesting conferences I have ever attended, and it is equally certain that there has never been anything quite like it before - and in the opinion of many people, there probably never will be again. It is easier to say what it was not. It was not a negotiating conference, although there were plenty of diplomats and ministers present, nor was it a scientific conference, despite the three Nobel prize-winners and other outstanding men of science who were there(1). Partially it was an attempt to survey the whole field of how science and technology can be applied to economic growth, but it was more than just that, as I shall explain in a moment. Perhaps as much as anything it was an attempt to draw attention to and help further the ideals of the United Nations Development Decade; a program launched in 1961 dedicated to the removal of the poverty, hunger, illiteracy and disease which are prevalent today in most countries of the world. The UNCSAT delegates met to decide what science can do to help.

We were constantly reminded at the conference of the nature and urgency of the problem. We were reminded for example that:-

- 40% of the world's adult population is illiterate
- life expectancy in the less developed countries is 29 to 39 compared with 69 to 71 in the developed lands.
- most Africans have an annual income of $50 to $100 - compared with an average of $900 for Europeans and $2,500 for Americans.
- during the conference (16 days) the world population increased by 1,600,000 persons and that production had not increased proportionately
- daily, hunger and disease face most of the human beings on the earth.

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(1) One American observer at the conference gave me the following break-down of the American delegation:

36 University (35%)	13 Government - Technical (13%)
24 Government - Diplomatic (23%)	11 Industry (11%)
5 Congressmen and Senators (5%)	12 Non-profit making organizations
	1 Lawyer (1%) (12%)

We were told that for the first time in the history of mankind it was technically feasible to alleviate all this. We were also reminded that this fact was realized by many of the people in the less developed countries (LDC) and that we were in the midst of the "revolution of rising expectations". It is one thing to be hungry and illiterate and to know nothing can be done about it, and quite another to be hungry and illiterate and to know that you need not be.

All this of course, was well known before the conference began, but it was necessary to create the background picture against which the meeting would be held - for the UNCSAT conference was dedicated to the problem of how science and technology can best be harnessed to help in this crucial problem of economic development. This was the overriding theme. Everyone agreed that it was a theme worth working for, but when it got down to specifics there was much less agreement.

The theme itself is not new, in fact somewhat similar conferences were organized at Lake Success by the U.N. in the time of Trygve Lie . by the World Federation of Scientific Workers in Warsaw in 1959, and perhaps the most successful forerunner was the Science and the New States conference held in Rehovoth, Israel in 1960. Some of the Pugwash conferences have also debated this theme. The scale of the UNCSAT meeting however, was vastly different. It was decided to encompass a very wide field. It was felt by the U.N. scientific advisory board who planned the conference, that the subject itself was broad and that at least the first conference of this nature should attempt to survey the whole field.

The meeting was divided to deal with twelve principal subjects as follows:

A. Natural Resources.
B. Human Resources.
C. Agriculture.
D. Industrial Development.
E. Transport.
F. Health and Nutrition.
G. Social Problems of Development and Urbanization.
H. Organization, Planning and Programming for Economic Development.
I. Organization and Planning of Scientific and Technological Policies.
J. International Co-operation and Problems of Transfer and Adaptation.
K. Training of Scientific and Technical Personnel.
L. Communications.

(When section H. was first proposed several months ago by the U.N. science advisory board, the U.N. officials said "Impossible! Do you honestly expect Americans and Russians to sit down and discuss rationally such a politically loaded question as economic planning?" Yet it was included and, if not discussed in the true sense of the word, at least diverging viewpoints were rationally presented.) Each of the twelve principal sections was the subject of a general session, but each was also divided into sub or special sessions where it was hoped to discuss the more technical points. Altogether

there were 81 of these special sessions.

Several months prior to the conference, countries were invited to submit papers which contributed to the subject of the conference according to an elaborate agenda sent out by the U.N.. It was the responsibility of each country's government to obtain the best thoughts on the agenda topics which were currently available in their country. In Britain, 600 papers were submitted to the British Secretariat, and of these only 110 were selected and transmitted to Geneva. The total number of papers submitted by all 96 participating countries was the astronomical figure of 1,910. Each was relevant, or supposedly relevant, to a particular subsection. The Secretary General of each subsection then wrote a report summarizing the papers in his section and suggesting particular points for discussion, and these, together with the papers, were available for the delegates.

Each session had assigned to it a number of discussion leaders, simultaneous translation was available for each session, in fact everything that could have been done to ensure success appeared to have been laid on. But in fact, too much had been done - it was over-organized. Free discussion never developed. It was made impossible by the necessity of inscribing names on a speakers' list before each session began, and then the chairman would call to the podium to speak, as many of those listed as time permitted. But discussion back and forth was impossible. It transpired that this had been deliberate policy on the part of the U.N. because before the conference got under way there had been many misgivings that it might easily become another cold war debate - so many of the problems touched on policy matters and these often were political, not scientific. The organizers decided not to take any risks - the meetings would be so organized that the chairman would have strict control, and free discussion would be avoided. In the event, political wrangling was not so dominant as had been feared. It occurred in the beginning, but infrequently, then finally both sides were told to "cut it out" by one of the African delegates.

By the end of the first week there was a general feeling of dissatisfaction and a special session was called by the president of the conference for the LDC+ delegates to voice their complaints. As a result of this it was formally announced that the system of inscribing speakers for the special sessions would be dispensed with. This seemed to satisfy a lot of the criticism, but in those sessions I attended it didn't make much difference, there were still too many people who wanted to make set speaches and more often than not the chairman had to prepare a list of speakers. There was still very little discussion.

More successful were several of about thirty informal sessions, the proceedings of which were not formally recorded. In these, different techniques were tried in an attempt to get some useful exchange of ideas. One of the most successful that I attended was one chaired by an Indonesian. He had asked each of the LDC delegates to prepare a list of problems that they had experienced in mineral exploration, not geological problems but problems of organization etc, and they were then asked in turn to

+ LDC - Less developed country (-ies).

read out their lists. Even with these clear instructions more than half read out a list of the things they had done rather than problems encountered, but several complied. The chairman then asked the delegates from developed countries to answer the questions. About half of their replies were relevant and it was one of the few sessions that I left feeling that at least someone got something out of it.

Many informal get-togethers were arranged, some in hotels, some in the bars and corridors, and I think the best occasions for making new contacts was at the various receptions given nightly by different governments. Gradually the formality died away and by the beginning of the third week I felt people were getting somewhere, not in the formal sessions, these went on to the bitter end and I don't think were ever really successful. At the end there were some delegates who still maintained it had all been a waste of time, but most delegates went away, I think, somewhat sobered by the immensity of the problems, and by the difficulties of grappling with them. Many might be tempted to say "But this is not my field", and rightly, but nor at the moment is it anybody's field. In fact there was a growing realization that there is a need for a new professionalism, that of scientist administrator, who is trained to apply science to economic development.

There were many behind the scenes discussions, and efforts were made to draft resolutions, although none were allowed to be presented according to the terms of reference of the conference. As time went on there was a growing surge of opinion that this should be a beginning rather than a climax. Many of the less developed countries wanted a new agency set up specifically to deal with applications of science to development. There was considerable opposition to this idea from developed country delegates; many felt that the existing organizations should be strengthened rather than new ones created. One proposal called for a greatly expanded effort by UNESCO in the sciences. Yet another idea was for a permanent group of experts in many disciplines who could be called in by developing countries to make analyses of situations - a sort of operations research team. They would be familiar with existing technology and could draw the attention of world scientists to unsolved problems. There were other proposals too, and the problem became one of deciding how to present the ideas at the end of the conference without passing resolutions. A simple technique was used. The idea was communicated to U Thant in New York that the science committee should meet again after the conference to consider all suggestions and decide during the next few months on suitable follow-up procedures. U Thant was asked to send his representative to give a speech at the final plenary session announcing this decision. Mr. Paul Hoffman flew in from New York and made the announcement. Everyone was satisfied - at least for the time being.

One suggestion which undoubtedly will <u>not</u> be followed up occurred to me during a particularly uninspiring session on education. It was held in a conference room I hadn't been in before in which simultaneous translations were received by means of individual radio receivers. To combat my boredom I decided to see how much I could understand in the French, then the Spanish translations. Not much. I then turned to another dial setting, one which wasn't included on

the conventional models in the other rooms, and to my astonishment and delight - found music. It was doubtless a mistake which never happened again - but what a wonderful innovation it would be, how the attendance at U.N. debates would be swelled, and how vastly improved the speeches would be if the speakers knew they had to compete with Beethoven or Presley. And nobody would ever know whether that look of rapture on a listener's face was due to the eloquence of the speaker or to the music!

The achievements of the conference

First and foremost the conference provided a review of known knowledge on the subject of science and technology applied to economic development. This knowledge was partially communicated in the sessions, but mainly in the 1,910 papers, and in the eight volume summary which is being prepared. In this letter I do not intend to discuss the technical matter presented at the conference except to mention that it ranged from the new and exciting, like the announcement of a way of obtaining protein from petroleum, to the mundane but none the less important conclusion that it was far better to train Africans to use axes for felling trees than to train them to operate power saws. Different people described this stock-taking aspect of the conference in different ways: "A super market where delegates from the less developed countries can window shop to help them decide on priorities" said Professor P.M.S. Blackett; "An inventory of knowledge"; "A catalogue"; "A birds eye view of what's available"; and according to Federov, the chief Russian delegate, "An encyclopedia".

Secondly the conference provided a forum where new research, either currently in progress or contemplated, could be discussed. Research which, if successful could have immense practical value to the less developed countries. Desalination of water was one example, non-conventional energy sources such as solar energy, thermal energy and nuclear energy, were others. Blackett warned against the LDC relying too much on these, certainly they are not something the LDC should be spending money on; if they come off, they should be regarded as windfalls. On the other hand, they are branches of research which the developed countries have often neglected, and every encouragement should be given for their support.

Thirdly, and following from the last point, the conference drew the attention of the scientists of the world to the vast problem of science and economic development. It was suggested that scientists have been neglecting their duties to society. They have been burying themsleves with narrower and narrower specialities and have been neglecting the wider implications. Now, suddenly, for the first time in the history of mankind, they have the ability to change cultures. Abba Eban in his usual eloquent style called it a "galvanizing of the scientific conscience". Certainly never before had so many scientists thought about economic development.

Fourthly, and perhaps as important as any of the other achievements, the conference drew the attention of the leaders of the new countries to the fact that (a) Science is no magic wand to prosperity but (b) that with the intelligent use of science and

technology a road can be charted which will lead in the end to prosperity. This requires a new outlook on the part of political leaders. They do not have historical precedence to rely on because it is the very lack of understanding of what science can do that has characterized the political leaders of many countries. My study of Hong Kong has made me realize just how difficult it is to persuade governments to support science.

Perhaps the most striking single statistic that the LDC delegates would take home was that offered by Lord Casey, the leader of the Australian delegation: "Australia is in a mid-stage of development" he said, "but over the past generation we have invested £200 million in research. We estimate that the return on this has been £400 million a year over the period".

Fifthly, the conference provided an opportunity for people to meet one another. It is a point that is often made about nearly all conferences: "Its not the papers you go to hear, but the opportunity to meet people informally who are working in the same field". This conference was no exception. One document perhaps as valuable as any that I brought away from the conference was the list of names and addresses of all delegates. The number of bilateral promises of aid made at this conference must be truly enormous. I went hoping to get ideas on how Hong Kong industry might be helped. In the course of informal conversation in the bars and corridors I received two offers of help and suggestions galore.

Criticisms of the Conference

As I mentioned earlier, there were many criticisms of the conference. I thought some of the criticisms were trivial, but since they obviously reflect attitudes, mainly on the part of the LDC delegates, I think they are worth mentioning. Also, some will have to be taken into account in planning future conferences.

The first criticism was that there were too many delegates from the developed countries and too few from the less developed. The figure generally mentioned was a ratio of 4:1. I have plotted the diagram in figure 1 which illustrates the point. Certainly the figure of 54% of all delegates from the Western European countries is excessive. The French were there in greatest numbers, in fact 18% of all delegates at the conference were French. But what was not generally realized was that many of the Europeans came only for a few days, attended the session at which they were giving a paper and then went home. Whereas the LDC delegates were, in the main, full time participants. I can illustrate this by the histogram in figure 2 which shows the time spent by British delegates at the conference. In fact the average time spent by a British delegate was only 6½ days. Thus the effective full time British delegation was about 60 instead of the 150 actually listed. Also included in the British delegation were a number of representatives from colonial territories. So although the numbers were disproportionate, they were not as disproportionate as appeared at first sight. Also the conference officials made every effort to let the LDC delegates speak, in fact they spoke for 44% of the time at the general sessions and

FIGURE 1.
Geographic distribution of UNCSAT participants.

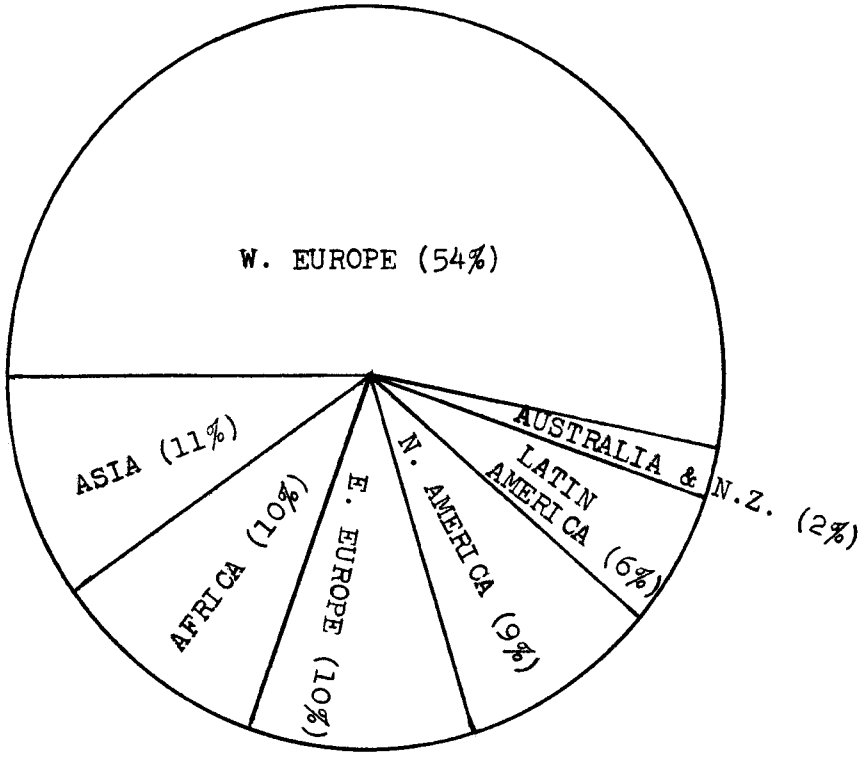
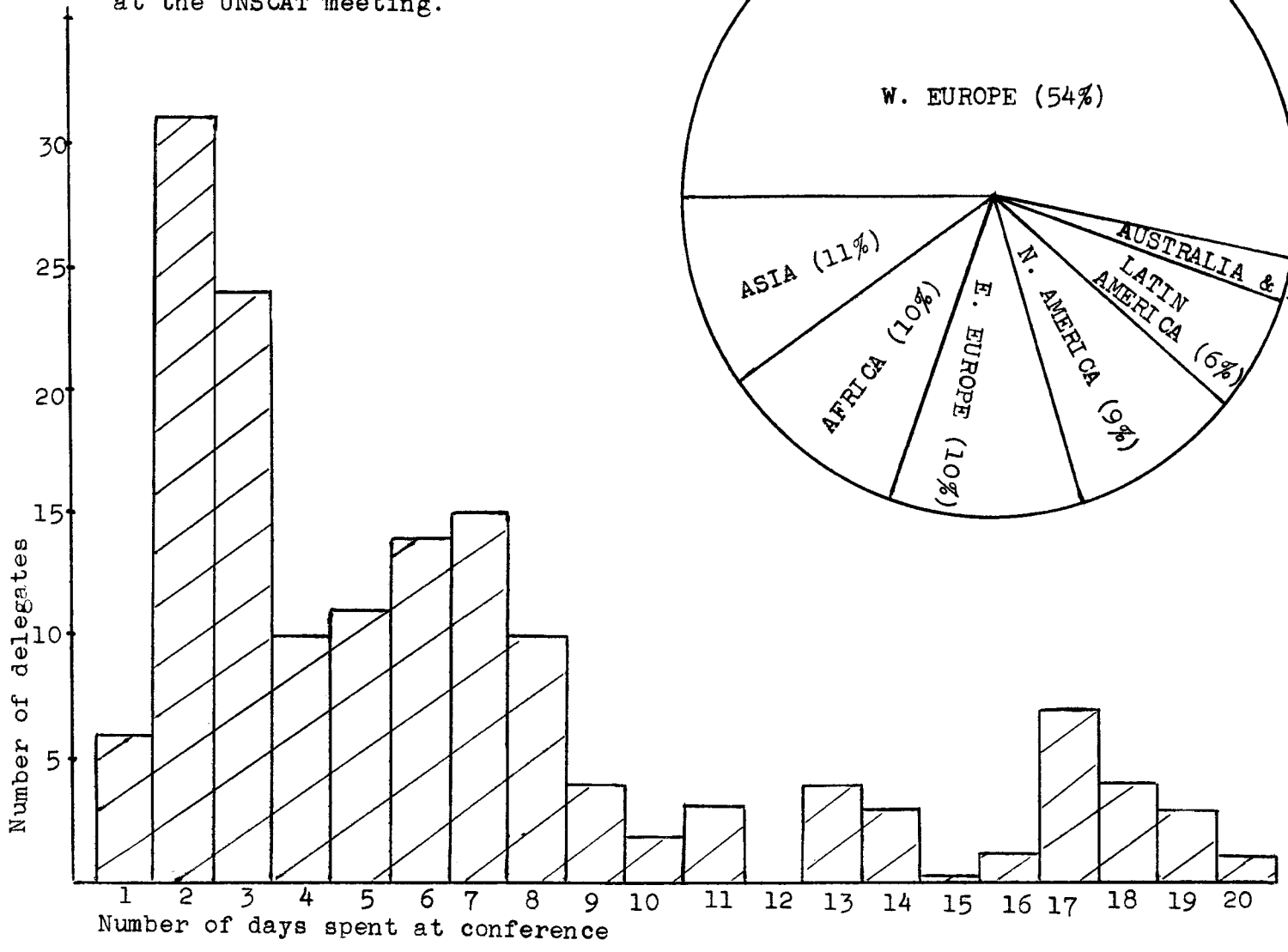


FIGURE 2.
Time spent by British delegates at the UNSCAT meeting.



there were three special sessions at which only LDC delegates could speak.

A second criticism was that the number of papers was disproportionate. A count showed that only 31% of the 1,900 papers was from the LDC. This is most certainly an invalid criticism, as was pointed out by a Mexican delegate who said "The LDC have come to learn and therefore it is only right that the majority of the papers should be from the developed countries".

A third criticism was that Geneva was an unfortunate choice of a site for the conference - particularly Geneva in the winter. It was suggested that it would have been much better to have held the conference in a LDC. Delegates would then be brought face to face with the problems that need solving. Others pointed out that Geneva is an expensive city, and I know several delegations were hard pressed to manage on the allowance provided by their governments. It was also pointed out that Geneva is perhaps a rather inauspicious city for conferences: "A home of lost causes" someone called it. The old League of Nations building where the conference was held has not seen many successful conferences amongst the many that have been held there.

A fourth criticism was that the subject matter was too broad, it was too big a conference and the sheer volume of papers (1,910 of them plus 5 directories of delegates and many other documents) was just too much to handle. There were many who felt like this. Dr. Walsh McDermott, the leader of the American delegation, when faced with this criticism at a press conference, said "Yes - but the problem is broad". He explained that it was necessary to make people realize just how wide the problems really are and the first conference of this type needed to be all embracing, future conferences could be specialized. It was interesting to see how people boggled at the sheer volume and mass of documents. Yet this was unnecessary, the documentation center was well organized, there were comprehensive lists of papers and it was really quite easy to obtain relevant papers. The conference itself was well organized so that there was no sense of confusion over the large number of simultaneous sessions. Not only that but it provided a certain amount of cross-fertilization of ideas between people who would not normally have come in contact.

A fifth criticism concerned the uneven quality of the papers themselves. This again is typical of most conferences. Yet as Dr. McDermott pointed out, the papers supposedly represented the best thoughts from throughout the world on the different subjects. If they were not good then this reflects our present state of knowledge and shows up what needs to be done.

A sixth criticism, and one which I mentioned earlier, was the question of the formality of the sessions. This was a very relevant criticism and despite efforts to reduce it I never felt that they really succeeded.

Some delegates from the developed countries said that even in the informal sessions and the special sessions the LDC delegates spent too much time blowing their own trumpets, saying what they had already done, rather than saying just what their problems were.

Others said the developed countries' delegates spent too much time discussing accomplishments rather than talking about adaptation. Others felt there was too much talk about grand, large-scale projects and not enough of what science and technology could do to help at the handicraft, local scale.

From all the criticisms came some constructive advice for organizers of future conferences: Find some way of financing the attendance of more delegates from less developed countries; Hold the next conference in a less developed country; Let the next conference have a more restricted agenda; Don't over-organize, make sure there is opportunity for genuine discussion and not just set speeches.

A Report to a Prime Minister

After listening to the speeches for 2½ weeks it was possible to pick out from the millions of spoken words certain messages of advice to developing countries which were heard time and again. They were messages based largely on the experiences of the past 15 years and were spoken by delegates of a variety of nationalities and political beliefs. They formed what one might call a concensus opinion of the steps a developing country should take. I have tried to summarize what I felt were the main points and present them as if I were a delegate from a new LDC presenting them to my government when I arrived home - Mr. Nolte, please be my prime minister!

1. The proper application of science and technology to economic development is going to call for many decisions about science on the part of Government. Therefore Government must have an understanding and awareness of science. In addition there must be a scientific elite in the country who can advise Government. One of the first tasks therefore must be to train this scientific elite. This means education and human resources should receive the highest priority.

2. The lessons of the past decade have shown the importance of each country having its own indigenous science. It is not enough to just import science and technology, it must be adapted to the specific conditions in each country. The scientific elite must be able to effect this adaptation and must be able to draw up a list of priorities. The best way of doing this is to set up a National Research and Development Organization. This organization should then act as the channel through which all foreign assistance can be co-ordinated, and should draw up a national science policy.

3. Those projects which should be given high priority are:

- applications of science and technology to the survey and development of natural resources
- study of local agriculture
- study of local health problems
- study of the means of applying science and technology to industry.

It is advisable to draw up a five or ten year development plan co-ordinating all these activities.

4. It is important that some research be initiated within the country. Perhaps the best way of tackling this problem is to set up regional institutes by collaborating with neighbouring countries - each country could perhaps specialize in one or more subjects. These regional institutes would then serve to train local people in these specialities. This would be better than sending too many students to developed countries for training. Experience has shown that many students do not return; that those who do often find the training they received is not relevant to the needs of their developing country; and many have trouble in making full use of their advanced training.

5. Greater use should be made of foreign assistance. Local scientists should be enabled to profit more by the visits of the foreign experts - who should be encouraged to pass on their expertise.

6. It is not advisable at this time to spend money on expensive research projects such as nuclear power, desalination of water and solar energy. However, the developed countries should be encouraged to work in these fields.

7. It is important that all people in the country should develop an awareness of science and technology. Such an awareness is needed to combat superstition and to break the present cultural inertia.

The Press

Since it was vitally important for the purposes of the conference that the proceedings be widely promulgated, it was necessary to gain the support of the press. 217 press representatives registered at the conference, 156 newspapermen, 24 radio, and 45 photo, film and television personnel. In addition, the U.N. information centers gave information on the conference to the press in all countries where they were located.

Perhaps it was the pre-conference misgivings on the part of the U.N., perhaps it was the sheer bulk of papers and wide scope, but there was no doubt that a certain section of the press was, at least in the beginning, somewhat lukewarm about the conference. Take for example the British Daily Express comment on the first day of the conference: "Converging on Geneva today are nearly 2,000 scientists, many with wives, and secretaries, coming to take part in a $3 million scientific jamboree. Lavish is the word to describe the arrangements - special bars have been installed in the Palais des Nations. The reason for the conference? ... How science and technology can conquer poverty, hunger and disease".+ Even the more responsible Guardian , in an editorial on the conference, believed that "One scientist in the bush was worth two in Geneva". The Daily Telegraph played up the political bickering which in fact played a minor part in the conference.

Even scientific news journals did not really give the conference the coverage it needed. Science reported briefly

+ The actual wording may have been slightly different, I quote from memory.

on the conference, but as of the March 9 issue, Nature had not. The New Scientist however, devoted a special issue to the meeting and at the final press conference a U.N. spokesman expressed pleasure at the coverage given the conference, pointing out that the U.N. information services had already sent back several hundred newspaper clippings from throughout the world.

Reasons why developed countries should help the less developed

A subject which cropped up occasionally was the question of the reasons why the developed countries should give assistance to the less developed countries. I was rather sad to note the extent to which many of the LDC regarded it as a "right" that they be helped. It was claimed that the rich countries were rich because they had taken raw materials from their former colonies, and so now it was only right that they should redeem themselves and pay back some of the debt they owed. The Russian delegates also played on this theme. These were emotional arguments and the case that the rich countries are rich for this reason does not hold up on closer scrutiny. No one likes to be told he is doing a good deed because he has to. The impassioned speech made by the chief delegate of Mali was typical of many. He said, "The less developed countries will develop with or without help from the developed countries, it only makes a difference to the time it will take, but if the developed countries do not help, then we will never forgive them".

In his book World Without Want , Paul Hoffman has mentioned several very good reasons why help should be given. For example, there is the moral argument, all major religions call on the rich to succour the poor; there is the economic argument that prosperous countries will buy more exports from the developed countries; and he says "The bluntest and most accurate answer to why we should be concerned, is that we must be if we are to survive".

The delegates from the less developed countries had a more valid point when they argued that depressed prices in their exports - raw materials, and inflated prices in their imports - manufactured goods, had all but wiped out the value of foreign aid received in recent years. Several delegates also pointed out that as soon as a less developed country becomes at all industrialized, the developed countries clamp import restrictions against its manufactured goods with the result that the less developed country still cannot get the foreign exchange it needs.

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This letter should have answered the first question - "What was the conference all about?" But - was it a succes? Or was perhaps the Guardian comment nearer the truth? These questions are much more difficult to answer. If the sole purpose had been to get scientists and policy makers together so that the policy makers from developing countries could ask questions and the scientists could give answers, then I would say the conference was a failure. If the main purposes were to advertise the value of science in economic development, to bring the problems before the scientists of

the world, or to educate the political leaders in developing countries, then we must ask: are there not better and more effective ways of doing this than holding a conference? Likewise, if the objective was to compile a catalogue or encyclopedia, then couldn't this also have been done without the millions of dollars which went into getting nearly 2,000 people to Geneva? And are there not better ways of making contacts from which bilateral aid arrangements sometimes spring? These are questions which need a lot of thought. I personally believe that at this time there was no better way to accomplish these aims than by holding the UNCSAT conference, and hopefully believe that it will eventually be proved that it was well worthwhile.

Yours sincerely,

C.H.G. Oldham

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