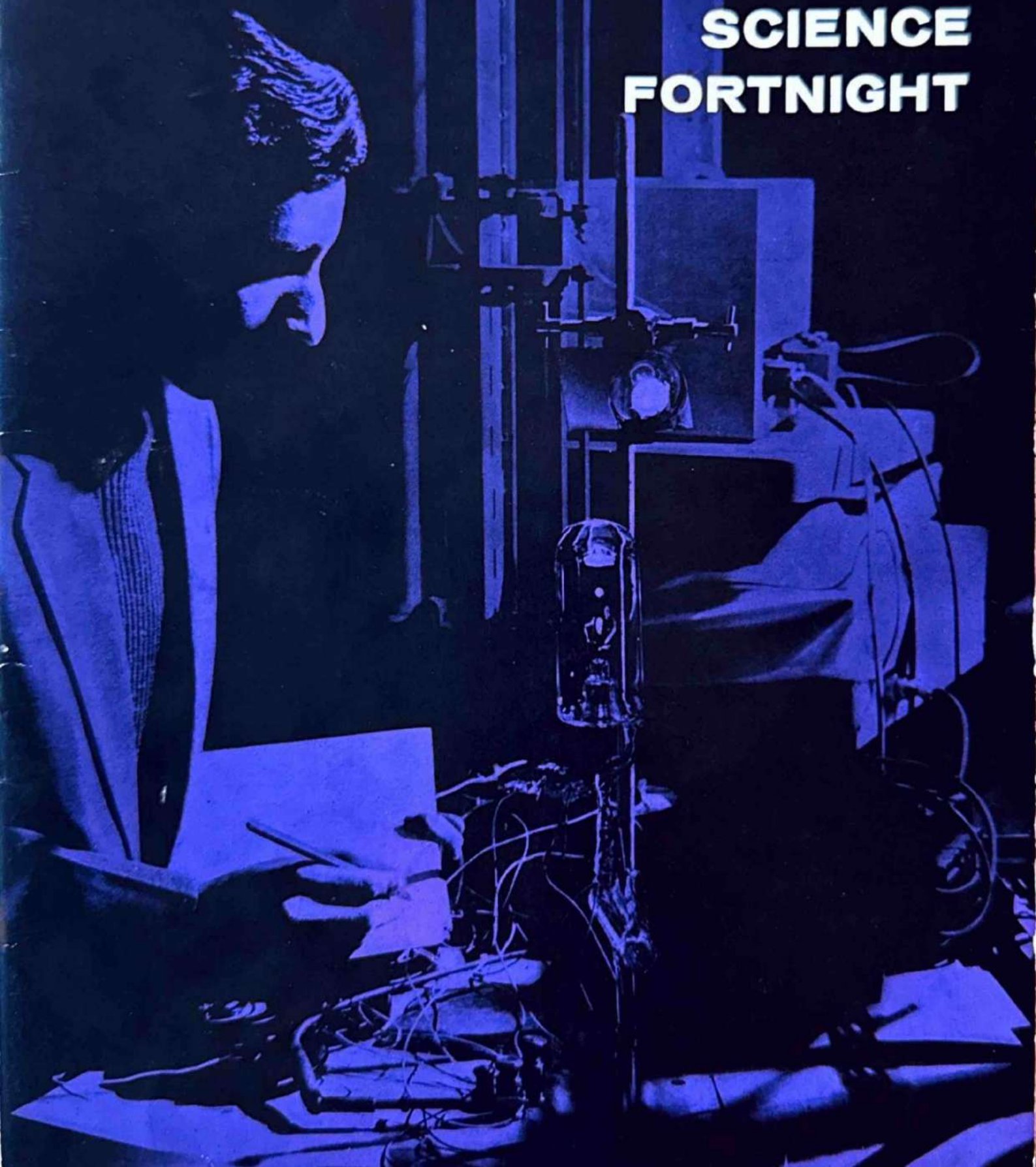
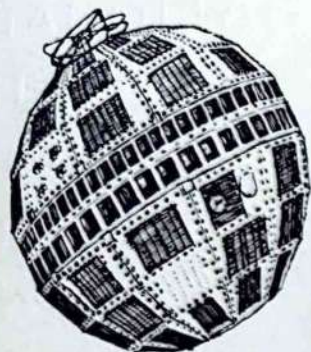


5

**FIFTH INTERNATIONAL
YOUTH
SCIENCE
FORTNIGHT**

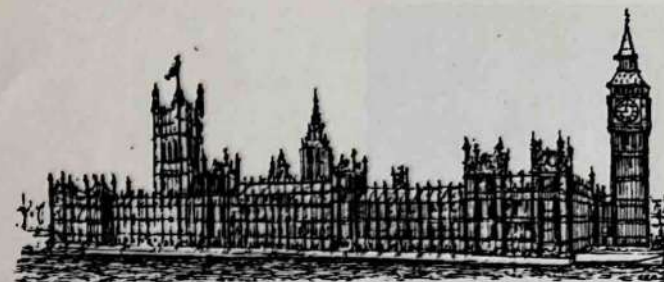




ILLUSTRATIONS
Left: British Communication Satellite 'Telstar'
Below: Post Office Satellite Communication Ground Station—Goonhilly
Right: Houses of Parliament and Big Ben—Westminster
 Illustrations by J. E. Heighton

CONTENTS

Patron, Presidents and Administrative Headquarters	1
Message from the Patron	2
Message from the President	3
The Director's Page	4
British Association for the Advancement of Science ..	5
"Where do we go from here" by Mr. G. McGowan ..	6
International Praesidium	8
Opening Ceremony, Lectures, Shell Film Show and Closing Meeting	9
Scientific Visits	10
Countries Represented and Sponsoring Bodies Abroad	12
Programme	13
British Schools Participating and Sponsoring Authorities	14
Discussion Group Leaders, Hosts and Officials ..	16
Joint Organising Council	17
Worldfriends	18
Letter from Mr. Cecil King	19
I attend the Fourth International Youth Science Fortnight by Miss Gillian Joubert	20
Reunions and 1964 Tour	22
Message from Sir George Allen	24
Announcements and Acknowledgements	Inside Back Cover



London International Youth Science Fortnight-July 1963.

Sponsored by Worldfriends in conjunction with the British Association for the Advancement of Science

Patron His Royal Highness The Duke of Edinburgh, K.G.

President The Rt. Hon. Lord Nathan, P.C., T.D., F.B.A.

Vice-Presidents The Rt. Hon. Lord Luke of Pavenham, T.D., D.L., J.P.
 Sir John Cockcroft, O.M.
 Dame Kathleen Lonsdale, D.B.E., F.R.S.
 Dame Irene Ward, D.B.E., J.P., M.P.

Administrative Headquarters: Worldfriends, 308 Earls Court Road, S.W.5 (FREMANTLE: 7071.)



Message from H.R.H. Prince Philip

THE London International Youth Science Fortnight has two principal intentions. First, it is hoped that all those attending will gain an insight into science which will be helpful to them in the course of their studies. Secondly, it is hoped that the meeting will produce a sense of common purpose and friendly understanding between individuals of different nationalities. People are naturally inclined to judge a nation by the individuals of that nation known to them personally. Sharing an interest in a common subject and meeting in the usually friendly and interesting atmosphere of an international congress, the chances are that the members will go home with a reasonable view of their international colleagues which they will almost certainly pass on to their friends and relations.

I want you to realise, as you start your fortnight's scientific tours and studies here, that you are joining a great international fraternity which is trying to serve mankind. As Cervantes put it, "Learning without virtue is like a pearl on a dung heap". We all know that science is not always directed to the material improvement of the world but it is equally certain that every true scientist, whatever his work, has the best interests of mankind at heart.

It is in that spirit that I welcome you to this country and to the Science Fortnight. I have no doubt that you will find much that will interest and instruct you in the scientific field but I hope you will also find out many things about each other and about this country which will give you a better and a wider understanding in the years ahead.

Patron

Message from Lord Nathan

I HAVE been President of the Science Fortnight for four years now, that is since its inception. I have seen the fruition of an idea and the growth of an ambitious scheme. Initially the Fortnight was based on exchange between continental sixth formers and their London counterparts. However, the demand for places rapidly brought about expansion, and today the majority of the participants live in halls of residence. Debate in the silent hours among the representatives of thirty nations brings about better understanding and epitomises the remark of Lord Tweedsmuir to the Director of the Fortnight, Mr. Green, when he planted the seed of the whole idea "... out of like interests come the strongest friendships."

It seems to me that a great undertaking is well on the move. After a small beginning we now have a Fortnight worthy of the patronage of His Royal Highness The Duke of Edinburgh, to whom I would express our respectful thanks for his encouragement in the early days, and indeed throughout. Now the effects of our aims are becoming felt. Participants themselves are taking up the challenge in their ideas for a Science Club and a News Bulletin. I have sympathy with their schemes, and I hope that everyone who reads this Message will feel likewise, and give support by word and action.



The President of the Science Fortnight, Lord Nathan, addressing the delegates at the Opening Ceremony in 1962.



The Science Fortnight

"Oh what a lovely war" is the title of one of the most remarkable theatrical successes in London. This satirical musical tells poignantly the story of the first world war with its frenzied nationalism, its ghastly slaughter, its Christmas Day exchange of greetings between rival trenches. "Tommy, how are you? I'm very well thank you." But where did this war to end wars lead? Merely to the next war, and is this to happen again?

In contrast, the other side of the coin can be seen in the photograph on this page. Taken at a London Railway Station in 1962, this unrehearsed picture of a Swedish boy being greeted by his English host symbolises the challenge of the Science Fortnight. In that moment of meeting two lives have crossed. What effect will it have? It can have a great deal, it can have none—that all depends on what use you, the participants in this year's Science Fortnight, make of your opportunities.

I say YOU because the Science Fortnight has become something more than two exciting weeks which remain a golden memory. In the past year the Science Fortnight has ceased to be an end in itself; rather has it become the beginning to a mighty end. From the enterprise of Bill Nike and others who thought like him in 1961, past and present Science Fortnight participants are forging links which may in time extend to young scientists generally. The News Bulletin will provide a debating forum; the Science Club will provide a meeting place for young scientists of any nationality.

You, like every other young person in every other land, want peace and a sensible order of society. You will only get it if you work for it. The Science Fortnight offers you this opportunity. "I got so much out of the Science Fortnight that I feel I must try to put something back in." These were the words of a participant from former years. Today, despite his studies and financial limitations that are every student's lot, he is trying to put something back. Will you follow his example?

Philip S. Green, M.B.E.,

*Originator and Director
of the Science Fortnight*

The British Association for the Advancement of Science

FOUNDED in 1831, the British Association remains unique as an independent institution of national reputation, which brings almost the whole range of sciences within its scope, and opens its membership, without qualification or nomination, to all who are interested in the progress of science.

It was the example of a German Society—the Deutsche Naturforscher Versammlung—which inspired the foundation of the British Association. In 1831 the Yorkshire Philosophical Society organised the first meeting at York, and Sir David Brewster defined the objects of the Association thus: "The principal objects would be to make the cultivators of science acquainted with each other; to stimulate one another to new exertions; to bring the objects of science more before the public eye and to take measures for advancing its interest and for accelerating its progress."

These objects are as valid today as in 1831, despite (and partly because

of) the tremendous progress of science. Today science, whether we like it or not, dominates the life of all of us. Only science can provide the answers to some of the major problems which face the world. On the other hand, science has provided also the means to bring life on this planet to an end.

For this reason, the Association regards it as one of its main tasks to promote a better understanding of the significance of scientific research and its impact through its applications, on society as a whole.

The principal activity of the Association is still the Annual Meeting, held every year since 1831 except for the period of the two world wars. It is a movable Festival of Science, held in a different city each year, and is the greatest scientific meeting in Britain each year. This year the meeting is at Aberdeen.

In addition the Association now maintains a Central Lecture Service, a Visual Aids Section, and nineteen Area Committees in most of the

principal centres of population to provide lectures, organise Junior British Association Meetings and Science Fairs, and promote wider use of the many excellent films about science which are available. One of the activities in which it is delighted to be associated with Worldfriends is the organisation of the scientific programme for the International Youth Science Fortnight.

As H.R.H. the Duke of Edinburgh, Patron of the International Youth Science Fortnight and a Past-President of the British Association said at the Annual Meeting of the Indian Science Congress (at which he represented the British Association) in New Delhi on 22nd January, 1959:

"Every human invention or discovery can be used for good or for evil and in the end it is the people as a whole who decide which it is to be. It is therefore essential that the possible consequences of scientific research should be put before the forum of ordinary people. Only in this way can the combined opinion of reasonable, upright and humane men and women throughout the world exert the necessary pressure to ensure that science is used to set free and not enslave mankind."

Where do we go from Here?



The idea of a Club and News Bulletin was taken to the Director of the Science Fortnight.

By George McGowan

Editorial Adviser to the Director of the Science Fortnight

As you read this programme for the first time you will be embarking on an adventurous Fortnight which will, in the opinion of many of your predecessors, eclipse every other experience of your life to date. In the days and nights ahead you will meet with, and talk with, other young scientists from every corner of our earth. Previous years have brought back to the organisers of the Fortnight many tales of friendships formed and enduring; of exchanges of opinion, of debates and arguments into the hours of darkness; of feelings of exhilaration and the desire to grasp firmly and not to lose the mutual understanding that this meeting and contact brings.

We cannot tell you who first thought that the Science Fortnight was not in itself an end, nor when the realisation came that it could provide the means to an end. Possibly it was a spontaneous, simultaneous feeling which arose in the hearts of departing participants as they travelled alone by

bus, by tube, by train, by ship, by plane to their homes scattered across the globe. We can neither confirm nor deny this belief. We do not know. However, we can tell you what has happened in England, and in particular in London in the past year.

During the winter months letters and reports came to London that there were small groups of participants from past years who were anxiously corresponding and meeting in an effort to stick together. At the same time the U.N.E.S.C.O. authorities pressed for the formation of Science Clubs, and advanced funds to encourage them. Thus it was possible for a meeting of interested young people to take place. The debate raged fast and there was a determination to do something. The definition of what was the aim was not readily apparent, but the need to understand the views of one's opposite numbers in other countries was readily seen.

The principal barrier encountered in the

early days was that of communications. No matter how many people write letters it is not feasible to keep in touch with almost a thousand people—the number who attended the Science Fortnight over the previous two years. It was, therefore, decided to investigate the possibility of printed and circulated which could be pants. As this article is being written, replies to an initial enquiry are coming in from all over the world; publishers are negotiating with the organisers of the Science Fortnight and in all probability the first issue of the Bulletin will make its appearance this year.

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It is significant that not one single voice was raised against the ideas. There was overall enthusiasm and a genuine desire to act rather than to ponder. The mood of the debate is best caught in the phrase "... the Fortnight seems pointless without some follow up."

The demand for the club was overwhelming. Long and involved debates on the domestic organisation took place, but underlying all was a feeling that this was important, that something must be done quickly to provide a meeting place for young people mutually interested in science. With such a wide field to cover, it was not surprising that the requests for the inclusion of many activities were made. The consensus of opinion was that the patronage of industry should be sought and that a centre should be established which would be readily available at week-ends and possibly more often, not only to those connected with the Science Fortnight but also to interested young people from all schools, colleges, universities and from all parts of the country, and indeed the world.

The urgent and all important need for a better personal understanding and mutual



Mr. Philip Green, M.B.E., greeted the scheme with great interest, and offered guidance and practical assistance.

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This view which inevitably smacks of idealism was treated rationally and at the same time enthusiastically by the great majority. There was no atmosphere of pleasure without responsibility, or of looking for something for nothing. There was talk of organising projects for the club. The social implications of science may not have been discussed, but they certainly motivated the debate and exercised the minds of all present. Possibly this can best be reported by quoting in full a paragraph of a report from one of the groups:—

"We would like to organise some project to do at our club. This could be a form of

scientific research using instruments such as infra-red spectrographs for analysis or viscosity measurements, etc. The equipment could belong to our sponsors, and we would learn to use and interpret its graphs, etc., under expert guidance and our findings could be reported to our members."

The realisation that even such a club would not be an end in itself was readily appreciated. "It is to be hoped that in time the club will develop into a junior Pugwash Conference" came readily and soon. The great need to spread the endeavours as far afield as possible and to provide "... facilities for people from abroad and from the provinces with reciprocal facilities" was voiced and agreed. And finally, the importance of getting on with the scheme "... the Science Club should start in London now

and continue with London as the centre of an association of provincial and international clubs."

These words were spoken three months ago. Now another Science Fortnight is opening. In the intervening period steady, if unspectacular, progress has been made. We have received encouragement for the scheme from our sponsors and from industrial organisations. However, this cannot assure success.

The success of the Bulletin and of the formation of clubs—initially in England but ultimately who knows where—depends upon you. If you feel, on the last day of the Fortnight as you say the many farewells, that it has all been worth something, then we hope you will do your utmost to ensure that these two weeks are but a beginning of a more worthwhile and lasting basis of understanding and respect. It may seem difficult or indeed impossible for such a small beginning to come to fruition or to achieve success. Clichés are unfashionable but proverbs are deemed to be wise—'tall oaks from little acorns grow' and 'where there's a will there's a way'.

In Britain recently a youth organisation produced the slogan "the Future is ours." This is true for the youth of every nation of the world. To-morrow is yours. Its challenges and opportunities depend on how you choose to use them. This Fortnight will plant the seeds of a lifetime's understanding and goodwill. Do not let these seeds fall on barren ground or die unattended. Accept the challenge of the future. Understanding and respect for the "other chap" will help to achieve a better world. Make a start by keeping in touch with the friends you have made here this year—write to them, read of their activities and interests in the News Bulletin, and whenever you can meet together again.



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International Praesidium of Honour

The Rt. Hon. The Viscount Hailsham, Q.C.,
Lord President of the Council, Minister for Science
His Excellency the American Ambassador
His Excellency the High Commissioner for the Commonwealth of Australia
His Excellency the Austrian Ambassador
His Excellency the Belgian Ambassador
His Excellency the High Commissioner for Canada
His Excellency the High Commissioner for Ceylon
His Excellency the Danish Ambassador
His Excellency the German Ambassador
His Excellency the High Commissioner for India
His Excellency the Italian Ambassador
His Excellency the Ambassador for Japan
His Excellency the Ambassador for Liberia
His Excellency the Luxembourg Ambassador
His Excellency the High Commissioner for the Federation of Malaya
His Excellency the Ambassador for the Netherlands
His Excellency the High Commissioner for the Federation of Nigeria
His Excellency the Norwegian Ambassador
His Excellency the High Commissioner for Pakistan
His Excellency the Portuguese Ambassador
His Excellency the Ambassador for the Republic of South Africa
His Excellency the Swedish Ambassador
His Excellency the Swiss Ambassador
His Excellency the United Arab Republic Ambassador
His Excellency the Ambassador for Yugoslavia
The Rt. Hon. The Earl of Home, Secretary of State for Foreign Affairs
The Rt. Hon. Sir Edward Boyle, M.P., Minister of Education

Opening Ceremony

The Opening Ceremony will be held at the Institution of Electrical Engineers in Savoy Place at 2.30 p.m. for 3.0 p.m. on Monday, 22nd July. The Rt. Hon. Lord Nathan, P.C., T.D., F.B.A., President of the Science Fortnight, will take the Chair. The Principal Address will be given by His Royal Highness, Prince Philip, Duke of Edinburgh, K.G., Patron of the Science Fortnight, who will speak on the theme "Social Implications of Science."

The Address of Welcome will be given on behalf of Her Majesty's Government by Mr. Christopher Chataway, M.P., Parliamentary Secretary to the Ministry of Education. The parents of British participants will remember Mr. Chataway as one of the greatest athletes this country has produced. Later Mr. Chataway became a well-known figure on television. In 1959 Mr. Chataway entered Parliament representing Lewisham North.

The Science Fortnight is honoured in having as third speaker, Sir Eric Ashby, Fellow of the Royal Society, President of the British Association for the Advancement of Science, and Master of Clare College, Cambridge. In 1938 Sir Eric Ashby migrated to the Chair of Botany in Sydney University; in 1940 he became Chairman of the Australian National Research Council and later went to Moscow as counsellor and chargé d'affaires in the Australian legation. After years at Manchester University and Queen's University, Belfast, where he was Vice-Chancellor, Sir Eric Ashby became Master of Clare College, Cambridge, in 1959.

There could be no more fitting conclusion to the Opening Ceremony than the Address of Thanks to His Royal Highness, The Duke of Edinburgh, by Mr. C. T. Melling, C.B.E., President of

the Institution of Electrical Engineers. The success of the Science Fortnight depends in large measure upon the generosity with which the Institution of Electrical Engineers grant the use of their premises. As the Fortnight progresses, participants will realise how deep a debt of gratitude the Sponsors owe to the President and his Council.

Lectures

Sir Raymond Priestley, M.C., D.Sc.,
on "Antarctic Exploration Yesterday
and Today"

Sir Raymond Priestley's long association with the Antarctic began with Shackleton's expedition in 1907; later he was a member of Scott's famous expedition to the South Pole. In recent years Sir Raymond has visited seven of the British bases in Antarctica including a visit with His Royal Highness The Duke of Edinburgh in 1957. At the invitation of the Americans, Sir Raymond spent two months in 1958/1959 in the icebreaker "Staten Island" in Deep Freeze IV.

Sir Raymond Priestley has had much to do with Universities in the Commonwealth, and from 1935-1938 he was Vice-Chancellor of the University of Melbourne. He was President of the British Association in 1956 and President of the Royal Geographical Society from 1961 to 1963. Sir Raymond has published a number of books and papers on the expeditions in which he has taken part.

Monsieur F. Wattier
on "U.N.E.S.C.O., Science Clubs
and Work Projects"

Monsieur Wattier is Administrateur-Conseiller to Jeunesses Scientifiques de Belgique, and Rapporteur to the Centre International de Coordination in Brussels which has been set up by U.N.E.S.C.O. to develop scientific activity among students.

SHELL Film Show and Tea

Shell International Petroleum Co., Ltd., will show the following films on the 25th and 30th July in their cinema at Shell Centre.

"Prospect for Plastics" (30 minutes)
"Frontiers on Friction" (20 minutes)
"Food—or Famine" (42 minutes)

The programme will commence with a short introduction by Mr. R. W. P. Rule, and will terminate at 4.10 p.m. Participants are kindly invited to tea in the Main (Upstream) Restaurant at the conclusion of the film show.

Closing Meeting

During the Fortnight selected participants will be invited to give short reports on various aspects of the Science Fortnight at the Closing Meeting.

The meeting will conclude with an address on the theme "One World?" by Miss Diana Reader Harris, B.A., Headmistress of the Sherborne School for Girls. The official business of the Science Fortnight could not end on a more appropriate note as Miss Reader Harris is one of the outstanding educationists in Britain.

Sponsoring Bodies

Office of the High Commissioner
for Australia

Worldfriends Austria

Bayerischer Jugending

Belgian Ministry of Education

Canadian Science Fair Council

Danish Branch of the World
Friendship Federation

Office National des Universites et
Ecoles Francaises

Office of the High Commissioner
for India

Italian Ministry of Public
Instruction

Worldfriends Italiana

World Friendship Federation of
Japan

Mouvement Jeunes Sciences

Liberian Embassy

Luxembourg Ministry of National
Education

Office of the High Commissioner
for the Federation of Malaya

Office of the High Commissioner
for the Federation of Nigeria

Norwegian Committee for
International Information
and Youth Work

Office of the High Commissioner for
Pakistan

Calouste Gulbenkian Foundation,
Portugal

South African Association for the
Advancement of Knowledge
and Culture

Swedish Central Committee for
International Exchange between
Schools

Tanganyika Ministry of Education
and Information Services

Embassy of the United Arab
Republic

Worldfriends U.K.

Countries Represented

Australia

Austria

Belgium

Canada

Denmark

France

Germany

Great Britain

Holland

India

Italy

Japan

Liberia

Luxembourg

Federation of Malaya

Morocco

Federation of Nigeria

Norway

Pakistan

Portugal

Republic of South Africa

Sweden

Switzerland

Tanganyika

United Arab Republic

United States of America

Yugoslavia

Discussion Group Leaders

Physics:

Dr. H. R. Allan
Department of Physics
IMPERIAL COLLEGE OF SCIENCE
AND TECHNOLOGY

Physics:

Dr. R. D. Davies
Department of Physics
QUEEN MARY COLLEGE, LONDON

Chemistry:

Dr. P. Sykes
Department of Chemistry
UNIVERSITY COLLEGE, LONDON

Bio-chemistry:

Dr. A. P. Mathias
Department of Bio-chemistry
UNIVERSITY COLLEGE, LONDON

Biology:

Dr. J. D. Carthy
Department of Zoology
QUEEN MARY COLLEGE, LONDON

Biology:

Dr. Maynard Smith
Department of Zoology
UNIVERSITY COLLEGE, LONDON

Mathematics and Engineering:

Dr. J. Crank
BRUNEL COLLEGE OF TECHNOLOGY,
LONDON, W.3.

Mathematics:

Dr. C. W. Kilmister
Department of Mathematics
KINGS COLLEGE, LONDON

General:

Mr. Nigel Calder
EDITOR, NEW SCIENTIST.

Resident Hosts and Hostesses for participants in residential halls

Panfield Hall

Enslough Place, W.C.1
Mr. and Mrs. J. I. Bolter
Mr. Bolter is a lecturer in Chemistry
at Taunton Technical College. Mrs.
Bolter is a Domestic Science Teacher.
Courier/Host - Mr. Roger Mulberge
Courier/Hostess - Miss Mary Spence

Campbell Hall

Tavistock Street, W.C.1
Courier/Host - Mr. Gerald Ashton
Courier/Hostess - Miss Ann Ackroyd

Bentham Hall

Cartwright Gardens, W.C.1
Mr. and Mrs. B. Duxberry
Mr. Duxberry is Art Master at
Salisbury Technical College.
Courier/Host - Mr. John Hope

King's College

Vincent Square, S.W.1
Mr. and Mrs. A. Nicholl
Mr. Nicholl is an Arts graduate of
Queen's University, Belfast, and teaches
in the Coleraine Academical Institu-
tion, Belfast.
Courier/Hostess - Miss Hilary Smith

Maria Assumpta College

Kensington Square, W.8
Mr. L. F. Lowenstein, M.A.
Mr. Lowenstein, a student of Educa-
tional and Clinical Psychology, is at
present studying for his Ph.D. at
County Hall, Westminster.
Courier/Hostess - Miss Eleanor Moore

Officials representing the organisers during the event

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THERAPY

Miss Mary Spence
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Miss Theresa Stokes
QUEEN ELIZABETH COLLEGE
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Mrs. M. A. Lambert Lamond, Worldfriends Organiser of Science Fortnight.



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***Mr. P. S. Green, M.B.E.**
Chief Advisor, Worldfriends

***Mrs. M. A. Lambert Lamond**
Worldfriends Organiser for Science Fortnight

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Headmaster, Battersea Grammar School: Chairman of Administrative Committee

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Ministry of Education

Public Relations Officer

Mr. John Hayward
Group Industrial Press Officer, The Rank Organisation Ltd.

**Members of Administrative Committee.*



WORLD FRIENDS

International Service for Youth founded in 1948.

A non-commercial members' Association without political or religious affiliations.

British Member of the World Friendship Federation which has full consultation status at U.N.E.S.C.O.

President of the World Friendship Federation,
Mr. K. Helveg Petersen, Danish Minister of Education.

Home to Home Exchanges

The exchange of groups including those with similar interests such as orchestras, choirs, drama and dancing ensembles.

Worldfriends Branches

These exist in many parts of Britain and, at their best, are International Youth Clubs. A speaker will be sent to any group of people wishing to form a Branch.

Holiday Language Schools

The thirteen schools in 1963 include Residential Courses at Sidney Sussex College, Cambridge, Culham College near Oxford and the Maria Assumpta College in London. Family-based schools are being held in Bexley Heath, Bishop's Stortford, Chichester, Dover, Frinton-on-Sea, Henley-on-Thames, Marlow, Shaftesbury and Worthing. A language school for Austrian teachers is being arranged at Culham in conjunction with the British Council.

If the demand justifies, schools will be opened on the Continent for those wishing to learn French, German, Italian and Spanish.

International Youth Science Fortnight

Similar specialised Fortnights are envisaged.

International Youth Fortnights

These Fortnights are of general interest and are organised by a Worldfriends Regional Council or Branch. Ten have taken place in London, four in Malvern, four in Salisbury and one in Harrogate.

Specialised Tours

Arrangements are made for groups of young farmers, teachers, etc., to study the practice abroad and exchange ideas with their counterparts in the country visited.

Worldfriends

exists in order to provide the international service Youth requires. This can only be done if Youth supplies a steady flow of ideas and enquiries to Worldfriends headquarters at 308 Earls Court Road, London, S.W.5. Telephone: FREmantle 7071.



A. McTaggart-Short
Founder, Worldfriends

W. C. Marsh, J.P.
Chairman, Worldfriends



Letter from Mr. Cecil H. King

THE communication of knowledge, ideas and information of every kind is vital to scientific progress; and communication is the business of the International Publishing Corporation Limited. It is particularly fitting, therefore, that one of the major Group of companies of the Corporation, Kelly-Liffé Holdings Limited, together with Albert E. Reed and Company, the papermakers, should jointly have the pleasure of donating this programme.

The Kelly-Liffé Group publish many journals devoted to science and technology; indeed they are the largest specialised publishers in the world.

Both companies join me in wishing you every success during the Youth Science Fortnight and in your chosen careers, throughout which we look forward to providing you with the international information service which will play so important a part in your future work.

Cecil H. King

Chairman,
International Publishing Corporation Limited

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 Prince Henry's Grammar School, Otley
 Purbrook Park County Grammar School
 Queen Elizabeth's Grammar School, Blackburn
 Queen Elizabeth's Grammar School for Girls, Carmarthen
 Queen Elizabeth's Grammar School, Mansfield
 Ranelagh School, Bracknell
 Rawlins Grammar School, Quorn
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Gillian Joubert, a high-school pupil from the Wynberg Girls' High School, Cape, South Africa, was one of the four candidates selected by *Archimedes** to attend the FOURTH INTERNATIONAL YOUTH SCIENCE FORTNIGHT in July of last year. This is her account of her experiences in LONDON.

I attend the Fourth London International Youth Science Fortnight

by Gillian Joubert

I AM told that the first thing I said on being informed that I was one of the four high-school candidates selected to attend the Fourth London International Youth Science Fortnight, was: "No, it cannot be true". This bewilderment remained with me throughout the preparations, and it was not until the Boeing took off from Cape Town for Jan Smuts Airport on 17th July with Dirk Laurie, a pupil from the Jan van Riebeck High School, and me aboard, that I fully realised what was happening.

The following day at the offices of *Archimedes* in Pretoria I met Estelle Janse van Rensburg, a pupil from the Lyttelton High School. I had already met Martin Griss of the Northview High School, Johannesburg, when he, as president of the Rand High Schools Science Association, attended the Junior Science Congress of the South African Association for the Advancement of Science, at Cape Town in June. I was privileged to present a paper on that occasion.

At a luncheon at the Iscor clubhouse, we were given an opportunity to thank the editor of *Archimedes*, his staff and the various sponsors for making this wonderful experience possible. That evening in high excitement, we left for London.

I'll never forget my first sight of the rows of doll's houses, lakes, and parks as we circled the London Airport. We were met by soft-spoken Mr. Oosthuizen of the South African Science Liaison Office. He took us to the quarters reserved for us, furnished us with a map of the Under-

ground, and told us to find our way to S.A.S.L.O. that afternoon. We did!

On Friday, 20th July, we were asked to tea with the Ambassador at South Africa House, a great honour.

Saturday we spent exploring London and saw many places of interest. That night we attended a dance given to welcome delegates. It was a huge success. Language was no barrier. My address book can bear me out when I say I made many friends of many different nationalities during this Fortnight.

On Sunday Mr. King, also of S.A.S.L.O., took us sight-seeing and later home to supper. That night we saw Piccadilly Circus.

Monday was the official opening. I was asked to carry the South African flag, and I saw to it that South Africa led one of the two lines of flags into the hall. A British boy led the other. Sir Charles Goodeve spoke on "Catching up with Progress", telling us all how important it was for the well-being of the world to have sufficient scientists and engineers. A business meeting followed and a film show with Russian, American and British films.

The conference started in earnest on Tuesday. We were split up to go on various excursions (naturally, as there were about 400 of us), and Dirk Laurie and I went with our group to Vickers-Armstrongs (Aircraft) Ltd., for the day. They are the producers of the famous VC 10 and the familiar Viscount. We were taken through the factories and testing works and to the research laboratories. We were shown a model of a prototype aircraft which, as it approaches its maximum speed,

folds back its wings and allows its cockpit to sink down, thereby reducing air-resistance. There is also a huge wind tunnel in which they can produce any climatic condition from blizzard to tropical hurricane, all for testing the aircraft under extreme conditions to expose faults in construction and design. At the rolling mills we were allowed to take samples of the metal used for these aircraft, duralium. Unfortunately, they were unable to tell us the composition of this alloy, but some of its constituents are beryllium, tin and aluminium.

The next day Estelle van Rensburg and I went with another group to I.C.I. Paint Works at Slough. Here we were shown the process of making paint, something more complicated than I imagined. After lunch we were taken to the research department. I don't think I have ever seen such an array of delicate instruments, the most absorbing of which was the electron microscope. There was not time to do this instrument justice.

On Thursday Dr. Kenneth Mellanby gave a lecture on "International Co-operation in Biological Research on Conservation of Natural Resources" at our headquarters at the Institution of Electrical Engineers, at Charing Cross, on the Embankment.

On Friday I accompanied another group by boat on the Thames to the Maritime Museum, Greenwich. The visit to the old Observatory was a delight and joy to me as one of my pet subjects is astronomy. I skipped from the Western Hemisphere to the Eastern and back again over the Greenwich Meridian. The Observatory

(the Hexagonal Room) has been restored as far as possible to the original, and most of the building is now used as a museum. It was thrilling to see the instruments developed by such famous astronomers as Halley and Herschel. The guide was very interested to hear what I had to say about Herschel at the Cape and other connections in astronomy.

During the week-end we four South Africans went to Westminster Palace, the Science Museum, Victoria and Albert Museum, and Kew Gardens. We had a fair amount of free time and made good use of it sight-seeing and going to ballets, the theatres, and the Albert Hall.

On Monday we had discussion groups. Estelle and I were privileged to attend a meeting presided over by the editor of *Nature*, that leading science magazine. I found this discussion very heartening, because I found, during its course, that South African education, being between that of Britain and America, was considered to be the best. It is sad that many of the British participants, specialising as early as they do, were unable to share with me an appreciation of their own literature. Some privately complained to me that having made their decision too early in life, they were now unable to change the course of their careers.

Later in the week we attended a series of films at Shell House, and went with a group to the Central Electricity Generating Board, where we were told about the latest developments in nuclear power stations, and saw experiments with breeding foreign fish in the heated water from the ordinary power stations. On Thursday

morning Estelle and I went to the British Museum and I emerged feeling shaken. Three hundred years of history pales to insignificance beside 6,000 of human history. Here again the theme was repeated: too little time to do it justice.

We joined our group after lunch at the Wellcome Museum of Medical Science. This I consider the most absorbing excursion of the Fortnight. "Museum" is misleading. There is a section devoted to the history of medicine (which pleased me in that it took as its theme Man's psychological development in his attitude towards medicine from the primitive state) but the real "museum" is a do-it-yourself lecture hall, dealing mainly with tropical diseases, each with a comfortable desk. The panels are arranged not only for aesthetic appeal, but for ease in following diagrams and facts: things related are placed close together: the finest print and smallest diagrams are nearest. All aspects of the disease, from first symptoms and carriers, to cure and final prognosis, are dealt with. Lighting, models, printing, and photomicrograph transparencies are all arranged on a scientific basis. Specimens are housed in special containers made to order on the premises of acrylic resins (much better than glass). It is a veritable storehouse of knowledge and is constantly revised. As soon as they have revised the whole, they start again from the beginning. I had not finished looking round when I was hauled out at closing time.

All the questions I had ever asked about computers were answered by Dr. A. M. Utley in an excellent lecture on "Automation". He made it all seem so simple. This

lecture was followed by the Closing Ceremony, and in the evening by a farewell dance.

I felt sad when I said goodbye to all my new friends. There was the American who refused to believe that Afrikaans existed, the French girl with the appalling accent—she thought mine was, too—the bewildered Pole with his old-time courtesy, the determined little Portuguese boy who would spend, if necessary, half an hour getting his question across and understanding the reply, gentle Naureen from Karachi, and many, many more. The nations represented were: Australia, Austria, Belgium, Canada, Ceylon, France, West Germany, Great Britain, the Netherlands, India, Irish Republic, Israel, Japan, Luxembourg, the Federation of Malaya, the Federation of Nigeria, Norway, Pakistan, Poland, Portugal, the Republic of South Africa, Spain, Sweden, Switzerland, Tanganyika, the United Arab Republic, the U.S.A. and Yugoslavia.

What a success the Fortnight was, and what a joy and inspiration every moment! I feel that the hope of the Fortnight, "the first step towards the goal of peaceful co-existence and tolerance without which there may well be no survival" (Philip S. Green, Director), has been realised.

The thought came to me as I was addressing my school on my return and trying to get them to share my enthusiasm for science: Surely at least one of these sitting here will some day go to a future Fortnight as I have? And you reading this, will your interest in science open the gates of such an experience as mine?



The flag-carrying parade at the Opening Ceremony of the Fourth International Youth Science Fortnight held in London in July last year.

* *Archimedes* is the Journal of the S.A. Association for the Advancement of Knowledge and Culture.

Keeping in touch . . .



Bill Nike
His initiative led to the London Reunion and the Editorial Board of which he is Chairman

LONDON

THE London Reunion at the Battersea College of Technology brought together nearly a hundred Science Fortnight participants. The arrangements were in the hands of participants from former years and they feel grateful to Dr. D. M. A. Leggett, the Principal, for granting the use of the College from 11 a.m. to 10 p.m. as well as giving the Principal Address. The story of this Reunion appears on pages 6 and 7.



Rosemary Cathels
Thanked the sponsors on behalf of all the participants at the 1961 Closing Ceremony Organised the Edinburgh Reunion

EDINBURGH

I suppose one could call it "internationalism"—the force which kept the Edinburgh participants of the Third Science Fortnight together. Whenever we met we talked about the international spirit, we admired it, and we philosophised about it until the Cuba Crisis jolted us out of our lethargic dreams.

Bill Nike was the first to take the initiative to put our dreams into practice. He wrote to various participants of the Third Science Fortnight asking for their ideas, and with their support he approached Mr. Green, the Director of the Science Fortnight. From there our ideas have been consolidated into the plans which may lead to the publication of a News Bulletin this autumn.

A meeting was held in Edinburgh on 15th June for Scottish participants of the past two years and for the prospective participants of the Fifth Science Fortnight. Following an address on the Social Aspects of Science Today, we had a report on the progress of the News Bulletin and the formation in London of an International Science Club. Discussion covered the News Bulletin and the possibility of an International Science Club in Edinburgh.

In conversation we contemplated ways in which we could help other countries, especially the underdeveloped ones. We felt that the written word would only achieve a relaxation of international tension if there were actions to prove the sentiments behind the words.



Jennifer Kershaw
A 1962 participant who is our main contact in the North of England

THE NORTH OF ENGLAND

PROBABLY the most enjoyable and profitable part of the International Youth Science Fortnight was the spontaneous discussions which arose when people from different backgrounds talked about their common interest—science in the widest fields, not only of technical applications, as seen in the visits, but also the moral and philosophical implications.

Naturally London itself provided much of interest with its theatres, concerts and jazz clubs. Living in a hall of residence gave an insight into university life and enabled stimulating discussions at all hours.

We made good friends while we were there but were afterwards beset by the difficulties of continuing our conversations and exchanging our ideas by correspondence. For those at school or university it is difficult to get time for all this and to travel to London for meetings. For these reasons we now welcome the opportunity to meet once again in our own area, the north of England.

. . . and in 1964



Paul Garwood
Will act as liaison between participants and the Organiser of the 1964 Tour

WESTERN EUROPE

IN the summer of 1964 a tour of Western European countries will take place. Whilst it will be by no means exclusively a scientific tour there will be visits to scientific installations and places of interest around the various capitals.

Anyone who would like to receive full details of the tour when they are finally confirmed should give his name to the Information and Entertainments Officer (Roger Mulberge) as soon as possible after the beginning of the Fortnight.

The tour should prove of interest not only to British participants wishing to take part but also to participants from Europe and overseas who could either help in the organisation of the tour or would like to join at some point along the route through their home country and continue for the remainder of the tour.

The itinerary and scope of the tour depends entirely on the response for the scheme from participants. Every effort will be made to incorporate the ideas and suggestions made and to make it something more than the customary "holiday" tour.

Message from Sir George V. Allen, C.B.E.



Sir George V. Allen, C.B.E., Secretary of the British Association for the Advancement of Science, presiding at the Closing Ceremony in 1962.

I AM very glad to send this message of welcome to all those taking part in the Fifth London International Youth Science Fortnight, on behalf of the British Association for the Advancement of Science.

During the past five years I have watched the International Youth Science Fortnight grow from the initial idea to the major event which it is today. I have been delighted by this successful growth for two main reasons.

The first is that it is in itself such a good idea. But I have learnt that in this world it is not sufficient for a thing to be good for it to happen. The second reason, therefore, is the fact that the growth has been in many ways typical of many of our best national institutions—it has been sustained by the enthusiasm and hard work of many keen voluntary workers and has constantly been improved and adapted to meet new developments.

I hope that in this Fortnight you will see some aspects of science and its applications which are new to you, and that you will enjoy this. Even more important than the scientific programme, however, is that you should enjoy yourselves, and enjoy being with one another.

I send you my best wishes for the Fortnight and for many years of friendly contact in the service of science and mankind.

Secretary of
the British Association for the Advancement of Science

Our Grateful Acknowledgements and Thanks are Due to:—

The industrial concerns, research establishments and university laboratories which have invited groups to visit them during the Fortnight. Without their co-operation the Science Fortnight could not have taken place.

The Education Committee of the Federation of British Industries for their help in augmenting the programme of scientific visits. The Trustees of the British Museum, the Director of the Science Museum, the Heads of Departments at the Imperial College of Science and Technology, King's College, Queen Mary College, and University College for permitting Group Discussions to take place in such interesting surroundings.

The Speakers, Lecturers, Discussion Group Leaders, and the many invaluable people behind the scenes, for their interest and help.

The Chairman of the Rank Organisation Ltd. for seconding Mr. John Hayward, Group Industrial Press Officer, to act as P.R.O. to the Fortnight.

The London Transport Executive for their consideration and help at all times. In countless ways they have contributed to the success of the Fortnight. To Mr. H. Dennis and Mr. T. H. Trussler goes our especial gratitude.

The industrial concerns and charitable trusts which have made donations to the Science Fortnight and enabled a Capital Fund to be created.

The Foreign Office for guaranteeing the Science Fortnight against loss up to the amount of £500.

The Shell International Petroleum Co. Ltd. for offering accommodation at Shell Centre for Committee Meetings.

The Chairman of the International Publishing Corporation Ltd. for the generous gift of this fine Souvenir Programme. No praise can be too high for Mr. P. E. B. Dean of Associated Iliffe Press Ltd. who has shown imagination and infinite patience in the production of the Programme.

Announcements

Present plans are for the Sixth Science Fortnight to take place in London during 1964. In 1965 the Fortnight may move outside London.

Worldfriends will expand its programme of Language Schools in 1964. They are the same high standard as the Science Fortnight and local Education Authorities are being invited to inspect schools in all cases (see page 18).

The Director of the Science Fortnight would appreciate hearing from any industrial concern, etc., able to assist development by offering office accommodation in Central London at a modest rental.



ASK ROGER MULBERGE!
Roger Mulberge has attended two Fortnights himself. This year he will come to help you. His job is to find out what is happening in London. He will know about theatres and entertainments, and will supply general information too. If you want to know anything—Ask Roger Mulberge!

Fifth International Youth Science Fortnight