March 1964 Vol. XVI No. 3

Vijnan Karmee

Annual Subscription Rs. 10.00
Single Copy Re. 1.00

SCIENTIFIC POLICY RESOLUTION

—M.S. IYENGAR

PRESIDENTIAL ADDRESS AT ASWI ANNUAL MEETING

—N.P. GUPTA

ADDRESS AT ASWI ANNUAL MEETING

—M.C. CHAGLA

Editorial Office :
CSIR, Rafi Marg
NEW DELHI-1

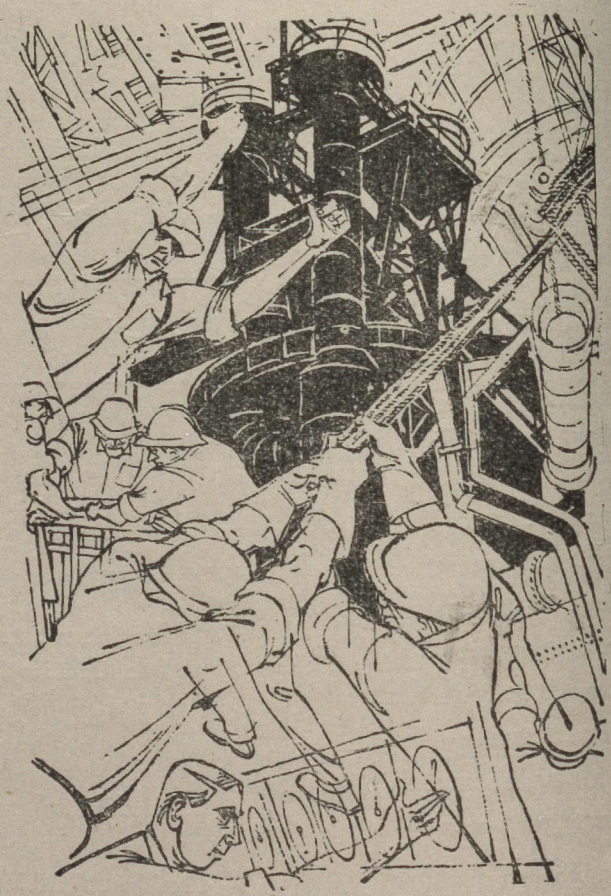
VIJNAN KARMEE

Journal of the Association of Scientific Workers of India

Founder President : SHRI JAWAHARLAL NEHRU

VOL. XVI MARCH 1964 No. 3

CONTENTS



a challenge well met

On the 3rd January, this year, the 'E' blast furnace at the Jamshedpur steel works was blown out for relining and enlarging. It was a big job involving 2,100 tonnes of refractories, 1,700 metres of piping, 7,600 metres of electric cables and 1,100 tonnes of steelwork and castings.

When the original schedule was halved from 180 days to 90, many thought it to be impossible. But a team of Tata Steel engineers, technicians and workers took up the challenge and completed the operation in 84 days, 6 days ahead of the drastically revised schedule.

The 'E' blast furnace, with an original capacity of 315 tons a day, was bought second-hand from the U.S.A. 45 years ago. Its rated capacity has now been stepped up to 660 tonnes of pig iron a day without sinter burden, or to 725 tonnes with sinter and sized iron ore.

The record-breaking achievement is another demonstration of efficient team-work, technical know-how and sustained efforts to attain greater productivity with the minimum outlay that characterize a city like Jamshedpur, where industry is not merely a source of livelihood but a way of life.

JAMSHEDPUR
THE STEEL CITY

GIVE FREELY TO THE NATIONAL DEFENCE FUND

JWTTN 14

The Tata Iron and Steel Company Limited

Some Observations on Scientific Policy Resolution and its Implementation

Dr. M.S. Iyengar

The Prime Minister while inaugurating the Conference of Scientists and Educationists, called by the Ministry of S.R. & C.A. in August, 1963 to review the progress on the implementation of the scientific policy resolution, said :

"It was a good resolution and that possibly even today if we drafted it, it would not be different. How far we have implemented it ? Some extent we have progressed, not as fully as many hoped and expected."

Some of the important developments in the implementation of the scientific policy resolution, as reported by Prof. Kabir in his address to the Conference of Scientists and Educationists, were as follows :

1. The total Government provisions for research in science had increased from about Rs. 150 millions in 1958 to over Rs. 400 millions in 1962.

2. The budget for the CSIR laboratories had increased from Rs. 43.5 millions in 1958 to Rs. 100 millions in 1962.

3. As against some 6000 admissions in engineering colleges and 10,000 in polytechnics in 1958, the admissions in 1963 were about 18,000 for colleges and 30,000 for polytechnics. Admissions in B. Sc. and M. Sc. courses had also more than doubled in the course of the last five years.

4. The Scientists' Pool was created to provide incentives for promising young scientists and their number had increased from 100 in 1958 to over 500.

5. The number of fellowships and scholarships offered by the CSIR alone had increased from 1,000 in 1958 to 2,300 in 1963; other scholarships offered by the Education Ministry had increased from 1,000 to 3,500 in 1962. In addition, the University Grants Commission had also initiated a large number of fellowships scholarships.

6. Measures had also been taken for dissemination of scientific knowledge in both urban and rural areas. As against 17 Vijnan Mandirs in 1958 the number in 1963 was 50.

While reporting on the above achievements Prof. Kabir, however, admitted that "We are still far from realising the goal which you, Mr. Prime Minister, set before us in the Scientific Policy Resolution. Our deficiencies and shortages in various fields have now been highlighted by the recent emergency."

The deficiencies highlighted by Prof. Kabir were :

1. Inadequacy of allocation which during the Third Five Year Plan was going to be roughly Rs. 2,000 millions or on an average Rs. 400 million per year. China is reported to be spending annually Rs. 2000 million i.e. at least five times as much and had already achieved an enrolment of 800,000 students in science and technology in 1960 as against barely 200,000 in India that year.

2. The discrepancy between the amounts needed to achieve accepted physical targets and financial provision made for the purpose.

3. Inadequacy of foreign exchange for providing equipment and books.

4. Lack of adequate support to universities and non-official agencies.

5. Defects in the existing organisation of scientific research which deprived junior

scientists of freedom to initiate schemes of research.

6. Imbalance in the allocation of funds between the various agencies.

7. Lack of prompt and proper utilization of results of research by the Indian industry and defence.

The main recommendations made by the Conference of Scientists and Educationists were :

1. Allocation for scientific research should be roughly one per cent of the total national income.

2. Increase in allocation should be accompanied by measures to ensure economic utilization and the work of the laboratories should be project oriented.

3. An Advisory Body comprising the major Govt. agencies should be set up under the Ministry of S.R. & C.A., to ensure effective utilization of material and human resources and to determine priorities and programmes of research.

4. Greater attention should be paid to the requirements of the universities and other non-official agencies.

5. The Ministry of S.R. & C.A. should be alloted an annual amount of Rs. five crores in foreign exchange.

6. The structure of scientific services should be simplified to ensure greater mobility and internal democracy.

7. To ensure further collaboration with industry there should be greater exchange of personnel between the laboratories and industrial concerns.

8. Indian processes should be given preferential treatment by providing greater scope for indigenous design and fabrication of equipment and development of consultative industrial advisory services.

Dr. S.H. Zaheer, in discussing the organisation of scientific research in India, stated that allocation of funds for research was done on an ad hoc basis. Considerable imbalance existed between the support given to research by the Central and State Governments. The support given by the State Government was limited to only agricultural and veterinary sciences. Inadequate effort was devoted to the important field of the survey of natural resources. There were also indications that the areas largely subsidized were those where knowledge and experience accumulated by the research abroad could be utilized, while areas which required heavy commitments of research expenditure to build up natural resources were rather poorly subsidized. There was also an imbalance in the training of students in various disciplines and their utility to research organisations or institutions, leading inevitably to frustration and unemployment. Lack of a proper perspective and strategy had also resulted in meagre scientific manpower and talent being frittered away over large area of investigation with no benefit to the country.

It was in this context that the Prime Minister had earlier appointed a committee of scientists with Dr. Bhaba as chairman to look into the working of science in India and to suggest what might be done to help scientific work, how allotment of funds should be made and generally how economy in expenditure and use of scientific talent can be made by coordinating the achievements of science in the various agencies The report of this committee has not yet been made public nor much is known about its *modus operandi*.

Need for a dynamic approach

The Conference of Scientists and Educationists served the useful purpose of focussing attention on the scientific policy resolution. Their recommendations are constructive, useful and in certain respects far reaching.

The basic problems, however, are :

1. Gearing research to national industrialisation programmes ; and

2. Creation of scientific outlook in the citizen.

The Conference has neither discussed nor recommended measures for the solution of these basic problems.

Scientific research had evolved in India based on the British pattern, without any real consideration to the social conditions or social needs. Although this has succeeded in creating the background for science in the country i.e., facilities for research and a team of trained scientists, it however lacked in direction and purpose.

The organisation of scientific research has to be viewed as a productive process for bringing about industrial and social transformation. Like all production efforts the investment of science for national progress has to yield returns in terms of national betterment and better scientific outlook. For achieving most satisfactory results it is necessary to have maximum coordination in industrial production, technical improvement and research and development. This should not be left to the normal operations of chance, personal contacts and other similar factors as has been hitherto happening.

The allocation of funds for research, the scientific manpower requirement, placement and training of scientists and engineers and the strategy of research have all to be geared to the industrial and other production targets in our Five Year Plans. The pace of industrialization can be accelerated by mobilizing the technical skill in our national laboratories towards designing and fabricating indigenously the plants and machinery required for our development and for evolving substitutes for deficiencies in raw materials. This is already being done to some extent in the field of atomic energy. The second atomic power station at Rana Pratap Sagar is being put up with the help of scientists and engineers of the Atomic Energy Commission. Similarly the scientists and engineers of the Hindustan Fertilizer Corporation have installed the fertilizer plant at Rourkela. This approach should be extended to other fields as well and the scientists and technologists in the CSIR and other laboratories should be utilized fully.

Industrial development in the public and private sectors is by and large dependent upon foreign technical know how and import of plant and machinery, for which the country is paying a very heavy price. The cost of machinery as well as that of technical know how in India is very high as compared to the cost in the originating countries. This has been forcefully brought out by the recent statement of a U. S. Senator in the United States who said that the cost of the atomic thermal power station for Tarapore was much higher than the cost of similar plant installed in the United States. Although scientists and technologists from various laboratories are associated with the public sector projects their role has been mainly limited to providing data on the analysis of the raw materials, preparation of specifications for the plant and scrutiny of tenders. They do not have a major say in the matter for ultimately it is the foreign firms which have to give guarantees of operation. If during the subsequent operation of the plant a breakdown occurs, we have to depend upon the foreign engineers to set it right, as has happened in the Delhi C Power Station.

Although our scientists and technologists are capable of tackling much bigger jobs than they are actually called for, their talents are not being fully utilized due to the faulty system of administration. The present system does not allow our scientists to take initiative and learn by mistakes. It is however encouraging to see the Minister for Steel, Mines and Heavy Industry, bringing in a new and dynamic approach to the problem of utilizing Indian scientists and engineers ; his bold decision to go ahead with the Bokaro steel plant with the help of Indian scientists and engineers should be followed by other public undertakings and ministries.

The prestige of our scientists and engineers in our society, and hence the prestige of Indian science, will go up only when society is benefited directly from their knowledge and talent. Its extent will depend on the opportunities Indian scientists are given of contributing their bit to the implementation of developmental plans and to that extent the science and the scientific policy reso ution gets social recognition.

Science and Planning

There is an urgent need for having both short term and long term scientific plans which should be prepared in relation to our national developmental plans. Allocation of funds, allocation of projects, and priorities in work should be worked out in relation to the country's developmental targets. It is also necessary to fix up time targets for the projects and concentrate effort on the priority items, striking a balance between those which are essential but with small returns and those which yield large benefits.

The Planning Commission are understood to be attempting to finalize a plan for scientific research during the Fourth Five Year Plan and another perspective plan for the next 10 years. This they are doing by sector-wise planning, but the working groups constituted for this purpose do not seem to include the representatives of the public sector undertakings. Consequently, it will be difficult to eliminate the imbalance of allocation of resources to the various sectors and lack of identity of approach between the various working groups or exchange of information. This lack of an integrated approach to science planning for the country as a whole is not likely to lead to any fruitful results.

Draft of a Proposal

A possible and more rational procedure would be to constitute a panel of scientists associated with the Planning Commission who should divide the entire field of science into about 30 topics which may be as general as organic chemicals and petro-chemicals, drugs and pharmaceuticals, heavy engineering, heavy electricals, power, steel and metallurgy, etc. On each of these topics a conference for working out the details should be convened. The invitees to the conference, which may last from 3 to 4 weeks, should number about 300 and should include representatives of each of the following categories :

(*a*) Scientists chiefly engaged in research;

(*b*) People engaged in teaching at the university level;

(*c*) Representatives of the public undertakings or Government de-department concerned;

(*d*) Engineers from the industries;

(*e*) Economists;

(*f*) Representatives of the Planning Commission; and

(*g*) Representatives of the learned bodies or scientific societies.

The function of the conference should be—

(*a*) To determine the state of knowledge in the particular field of application in India;

(*b*) To prepare a list of problems to be solved in order to advance in the field of production or applicalion;

(*c*) To prepare a draft of what should be taught in technical or professional colleges and universities; and

(*d*) To consider the implication of the programme in terms of men and materials. The integrated scientific plan for ten years should then be worked out with the appropriate ministries and Planning Commission in a period of one year.

The Need for a Scientific Policy Commission

The plan for science cannot be effectively implemented unless there is better coordination and understanding between the major scientific organisations in the country, *e.g.*

1. The Atomic Energy Commission;
2. CSIR (Council of Scientific & Industrial Research);
3. Defence Research Organisation;
4. Indian Council of Agricultural Research;

5. The Indian Council of Medical Research;

6. The Universities; and

7. The various industries and undertakings.

At the present moment they are functioning almost in complete isolation of each other and their efforts are fragmented. Duplication of effort, rivalry and constant migration of scientists from one organisation to the other are all leading to an unhealthy state of affairs.

There is therefore an urgent need for the formation of a Science Policy Commission for directing scientific research on the problems most important to the development of the country and taking instruction from and reporting to the Cabinet. At present the need for adequate coordination is particularly emphasised by :

(*a*) The need to mobilize science to achieve the various targets set out in our developmental plans.

(*b*) The need to establish priorities in allocation of finance and personnel.

(c) The need to ensure adequate expansion of scientific work in fields at present neglected.

The Government is committed to the scientific policy resolution. This resolution cannot be fully implemented unless it is followed up by an equally positive step, namely the setting up of a Science Policy Commission.

The terms of reference, composition and powers of this top level Commission are very important and this vital matter should not be left entirely in the hands of the administrative machinery of the Government.

The functions and responsibilities of such a Commission should cover the following :-

1. Organisation of scientific institutions and undertakings;

2. Planning and coordination of scientific research in each area;

3. Integration of plans and activities in science with national plans and programmes;

4. Effective utilization of scientific research in the various undertakings ;

5. Control and allocation of research funds ;

6. Establishment of working standards and grants for students ;

7. Development of training programmes ;

8. International exchange and collaboration; and

9. Proper assessment and utilization of scientific manpower.

The Commission should be assisted by a central scientific office at cabinet level. An alternative suggestion for a Ministry of Science which has been made in certain quarters could also be considered. Formation of a Ministry of Science will have the advantage that unlike the commission it will have exclusive powers & hence its decisions can be more binding.

Creation of an All India Scientific Service

The need for an all India Service cadre in scientific vocation needs no emphasis. Several expert committees and individuals have recommended to the Government for organising such a Service. On an anology, the UK pattern, where the Scientific Civil Service has been rationalised taking into consideration the specialists requirements, could be considered as a nucleus and specially modified for the Indian conditions.

Formation of service on All India basis will undoubtedly benefit the Government in that a Pool of experienced scientists becomes available with their specialised backgrounds and will also open for the scientific worker

a wider promotion zone. In other highly advanced countries a pattern has emerged in regard to the recruitment of scientists to the service cadre wherein there is provision for two sets of cadres, viz. a junior and a senior cadre and a gradual and progressive merging of the junior cadre with the senior one. The scientific worker in a field of specialisation gets a seniority irrespective of the location of the vacancies. Introduction of such system is an immense advantage as personnel with proper backgrounds and experience and necessary incentive to specialise in the branch of science are available to take responsibility in similar and anologous fields under the Government.

The Cultural Values of Science

The scientific policy resolution also aims at making the man in the street a scientifically-minded citizen. This is necessary firstly to make him understand his role in modern industry, the way in which the world is changing, and to enable him to exercise his democratic rights on the basis of knowledge instead of prejudice; and secondly, to enable him to draw benefit from the general cultural value of such understanding as an individual. A broader and more general education in science for every one is an imperative necessity, not so much training in special branches of science as an understanding of the scientific basis of every day observations concerning food, health, heredity, etc. and an appreciation of the value of factual data and experimental methods. There remains much to be done in this field. Some of the measures which can be considered are :

1. Establishment of evening educational classes.

2. Multiplication of the science museums, set up by the CSIR, so as to cover major towns and cities.

3. Increase in the number of scientific films and documentaries produced by the film division and encouragement for formation of science film clubs.

4. Science programme broadcasts should become more frequent and several hours a week should be devoted to debates and special features covering the following subjects :—

(*i*) The history of science, scientific discoveries; the lives of scientific workers; the progress of science and its impact on life

(*ii*) Talks designed to explain the scientific basis of natural phenomena.

(*iii*) Applied science covering food and health and social habits, housing, agriculture and industry.

(*iv*) Scientific aspects of current events.

5. Set up an institution of scientific information which could keep records of research progress and of scientists able to give information on special topics. It will also release authoritative scientific news to the press and radio and assist in the dissemination of scientific information, exhibition, films, and other types of publicity.

Science in General Education

One important purpose of education is to fit the people to a realistic approach to life so that they can fully adapt themselves to the environment in which they are going to live. It can be best achieved through the teaching of science. To a large extent the present educational system is a relic of the British colonial rule and has not been modelled for a growing nation with a quick developing industry. Not only is the science teaching inadequate but also often ill chosen. The aim in science teaching should be to inculcate an appreciation of scientific method of observation and the analytical study of facts in testing hypotheses. This would involve teaching children to observe carefully, to record their observations systematically and faithfully, and to accept the principle that no prejudice or personal opinion should outweigh the factual observations.

They should have a grasp over the fundamentals responsible for the modern industrial and technological development and should be able to fully appreciate the impact

of scientific and technical discoveries on the economic and social development of our country.

The Training of Scientists

The main sources of science graduates are the universities, although not inconsiderable number also comes from the technological institutions. The problems faced by the universities have already been highlighted by Prof. D. S. Kothari and his recommendations are awaiting implementation.

Science and Administration

Our administrative machinery is not geared to the modern needs of a growing industrial country and continues to be based on old colonial traditions. There is an urgent need therefore to have scientists active at all levels of the Government. The administrative services should be permeated with a scientific spirit which can be inculcated at the time of administrative training. It should include courses on scientfic thought and method, statistical techniques and mechanical means of storage and retrieval of information. It would be particularly important for the administrator to have a broad technical understanding of industrial and commercial practices. This would fully equip him to deal with social and industrial problems quickly and call for expert advice at the proper stage. Scientific outlook in life would reduce or even eliminate "bureaucracy" and bring in a more human approach.

Conclusions & Recommendations

The Scientific Policy Resolution recognises science as a powerful tool to bring about industrial and social transformations. The obligations of the Government, the citizen and the scientist to each other and to society as a whole have to be properly understood. The task of the Government is to relate its social objectives to the material and factual possibilities, and the mobilisation of scientific advice and effort is a prerequisite. The organisational steps suggested for securing the full use of science are:

1. Formation of a panel of scientists in association with the Planning Commission for evolving a Ten Year Plan for science;

2. Formation of a Science Policy Commission responsible to the Cabinet for ensuring co-ordination between different scientific agencies and for effective utilization of material and manpower resources; and

3. Creation of an All India Scientific Service.

Since in the ultimate analysis responsibility rests on the citizen—as in a democracy it must—then the citizen must be scientific minded and aware of the technical as well as the social aspects of the problems. The various steps for achieving this objective are suggested below:

1. Establishment of spare time educational classes;

2. Increase in the number of science museums;

3. Exhibition of scientific films and formation of scientific film clubs;

4. Increase in the space and time given to science news coverage in the press and radio; and

5. Establishment of an Institute of Scientific Information.

Other measures suggested are :

1. A reorientation of science policy in schools;

2. Science education in the Administrative Services;

3. Employment of scientists at different levels of government machinery.

Scientists have a positive and vital role to play in the industrial development and the general educative processes. They must understand the Government's social objects and must develop greater understanding

of social and political problems. The ultimate responsibility for securing a progressive policy and the full use of science depends not on scientists alone, but on every citizen.

Scientists have need not only to express their views as individuals but also have a responsibility to act collectively as an advisory body to the Government. The Association of Scientific Workers of India has attempted this task since 1947.

In conclusion it is suggested that the following working groups of scientists, educationists, public men, Association of Scientific Workers and Association of the Science Teachers be formed to study the various aspects of the Scientific Policy Resolution.

1. Science and Planning
2. Science Policy Commission
3. Science and Education
4. Popularization of Science

The composite report of the working groups should be prepared in consultation with the representatives of the Government and the Planning Commission and implemented.

References

1. Opening remarks of Prof. Humayun Kabir, Minister for S. R. & C. A. at the Conference of Scientists and Educationists, 4-5th Aug. '63, New Delhi.
2. Recommendations of the Conference of the Scientists and Educationists, New Delhi, 1963.
3. Zaheer, S. H., Address to the Indian Science Congress Session, Delhi, 1963.
4. Kothari, D. S., Science in Parliament, 1964.

SCIENCE NEWS

Automatic sorting, counting and bagging of coins

A machine that automatically sorts seven denominations of coins, counts them numerically and by value, and bags them in predetermined amounts at an average rate of 250, 000 in an eight hour day, has been developed in Britain.

It also prints out totals, and has provision for the inclusion of information about bank notes, tokens and vouchers, allowing their values to be added to the total of each run and to the grand total.

Coin thickness does not affect the operation of the machine. Thin or partially damaged coins can be handled without special adjustments.

Five hundred coins at a time are fed into a chute at one end of the machine and come out counted, sorted ane bagged at the other end. Their passage is detected by photo-electric sensing heads and their value is computed electronically.

Operation is continuous, and when a bag is full a buzzer sounds, a red lamp lights, and the coins are automatically diverted into a second bag. Counters indicate how many bags of the various denominations have already been filled, and the value of the partially-filled bags.

(Brit. Inf. Ser. BF 53)

* * * *

Improved corrosion protection with new process

A method of applying paint coatings by electro-deposition has been introduced into the production plant of a British factory. The coating technique, said to give greatly improved corrosion protection, is expected to find wide application in the car industry and general industrial field.

It is believed to be the first technique of electro-deposition of paint to be used on a production line in Briton. It is now being used at works where an ammonia-stabilised water-borne paint is priming car petrol tanks. Experimental plant for applying the process to car bodies and to a small-parts line is also in operation at the same company.

The process is essentially a dipping one, in which an electric current is passed between the work piece and another electrode. The resultant coating consists of a high viscosity coagulated film which adheres strongly to the steel surface even before stoving. Only the resin and pigment are deposited (the water being excluded by electro-osmosis), which eliminates the possibility of runs or sags. The voltages necessary to achieve a satisfactory film are below 100 volts DC. Deposition can take within a period of one minute and drain-off is claimed to be very rapid.

Other advantages claimed for the new technique are : fully automatic operation including the facility of controlling film thickness, full utilisation of paint, good coverage of sharp edges without film recession, penetration into welded seams and effective and irreversible coverage of partially screened areas such as the interior surfaces of box sections.

(Brit. Inf. Ser. BF 53)

* * * *

Versatile steel-working machine

Improved design and manufacturing methods have allowed a London firm to reduce substantially the price of a universal steel working machine.

Using four separate work stations, the machine can punch, shear and notch mild steel up to $\frac{3}{8}$ in. thick and also crop angles tees, channels, girders and other sections, including bevel cutting of angles and tees up to 45 degrees. Special tools also allow tongue and louvre punching, bending and forming, slotting and nibbling.

The machine is powered by a 2 h. p. electric motor, and delivers a maximum punching pressure of 35 tons and a maximum cropping pressure of 60 tons at a rate of 35 strokes a minute. It is simple to operate by either foot or hand controls.

(Brit. Inf. Ser. BF 53)

* * * *

Power from the sun

The concept of power from sunlight comes closer to commercial reality with the development in Britain of multiple solar cells which have virtually unlimited life and can withstand extreme climatic conditions.

The solar cell system for converting daylight into electric current for storage in secondary batteries became generally known when it was used to provide power for electronic equipment in satellites. What the British firm has developed is claimed to be the first efficient and economic device for doing the same job in remote land or sea situations at considerably less cost than conventional systems.

The new system is based on a large-area silicon photo-voltaic cell unit known as type MS 40. It is composed of four individual cells connected in parallel to a common heat sink. An integral moulded cylindrical lens encapsulation increases the effective solar radiation collection area. This, together with other design features, gives a solar spectrum conversion efficiency of about 8 percent at ground level.

A trial assembly of the MS 40 modules has just been shipped to the Persian Gulf where it will be used to power off-shore oil drilling. Others are being used to provide light for marine buoys and other navigational aids. Cost of power when using the new cell is one penny per watt hour—based on capitial cost of the equipment spread over five years. Compared with conventional power generation systems using commercial fuels and requiring frequent maintenance, running costs of the solar power system are said to be negligible.

Other uses envisaged for the solar power system are rural telecommunications, telemetry systems, unattended weather stations, solar powered clocks and repeater stations.

(Brit. Inf. Ser. BF78)

* * * *

New device for ultra-High Frequencies

A new solid-state device, at present in its early stages of development, offers the prospect of an attractive alternative to the transistor for use at ultra-high frequencies, where it is claimed to have a greatly superior performance.

Known as a "transluxor", the device operates at a temperature of about minus 196°C, and was on show to the public for the first time at the Physical Society Exhibition in London recently.

Although its properties are generally similar to those of a transistor, the transluxor differs in that, as its name implies, it is light-operated. The current is carried by photons instead of electrons, and as it is less limited by the usual transit-time effects, operation at frequencies well above a thousand megacycles is expected.

(Brit. Inf. Ser. BF 78)

* * * *

Annual Meeting

of

the Association of Scientific Workers of India held at New Delhi, on March 17, 1964

Presidential Address

by Dr. N.P. Gupta

Fellow Scientific Workers, Ladies and Gentlemen :

The Association of Scientific Workers of India completes its 16 years of existence. Throughout these turbulent and difficult years, all of us in the Association, looked forward to its Annual meet to have an opportunity to listen to Prime Minister Nehru, who was ever willing to accept an invitation from us. He is our Founder President. Over the years he has inspired a whole generation of scientific workers to stick to the organisation and keep it alive and going. To-day our good wishes go out to him. May he live long and continue to guide the destinies of our people for many more years to come.

The Association is privileged to have Mr. Chagla, Union Minister for Education amongst us. Mr. Chagla needs no introduction to this audience. The whole nation particularly, the scientific workers, are watching with optimism the fresh wind of change which has started blowing across the fields of education and scientific research since he took over its charge. The Association is indeed grateful to him for finding time for us out of his extremely busy programme.

I would, on this occasion, make a special mention of the role Dr. S. Husain Zaheer has played in our Association. Throughout its difficult period of existence, Dr. Zaheer has steadfastly stood by the Association, inspiring young workers to develop a national and international outlook. To-day he is the Director-General of an organisation which employs the largest number of scientific personnel in the country and which constitutes an image of science in India. His national outlook and his views of scientific development and utilisation of science are well known. For the first time, the young scientists are already feeling the impact of his ideas. The scientists are beginning to get the place of respect which is their due. The Association is indeed proud of having Dr. Zaheer as an active member. The scientific workers are with him in any progressive task that he may formulate for them.

ASWI in Retrospect

Allow me to go back a little and recall the period when our Association was founded. Immediately after the Second World War, the scientists and scientific workers formed such Associations in many countries all the world over. The nuclear age—with its tremendous destructive as well as constructive potentialities—had just begun making the scientists ever more conscious of their role in society. A new world was emerging before their very eyes. Powerful revolutions were sweeping across India and other Asian countries affecting nearly one half of humanity. The very foundations of the imperialist system had been shaken and problem of development of the then 'backward' nations was on the agenda. The 'cold' war between the two post-war power blocs was just beginning, threatening the world with a nuclear holocaust and destroying all hopes of the colonial countries to develop their science and technology which would make them independent politically and economically.

At home the era of our independent India was about to begin. Its industrial base was slender. Vast majority of its people were rooted to agriculture. Increasing population and burdens of Second World War had created wide spread poverty, hunger and want.

The Association of Scientific Workers of India was formed under a historic international and national setting. From its very inception, like science itself, the Association had a world outlook. It was affiliated to World Federation of Scientific Workers. At the same time it anticipated a tremendous development of science, technology, higher education and industry in a free India. The Association, therefore, aimed at organising the scientific workers and to look after their economic, social, professional and other interests. At the same time, conscious of the role of scientists in an under-developed country, the Association aimed at taking all steps necessary for the effective use of science and scientists for the welfare of society as a whole.

The Situation Now

Mankind everywhere faces two main problems both of which are gigantic in proportion and realisation—the achievement of world peace and elimination of poverty, hunger and disease. Scientists all over the world occupy key positions in solving both these problems. Major world powers, the United Nations, innumerable international organisations are engaged in the task of finding solutions to problems of disarmament and world peace.

Our Association is one with the Government in its support for all measures which reduce international tension and for general and complete disarmament. The Association fully supports the Moscow Test Ban Treaty and negotiations as a basis for settlement of outstanding international disputes.

Problems of far greater magnitude face mankind with regard to the underdeveloped part of the world. How closely these are related to world peace and disarmament was symbolically represented in Geneva by the UNCSAT Conference (1500 scientists, 1836 papers) in session in the same building where the 18 Nations Disarmament Committee held its meetings.

Advanced technology and science has revolutionised living standards in developed countries. But the poor countries have remained poor. Disparity between the rich and the poor countries is thus on the increase. The rich countries constitute only one third of the world. In poor countries, the population rise seems to outstrip whatever advance is made. Nine tenths of world's scientific personnel belong to industrially advanced countries while their population is only 14 percent of the world's total. Of world's 350 million families engaged on agriculture, more than 70 per cent still use only pick-axe or a wooden plough. Another 25 per cent use an iron plough driven by cattle or horses.

On the other hand, less than 7 per cent of U.S. labour force is devoted to agriculture. Less than a million farms supply all the food needed by U.S. towns and cities. Acreage and man hours are continuously being reduced and yet technology enables each farm to produce 12000 calories per day per head—enough to feed a population of 1000 million. Per capita income in Europe and America is £400 but for the vast population of Asia and Africa it is less than £40. Expenditure on research and development is an index of progress of science and technology and industry. In U.S.A. it is 3 percent of the gross national income. It is 2 percent in U.K. India allocates only 0. 3 percent for this purpose.

The situation calls for a solution because the resources of our planet are sufficient. Existing scientific knowledge is adequate for material goods to forge ahead of population—the only guarantee for a sustained lowered birth rate. Experts feel that a radical change can be achieved if 10 to 50 billion dollars per year are available for poor countries for a period of 20 years. This amount is less than 30 per cent of the expenditure on armaments. Diversion of a mere 1-2 per cent of the gross national income of the advanced countries can considerably increase the tempo of development.

National Situation

Sixteen years of freedom have also transformed the face of India. A total of Rs. 10,110 crores has been invested in both public and private sectors in the first two Five Year Plans. The Third Plan envisaged a total outlay of Rs. 7,500 crores. Taking the last 16 years as a whole, advance has been recorded on all fronts, irrigation, power, transport, minerals, agriculture, industrial goods and such key industries as steel, coal mining, petroleum and heavy chemicals. Social services have expanded. National income was up by 42 per cent in 10 years.

India looks ahead through its perspective planning into the coming seventies and beyond. National income would rise from Rs. 14,500 crores at the end of Second Plan to Rs. 19,000 crores at the end of the Third. It would shoot up to Rs. 25,000 and Rs. 34,000 crores in 1972 and 1977 respectively. The total outlay on science and technological research would also rise. At 1 per cent at the end of Third Plan, it would mean Rs. 190 crores in 1967, Rs. 375 crores (at 1.5 per cent) and Rs. 680 crores (at 2 per cent) in 1977.

New developments have taken place in science and technology in India during last 16 years. The demands of modern India as an industrialised state trying to establish a socialist pattern of society has led to a vast expansion of scientific and technical institutions for research and teaching and technologists in the industry.

An extensive network of higher scientific institutions for research and teaching has been set up.

Over 57 universities train new cadre and do research in pure sciences. The CSIR has more than 30 national laboratories and numerous research centres and units engaged in applied and fundamental research in relation to industries. The Atomic Energy Establishment comprises numerous divisions covering almost all aspects of reasearch requiring the use of radio active materials. The Indian Council of Agricultural Research with its Central Institute in Delhi and large number of research centres in States covers all aspects of scientific know-how on food, cash and plantation crops in addition to forestry, fisheries, animal husbandry and soil conservation. The Indian Council of Medical Research and Institutes under the Ministry of Health manage medical research. Defence Science Organisation is now in the field and has set up large number of science institutes. Institutes of Technology and Engineering train engineers and do research in their problems. Ministries own their scientific research institutes on irrigation, railways, minerals and communications. Other institutions concerned with statistics, standardisation, instruments and productivity have been set up. Many industries have their own research institutions.

Again if expenditure on scientific research is taken as an index of growth of science and technology, the rate of increase has varied from 15-17 per cent per annum. In 1952-53 the total expenditure amounted to Rs. 122 millions. In 1961-62 it was estimated at Rs. 469 millions.

In 1962 India had roughly 50,000 post-graduate scientists, 75,000 graduate engineers and 40,000 medical graduates. Thousands of young scientists are working in these institutions and India could be justly proud of the way in which they have mastered methods and scientific technique. The future of India depends on this generation of scientists which is now at its post.

On the debit side, during a decade of development, the population increased by 21 per cent wiping out much of the advance made. The rich became richer and the poor poorer. It was admitted that 270 million people were able to spend only 42nP. per day. The Government is appointing a Monopolies Commission to enquire into concentration of wealth as a result of development. The allocation for scientific research and development is a meagre Rs. 200 crores for the entire Third Plan period.

The Chinese aggression against India now presents itself as a combined move by China and Pakistan. This threat to our country has created a new sense of awareness among all including scientific workers. The Association of Scientific Workers has

pledged its full support to the Government of India in its determination to defend the borders of our motherland and the integrity of our country. We in the Association have been conscious that all was not well with scientific development. Our Association devoted to look after the interests of scientific workers in the laboratories in all types of institutions continued to be under a cloud. After an initial spurt of activity, its membership over a decade dwindled. Nothing could be more tragic than lack of support and even hostility by some for an association which stood for an organised expression of scientific opinion for the use of science for people's welfare.

The year 1963 marked the turning point of this process. The Chinese attack, the mid-term appraisal of the Third Plan and the new awareness made the scientific workers more vocal. The growing discontent of the scientists of the younger generation was reflected in the Daily Press. Our Association took the lead in organising a small symposium on the state of scientific research in the country in May 1963. Prof. Mahalanobis initiated the discussion and characterised the state of research as depressing. He pinned the blame on meagre allocations. Others who joined in the discussion put the blame on many other factors. In August 1963, a two day conference of scientists and educationists was organised by the Ministry of S.R. & C.A. Almost all who came to attend admitted that little has been done to implement the Science Policy Resolution of the Parliament adopted nearly five years ago. But even this conference succeeded only in partly posing the problems facing the scientists and scientific workers.

It is not merely a coincidence that precisely during this year, the Association is again forging ahead organisationally. Over a dozen new branches have been formed. Scientific workers from all over the country are joining the ASWI soon to become truly national and representative in character.

Democracy in Science Institutions

India is very proud of democratic structure of society. But in contrast, the administrative set up continues to be almost similar to one which we inherited from the British colonialists. The bottle-necks, delays, false alibis and corruption are an integral part of this structure.

Unfortunately in science institutions, universities, colleges and research laboratories, this administrative system has done the greatest harm to the cause of rapid development of science and particularly in determining its quality.

"Intellectual progress demands the maintenance of the spirit of free enquiry. The pursuit and practice of truth regardless of the consequences has been the ambition of the Universities."

Again—"Professional integrity requires that teachers should be free to speak on controversial issues as any other citizen of a free country. An atmosphere of freedom is essential for development of this morality of mind."

These words from the Report of the University Education Commission are equally true for research laboratories. Scientific progress demands a questioning attitude and "continuous clash of opinions" on matters academic and scientific in the class room, lecture halls and laboratories. Scientists are revolutionaries by the very nature of their work, where the new continuously replaces the old sometimes slowly but some times suddenly when a major discovery ends an era or heralds a new one.

The Association of Scientific Workers of India has been in the forefront of the struggle for a proper democratic atmosphere in science institutions and universities. At our May 1963 symposium "Bossism" was named as an important impediment to scientific work. In August, Prof. Kabir, the then Minister of Education referred to it. In his address to Indian Science Congress, Dr. Zaheer put it mildly when he said that there is tradition of setting up bureaucracy rather than schools of work. The fact is that peculiar feudal atmosphere has prevailed over the years in many places. Annual entries in the 'confidential' of teachers and scientific workers hold young scientists in submission. The 'confidential' always hangs like sword of Democles over the head of the scientific workers. But the young scientist

does not lose his head. The spirit of free enquiry, the 'clash of opinions' is sacrified instead.

It is the science itself which is demolished in the process and the whole nation suffers as a consequence.

Democracy in a science institution is not a mechanical transfer of political democracy. Its function is to release the creative abilities of all working scientists so that optimal results can be obtained. A scientist director who is competent in his specialiy can guide and lead the work of a small team of scientific workers. In another situation he may only be required to co-ordinate the work of the team. It is indeed too much to expect that a Director should combine the qualities of an eminent scientist and those of a business executive. Problems generally arise when Directors and Heads of Departments start imagining that they indeed possess both the qualifications.

Ideally speaking a director should have sufficient knowledge of the research areas which he is directing. He should be source of inspiration, encouragement and should be able to act as a leader in any laboratory under his control but limiting himself to general lines of approach. Most of all, he should not be sensitive to criticism and should be able to encourage full and frank criticism of the work being done.

The situation is serious. For over a year we have on our agenda a resolution sponsored by one of our very active and responsible branches that the system of directorship be abolished. An able scientist devoted to his work they argue—if appointed as a director would be a loss to Indian science. We have few really competent scientists and the nation would perhaps use them best through their undivided attention for research and training of new cadre. On the other hand, appointment of a second rate scientist or a non-scientist Director can only lead to constant interference in the work of the scientists and extension of well known 'redtape' methods of the Secretariat to Science institutions. Not all agree to this proposal. The Association has, therefore, decided to open a forum of discussion on this subject in our journal.

Other suggestions are also before the Association. The CSIR, it is understood, has already approved of the idea to establish staff councils. Some laboratories have even formed them perhaps only in name, the real power still remaining with the Director. The Director could be asked to act under advice of the staff council consisting of all heads of departments and project leaders. After all no Director could claim to be superior to the collective wisdom of a dozen of his senior scientists. A record of these proceedings be made available to higher bodies. But extension of democracy should not be stopped at this level. Each department in turn should have its own staff committee. The head of the department or the project leader should work under advice from such a departmental committee. Again proceedings of such committees should be recorded and made available to the Institute Council.

These are only suggestions. There would be others. But we must do something to unleash the creative abilities of our young scientists by providing a "proper atmosphere"—an elusive but absolutely essential parameter for better scientific research. Let the young minds—most creative before the age of 40 years—be released from bondage. May be that an essential component of the new parameter would have been provided in the process.

Planning of Scientific Effort :

Planning is necessarily imposed on all underdeveloped and emerging countries because resources are limited and foreign exchange even more so. The pace of development has to be rapid. People can not wait for fruits of their labour to be ready for harvesting in the next generations. Planning involves priorities, certain measure of hardship, so that the burden of capital formation can be distributed according to capacities of different sectors of population to pay. The Third Plan was thought to be the first phase of building a self reliant and self generating economy for India. It became essential to ensure a continuous and adequate supply of man power, enough economic wealth to finance all imports and a level of research which would sustain a rising tempo of science and technology.

As scientific workers we are mainly concerned with planning of science and scientific effort in the country. It is indeed a sorry state of affairs that vast majority of working scientists have no say in policy making or programming of research or in shaping plans at any stage. The plans are made some where in high offices arbitrarily. These plans are then imposed on the scientific workers, who obviously cannot be persuaded to have their heart in them through executive orders.

Innumerable instances can be given of such planning from above. The problem of allocation of funds for scientific research was highlighted by Prof. Mahalanobis last year at the August Conference on science policy. The conference recommended that it should be immediately raised to one per cent of the national income which would mean increasing the current outlay by a factor of three. The total outlay for development of scientific research being Rs. 200 crores for the Third Plan period, another Rs. 400 crores have to be released immediately. The Chinese are said to be spending nearly five times the amount which India spent in research and development of science. It is not so much a question of socialism or even of a Welfare State. The increased tempo of scientific effort has become essential for our very survival as a nation.

Another example is provided by establishment of a chain of national laboratories for scientific research on industries in the public sector and the corresponding industries being in the private sector. This contradiction has led to absence of any integration between laboratories and the industries.

Planning for industrial development in private sector almost invariably includes foreign participation either through equity capital or on the basis of royalty payments. The Indian research worker or the laboratory is neither consulted at the time of surveying nor when the industry is being licenced. There is no programme for making use of Indian scientists at all stages so that they could determine the extent of foreign collaboration and the time period needed for Indian research workers to improve on the foreign know-how. There is no plan as yet to use Indian science and research as lever for India's industrial development. Liaison and co-ordinating departments only increase file work. Practical measures must immediately be taken to devise ways and means to overcome this chaos.

Scientific research and effort is fragmented and lies scattered under various union and state ministries, autonomous bodies and Universities. Duplication of effort, even competition and constant and increasing pressure on limited foreign exchange and scientific talent has not led to very desirable results.

Research on medical and public health problems, for instance, lies scattered between ICMR, ICMR Institutes, Health Ministry Institutes, CSIR, AEE, Medical Colleges and various state establishments. Sometimes a kind of parallel development is noticeable without serious efforts at integration to avoid duplication.

Other areas which show a lopsided development have been pointed out. Over 90 per cent of the research expenditure on science is done by CSIR and the AEE. An eight-fold increase in the allocations for defence research in the wake of Chinese attack and emergency could have been avoided if better and integrated planning was available. The research activity of State Governments was limited mainly to agricultural and veterinary sciences. It is astonishing that even to-day, in many states, the Directors of Agriculture and Industries are non-technical civil servants.

The Association firmly believes that there is an urgent need for a Science Planning Commission to be formed to review and assess the situation in all sectors of scientific activity and prepare blue prints for a 20 year period. But more than that unless the people—the scientific workers—are taken into confidence at all levels, nothing much will come of this so called planned scientific effort which goes on in the country to-day.

Socialism and Indian Scientists

India is committed to establish a socialistic pattern of society. The Indian Parliament as far back as 1954 accepted it as India's goal of socio-economic achievements.

Socialism—would naturally mean a tremendous development of science, technology and industry without which a welfare state cannot be established. The scientific workers occupy very important place with regard to the preparatory stage, the stage of transition and when a socialist society is finally established in India.

The Association of Scientific Workers of India has been working all these years for the most effective use of science and the scientific method for the uplift and welfare of the Society. The Association is keen to "ensure that national resources of the country and also the results of scientific research and development are utilised in the best interests of the community as a whole".

Here too difficulties and problems arise. The working conditions of scientists and scientific workers, their pay scales, emoluments, their place in a socialist society should be such as to ensure that the best talent of the country is attracted towards the research and other institutions of higher learning. But situation in this sector is distressing.

In 1958, the Parliament, conscious of the role of scientists in making of a free independent strong India passed a magnificent Science Policy Resolution. It sought to foster, promote and sustain science by all appropriate means, to ensure a steady supply of research scientists of highest quality, to encourage training of personnel, creative talent and individual initiative in all spheres. The scientists were promised good conditions of service, a place of honour in society and their constant asssociation with formulation of policies. Five years passed by. Apart from creation of a few National Professorships, Scientific Pool Service and Schemes of Fellowships, nothing else was done to implement the Science Policy Resolution. Another conference was called in 1963. After a frank acceptance of failure in many sectors, its recommendations too are still awaiting official publication. Many doubt if the Universities, State Governments and other autonomous bodies, which were poorly represented at this conference, would even accept the "recommendations". An Advisory Committee was formed by the conference to examine the steps to be taken for implementing the recommendations. Scientific workers are anxiously waiting for something to happen. We now hear that the committee has been abolished altogether.

The scientific workers are not satisfied with such half hearted attempts to improve their lot. One of the major question is Unified Pay Scale which they have been demanding for years. The promotion of a scientist, in a University or Institute should not depend on creation of a vacancy. It should depend upon his work which should be assessed by suitable democratic procedures. This principle of promotion has to be accepted by the Government, the institutes and universities.

Abolition of multiple grades would help to abolish the feudal atmosphere in institutions of higher learning. It would prevent constant friction between senior and junior scientists. It would prevent constant movement of scientists from one place to another in search of jobs with higher emoluments. This would avoid friction with authorities who always are keen not to forward any application. It would also produce an atmosphere of equality so conducive to establishment of a socialist society. The young scientists would be able to work without let or hinderance during the period of their maximum creative abilities.

There are innumerable other small demands concerning the working conditions which the Association presents before the authorities from time to time. I may take this opportunity to refer just a few of them.

A large number of scientists are engaged in para scientific departments of science institutions as information scientists in Publications Dtte, Survey Section and National Register Unit and other sections of CSIR, and as technologists in laboratories and pilot plants. For some reason, a distinction is made between scientists doing work in laboratories and those working in such para scientific departments. This is unjustifiable. It has already caused considerab'e hardship to these workers. This needs to be rectified immediately.

Another problem is that of opportunities for improvement in one's qualifications. Adequate provision should be made so that

all scientific personnel particularly at the lower levels and among the technicians get study leave or a chance to join colleges after working hours. It should be the duty of the employing authorities to constantly examine the situation and help their employees to improve their knowledge.

So far I have emphasised the claims which the scientific workers make on the Government and other agencies who employ them. But our Association is a Trade Union of a different kind. We have never been nor shall ever be satisfied by making claims. We always look around us and we are equally perhaps more conscious of our responsibilities to science, to the Government and to our people. We ask for democracy in science institutions but we are aware that we should jealously guard against its misuse. We ask for a share in planning; we know that if scientists at all levels are asked to participate in making the plans, it would be their job to complete the targets and fulfil the plan. We ask for full implementation of the Science Policy Resolution and a place of honour for scientists at all stages of transition towards a socialist India. But we know that we are not asking to be converted into a privileged class sitting in ivory towers divorced from the needs and moods of the people. But no true scientific and technological developement is possible which is based on an entangled mass of frustrated and angry young scientists and technicians.

Independence and Non-alignment

India is politically independent. We are struggling to become independent economically too. But it appears we are still in the colonial stage in scientific development. Sixteen years after independence, we are materially and, worse than that psychologically, still dependent on others for advanced scientific and technical know-how. This, in turn, makes our industrial development dependent on other countries. Political and other implications follow.

There are many reasons for such a state of affairs. Poor quality of research due to lack of proper atmosphere makes our higher scientific effort second rate and consequently wasteful. One major factor, in addition, is psychological dependence on advanced countries using English language. Apart from training of a few engineers and occasional cultural exchange of students, we in India have made little effort to be truly nonaligned in the scientific sphere. Let us remember that English speaking countries do not have a monopoly of scientific and technical know-how. Extensive facilities for learning other foreign languages should be provided in all institutions of higher learning. Scientists acquiring knowledge of languages other than English should be given some allowance to encourage others to learn them. Bilateral contacts with all countries willing to help us, should be established for a large programme of exchange of scientists and students. Scientific and technical know-how should be pooled from all sources. An intermingling of scientists, training in different countries on a project is bound to produce very useful and fruitful results. The Association is keen that for the same reason dissemination of scientific and technical information from non-English speaking countries should be undertaken on a large scale so that scientific workers can be kept informed of new developments. We have poorly developed science information services. A well planned programme of translations of scientific material from other countries has to be set up. A large well equipped National Institute for Scientific Information is long overdue.

Non-alignment in the political field is an essential and basic policy. It helps our country to maintain its independence, achieve maximum rate of economic development and effectively contribute towards world peace. A non-aligned attitude in scientific field is an equally important factor in helping us to become independent in scientific and technical know-how. For the same reason, it is necessary for us in this country to forge links with scientists of other non-aligned countries to work together. The Association has already taken steps to invite scientists of Asia and Africa at the National Symposium to be held in a few months time.

Tasks before ASWI

One of the major tasks before us is to organise the scientific workers at all levels

We have to learn from and educate them about their rights and privileges and duties and responsibilities. A democratic society oriented towards establishment of socialism would need the organised strength of different sections of our people. The scientific workers can be no exception.

Needless to say that we have to enrol more members and establish new branches and units. The time is short and the Association has heavy responsibilities both towards scientific development and the scientists themselves. May I emphasise that scientific workers in departments of social sciences and institutes are also eligible for Membership of our Association. In point of fact, we should make a special effort in enrolling them as members.

I would appeal to all members of ASWI to study the problems of technicians and enrol them as Associate Members in the Association. Our active members could also help the technicians in forming their own Associations which may later get affiliated to ASWI. There is also urgent need for our Association to study the questions of offering affiliation to gazetted, non-gazetted staff associations and teachers organisations so that all scientific workers can unite under a single federation.

The Association should sponsor joint conventions and conferences with other organisations like the University Teachers' Federation to consider problems of common interest. The Association has also to pay considerable attention to the new science graduates and research scholars who are just entering the profession. Our journal and our activities should inspire the new generation which alone can complete the unfinished tasks.

There are other tasks too which can be immediately taken up by the branches. The Association should prepare a list of places of employment for scientific and technical workers. Through this activity, we could help young scientists in search of jobs and also expand our organisation.

There is need for collecting a list of all such bodies, in the states and Centre, which may be affecting the interests of science and scientists. The Association of Scientific Workers would seek representation on all such bodies to participate in their deliberations.

We are bringing out monthly journal. There is need to expand its activity. I think we could easily make a modest beginning with a "Science News and Feature Service" which may help our publications, popularise science and also help the Association financially.

We have no headquarters as yet. Time has arrived when we should have our own building preferably in Delhi. We appeal to the Government and to all our well-wishers to help us in this task.

Lastly as provided in our constitution we should set up foreign department of the ASWI which will work in collaboration with Indian Regional Centre of the World Federation of Scientific Workers.

While building our organised strength to look after the individual and collective interests of scientific workers, we have to increase the scope of our activities concerned with effective utilisation of science in the country. May I draw your attention to the National Symposium on "Science and the Nation During the Third Five Year Plan" which the Association is holding in Mid. 1964. The decision to hold this symposium was taken at the last annual meeting in January, 1963. A few months back, invitations were sent out to the Union Ministries, Universities, Laboratories, Association Branches and individual scientists. By now about 11 Union Ministries and Science Institutions under their control have officially nominated their representatives. CSIR Laboratories, Atomic Energy Establishment, Indian Council of Medical Research, several universities, Teachers' Organisations and independent scientists and all our Association branches have agreed to participate in the symposium. An Organising Committee and a Steering Committee have been formed.

There have been numerous symposia, seminars, reviews and appraisals of the Third Plan. The Association aims at making this symposium a unique forum different from the rest. A full and frank discussion on all aspects of planning of

science and technology is expected so that all concerned could overcome short-comings in scientific and technological efforts.

While we were engaged in organising this symposium, the World Federation of Scientific Workers suggested that we should hold a conference of scientific workers from countries of South East Asia, South Asia, and West Asia. The ASWI has now decided to invite scientists from countries of South East Asia, Middle East and Africa, Asian Republics of USSR, Mongolia and Eastern Europe to be its guests at this National symposium. These scientists from the region could then meet together to discuss problems of common interest and prepare for a regional conference.

Conclusion

The Association of Scientific Workers of India is alive to its responsibilities towards scientific workers, science and the nation. It is equally alive and conscious of the problems of scientific and technological development of Asian and African & Latin American countries which to-day are linked to disarmament and world peace. In our own country the Association asks for nothing more than a firm and conscious application of the basic tenets of Indian social development. The Association only wants that Democracy, Planning, Socialism and Non-alignment as formulated by Prime Minister Nehru, be extended to the sphere of science and technology and particularly to science and other institutions of higher learning. The Association only asks for a full and complete implementation of the Science Policy Resolution here and now.

In its international outlook too, the Association is proud to present the Indian way of economic, scientific and technological development. Peoples of Asia, Africa, Latin America and Oceanic are struggling and searching for the best method of rapid development without causing hardship to their people. Numerous models for development are being projected before them. Dictatorship of individuals, group or party has been recommended. Free enterprise is the slogan of others. The Indian model as designed by Prime Minister Nehru combines the best of both the viewpoints to ensure economic, industrial, scientific and technological development without curtailing freedom and with minimum cost in human sacrifice.

The Indian outlook is the most gigantic experiment of development in human history and it stands alone. It may be a weak model, partly wasteful and at times agonisingly slow. But let us remember that success or failure of Indian experiment will mark a turning point in world history. Stable human societies based on willing co-operation of the people and their maximum happiness are no easy matter to achieve. Even the great communist societies which promised millenia are undergoing stresses and strains and are slowly groping their way towards respect for democracy and individual liberty. Let us pledge that it is our task to overcome the weaknesses of the Indian World Outlook because to me there appears to be no other way possible either for India or for humanity.

Long live Association of Scientific Workers of India.

ADDRESS

by

SHRI M.C. CHAGLA

Minister of Education, Govt. of India

AT THE ANNUAL MEETING OF ASSOCIATION OF SCIENTIFIC WORKERS OF INDIA

held in New Delhi on 17th March 1964

Mr. President, Friends,

It is a matter of great regret that the Prime Minister is not here to deliver his usual inaugural address and I know how unqualified and unsuitable I would be to replace him. We all know what great contributions the Prime Minister has made in achieving the freedom and in the building up of our nation. But I think the greatest contribution he has made is to the science in the realistation that India cannot advance economically and industrially without proper emphasis being laid on the study of science and development of scientific research and today we have a large number of scientific organisations in this country. It is due to his initiative. I all join with you to wish him good health and hoping that at the next meeting you will not miss him.

Sir, you have rightly said that your Association is not a Trade Union and therefore you are more interested in the development of the country, in the welfare of the country and in the contribution that science can make to the industrial and economic progress of the country rather than merely in your rights, your emoluments and your privileges. I may start by saying a few words about the social implication of science. I think that some of the greatest difficulties we have in this country are our social attitudes and these attitudes have to be changed if this country is to become a modern progressive country. Now what are these social attitudes ? We have as you know groupism, casteism and communalism spread in the length and the breadth of the country. We still cling to the castes and communities. We still have intolerance. We have taboos. We have superstitions and all these stood in our way of progress and therefore one great advantage of scientific education is not merely the acquiring of knowledge but the acquisition of particular mental attitude. We want a scientific outlook if this country is to progress. Now what does the scientific outlook mean? Science teaches us that we should test every theory by objective attitude. We should reject doctorines, ideals if they can not be tested by objective evidence. That is the frame of mind we should also have with regard to social and economic problems of scientific outlook which will help us to become modern progressive country. A scientific outlook means a rational outlook, an outlook which is prepared to discard any institution, any idea which goes counter to the test of the reasoning and in that respect there is a great deal of difference between education in the humanities and education in science. Humanities are meant to teach people values and ideals and to teach them what they can learn from the past, what the cultural heritage of the country is and in that sense humanities have a conservative tendency. It teaches people to remember what their country has been, what their country stood for and therefore I said humanities have definitely conservative tendencies. Science, on the other hand, is quite different. As you said, Sir, that science and scientist are essentially revolutionary because not only does the scientist want an expansion of horizon of knowledge but he wants to change the society, the fabric of society by his research, by his investigation and by his enquiry. He wants to transform society. He wants a different world. He wants people to have more things and better things than they had in the past. After all, the ultimate object of

science apart from the acquisition of knowledge should be the production of abundance that can ultimately fight poverty, disease and unemployment. And in that sense science and study of science must lead to rational and progressive thinking, because I myself being a humanities man, I believe in the system of education which combines both the science and humanities because on the one hand, you must know your country and the past of your country and at the same time you must have a modern progressive and rational outlook on problems of life.

Now, gentlemen, scientific education, scientific research and work in the laboratory should entail the least amount of administrative work for a scientist because a scientist is not a man of administration. That is not his job. His devoting time to administration is essentially loss to science. And therefore the least administrative work a scientist does the better for himself, better for science and better for research. Now it has been suggested that the appointment of scientists as Directors may constitute a loss to research. I know some distinguished scientists were given high posts which require administrative work. This resulted in the definite loss to science. Brilliant scientists were taken away from research work and given high posts which entailed a large amount of administrative work. Therefore I am oppressed by this idea. I have been thinking about it—is it a loss to science if you take away a brilliant scientist and appoint him a Director? Does it mean that scientific progress, scientific research suffer by that appointment? On the other hand you have to man your laboratories with Directors. You must have best man available. This is a dilemma which often faces us when making necessary appointment. You use the word democracy in science and that means that all scientists must be considered equal in as much as they are doing important scientific work and I entirely agree in as much as it means that they should have complete freedom and autonomy to carry on research, freedom of thought, the right to free investigation etc. I also agree that some type of democracy is essential and I assure you we have taken steps and we are going to take steps to abolish the system of heirarchies in our laboratories. Heirarchies may be essential in administration but they are not essential in science because at whatever level a scientist does his work he is doing more or less the same type of work or similar type of work. He is increasing fund of knowledge. There should be no files with notings going from junior scientists to senior scientists. Notings and files should be cut down even in administration, leave aside in laboratories. But in laboratories you must have leadership. You must have some one to inspire the scientists to point out occasionally, in which direction their work should be reoriented and the research which they are doing and therefore the Director should not be outside the frame work. He should be one of them also doing the research but at the same time inspire by better efforts, higher efforts, noble efforts. That I understand should be the role of the Director not as an administrative head. He should not be cut off from research. I also agree, Sir, that every encouragement should be given to young scientists. I always remind myself that the most brilliant research has been done by people before they are 30 and if you look on the list of Nobel Prize winners of various countries, I think most of them won the Nobel Prize before they were 30 and therefore our attempt should be to give every encouragement to the young scientists who are in our laboratories. I do not know how many potential Nobel Prize winners we have. The initiative and the inspiration come when you are about 30 years. This is the time when scientific inspiration and initiative are utilized to the best advantage. Let us get to explore what talent there is in this country.

You, Sir, have talked about socialism in science. My definition of socialism is very simple. Socialism means social justice and in bringing about social justice undoubtedly science must play a very big part. What is social justice? We must at least give to our people—every man, woman and child, the minimum of necessities of life to which every human being is entitled if he is to enjoy the stature of human being and dignity of man. And inthe production of this wealth which is essential to give these minimum necessities to our people, science can play a very big part, as science has immense potentialities. Science and technology especially in our country, can change the whole scene. As I said, it can increase production beyond

conception. It can supply the needs and wants of modern people. That, to my mind, is meant by socialism. Socialism also means equality of opportunity not that it is a monopoly of intelligence of intellectual human beings. They will always differ in their dealings, their qualifications, their outlook. But what socialism means is that every man of talent should be given opportunity to develop talent and this particular aspect of socialism applies most powerfully to science. We want tremendous things from the scientists. We want scientists to teach our students, to man our Universities, our laboratories. We want teachers in hundreds of thousands to teach science in our schools. We have to look for these people. As I said we want to tap the ablest of the men, brilliant men, this country can produce. I have seen our scientists in U.S.A. and U.K. and I know how well spoken they are in those countries. I think there is as much scientific talent here in India and we need to find it, to give it the opportunity to develop and make the most of it. And therefore socialism as I understand has its scientific definition and scientific form. Giving them the best opportunity to develop their talent, our scientists will ultimately reach their highest. grade compared to any country in the world. I gave an assurance that not a single Indian scientist abroad will be denied the opportunity to come back here and work for the people and for the country. I stand by the assurance I gave. We have also started Scientists' Pool to get our Indian scientists from abroad. A large number are coming back. As I said many scientists mostly in United States and United Kingdom are better. They are not greedy of money. What they want is an opportunity to work, a proper atmosphere and facilities to work. If we can provide these things to our youngmen, I am sure they will not mind what emoluments they get even though they could get higher emoluments in United Kingdom and United States.

Our Government is following the policy of non-alignment in political field. We have also felt Sir, that science must be non-aligned. Science in its very nature is international. It should know no boundaries, no frontiers, no limits. The scientific research in this country belongs to the whole world. A scientific discovery in Russia or America also belongs to India. But science in our country is also national in the sense that we have our own problems to be solved. We have to find the problems of our country and work out details so as to solve these problems. Also you mentioned about language and I agree with you, that we have perhaps concentrated too much on one language only, that is English. We hope to establish very soon Institute of Russian Language in Delhi so that students could learn Russian which has become very important language from the scientific point of view as you know USSR has forged ahead in the world of science and technology. From the point of view of science we must not overlook most important languages like German, French and we must devise some methods in which scientists will be taught not only English but other European languages. Almost every scientist in other countries knows German or French and that is what we should do in our country.

It is always dangerous for a non-scientist to speak of science. I do not know how many mistakes I have made from the objective point of view because my approach to science is very objective and in that objective, scientist would have spoken to you in quite a different language. So far as I am concerned, I have the highest regard for the scientists and the contribution they have made towards progress of the country. I can give my assurance to every scientific worker for any help and support to him.

File - ASWI (II/2a)

Annual Council & General Body Meeting

Minutes of the 17th Annual Council and General Body Meeting of the Association of Scientific Workers of India held on 17-18th March, 1964 at New Delhi.

Members Present

1.	Dr. N.P. Gupta	President
2.	Dr. M.S. Iyengar	Gen. Secretary (Org.)
3.	Dr. V.S. Nair	Gen. Secretary (Pub. Relations)
4.	Shri Kamalesh Ray	Gen. Secretary (Publications)
5.	Dr. S.K. Roy	Treasurer
6.	Dr. S. Husain Zaheer	Member
7.	Dr. (Mrs.) S. Iyengar	Member
8.	Dr. Narendra Singh	Member
9.	Shri K. Kashyapa	Secretary, CSIR Branch
10.	Dr. Y.V. Kathavate	Secretary, IARI Branch
11.	Dr. B.M. Gupta	Secretary, Lucknow Branch
12.	Shri M.N. Keshava Rao	Secretary, Roorkee Branch
13.	Shri K.M. Dastur	Secretary, Mysore Branch
14.	Shri G.V. Subramanian	Secretary, Jamshedpur Branch
15.	Shri V.S. Narasimhachar	Secretary, CMRS Branch, Dhanbad
16.	Shri P.S. Desikan	Secretary, Karaikudi Branch
17.	Shri S.K. Puri	Secretary, Dehradun Branch

Delegates :

1.	Shri Y.R. Chadha	CSIR
2.	Shri S.P. Gujral	,,
3.	Dr. (Miss) Agarwal	,,
4.	Dr. R. Prasad	IARI, New Delhi
5.	Dr. T.N. Chojer	UP, PWD Res. Instt. Scientific Workers Association
6.	Shri K.N. Vasudevan	IARI, New Delhi
7.	Shri N.K. Bhagia	,,
8.	Dr. S. Bhatacharjee	Lucknow Branch
9.	Dr. J. Misra	,,
10.	Shri K.B. Mathur	,,
11.	Shri V.S. Agarwal	Roorkee Branch
12.	Prof. G.S. Ramaswamy	,,
13.	Shri M.V. Sastry	Mysore Branch
14.	Shri B. Anadaswamy	,,
15.	Shri S.R. Shurpalekar	,,
16.	Shri N.P. Dani	,,
17.	Shri J. Muna Rao	,,
18.	Shri P.K. Gupte	Jamshedpur Branch
19.	Shri S.B. Mandal	,,
20.	Shri N.K. Dass	,,
21.	Shri A.K. Bose	,,

22.	Shri D.V. Raman	Jamshedpur Branch
23.	Shri Gurdial Singh	,,
24.	Shri M.V. Veeraraghvan	Khamaria, Jabalpur
25.	Dr. Akhtar Husain	Jammu Branch
26.	Dr. G.S. Sidhu	Hyderabad Branch
27.	Shri T.R. Venkatasubramanian	Karaikudi Branch
28.	Dr. D.N. Kanungo	CMRS, Dhanbad
29.	Shri S.K. Bagai	—do—
30.	Dr. R.K. Srivastava	I.I.P., Dehradun

Invitees :

1. Shri A. Rahman
2. Shri Baldev Singh
3. Shri S. Ramabhadaran
4. Shri M.R. Raman
5. Shri Misra
6. Shri R.C. Tewari
7. Shri A.K. Bose

1. Confirmation of the minutes of the previous meeting :

The minutes of the previous meeting of the Council were confirmed. Arising out of the minutes, the General Secretary (Org.) replied that of the various resolutions passed, the most important was the one on the unified scale of pay of the Scientists. This was taken up with the CSIR and was receiving the attention.

2. Report of the General Secretary (Org.) :

Dr. Narendra Singh suggested that steps should be taken for increasing the membership in organizations outside the CSIR and also for having seperate office building for the Headquarters. Mr. Sastry reported on some of the difficulties encountered in enrolling University teach ers as members. The report was adopted.

3. Report of the General Secretary (Pubn.) :

Shri Kamalesh Ray read out the report. Shri T.R. Venkatasubramanian (Karaikudi) said that enouth copies of Vijnan Karmee were not received in the Branches. He suggested that Vijnan Karmee should make further improvements in its get-up and also include review articles. He was critical about the delays in publications. Shri Ray suggested that the only way that Vijnan Karmee could be brought out with some regularity was by converting it into quarterly issue. The majority of the members, however, felt that Vijnan Karmee should be brought out as a Monthly. Mr. Dastur (Mysore) offered the help of his Branch in getting the journal published in Mysore, provided edited material was made available to him regularly. Dr. Srivastava (Dehradun) offered his services for proof-reading. The President proposed the following working committee, to go into the question of Vijnan Karmee :

1. Shri Kamalesh Ray
2. Shri K. M. Dastur
3. Dr. B.M. Gupta
4. Dr. R.K. Srivastava
5. Shri A. Rahman
6. Shri Y.R. Chadha
7. Prof. Rais Ahmed, Aligarh
8. Dr. Y.V. Kathavate
9. Shri Y. Subbarayappa
10. Dr. M.S. Iyengar

The report of the General Secretary (Pubn.) was then adopted.

4. Report of the General Secretary (Public Relations) :

Report of the General Secretary (Public Relations) was read out and adopted.

5. Annual report of Treasurer :

Dr. S. K. Roy presented the audited

account for the year 1962-63 and an uptodate statement of income and expenditure for the year 1963-64.

Shri Desikan emphasied the need for adopting the calender year as financial year both for the recruitment of members as well as for general purposes. It was, however, pointed out that since the Association receives its grants from the Government, it was necessary to maintain the accounts on the present financial year basis. The Treasurer's report was then adopted.

6. Reports of Secretaries of Branches:

Mysore Branch—Shri K. M. Dastur stated that although a Branch existed in Mysore earlier, it had virtually stopped functioning and therefore it had to be revived. This was done in June '63. He reported that the present membership of the Branch is 163. Of this only 15 were from the University and the rest were from CFTRI. The Branch conducted two discussions, one on the unified scales for scientists and the other on the problems of Technicians. The Mysore Branch felt that the grade of research technicians should be improved and the grade suggested was Rs. 150-540 and for the Class IV Staff Rs. 75-200. The Branch also organized a Symposium on the Training of Scientists.

Jamshedpur Branch :

Shri G. V. Subramanian presented the report of the Jamshedpur Branch and said that they had succeeded in forming the Branch at the beginning of this year. Since then the Executive Committee met eight times to discuss various problems. The Branch submitted memorandum to the Reviewing Committee of the CSIR suggesting improvements in service conditions, quality of research etc. Some of the other problems taken up by the Branch were allotment of accommodation, the problem of improving qualifications of B.Sc.'s, social economic survey etc.

CMRS, Dhanbad :

Shri V. S. Narasimhachar reported that the Branch started functioning effectively only since January, 1964. During this period they held 6 Executive Committee meetings. The present membership is 93. The Branch also submitted a memorandum to the Reviewing Committee of CSIR.

Karaikudi Branch :

Shri P. S. Desikan said that the Branch started functioning from August 1963 with a membership of 86. The present membership is 140. Several meetings were held at which distinguished Scientists were invited to address the Association. They have taken up some of the local problems effecting the scientific workers also.

Dehra Dun Branch :

Shri S. K. Puri stated that the Branch was having a membership of only 33. Improvements in conditions of services of JLA'S. and SLA'S etc. were amongst the problems taken up by the Branch.

IARI, Delhi Branch :

Dr. Y. V. Kathavate reported that IARI Branch was formed on 5th February, 1964 and its present membership is 157 and thus it is one of the biggest Branches of the ASWI.

CBRI, Roorkee Branch :

Shri M. N. Keshava Rao stated that the Branch had a total membership of 63. The majority of members were Scientific Assistants and therefore his Branch desired that ASWI should pay special attention to improving service conditions of the Scientific Assistants. One of the activities of the Branch during the year was to make arrangement for teaching French. Discussions on team work and better medical facilities were also arranged.

Lucknow Branch :

Dr. B. M. Gupta reported that the membership of the Lucknow Branch comprised scientific workers from CDRI, Railway Testing and Research Centre, National Botanical Gardens and the University. The present membership is 141. The Lucknow Branch was the first to work out the details

of the unified pay scales for the Scientists which was adopted by the ASWI. The Branch was also preparing proposals relating to effective utilization of scientific manpower and foreign exchange facilities in the country and preparing articles and review papers concerning the following topics for the forthcoming ASWI Symposium on the Science and the Nation :

1. Planning of Drug Industry.
2. Biochemical, Engineering and Fermentation Industry.
3. Organisation of Health and Medical Services.
4. Planning for population control.
5. Biological and medical Research.
6. Organization of Fish and Poultry Industry in India.

Jammu Branch :

Dr. Narendra Singh reported that the Jammu Branch had a membership of 52. He pleaded that the Centre should give guidance to branches established with small membership.

CSIR Branch :

Shri K. Kashyap stated that the membership of the Branch is 68 and the membership is mostly confined to the Publications Directorate and the National Registier Unit of CSIR. One of the problems facing the Branch was the problem of discrimination between Information Scientists and Bench Scientists. A deputation of the Branch waited on the Secretary, CSIR and discussed these questions.

UP, PWD Research Institute Scientific Workers Association :

Dr. T.N. Chojer reported that the present membership is 21. The Unit faces several problems and sought guidance from Lucknow Branch. One of the problems faced was regarding forwarding of applications for outside employment.

Hyderabad Branch :

The Gen. Secretary (Orgn.) stated that he had received a report from the outgoing Secretary of the Hyderabad Branch. The present membership is 110 During the year, the Branch held four BEC meetings. Of the problems taken up by the Branch, the extending of the benefit of the Contributory Provident Fund to staff employed in Grant-in-aid research schemes deserve special mention. During the year, the Branch organized 6 lectures at RRL, Hyderabad attended by distinguished Scientists and three popular lectures in collaboration with the Hyderabad Scientific Association, Andhra Academy of Sciences and the Indian Medical Association.

7. Report on the Indian Regional Centre of the World Federation of Scientific Workers

The Secretary, Dr. Mrs. Sultana Iyengar presented the report. Dr. N.P. Gupta gave a full background of the World Federation and the establishement of the Regional Centre. He also reported on the meeting of the Bureau of the World Federation held in Geneva which he attended.

8. The National Symposium on the 'Science and the Nation during the 3rd Five-Year Plan'

Dr. M.S. Iyengar reported on the preparations made in organising the Symposium. He stated that the CSIR had sanctioned a sum of Rs. 10,000/- for organizing the Symposium and that 8 Ministeries of Government, 10 National Laboratories, 5 Universities and five public undertakings had agreed to send representatives to participate and contribute papers. He also stated that it was proposed to invite Scientists from South-East, Far East Asia, Middle East, Republic of U.S.S.R and Africa to participate in the National Symposium as observers and that it was proposed to send three representatives of the Association on good will mission to the above regions for establishing personal contacts with the Scientists and for extending invitations on behalf of the ASWI. The CSIR had agreed to grant a sum of Rs. 2 lakhs for organizing the Symposium.

Several members participated in the discussions. Some members stated that they had not recived details about the Symposium. Others stated that the Directors of the Laboratories were not taking the Branches into confidence in the preparation of the papers for presentation at the Symposium. Some of the Directors of the National Laboratories like those of CDRI, CECRI and RRL, have however asked for preparation of the papers in consultation with the Branches.

It was also emphasised that the Symposium should be conducted in an exemplary way and that papers should be distributed before hand. Only the salient points on all these papers need be presented at the Symposium. For each of the sessions, a discussion leader should be nominated who should incorporate all the ideas presented in various papers and initiate discussion. It was also suggested that the Association should explore the possibility of bearing the travel expenses of some of the delegates attending on behalf of the Branches.

9. Resolutions

(i) Resolution No. 1—This was adopted with the modification that posts for which scientific qualifications have been prescribed will have scientific grades.

(ii) Resolution No. 2—This was adopted.

(iii) Resolution No. 3&4—This was referred to the Sub-Committee comprising of Dr. N.P. Gupta, Mr. T.R. Venkatasubramanian (Karaikudi), Shri K.N. Vasudevan (IARI, Delhi) and Prof. Rais Ahmed.

(iv) Resolution No. 5&6—These along with the memorandum submitted by CFTRI Branch should be circulated to all the branches for their views.

(v) Resolution No. 7—The UP, PWD Branch was asked to send relevant papers to the General Secretary, ASWI for necessary action.

(vi) Resolution No. 8—To be referred to the Sub-Committee adopted for considering Resolution No. 3 & 4.

(vii) Resolution No. 9—This was to be referred to the next C. E. C. Meeting.

(viii) Resolution No. 10—Adopted.

(ix) Resolution No. 11—Referred to the C.E.C.

(x) Resolution No. 12—Adopted.

(xi) Resolution No. 13—This was referred to Committee comprising of Dr. Narendra Singh, Shri K. Ray and Dr. N.K. Bhatia.

(xii) Resolution No. 14—Adopted.

(xiii) Resolution No. 15—Adopted.

Resolutions 16 to 33 were to be referred to C.E.C.

10. Election of three representatives for visiting South-East, Middle East, and Africa

The following panel was suggested from which the General Serretary (Orgn.) and President were authorised to finalise the three names in consultation with Dr. S. H. Zaheer, DGSIR. If necessary, they should also consider names from outside the panel.

1. Dr. Narendra Singh
2. Dr. C. R. Krishnamurthi (CDRI)
3. Dr. M. S. Iyengar
4. Shri A. Rahman
5. Dr. N. P. Gupta
6. Shri K. Kashyapa (CSIR)
7. Dr. G. S. Ramaswamy
8. Shri K. Ray
9. Dr. (Mrs) Sultana Iyengar
10. Dr. Nitya Nand
11. Dr. V. S. Nair

12. Shri Y. R. Chadha

13. Shri S.B. Mandal, NML.

14. Dr. S. K. Mukherjee, Kalyani University.

11. Office bearers for 1964

All the Office bearers for 1963 were re-elected with the exception of Dr. Shah who has gone abroad. In his place Shri A. Rahman was elected. The names of the office bearers are given below :

President :

Dr. N.P. Gupta, Asstt. Director, Vallabhbhai Patel Chest Institute, Delhi-6.

Vice-Presidents :

1. Dr. Y. Nayudamma, Director, CLRI, Madras,

2. Dr. Gurbaksh Singh, Head of Deptt. of Chemistry, Banaras Hindu University, Banaras.

3. Dr. H. A. B. Parpia, Director, C. F. T. R. I., Mysore.

General Secretary (Org.)

Dr. M. S. Iyengar, Director-on Special Duty, R & D Orgn., Ministry of Defence, New Delhi.

General Secretary (Pubn.)

Shri Kamalesh Ray, Deputy Director, N. R. Unit, CSIR, New Delhi.

General Secretary (Public Relation).

Dr. V. S. Nair, Publicity Officer, CSIR, New Delhi.

Treasurer :

Dr. S. K. Roy, S. T. O., N. R. Unit, CSIR, New Delhi.

Members :

1. Dr. S. Husain Zaheer, DGSIR, New Delhi.

2. Dr. Narendra Singh, R.R.L., Jammu

3. Dr. Nitya Nand, CDRI, Chattar Manzil, Luknow.

4. Dr. S. Ganguly 17, Hindustan Park, Calcutta.

5. Dr. S. Z. Ali, Defence Science Laboratory, Metcalf House, Delhi.

6. Secretary, Hyderabad Branch, Hyderabad (RRL).

7. Secretary, CFRI Branch, Jealgora, (Dhanbad).

8. Secretary, CDRI Branch, Lucknow.

9. Secretary, Bangalore Branch, Indian Institute of Science, Bangalore-3.

10. Secretary, CSIR Unit, CSIR, Delhi.

11. Secretary, Mysore Branch, CFTRI, Mysore.

12. Secretary, Scientific Workers' Association, Kanpur.

13. Secretary, Assocn. of Scientific Workers, Khamaria-Jabalpur-5.

14. Secretary, Assocn. of Scientific Workers, Kirkee-Poona.

15. Secretary, U. P. P W D Research Institute, Scientific Workers Assocn., M.G. Road, Lucknow.

16. Secretary, CLRI Unit, CLRI, Madras.

17. Secretary, Jamshedpur Branch, NML, Jamshedpur.

18. Secretary, Jammu Branch, RRL, Jammu.

19. Secretary, Karaikudi Branch, CECRI, Karaikudi.

20. Secretary, Dehra Dun Branch, IIP, Dehra Dun.

21. Secretary, Roorkee Branch, CBRI, Roorkee.
22. Secretary, CMRS Branch, Dhanbad.
23. Secretary, Delhi University Branch, Delhi.
24. Secretary, I. A. R. I., New Delhi.
25. Secretary, CMERI Branch, Durgapur.
26. Secretary, CS & MCRI Branch, Bhanvagar.

Shri A. Rahman was elected as ASWI representative for the meetings of the Indian National Commission for Co-operation with UNESCO.

The meeting came to a close with a vote of thanks to the Chair.

M. S. IYENGAR

General Secretary (Org.)

——:o:——

Annual Report of the General Secretary (Orgn.) 1963

Units/Branches/Affliated Organizations.

At the beginning of 1963, only the branches at Hyderabad, Jealgora and Lucknow and the Unit at Delhi were functioning. It appears that even these did not hold their meetings regularly and collection of subscription was irregular. The Federation of Defence Workers Association at Kirkee was dissolved and with this the Defence-Workers Organization, Kanpur, Khamaria and Kirkee remained disaffiliated from the ASWI.

The position at present is as follows :

	Total Membership
Branches newly formed :	
Jammu Branch	52
CSIR Branch, New Delhi	68
I.A.R.I., New Delhi	157
Central Mining Res. Station. Dhanbad	93
Central Mech. Engg. Res. Inst., Durgapur	47
National Metallurgical Lab., Jamshedpur	156
Central Electrochemical Res. Instt., Karaikudi.	140
Central Salt & Marine Chemicals Research Institute, Bhavnagar.	57
Branches Revived :	
Central Food Technological, Res. Instt., Mysore	163
Central Building Res. Instt., Roorkee	63
Aligarh	
Units newly formed :	
Indian Instt. of Petroleum	33
Central Leather Res. Instt., Madras	
Delhi University	10
Other Branches	
Lucknow	141
Central Fuel Res. Instt., Jealgora	55
Hyderabad	110
Affiliated Organizations :	
Association of Scientific Workers, Khamaria (Ordnance Establishment)	162
—do— Kanpur	556
—do— Kirkee	162
U.P. P.W.D. Research Institute Scientific Workers Association, Lucknow	21

Branch Dissolved

Central Tobacco Res. Instt., Rajahmundry. made to revive the branch at Calcutta.

Inspite of repeated attempts no contact could be established with the Izatnagar Unit, Bahadrabad Unit, Southern Railway, Chemists & Metallurgists Staff Association Madras, Survey Association and Scientific Workers Association, Pimpri.

During the year, an attempt was also

To sum up, we have to-day fifteen branches, three units and four affiliated organizations. The total membership is about 2,000 out of which 1,000 are from the CSIR Laboratories, 872 from the affiliated organizations and the rest from the Universities and Indian Agricultural Res. Instt. New Delhi.

General Meetings

During the year meetings were arranged in New Delhi, in which following lectures were delivered :

1.	Science in the Far East	Dr. Mendelsson, F.R.S.
2.	Report of United Nations Conference on Science & Technology held in Geneva, 1963.	Dr. S.H. Zaheer
3.	The Planning of Science in India —A Discussion	Prof. P.C. Mahalanobis
4.	Oil Problems of India	Shri K.D. Malaviya
5.	Some Thoughts on Science in India	Dr. Allen Mackey
6.	The Problems of Iron & Steel Industry in India	Shri C. Subramaniam, Minister for Steel, Mines & Heavy Engg.
7.	Science in International Relations	Prof. C.F. Powell, F.R.S., N.L.
8.	Impressions of Unesco South & South East Asia Regional Research Organisations Conference	Dr. S.H. Zaheer
9.	Problems of Irrigation & power in India	Dr. K.L. Rao, Minister for Irrigation & Power

All the above meetings were well attended and followed by lively discussions.

Central Executive Meeting

During the year only one C.E.C. Meeting was held, on October 10, 1963 during the session of Indian Science Congress.

Indian Parliamentary & Scientific Committee

Affiliation to this Committee has been renewed and we have been attending nearly all the conferences and meetings convened by the Committee. Before the Budget Session, a memorandum prepared and approved by the C.E.C on the Unified scale

of pay was brought to the attention of the Members of the Parliament through the Committee.

Indian National Commission for Cooperation with the UNESCO

The A.S.W.I. has been admitted as an Associate Member of the above Commission, and invited to send its representatives to the Sixth Conference to be held on March 21 and 22, 1964 at New Delhi.

Symposium on "Science and the Nation during the Third Five Year Plan"

Preparation for the above symposium are well under way and circulars regarding it have been sent to branches. The C.S.I.R. has sanctioned a sum of Rs. 10,000 for organizing the symposium. It is proposed to cover the following fields in different sessions spread over 3 days :

Session	I.	Science in key industries : Steel, Heavy Chemicals and Fertilizers, Heavy Electricals and Engineering, Power, Coal, Oil etc.
Session	II.	Science in Transport & Communication : Railways, Aviation, Road Transport and Posts and Telegraphs.
Session	III.	Science and Agriculture.
Session	IV.	Science in Health : Food & Consumer Industries.
Session	V.	Science in Building, Defence and Atomic Energy.
Session	VI.	Planning and Finance of Science : Organization of Scientific Research, Training of Scientists, Science and Governments ; Science and Administration.

Response to our invitation has been very encouraging. The following have nominated teams of scientists and technologists to contribute papers and participate in the symposium :

MINISTRIES OF

1. Steel, Mines & Heavy Engineering
2. Health
3. Food and Agriculture
4. Railways
5. Works, Housing & Rehabilitation
6. Commerce
7. Defence
8. Industry

NATIONAL LABORATORIES

1. Central Drug Research Institute
2. Indian Ocean Expedition Unit
3. Indian Institute of Petroleum
4. National Chemical Laboratory
5. INSDOC
6. Central Food Technological Research Institute
7. Central Fuel Research Institute
8. National Metallurgical Laboratory
9. Central Salt & Marine Chemicals Research Instt.
10. Regional Research Laboratory, Assam

PUBLIC UNDERTAKINGS

1. Hindustan Steel Ltd., Rourkela
2. Hindustan Steel Ltd., Ranchi
3. Neyveli Lignite Corporation Ltd., Neyveli
4. Hindustan Cables Ltd.

OTHER ORGANISATIONS

Planning Commission
Atomic Energy Establishment
Geological Survey of India
Directorate General of Technical Development
Singareni Collieries Co. Ltd., Hyderabad

It is proposed to invite scientists and technologists from the South East Asia, Middle East, Mongolia, Asiatic Republics of the Soviet Union and Africa as Observers to the Conference. The C. S. I. R. has kindly consented to finance the visit of the foreign delegates as well as of our three representatives to these countries. Our representatives would be visiting these countries to extend invitations personally.

A Reception and Organising Committee comprising of about 30 members drawn from different institutions in New Delhi was formed. This committee met on 10th February, 1964 to discuss the details of the Symposium. It was also suggested that the symposium should be held in New Delhi towards the end of May or beginning of June, 1964 and the contributions should be received by the 31st March, 1964 and the General Secretary should nominate conveners for each of the subjects listed for the symposium.

A steering committee comprising seven members was also formed.

Members of Steering Committee

1.	Dr. N. P. Gupta	Chairman
2.	Dr. M. S. Iyengar	Secretary
3.	Dr. Jagjit Singh	Member
4.	Dr. Sadgopal	Member
5.	Shri A. Rahman	Member
6.	Dr. S. K. Roy	Member
7.	Dr. S. H. Zaheer	Member

Science Policy Resolution

The General Secretary of the Association was invited to the Conference convened by the then Ministry of Scientific Research and Cultural Affairs in August, 1963 to discuss the progress made on the implementation of the above resolution. No concrete steps, however, have been taken towards implementing the Resolution. Even the few recommendations made by the conference have not been made public nor implemented.

Registration under the Societies Act

The Registrar of the Trade Unions has been approached to renew the registration of the A. S. W. I.

Economic and Service Conditions Problems

A large number of economic and service conditions problems were referred to the Centre either directly or through C.E.C. whose resolutions in these regards were pursued with the concerned authorities.

A list of problems is given in Table below :

Subject	*Sponsored by*	*Addressed to*	*Situation at present*
Unified Scale of Pay	C.E.C.	C. S. I. R. on 21st Oct'63	Considered at the Directors' Conference and is still under consideration.
Promotion of Scientists who had completed more than five years service in the same rank	Lucknow Branch	C. S. I. R.	Matter was discussed with DGSIR and the CSIR. Referred back to the branch.
Policy of distinction between Technical and Scientific Scales of Pay.	CSIR Branch	C. S. I. R.	Not much progress made so far.

Observations

The organization which had been in doldrums for the past 5 or 6 years and drifting towards extinction, has been revitalised and brought into a position of security, and strength. The prejudices which existed about the Association particularly its Trade Union aspect, appear to have been removed to a large extent. Contacts with scientists and technologists working in other Ministries and Public Sector undertakings have been established.

The forthcoming Symposium provides an opportunity for the Association to project itself as the only representative organization of scientific workers contributing to a conscious discussion on developing science and technology in the country with a sense of direction and purpose.

The Tasks Before the Association

1. To consolidate and further increase the membership among scientists in Ministries, Public Undertakings and Universities.

2. To press for the implementation of Science Policy Resolution of the Govt. and planning of Science.

3. To press for effective utilisation of scientists and facilities and for democratisation in the internal functioning of the laboratories.

M. S. IYENGAR

Gen. Secretary (org.)

Report of the Secretary (Publications)

The Vijnan Karmee, the monthly Journal of the ASWI has considerably suffered a delay in publication during the year 1963. Only two combined issues, namely Jany.-October and November-December, could be brought out. The delay was in the first instance, due to the transfer of office from Kanpur to Delhi necessitating certain legal formalities which took a long time to finalise. The lack of working facilities and office space also partly contributed to the dislocation in the work of the publication.

The cover page and get up of the Journal have been improved upon and greatly appreciated. A few thought-provoking articles were published. Special mention may be made of the articles. "Sharing Skills-technical aid to developing countries" —by Ritchie Calder ; "National Emergency and Our Scientists"—by Dr. S. Husain Zaheer ; "Collaboration between National Laboratories and Universities"—by A. K. Mustafy; and "Planning of Scientific Research"—by A. Rahman.

The Advertisement rates have since been revised and enhanced. This has not yet been given effect to. Accordingly, 2,000 folders have been printed giving advertisement rates and mechanical data of the Journal for distribution to potential advertisers.

The expenditure involved will be submitted by the Treasurer. However, this is approximately given here. The two issues of the V.K. have cost about Rs. 2,036/- and the folder about Rs. 115/-.

It may be mentioned that the production of the Journal is a time consuming process and needs adequate secretarial help. This can be gradually built up as our resources are strengthened. It may be considered whether the Journal should be made into a bi-monthly one. This may ensure better attention and improved quality of the Journal.

Membership of the ASWI has recently increased due to the strengthening of the existing units and due to formation of new units. The next number is scheduled to be published in 2,500 copies. This will naturally increase the cost of production per issue.

I am thankful to our contributors, and also to Shri S. P. Gujral who has continuously extended his able assistance in the production of the Vijnan Karmee.

K. Ray

Secretary (Publications)

Annual Report of General Secretary (Public Relations) 1963-64

The publicity and public relations activities of the Association were intensified and scientists in various parts of the country were contacted during 1963 in a bid to start new units and branches and revive branches and units which ceased to function earlier. Results of these activities have been quite encouraging as is evident from the fact that the number of branches and units which was only four at the beginning of 1963 is now 18, besides four affiliated organisations. The names and strength of the branches, units and affiliated organizations are indicated in the Annual Report of the General Secretary (Organisation).

Contacts with scientists working in most of the government organizations, research institutions and Universities have been established and the prospects of formation of either branches or units in Trivandrum, Ernakulam and Alwaye in Kerala, Nagpur and Calcutta are bright. Discussions and correspondence with groups of scientists in these places have created a consciousness among them of the vital necessity for an organisation for the welfare of the scientists as well as for the develpment of science in the country. They have shown keen interest in an early formation of branches/units in their organisations and requested for membership forms, and these have already been despatched to them.

The press publicity was stepped up in an unprecedented scale during 1963. Nine general meetings were organised by the Central Executive of the Association at New Delhi which were addressed by Dr. Mendelsson, Dr. S. Husain Zaheer, Prof. P. C. Mahalanobis, Shri K. D. Malviya, Dr. Allen Mackey, Dr. K. L. Rao, Shri C. Subramaniam and Prof. C. F. Powell. Announcements regarding these meetings were made in the leading dailies of Delhi. Besides Association members, over 500 scientists were invited to attend these meetings by sending invitation cards. All these meetings without exception received good coverage in almost all the leading dailies. Discussions at some of the meetings were subjects for editorials in the major dailies of India. There were editorials in a number of dailies on the discussion initiated by Prof. P. C. Mahalanobis on the organisation and planning of scientific research in the country and these have evoked considerable public interest. The then Ministry of Scientific Research & Cultural Affairs even convened a conference of scientists at New Delhi as a sequel to these discussions.

Press publicity for all these meetings were arranged through releasing press handouts to the various newspapers and by inviting press correspondents to attend the meetings and cover them in their respective newspapers. Taperecording by All India Radio was arranged at some of the important meetings for their newsreel broadcasts. The Central Executive established contacts with the press correspondents, science writers and editorial writers of newspapers and these would explain for the wide publicity in the newspapers for all the meetings arranged by the Executive Committee. This has largely helped in building up the Association by making the scientists as well as the general public aware of the role played by the Association in respect of the country's scientific and technological develepment.

V. S. NAIR
Secretary (Pub. Relations.)

Annual Report of the Treasurer (1963-64)

The audited statement of Income and Expenditure account for the year ending the 31st March, 1963, and also the Balance Sheet as on the 31st March, 1963 is presented. It may be observed that the expenditure during the year exceeded the income by about Rs. 1,175. This deficit was made up later in the year 1963-64. The outgoing General Secretary and Treasurer had also sent a statement of Income and Expenditure incurred by them from April to July 1963 before the accounts were transferred. The Association received a grant of Rs. 3,000 from the Govt. of India towards the publication of Vijnan Karmee, during 1962-63.

The accounts of the Association of Scientific Workers of India in the Punjab National Bank, Ltd., Kanpur were transferred to Punjab National Bank Ltd., New Delhi in August 1963. Some formalities had to be completed before the Central Office in Delhi could operate the account.

A preaudit statement of Income and Expenditure incurred by the Delhi Office from July 1963 to 16th March 1964 is presented. One important feature of the accounts for this period was receipt of more than Rs. 1100 as Centre's share of membership contribution received in the Branches. During this period the Association also received a grant from the Ministry of Education, Govt. of India of Rs. 4000/- towards the publication of Vijnan Karmee. The Council placed on record its thanks to the Govt. of India for the grant and hoped that the amount would increase in the next year.

Statement of Accounts (Delhi Office) July '63 to 16 March '64

EXPENDITURE

By	Establishment a/c Pay of Office Asst. July 63 to Feb. 64	Rs.	360.00
By	Stationery & Printing a/c Miscellaneous purchases as per vouchers	Rs.	532.99
By	Postage and telegram a/c Correspondence a/c ...Rs. 322.55 Despatch of V. K. ...Rs. 337.35	Rs.	659.90
By	Conveyance a/c Miscellaneous expenses as per vouchers	Rs.	51.29
By	Printing & Production of V.K. a/c As per bills of United India Press	Rs.	2150.35
By	Miscellaneous a/c Sundry expenses as per vouchers	Rs.	203.25
	TOTAL	Rs.	3958.13
	Balance	Rs.	1349.32
	TOTAL	Rs.	5307.45

INCOME

To	**Branch's share to Centre a/c**	Rs.	nP.	
	1. CSIR Branch		100.00	
	2. Jammu & Kashmir Branch		105.00	
	3. Karaikudi Branch		135.00	
	4. Lucknow Branch		100.00	
	5. Dehra Dun Branch		59.50	
	6. Jamshedpur Branch		238.00	
	7. CFTRI Mysore Branch		140.00	
	8. CBRI Roorkee Branch		99.25	
	9. CMRS Dhanbad Branch		60.00	
	10. CSMCRI Branch Bhavnagar		59.60	
	11. Delhi Univ. Br. (under formation)		39.60	Rs. 1,135.95
To	**Affiliation fee a/c**			
	1. Kirkee ASW of Defence Workers		25.00	
	2. PWD Res. Inst. Assn., Lucknow		15.75	40,75
To	Membership a/c Received from individual			20.00
To	Sale Proceeds of V.K. a/c			15.75
To	Advertisement in V K. a/c Tata Chemicals			85.00
To	Grant in-aid. Govt. of India My. of Education			4,000 00
To	Miscellaneous From outgoing Secretary			10.00
			TOTAL	5,307.45

Sd/S.K. Roy
Hon. Treasurer.

Report on the Activities of the Indian Regional Centre of the W.F.S.W. 1964

The idea of starting a regional centre was first mooted in 1956. The W.F.S.W. directed the ASWI to explore the possibilities of setting up a regional centre, hold a regional conference in 1957, extend Vijnan Karmee to include foreign science news and run a monthly cyclo-styled news-service.

From about the middle of 1956 to the beginning of 1958, the ASWI carried out the main functions of the Indian Regional Centre. The Centre was then formed in 1958 with its office at Calcutta and was shifted to Hyderabad in 1958, with the treasurer of the ASWI dealing with the finances received from the W.F.S.W. Last year, decision was taken to shift it to Delhi, with Dr. N. P. Gupta as its Chairman.

Activities of the Indian Regional Centre

(i) The Vijnan Karmee was enlarged to include foreign science news.

(ii) Preparatory work for a regional conference was carried out from Hyderabad and after writing to the various scientific societies and the embassies in Delhi, a list of scientists in the various countries of South East Asia and Middle East was compiled.

(iii) All correspondence and co-ordination work in connection with the Symposium on 'Higher Scientific and Technological Education' held at Moscow in Sept., 1962 was carried out from the Hyderabad Office. Two delegates Dr. Rais Ahmed and Dr. Gurbaksh Singh attended the Moscow Symposium.

(iv) A meeting of the I.R.C. was held in October '63 at which the decision was taken to send the Chairman Dr. N. P. Gupta to Geneva to attend the Bureau meeting in Nov. '63 in view of the importance of the agenda.

It was also decided to authorise Dr. Gupta to extend an invitation to the World Federation to hold the General Assembly Meeting in India together with the proposed Symposium in 1964 or in 1965.

It was also decided to develop closer and better contacts with the scientists of the South and South East Asian regions and the earlier proposal of sending two or more Indian representatives to the region as well to the Middle East was to be re-examined with financial support from the W.F.S.W. Dr. Gupta was also authorised to present the audited statements of account of the I.R.C. to the Treasurer of the W.F.S.W. during his visit to Geneva.

Dr. Gupta on his return submitted a comprehensive report on the Geneva Meeting.

In December 1963 and January 1964, further discussions were held with Prof. Powell regarding the Regional Conference which Dr. Gupta had proposed on behalf of the I.R.C. and ASWI at Geneva. After discussion between him and Dr. S. H. Zaheer, it was agreed that due to the short time available a Regional Conference may not be possible in 1964. Instead, Scientists from the Region could be invited as observers to our National Symposium on science and the Nation during the 3rd Five-Year Plan to be held shortly. A Regional symposium could then be planned in consultation with them.

——:o:——

RESOLUTIONS MOVED AT THE CENTRAL COUNCIL MEETING

C. S. I. R. Branch

Resolution No. 1

At the time of implementation of the Pay Scales, recommended by the Pay Commission for the scientists, the CSIR gave these scales only to the scientists doing bench work in the laboratories, and the information scientists were put in comparatively inferior pay scales. the so called technical scales. Further, discrimination was created in the age of retirement also : age of retirement for persons in the scientific scales was fixed at 60, while for those in the technical scales it was fixed at 55, the normal retiring age for Govt. servants. This uncalled for distinction resulted in a great discontentment amongst the information scientists, particularly when the qualifications for the recruitment of the information scientists and bench workers continued to be the same. About a year back the matter was taken up by the ASWI, and as a result of the efforts of the Association a few information scientists have now been appointed in the scientific scale. This has led to a further dissatisfaction, as the information scientists, who have already been in service for many years, continue to be in the technical grade. For instance, an editor of a science periodical is in the technical scale, while a newly appointed associate editor of the same journal is in the scientific scale. It is high time that the ASWI should take up the matter with the higher authorities of the CSIR to redress the genuine grievances of the information scientists.

Resolution:

It is unanimously resolved that the discrimination between the pay scales and the service conditions of scientists engaged in laboratory work and information work in the CSIR must be done away with immediately. The financial loss, suffered by the scientists as a result of this discrimination, should be made good retrospectively from the date the scientific grade came into effect in the CSIR.

Resolution No. 2

Some of the overseers working in the CSIR Headquarters office are getting the Planning Allowance, while others employed on the same duty are not getting it. The matter was taken up with the higher authorities but so for no tangible results have been achieved.

Resolution:

It is resolved that all overseers doing planning work in the CSIR Headquarters office must be given the planning allowance and no distinction should be made amongst them.

Karaikudi Branch

Resolution No. 3

(a) The Association of Scientific Workers of India is of opinion that the Indian Universities should revive the practice of awarding M.Sc., degree by research. It wishes to point out that today as a result of stoppage of this practice by almost all the Universities, several brilliant scientific workers with a basic bachelor's degree in science who have taken to research career in National Laboratories are unable to register themselves for higher degrees and thus pave way for their advancement. The Association is of opinion that the amount of basic knowledge that is required at the degree level in different branches of science is quite sufficient as starting point to build up any high standard of knowledge in any particular branch or branches in which an individual would be interested during the course of his research work. It is, therefore, felt that revival of M. Sc. degree with appropriate stipulation for passing some written papers will be a step forward in promoting science in the country.

(b) Besides this, the Association also insists that all Indian Universities should as a rule recognise the work done in various National Laboratories for awarding higher degrees like M. Sc., and Ph.D. Further, the practice of insisting upon the condition that the first degree for a registration for higher degree should be from the same University should be discontinued, and all Universities should entertain graduates from other Universities as well, for registration. This will be the right step from the point of view of National Integration. In the absence of such step being taken by Indian Universities the Government of India should see that some Central Universities at least keep open for all graduates the facilities to register for higher degrees irrespective of their parent University.

Resolution No. 4

The Association requests the CSIR to adopt a more liberal policy towards their employees who want to qualify themselves further in the scientific field. It may, for example, depute on full pay for two years, Bachelor Degree holders who want to study and obtain M. Sc. or M. Tech. degree from an Indian University. In the long run, such a policy will only be in the interest of the laboratory itself, which can count on the services of better qualified scientific workers with training and experience in a particular field.

Roorkee Branch

Resolution No. 5

Resolved that a Unified Cadre of scientific assistants be created on the same lines as the proposed Unified Cadre of scientific officers.

Resolution No. 6

Resolved that the ceiling of the scale of pay of scientific assistants in the unified grade be fixed at the ceiling of the present Junior Scientific Offiicer's scale.

U.P.; PWD Research Institute Scientific Workers Association, Lucknow, U.P.

Resolution No. 7

Forwarding of application for employment elsewhere is pending since January, 1960 and it is requested that early action may kindly be taken.

Bhavnagar Branch

Resolution No. 8

B. Sc. Science Graduates having research experience in a particular field in the National Laboratories of the CSIR, may be permitted by the Universities for carrying research for Ph. D. degree.

From the Centre

Resolution No. 9

Resolved that Honorary membership under Clause 7 of the constitution of the Scientific Workers of India be offered to Indian scientists in recognition of their services to the cause of science and scientific workers in this country.

Further resolved that a committee be constituted to put forward definite proposals before the next meeting of the C.E.C.

Resolution No. 10

On allowance for scientific books and journals for teachers and research workers:

Whereas :—

(i) The rate of progress in science is so rapid that it is difficult for universities teachers and research workers in National Laboratories to keep track of it.

(ii) The cost of latest scientific monographs, conference reports and journals has risen steeply during last few years.

(iii) The number of available books and journals obtained in any library is not adequate to meet the growing demand of all research workers, teachers and post-graduate students in an institution.

It is resolved that the Research Institutes and Universities should sanction an adequate

books and journals allowance to every research worker and teacher to cover his pressing needs.

Resolution No. 11

On short-term advanced courses of study in Science in Universities and National Laboratories:

Resolved that in view of the paucity of highly trained scientists in the country and for maximum and optimal utilisation of existing talent and equipment, the University and National Laboratories should organise short-term intensive courses of advanced study during vacations or at other times if necessary. Such courses should be held in the laboratories of the organising institution or department. The teachers and research workers participating should be adequately paid for the extra effort in organising such courses.

Resolution No. 12

On Police verfications of political antecedents:

The Association of Scientific Workers regrets to record that the pratice of police verfication of political antecedents of scientific workers in National Laboratories and other institutions still continues. India is a free and democratic country aiming to achieve a Socialist Society. Police verfication was introduced during the British Colonial regime for victimising persons having sympathies with the National movement. Its continution 16 years after freedom is an anachronism.

The Association, therefore, demands that the practice of verification of political antecedents be stoppped forthwith in all science institutions and other institution of higher learning.

Resolution No. 13

On Confidential Reports:

The Association of Scientific Workers of India would draw the attention of the employing authorities of scientific workers to the harmful effects of annual entries in the "Confidential" of scientific workers. Democracy, clash of opinions, freedom of expression, frank criticism are the very essence of scientific methodology. The "Confidential" smothers all the above factors and thus blocks rapid development of science which is so essential for our nation to-day.

The Association therefore requests all concerned to abandon this system of "Confidential" entries and replace it by some suitable democratic and open method of assessment of the work of individuals.

Further resolved that the Association should forward a copy of this resolution to all major authorities employing scientific workers.

Resolution No. 14

On Moscow-Test-Ban Treaty:

The Annual General Meeting of the Association of Scientific Workers of India welcomes the signing of the Moscow Test Ban Treaty which has so far been endorsed by more than one hundred countries of the World, the Govt. of India being one of the first to sign it.

Ever since the first atomic test, mankind has suffered due to artificial radioactivity. Thousands of dead, burnt and sick at Hiroshima and Nagasaki, perfecting and large scale production of atomic bombs by several powers, testing of hydrogen bombs by them, and increased natural radio-activity in man's environments constantly remind mankind of the hazards before it.

Stock piling of nuclear weapons has reached such proportions that there is 30 tons of TNT perhead in the world. Nothing will remain of life on this planet if all of it was exploded. In a nuclear war, a sixty minute exchange between the two powers would kill 300 millions of Americans, Russians and Europeans and untold numbers elsewhere. The living will envy the dead.

The Association of Scientific Workers of India has campaigned and struggled for a

ban on nuclear bombs and for general and complete disarmament and world peace since its very inception. The Moscow Test Ban Treaty banning tests on earth, under water and in atmosphere, has helped in creating a new climate of opinion when further steps could be negotiated for a general and complete disarmament.

The Association has considered the stand taken by Dr. Gupta, President of the Association at the Meeting of the Bureau of the World Federation in November 1963. It is in full agreement and fully endorses the stand taken by him on Moscow Test Ban Treaty.

Resolutoin No. 15

(a) ASWI regrets to note that a discrimination is made between a foreign qualified and Indian qualified Pool Officer. This is unjustifiable in many instances. Pool facilities, therefore, should be extended on the basis of merit and not on the basis of country from which qualifications are obtained.

(b) Resolved that every Branch of ASWI should make special efforts to set up new units and branches in Universities and other research centres immediately. Efforts should be made to establish similar ASWI basis in industrial organizations.

(c) Resolved that in view of the immediate necessity for having H. Q. building in Delhi, the ASWI should immediately approach the Govt. for financial sanction in this regard. The Building fund should be created and all Branches and Units should make special collection for the ASWI Building.

Further resolved that pending the availability of its own building, the C. O. should be authorised to take accommodation on a rental value of up to Rs. 500/- in view of the emergency of maintaining an office for the Symposium.

(d) Resolved that in view of the changes which occurred in the salary obstruction etc. since 1947 when the constitution was adopted, Rule No. 90, dealing with the composition of Executive Committees, be kept in abeyance till a suitable amendment is made to this clause.

Further resolved that all amendments to the Constitution should be presented to the next CEC meeting, which must subsequently circulate the same to Branches for their opinion and the same may be moved for final adoption at the next Council Meeting. The final revised version should be published immediately after that, for supply to members.

Resolutions to be referred to CEC

Resolution No. 16

This Council hereby reiterates that the Association of Scientific Workers of India stand for the scientific progress of the country and as such the activities of the Association may be regarded by Governmental, University and other private scientific institutions of the country as part of their official activities and the delegates attending the various meetings of the Association may be considered by the respective Institutions as discharging part of their official duties.

Resolution No. 17

This Council feels that in the various Governmental, University and other private scientific institutions of the country at present no parity exists either in the stipulated basic qualifications or in the scales of pay offered for posts requiring the same amount of technical qualifications or skill and such disparities being one of the reasons prompting shifting of staff from one Institution to another, this must be looked into by the sponsoring authorities of the various Institutions.

Resolution No. 18

While this Council is aware of the existence of facilities for the improvement of the academic and technical qualifications of the junior staff working in some of the Governmental, University and other private scientific institutions of the country, it is felt that such facilities are at present inadequate in some of the Institutions. The Secretary of the ASWI will, therefore call forth at an early date reports from the various branches on the existance of such facilities in their respective circles for a full discussion by the Council.

Resolution No. 19

AMENDMENT TO RESOLUTION 2 OF KARAIKUDI BRANCH

Study leave for two years should be granted liberally under the existing rules to those desiring to qualify for M. Sc. If full pay is granted during this period, a contract of 5 years service may be required to be signed.

Alternatively, in certain branches of specialisation for which Universities do not have degrees, the CSIR laboratories themselves should take steps to award diplomas on the basis of the attainments of the concerned Scientific Workers.

Resolutions of Mysore Branch (20-24)

Resolution 20

The institution of supernumerary posts to be filled by Pool Officers recruited from abroad will create wide disparity between them and others holding equivalent qualifications already and employed in the different Ministries of Government. Such a situation may lead to serious demoralisation among those affected. The cases of such persons should be reviewed and their emoluments should be suitably adjusted, with retrospective effect if necessary.

Resolution No. 21

It is hereby resolved that ASWI should form a standing committee to investigate individual cases of gross injustice and discrimination against Scientific Workers. The committee should consist of three members of theCentral Executive Committee and two other eminent Scientists appointed from outside.

This Committee will go into the cases referred to them by the branches or the C.E.C., and take appropriate steps to implement their decision. The cases so referred shall be kept strictly confidential. The decision of committee shall be binding on the party concerned.

Resolution No. 22

In the absence of a Unified scale of pay of scientists, and of any regular system of merit promotions, applications of Scientific Workers for better posts should be forwarded by the Departmental Heads with their comments in all cases.

Resolution No. 23

Irrespective of the acceptance of Unified pay scale wich does not touch upon the Senior Scientific Assistants, existing pay scale of Senior Scientific Assistants should be replaced immediately by the old scale with retrospective effect, to remove the bitter disparity among the old and new Senior Scientific Assistants.

Resolution No. 24

Amendment to Constitution:

Paragraph. 90. The words"

"Basic pay of more than Rs. 500" to be replaced by "pay of more than Rs. 800"

Resolution No. 25

RESOLUTION ON COLLABORATION WITH AFRO-ASIAN COUNTRIES

Association of Scientific Workers of India feels that Indian Scientists have a special responsibility towards scientists of the developing countries, particularly the Afro-Asian countries.

The scientists in the Afro-Asian countries are faced with tremendous difficulties and they look upon the Indian Scientists to help them with their experience and research.

It is therefore desirable that

1. The activities of the Regional Centre of the W.F.S.W. are given greater attention than they have been given so far.

2. The Association of Scientific Workers of India should have special unit

for Afro-Asian collaboration with the task of maintaining contact, promotion of collaboration and helping the countries in the programme of Scientific Activities.

Resolution No. 26

RESOLUTION ON STEPS TO BE TAKEN TO GET RECOGNITION OF ASSOCIATION OF SCIENTIFIC WORKERS OF INDIA

Association of Scientific Workers of India directs the General Secretary to take immediate steps to approach various Govt. departments, quasi-government organisations and other Institutions employing scientists to recognise Association of Scientific Workers of India as the representative organisation of the scientists, to represent their cases and to negotiate on their behalf.

Resolution No. 27

RESOLUTION ON ELIMINATION OF WASTE AND INCREASING EFFICIENCY

The Association of Scientific Workers of India notices with dismay the lack of efficiency and increasing wastage of resources. The Association considers the stoppage of wastages and an efficient utilisation of resources could only be possible through planning with Scientific research playing a central role.

The Association of Scientific Workers of India considers that special efforts are required to efficiently utilise human and natural resources and to stop import of foreign know-how.

Resolution No. 28

RESOLUTION ON COMMITTEE TO LOOK INTO THE GRIEVANCES OF MEMBERS

The Association of Scientific Workers of India in pursuance of its aims and objects to redress the grievances of its members is requested to form a permanent committee at Headquarters to receive grievances from members, scrutinise them and take necessary action to redress them.

In this connection it is suggested that the Committee should lay down strict procedure of collection of data verifying and scrutinising it and taking action.

Resolution No. 29

RESOLUTION ON SCIENCE POLICY

The Association of Scientific Workers of India feels that there is a need for redefining the science policy of the country in order to correlate education, research and industrial development of the country. There is at the moment considerable fragmentation and lack of coordination of policies in one sphere with those of the other.

In education, subjects which are vital for industrial development of the country are hardly taught, nor there is clear definition of technical and industrial aims of the education.

In the field of research the technical know-how available in the country is not fully utilised and foreign know-how is preferred.

In the field of Culture instead of efforts being made to make it more scientifically oriented there is much pandering of the reactionary.

In view of the present situation the Association of Scientific Workers of India appoints a committee of three to examine the entire problems and submit its report within 3 months.

The Association of Scientific Workers of India also calls upon the Govt. to call another conference of scientists, educationalists and industrialists to examine the implementation of science policy resolution and the various recommendations at the earlier conference and consider concrete steps to qualify the various aspects of the resolution and to implement them.

Resolution No. 30

RESOLUTION ON PROMOTION OF SCIENTIFIC ATTITUDE

Science and Technology are the main instruments for bringing about social trans-

formation. This also necessitates a change in the outlook of people. Science and Technology cannot be supported by a Society whose members have an anti-scientific outlook.

Indian scientists and technologists are playing their role in changing the environment but have shirked their responsibility in changing the out-look of people. It is to this task that Association of Scientific Workers of India should devote itself with greater vigour so far. It is, therefore, proposed that Association of Scientific Workers of India should chalk out an active programme of propagation of scientific attitue. In this connection it should appoint a committee to :—

1. Go through school text books and submit a report on anti-scientific and irrational elements in the texts.

2. Ask the Govt. for (*a*) facilities of popularising scientific attitude on A. I. R.

(*b*) Prohibition of construction of place of workship in educational institutions at public expense.

(*c*) Stopping of compulsory and optional teaching of theology.

3. The withdrawl of declaration column of religion, caste from student or service application forms.

4. Propagate for stopping of religions invocation in scientific and govt. functions.

Proposal for consideration of General Body of ASWI

Resolution No. 31

In order to critically assess work carried out in India by scientific workers and linking the researches with the developmental requirement and progress of the country, it is suggested that an annual prize be instituted by the ASWI to be awarded to a scientist whose work has helped most in technological development of the country. The *modus operandi* for selection of prize winner by fellow science workers will be as follows:—

1. Each claimant should give an assessment of his own work during the past one year and indicate how his work has helped in scientific advancement and would help in technological progress of the country.

2. Individual ASWI Unit should critically evaulate reports of such work, which have been sponsored by at least two members of the Unit, and recommend by majority votes the first three reports to the Branch.

3. Individual branches should evaluate the reports submitted by Unit and recommend first three reports to the Central Executive.

4. The Central Executive in collaboration with co-opted members should adjudge these reports and award the first prize at its annual meeting.

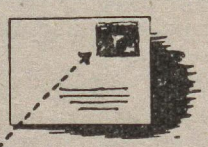
The prize should help the ASWI members to honour the best worker in the field of scientific and applied research. The psychological impact of the prize would be tremendous as it would help in orienting the research activities in a manner which would have direct bearing on the technological advancement of the country and would also assist each scientific worker to critically evaluate his own work and improve his out-put considerably.

———

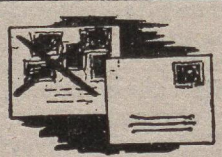
AFFIX STAMPS WITH CARE

TO SPEED UP THE MAIL

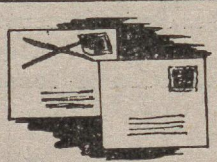
★ AFFIX STAMPS OF CORRECT VALUE



★ STICK STAMPS ON TOP RIGHT CORNER ON ADDRESS SIDE



★ USE MINIMUM NUMBER OF STAMPS FOR VALUE REQUIRED



★ DON'T STICK STAMPS LOOSELY

POSTS AND TELEGRAPHS DEPARTMENT

DA 63/476

Printed and published by Shri K. Ray at the Narendra Printing Press, 20 Model Basti, New Delhi-5.
Regd. No. A-1468