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# ACADEMY NEWS

VOL. 3

NO. 1

NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY  
National Science Development Board

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\*deceased





## NAST Launches Search for 1981 Outstanding Young Scientists/Technologists

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### Chemrawn II to Meet in Manila Feb 2-6 '82

**Pledges to help Answer the World's Food Supply, Nutrition and Economic Development**

CHEMRAWN II is a major international nonpolitical, interdisciplinary conference dealing with present and potential contributions of chemistry and biological sciences to the world's agricultural and food production and processing institutions, will convene in Manila on February 2-6 next year.

The organizers are specially interested in reaching persons responsible for planning, setting and implementing policy on food production and nutrition and with managers and scientists who plan direct research in these important areas.

Scientists, technologists, industrial managers and agricultural specialists will gather in this meet to identify and set into perspective those areas of scientific research that hold the potential to provide an enlarged technological base upon which the cultural production and food processing needed to meet their increasing food and nutritional needs.

This international meet is co-sponsored by the International Union of Pure and Applied Chemistry (IUPAC) and the International Rice Research Institute (IRRI) based in the Philippines. The

The National Academy of Science and Technology has announced its search for Outstanding Young Scientists/Technologists. Each will fall under the following disciplines: Mathematics, Physics, Chemistry, Engineering, Medicine, Biological Sciences and Social Sciences.

To be a nominee, he should be a Filipino citizen, not more than 40 years old in July 13, 1981 and not a day older than 40 years, a holder of a Bachelor's degree in one of the above-cited disciplines; and a major researcher of a project or research activity.

The general criteria for the selection of awardees among others are: relevance of research activities; quality of scientific works and publications and productivity and importance of research works.

Nominations can be submitted by heads of government/private research institutions as well as colleges and uni-

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conference will place strong emphasis on the forward edges of science and related technologies: chemistry, biochemistry and biology, with emphasis on molecular biology — which will be capable of producing the major breakthroughs necessary to meet the nutritional needs of the world's population in the next two decades.

For additional information, you may communicate with CHEMRAWN II Coordinating Office: The International Food Policy Research Institute, 1776 Massachusetts Avenue, N.W Washington DC, 20036, U.S.A.

versities to the National Academy of Science and Technology (NAST), Bicutan, Taguig, Metro Manila.

Accomplished forms handcarried or mailed must reach the NAST Secretariat on or before 30 April 1981 regardless of post mark.

The timetable for the Selection of the 1981 Most Outstanding Young Scientists/Technologists follow:

March	Announcement
April	
May	Screening by different Committees Screening by the Executive Council
June	Selection

Meanwhile the Executive Council has named the head of the Committees for the Screening of 1981 Most Outstanding Young Scientists/Technologists:

Committees	Chairmen
1. Social Sciences,	Dr. Alfredo V. Lagmay
2. Biological Sciences,	Dr. Carmen C. Velasquez;
3. Medical and Health Sciences,	Dr. Geminiano de Ocampo;
4. Physics,	Dr. Melecio S. Magno;
5. Engineering,	Dr. Tito A. Mijares;
6. Mathematics,	Dr. Raymundo A. Favila;
7. Chemistry,	Dr. Alfredo C Santos.

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Third Annual Scientific Meeting of the National Academy of Science and Technology  
Set for July 13, 1981 . . . (Details in the next issue of the Academy News).

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## NAST Honors Founding Members of PAASE

The National Academy of Science and Technology honored the Founding members of the Philippine-American Academy of Science and Engineering last January 7 with a dinner at the Holiday Inn Manila.

Dr. Severino L. Koh, president of the PAASE expressed their indebtedness to the NAST for the cooperation in extending the help by sponsoring that dinner in their honor. Later, Dr. Paulo C Campos, NAST President, gave a short background of the Academy, introduced and presented the Academicians present.

By the way, the PAASE is composed of 27 Philippine-American scientists and engineers who have individually distinguished themselves in their respective areas of study through research publications and other technical achievements. They have signified their interest in becoming the Founding Members of the Academy dedicated to the promotion of its stated objectives. To underscore the ties this newly founded Academy would like to foster as well as the deep-seated affection its Members feel for their native country, it is only fitting that the Academy holds its inaugural Meeting in the Philippines. To commemorate this event in a meaningful way, perhaps to initiate also a mode of interaction among scientists and engineers from the Philippines and those from abroad, some of the Founding Members attending this meet-

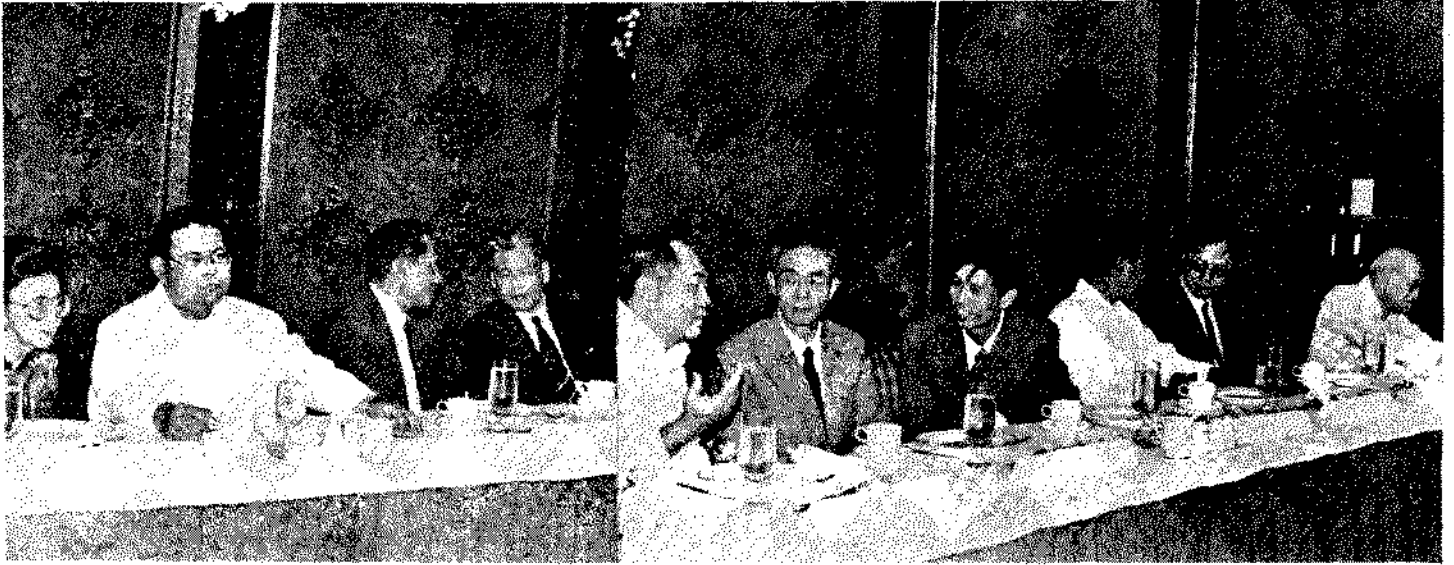


ing will present some results of their research studies in a Founders' Symposium.

The Philippine-American Academy of Science and Engineering was incorporated in the State of Indiana, U.S.A., on August 11, 1980 as a non-profit organization with the primary objectives of (1) promoting the advancement of science and technology; (2) encouraging collaborative work among scientists

and engineers in research and development; (3) supporting interaction among United States citizens and residents of Philippine descent in scholarly and scientific endeavors that would be of particular benefit to the United States and the Philippines, and (4) providing means for a transfer of scientific and technological information between these two countries.





*A group of 8 social scientists from Chinese Academy of Social Sciences of the People's Republic of China was in the country as guests of the Philippine Social Science Council. Here, the Chinese delegation is shown at the Presidential table with our National Scientists and Academicians. From left to right: Dr. Fe del Mundo; Bro. Andrew Gonzales of La Salle University; Dr. Alfredo Lagmay, Vice-president of NAST; Wang Gang, Secretary-General of the Delegation; Dr. Paulo C. Campos, NAST President; Director San Yaming, head of the delegation; Prof. Jiang Yiping, interpreter; Dr. Francisco Nemesio, Jr. of PSSC; Tu Kung, of Chinese Embassy and Dr. Alfredo C. Santos.*

*This marks the beginning of closer linkage between social scientists of China and the Philippines.*

\* \* \* \* \*



*Left and right photos--*

*NAST President, Dr. Paulo C. Campos with delegates to the International Conference on Energy and Environment, at the mini-hydro plant in Dasmarinas, Cavite.*

# The Role of a National Academy

By Lord Todd, O.M. F.R.S.

More than three centuries ago — in the year 1660 — the Royal Society was officially founded in London, although in fact its formal creation by King Charles II was only the official recognition of a group of learned men who had been meeting more or less regularly to discuss and study natural phenomena for some considerable time before then. Its aims and objects were clearly stated in 1663 by its secretary, Robert Hooke, as follows:

The business and design of the Royal Society is— To improve the knowledge of natural things, and all useful Arts, Manufactures, Mechanick practices, Engynes and Inventions by Experiments — (not meddling with Divinity, Metaphysics, Moralls, Politicks, Grammar, Rhetorick, or Logick).

Adhesion to these rules was not too difficult in Hooke's day. True there was always the danger of an accidental brush with religious dogma, but certainly, as far as pure science was concerned, politics presented no problems. Pure science was — and for that matter still is — a branch of culture just like music and the arts and to its governments stand as patrons just as they do to these others. Science really only began to emerge as a significant cultural pursuit in the second half of the seventeenth century with the so-called scientific revolution and it quickly acquired a status which ensured for its practitioners quite a remarkable degree of tolerance with immunity from interference by governments which lasted until the second half of last century.

So it was that, two hundred years ago when America and Britain were at war with one another, Benjamin Franklin, a Fellow of the Royal Society and Founder of the American Philosophical Society, was able to obtain the right of passage and freedom from molestation by American warships for ships of the British Navy, under the command of Captain Cook, engaged on a scientific expedition to the South Seas which had been organised by

the Royal Society. During the Napoleonic wars we know that the English scientist Count Rumford travelled extensively in France holding discussions with scientific colleagues, and it is also on record that in 1796 Chevalier de Rossel, a French sailor and scientist at the time a prisoner of war in England, dined at the Royal Society Club as a guest of Alexander Dalrymple, the hydrographer of the Royal Navy. As a final indication of the attitude of governments in the past I quote the following excerpt from the instructions issued to the captain of H.M.S. Rattlesnake when she sailed on a scientific expedition in 1846:

"You are to refrain from any act of aggression towards a vessel or settlement of any nation with which we may be at war, as expeditions employed on behalf of discovery and science have always been considered as acting under a general safeguard."

Since those days things have deteriorated a lot and I doubt very much whether such sentiments are widely shared by nations today. The reason for this deterioration is, to my mind, fairly clear. By the end of the 17th century it had become recognized that, particularly in matters concerning navigation, safety and progress were bound up with scientific discovery and invention; moreover science was a common interest of mankind and its discoveries were not as a rule associated or identifiable with any sectional interests in society. That it should have been granted a substantial measure of tolerance and immunity from interference by civilised communities is thus understandable. From about the middle of last century, however, men began consciously to apply science, or more particularly the results of scientific research, to the solution of practical problems in agriculture, industry, medicine, and defence. It was this — the new science based technology — that enormously speeded up technological innovation and led to

the fantastic and ever-accelerating advance in our material civilisation which has been the characteristic feature of the past hundred years. As a result science has come closer to its practical utilization and governments have become increasingly interested in it. For government is about power and in scientific research lie the seeds of power. The temptation to support but at the same time to control science in the interest of national political aims has therefore grown apace and tolerance can no longer be taken for granted; nor can science safely eschew all contact with politics as it could in Hooke's day. Everywhere it is evident that economic strength and with it national stability are dependent on technological progress and it is difficult today to think of any area in national affairs in which science and technology are not involved directly or indirectly. Under such circumstances it is hard to believe that correct policy decisions can be reached in a democracy whose members are virtually ignorant of science. There lies therefore at the root of any national science policy a complex problem of education. To that I shall return but before doing so I would like to consider the matter of science policy as such.

As I have already said, governments are interested in power and power today rests on technological competence. It follows therefore that a government must be interested both in science and in technology although the two are in many areas interwoven. Pure science must be supported not just because it is from its research that the seeds of technological advance come but also for a very practical and immediate reason. In a technological society it is essential to have an adequate supply of trained scientific manpower capable of applying science and its methods to practical problems. Scientific research carried out in universities and technical institutions has a training function, directly for postgraduates, but in-

directly also for undergraduates since first-class teachers in science can only be sustained through the stimulus given to them by research. The vital training function of research in centres of higher education applies in large measure also to applied research of which a good deal is also done in such institutions. It may be well, however, if at this point I define these terms. In my view pure scientific research is research aimed at expanding the frontiers of knowledge without having any formal *economic* objective (I say "economic" since all research must have some objective). Applied research differs only in that it must have, at shorter or longer range, an economic objective (e.g. electronics or metallurgy); in its philosophy and methods it does not differ from pure research. There has been much talk in recent years about the need to bring universities much closer to industry than they have been in the past and to orient their teaching and research accordingly. No doubt this is desirable but one must not carry it too far. It is important that a prospective scientist should be made aware of the opportunities and problems of the outside world and that his education should fit him to enter it, but if his education is reduced to a set of techniques suited to the current needs of industry then he will emerge as a technician and not a scientist (although let us remember that in modern society we need many more technicians than we do scientists). Equally in the field of research too narrow concentration on practical problems can be dangerous — we must remember that the essential function of research in a university is educational.

Governments are therefore faced with the problem of how much money to spend on research (and on development) and how it should be distributed. But of course it is quite impossible to say how much money this or any other country should spend on scientific research, the more so as examination of available figures does not show any clear or simple relation between a country's economic progress and the amount spent on pure research. I believe simply that it should be sufficient to ensure that the training function is discharged adequately to meet the country's need for highly qualified scientists and technologists. I believe its inflation to the point where research gets wholly divorced from its training function and leads to the development of



*Lord Todd was NAST visitor. He is shown here with the NAST head, Dr. Campos. Science Minister Magno is at the rostrum.*

more or less permanently staffed research institutes with no economic objectives is wrong, and could, in the long run, destroy rather than promote science. But there are other problems too. Not so long ago pure research was inexpensive and as such presented few problems to governments; but today this is no longer true and indeed some areas of research e.g. nuclear physics and astronomy, have become enormously expensive and others bid fair soon to catch them up. No government has unlimited funds at its disposal, and so it must make choices. If it fails to establish its priorities and make choices accordingly the only result will be a spreading of resources too thinly with a consequent failure to be competitive in any field of science. It needs a policy for the support of science and such a policy can only be devised as part of economic policy, since its operation will, almost certainly, determine the number and type of trained scientists who will become available to meet the country's industrial and other needs. There is in my mind no doubt that the proportion of a country's best brains going into one subject area is affected by the scale of, and the amount of publicity and glamour associated with the research being done in it. Failure to take economic policy into account in de-

termining the areas of science in which major research efforts should be mounted can only lead to frustration, emigration of able young people, and, in the end, to industrial stagnation. Government should not and indeed cannot, control science but it can and must control the relative weight of effort in the different branches of science if it is to pursue any coherent economic policy. To do so it needs independent, disinterested advice of the highest quality; which brings me back to the subject of national academies and their role at the present day.

The situation is far from being as simple as in Robert Hooke's time although the fundamental function of a national academy such as the Royal Society — to stand for and to promote excellence without regard to creed or political dogma — remains as important as it ever was. Other functions, important though they are, are secondary since without excellence none of them can be fulfilled. How should it do this? First and foremost its members should be chosen on grounds of scientific or technological merit and achievement alone without reference to political or other connections. Secondly, the membership should cover the whole range of science although it should not be too

*(To next page)*



## To Hold One-Week National Physics Congress this October

The Philippine Physics Society (Samahang Pisika ng Pilipinas) is holding a one-week National Physics Congress at the end of October, this year. This coincides with the academic semestral break. Roughly 200 local and foreign participants from the country as well as our Asian neighbors and the western countries will convene here.

Although at this stage plans have not been firmed up but they have already considered inviting the Nobel prize winner in physics

of 1980, Dr. Abdul Salam (Pakistani). He is the director of the International Institute of Theoretical Physics at Trieste, Italy and a physicist from Cambridge University in England. If plans will be carried through, he will be the guest speaker and will give additional lectures while here.

In this connection, the Philippine Physics Society has extended the invitation to NAST to participate in the Congress since one of the sessions would be on "Physics and Medicine."

## Indonesia Considers Setting-Up a Similar Institution like NAST

Dr. Sabana Kartasasmita, Indonesian Assistant to the Minister of Research and Technology was assigned to set-up and establish a similar institutions in Indonesia like the National Academy of Science and Technology and NRCF in Indonesia. In order to gain insight he came to Manila and visited these institutions. The Members of the Executive Council actually compared notes with the Indonesian official who is an economist by profession, on science policies, plans and structure at a luncheon meeting held at the Casino Español de Manila last March 17th.

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### ROLE OF NATIONAL ACADEMY. . . (Continued from page 5)

large. Thirdly, every effort should be made to keep down the average age of its members; too many academies have lost their influence by becoming clubs for the aged. Youth and vigour are necessary. Given that these three requirements are met an academy should also seek out promising young scientists and ensure that they are given adequate support to develop their research potential. Furthermore, the fact that it embraces all branches of natural science puts it in a unique position to promote interdisciplinary activities which, although vitally important, often tend to be neglected by the subject-oriented scientific societies. This can be done by holding multidisciplinary discussion meetings which the general scientific public may attend, and by promoting similar but smaller gatherings of specialists to review progress and formulate programmes of research. I do not myself believe that an academy should own or control research institutes; research is best pursued in universities or, where specific objectives are in view, by government (e.g. for defence research) or by industry.

A second vital function of an academy is to be responsible for international scientific relations. Science is international — there is no such thing as British science or American science or Filipino science and

free interchange and discussion between scientists of all nations is something we must all strive to attain. Its attainment depends wholly on international agreements and relations being made and operated between national scientific academies with a minimum of interference from politics and politicians; for this I believe there is no substitute for a national academy which represents science as a whole. We already have examples to hand in the agreements which operate between the Royal Society and other national academies overseas on exchanges — agreements which, I hope, will expand and develop to our mutual benefit. And governments, incidentally, should beware of the assumption that harmonious scientific relations have no relevance to the betterment of trade and perhaps even of political relations.

In addition to these there is finally an important function for national academies as advisers to government. In what we might call the day to day business of government the academy is the body to which it should turn for advice on scientific appointments, and on the scale and broad distribution of resources for research and education in science. But an academy should also have an important advisory role in policy making. It is not

the business of the scientist to take policy decisions — decision is a political matter and it is for the politician. But the politician cannot take a wise decision unless he is made aware of all the relevant scientific facts and their technological implications insofar as they can be predicted. Equally, when it comes to such questions as the likely effect of various actions on our environment (including such direct effects as pollution) or the choice of a long-term energy policy, it is essential that government be given all the scientific information available before it can reach sensible conclusions. And this can only be done by a fully responsible, disinterested body which can call upon all the talent in the country and is therefore well able to sift information critically and give government reliable advice.

These three functions are in my view of great importance and they are the functions we seek to perform as the Royal Society. I do not say we have always done so successfully but the unobtrusive and informal association with government which characterises the Royal Society's role in the United Kingdom is something which should not only be preserved but should be intensified in the difficult times in which we live.



# The NAST-INSA Cooperation

## ARRANGEMENT ON COLLABORATION BETWEEN THE NATIONAL ACADEMY OF SCIENCE AND TECHNOLOGY OF THE PHILIPPINES AND THE INDIAN NATIONAL SCIENCE ACADEMY

RECOGNIZING the mutual benefit of scientific interchange and the convenience of set procedures for its administration, the National Academy of Science and Technology of the Philippines and the Indian National Science Academy hereinafter called the Sides, conclude the following agreement:

### I Scientific contacts

Both Sides will do all in their power to facilitate collaboration between specialists in the scientific disciplines within their mutual competence.

### II Exchange visits

Each year commencing \_\_\_\_\_ the Sides will organize and finance visits in each direction by postdoctoral scientists in the natural sciences and technology in two categories:

(a) *Study visits:* usually for short periods of from one to three weeks, to a total of four person-months on either Side, with the aim of visiting a number of laboratories in the host country for discussions and liaison, or for field study visits.

(b) *Fellowships:* Usually for longer periods to carry out research projects or learn new techniques predominantly in one laboratory or site, but with provision for short subsidiary visits to other places.

### III. Financial responsibilities

(a) *Study visits:* The sending Side will pay the international fares of its visitors, while the host Side will provide for the local costs of the visit (board, lodging and transport connected with the objects of the

visit) in accordance with the Financial Annex to this agreement.

(b) *Fellowships:* The sending Side will pay for all the expenses of the visit, both international fares and local costs, with the host Side helping with the placing of visitors and the administration of their programmes, as may be necessary.

### IV. Selection and nomination of visitors

The sending Side will be responsible for selecting and nominating visitors from that country to the host Side, although the host Side may ask that certain named scientists or certain subject areas may be given favourable consideration where it is known that they would be particularly welcome. Especially with Fellowships preference will be given to applicants involved in joint projects (see Article VI).

Nominations are to include the following details:

1. The category of visit for which the scientist is nominated.
2. Full surname, forenames and title.
3. Date and place of birth.
4. Short scientific biography and details of degrees.
5. Current appointment.
6. Field of specialization.
7. Main scientific publications (to a maximum of six).
8. Knowledge of languages.
9. Proposed scientific programme:

(a) *For Study visits* — Scientific centres or type of institution which it is desired to visit; length of stay in each centre; specific scientists with whom meetings are requested and the type questions to be discussed.

(b) *For Fellowships* — precise details of the work to be carried out including prospective host institute; places or people to whom short subsidiary visits are requested.

(To next page)

*The proposed arrangement on collaboration between the National Academy of Science and Technology of the Philippines and the Indian National Science Academy, as drafted by the former—The Editor.*

10. Desired date of commencement and length of visit.
11. Anything else desired by the nominee which is not connected with the programme of scientific work.
12. Whether to be accompanied by dependents(s) at own expense.

Nominations are to be forwarded to the host Side in sufficient time for at least three months notice to be given in each case. Not later than two months following receipt of a nomination the receiving Side is to inform the sending Side as to the acceptability of the proposed visitor, the suggestions for the programme and the period of the visit. A provisional programme should be sent as soon as possible for the visitor's information and approval.

Once a nominated scientist has been accepted for a visit, the receiving Side is to take all necessary steps to facilitate the issue of any necessary visas, work, residence or other permits. Precise details of the visitor's travel arrangements, e.g., flight number, estimated time of arrival at airport, etc. are to be cabled to the receiving Side not less than seven days before departure.

#### *V. Attendance at meetings*

Although the purpose of visits under Article II should not primarily be attendance at conferences, etc., such attendance may be included within a visit if both Sides agree.

#### *VI Joint projects*

Both Sides will encourage joint scientific research between laboratories in the two countries including the conclusion of inter-institutional agreements where this is necessary. The research results shall be mutually shared by both Sides.

#### *VII Medical insurance*

Both Sides will ensure that visitors from their respective countries are adequately insured against medical expenses which may be incurred as a result of falling ill or sustaining bodily injury in the course of visits under this agreement.

#### *VIII Limitation*

The provision of this agreement as well as of subsequent implementing arrangements on programmes shall be subject to the laws and regulations in force in the country of each Side.

#### *IX. Validity of agreement*

This agreement will come into force on \_\_\_\_\_ It will be implemented directly between the National Academy of Science and Technology of the Philippines and the Indian National Science Academy. It is open to either Side at any time to submit suggestions or recommendations for amendment or modification of the Agreement which will not otherwise be subject to regular renegotiation.

For Indian National Science Academy

For the National Academy of Science and Technology of the Philippines

Minister, National Science  
Development Board

*Financial annex to the Agreement on collaboration between the National Academy of Science and Technology of the Philippines and the Indian National Science Academy*

As stated in the body of the Agreement, Study visits under Article II

(a) will generally be on the basis of the sending Side paying international fares and the host Side local costs, whereas Fellowships under Article II

(b) will be entirely at the expense of the sending Side.

#### *Study Visits*

##### *Accommodation*

The Host Side will reserve and pay directly for the visitor's occupation of a room with use of bath or shower in a hotel, college hostel, or other suitable establishment for the period of the visit.

#### *Maintenance*

Additionally the visitor will be paid in advance a daily allowance for meals not included in the price of accommodation and for incidental expenses, the amount to be agreed by the Sides by correspondence and regularly reviewed.

#### *Travel*

For other local travel visitors will be given pre-paid tickets or, where this is impracticable, such expenses will be reimbursed retrospectively.

#### *Conference fees*

At the request of the sending Side the host Side will pay the fees for attendance at meetings under Article V.

#### *Accompanying dependants*

Accompanying dependants will be at the expense of the visit concerned. However, if requested in good time, the host Side may help by reserving economically priced double rooms, making extra provision for local travel, etc., on the understanding that the extra cost will be repaid by the visitors.

#### *Fellowships*

Although Fellowships under Article II (b) will be entirely at the expense of the sending Side, the host Side, if requested may help with accommodation by making inquiries and reservations on behalf of the sending Side; providing information on availability, cost, etc., either to the sending Side or directly to the visitor.

For the Indian National Science Academy

For the National Academy of Science and Technology of the Philippines

Minister, National Science Development  
Board

# ACADEMY NEWS

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