

RUTHERFORD LABORATORY BULLETIN NO. 20

for the week commencing Monday 6th February, 1961

VISITOR

✓ Mr. S. Murakami, Japanese U.N.E.S.C.O. Fellow and Member of the the Japanese Ministry of Education will visit the Laboratory on Wednesday, 8th February for discussions with Dr. J. A. V. Willis.

VISITS ABROAD

✓ Messrs. N. M. King and D. Whiteside of the Theoretical Group will visit CERN on 8th February for discussions on anti-proton beam extraction.

INTERNAL EVENTS

✓ X Wednesday, 8th February, 2.00 p.m. Conference Room, Building R.1	P.L.A. Group Seminar	Dr. R. J. Griffiths	"Progress report on the (p, 2p) experiment"
Friday, 10th February 11.00 Conference Room, Building R.1	P.L.A. Group Lecture	Dr. C. J. Batty	"Elementary nuclear physics" (8th Lecture)

EXTERNAL EVENTS

✓ X Tuesday, 7th February, 5.30 p.m. Cockcroft Hall, A.E.R.E.	Lecture	Mr. L. G. Cripps (Mullard Research Laboratories)	"Small signal theory" (4th in a series of lectures on transistors)
Friday, 10th February, 4.15 p.m. Lindenmann Lecture Theatre, Clarendon Laboratory, Oxford.	Colloquium	Dr. J. M. Lock (R.R.E. Malvern)	"The prospect of super- conductive computers"

EXHIBITION

✓ A mobile showroom from Associated Electrical Industries Limited demonstrating a new range of vacuum components will be visiting Harwell on Tuesday, Wednesday and Thursday, 7th, 8th and 9th February. The exhibition which will be open between 10.00 a.m. and 4.00 p.m. will be situated on the north side of the Social Club, A.E.R.E.

UNCLAIMED MAIL

A letter from Messrs. Burndep Limited, Erith, Kent referring to a digital valve voltmeter is awaiting collection from Mr. E. Newberry, Building R.1.

G. L. COOPER

6th February, 1961

RUTHERFORD LABORATORY BULLETIN No. 21

for the week commencing Monday, 13th February, 1961

NIMROD VACUUM VESSEL

The prototype section of the outer vacuum vessel for Nimrod arrived at the Laboratory on Tuesday, 7th February from the manufacturers, Marston Excelsior Limited of Wolverhampton. The section which is approximately 50 ft. long by $1\frac{1}{2}$ x 3 ft. is at present being prepared for extensive pumping trials in the Vacuum Vessel Testing Compound, which has been partitioned off in the Experimental Area. It will be followed by eight similar production sections and the corresponding inner and header sections which together will form the complete vacuum vessel.

P.L.A.

The polarised proton source which has been under development for the last three years has been completed and installed on the P.L.A. It is planned to carry out tests on the quality of the polarised beam produced during the week.

VISITS ABROAD

Mr. M. J. Marchbanks and Mr. H. C. Brooks of the Nimrod Engineering Design Section leave for Zurich, Switzerland on the 13th February to have discussions with Brown-Boveri Limited, manufacturers of the converter equipment for the Nimrod Power Supplies.

Mr. D. H. Lord of the Accelerator Research Group leaves on 18th February for a three month attachment at C.E.R.N. to work on an advanced type of track measuring machine used in bubble chamber experiments.

INTERNAL EVENTS

Monday, 13th February, 11.00 a.m., Conference Room, Building R.1	Theoretical Group Colloquium	Mr. D. Morgan	"Ionisation loss in absorbers. Some applications to strange particles"
Thursday, 16th February, 3.00 p.m. Conference Room, Building R.1	Nimrod Engineering Design Group Colloquium	J. A. McWilliam, M. Mason and N. D. Watson (All from Firth Vickers)	"Three lectures on the metallurgy and applications of stainless steels"
Friday, 17th February, 11.00 a.m. Conference Room, Building R.12	P.L.A. Group Lecture	Dr. C. J. Batty	"Elementary nuclear physics" (9th Lecture)

EXTERNAL EVENTS

Tuesday, 14th February 5.30 p.m. Cockcroft Hall, A.E.R.E.	Lecture	Mr. L. G. Cripps (Mullard Research Laboratories)	"Pulse theory" (5th of a series of 11 lectures on transistors)
Thursday, 16th February, 6 p.m. Central Hall Westminster, S.W.1.	I.E.E., Faraday Lecture	Mr. L. J. Davies	"Transistors and all that"

TRAINING CONCESSIONS

All staff receiving training concessions are asked to note a change in the method for claiming travel expenses. Claim forms should be signed by Certifying Officers and sent direct to Claims Section, Building R.20 in the case of N.I.R.N.S. staff and to Claims Section, Oxford Office in the case of A.E.R.E. staff. For the time being, non-industrial staff should continue to send claims for text-book allowances, course and examination fees to Staff Training Section, Bldg. 328/T. Industrial staff should send them to Claims Section, Bldg. R.20 (N.I.R.N.S. staff) or Industrial Training Section, H.9 (A.E.R.E. staff).

10th February, 1961

G. L. COOPER

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RUTHERFORD LABORATORY BULLETIN No.22

for the week commencing Monday, 20th February, 1961

NEW BUILDINGS

✓ The Institute's General Purposes Committee have approved in principle an extension of Building R.2 (Nimrod Control Block and Preparation Area) to provide more accommodation primarily for the Nimrod Group. The extension giving an extra 26,000 sq.ft. of floor area is to be to the north-east of the present building, completing a quadrangle with the eastern side five storeys high. Treasury approval for the scheme is being sought.

The new 17,000 sq.ft. 'Heavy' laboratory required for the development and testing of nuclear equipment for Nimrod and also accelerator research, will be sited to the south of Building R.1 where the top-soil dump is now. Levelling of the site will begin in a few weeks time.

VISITS ABROAD

✓ Mr. R. W. Wimblett of the Engineering Design Group will visit CERN from the 20th to 24th February to discuss arrangements for the installation there of the British National Hydrogen Bubble Chamber.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
20th-22nd February	University College, London/NIRNS	Measurement of spin correlation coefficient in p.p. scattering.
23rd-24th February	Birmingham University	Measurement of proton polarisation after double scattering.

INTERNAL EVENTS

Mon., 20th Feb., 11 a.m., Conf. Room, Bldg. R.1.	Theoretical Group Colloquium	Dr. W. Galbraith	"Spark Counters" (Report on a recent meeting of the Physics Users Committee at the Argonne National Laboratory).
Wed., 22nd Feb., 2 p.m., Conf. Room, Bldg. R.1.	P.L.A. Group Seminar	Mr. R. Giles (King's College London)	"The Optical Model; total proton reaction cross- section, search programmes."
Fri., 24th Feb., 11 a.m., P.L.A. Conf. Room, Bldg. R.12	P.L.A. Group Lecture	Dr. C. J. Batty	"Elementary nuclear physics" (10th Lecture)

EXTERNAL EVENTS

Tues., 21st. Feb., 5.30 p.m., Cockcroft Hall, A.E.R.E.	Lecture	Mr. K. Holford (Mullard Research Laboratories)	"D.C. Circuit Design" (6th of a series of 11 lectures on transistors)
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HIGHER DEGREE AWARD

Mr. P. F. Smith of the Nimrod Magnet Group has been awarded a Ph.D. by London University for his thesis on, "An experimental and theoretical investigation of the magnetic field produced by ridged pole-pieces."

LIBRARY

Laboratory staff and university visitors working at the Laboratory are reminded that there are a number of quiet study rooms available in the A.E.R.E Main Library (Building 465) which may be reserved for any reasonable period on application to the A.E.R.E. Librarian (Ext. 2849).

UNCLAIMED MAIL

A letter from Messrs. Taw Manufacturing Co. Ltd., Hornsey, London, N.8, regarding stainless steel spinnings, is awaiting collection from Mr. E. Newberry, Building R.1.

B. E. Kingdon
Scientific Administration

Building R.20
17th February, 1961

RUTHERFORD LABORATORY BULLETIN No.23

for the week commencing Monday, 27th February, 1961

NUCLEAR PHYSICS CONFERENCE

✓ The Institute of Physics and the Physical Society are holding a Conference on Nuclear Physics, at Birmingham University on April 17-19th. A number of prominent speakers have been invited to read papers, and further contributions will be welcomed, particularly from young research workers. Application, both to attend the Conference and to submit papers, must be made by March 7th. The number of places will be strictly limited. Further details and copies of the programme and application forms may be obtained from B. E. Kingdon, Building R.20.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

X

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
27th Feb.-3rd March	N.I.R.N.S.	Investigation of the p-d reactions by fast coincidence techniques

INTERNAL EVENTS

X

Mon., 27th Feb., 11 a.m., Conf. Room, Bldg. R.1.	Theoretical Group Colloquium	Prof. G. W. Hutchinson (Southampton University)	"The use of Cherenkov Counters in High Energy Physics"
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EXTERNAL EVENTS

X

Tues., 28th Feb., 5.30 p.m., Cockcroft Hall, A.E.R.E.	Lecture	Mr. P. Tharma (Mullard Research Laboratories)	"Audio Frequency Amplifiers." (7th of a series of 11 lectures on transistors)
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ACCELERATOR NEWS

✓ U.S.A.

A spiral-ridge cyclotron, claimed to be the first high-power machine of its type, has recently been made operational by the University of California at Los Angeles. The designers report that the machine, which is 49 inches in diameter, can accelerate protons to 50 MeV with continuous rather than pulsed operation. It should be practicable to build similar machines with energies up to several hundred MeV without introducing any new design principles, and design studies of similar machines have been made in many places, including the Rutherford Laboratory and CERN.

✓ U.S.S.R.

A compact accelerator, 40 inches long, which produces beams of neutrons with energies up to 14 MeV has been built at Kiev University with the initial purpose of making accurate estimation of trace elements in ores.

B. E. Kingdon
Scientific Administration

24th February, 1961

RUTHERFORD LABORATORY BULLETIN No. 24

for the week commencing Monday, March 13th, 1961

P.L.A.

✓ Mr. K. Batchelor has returned from a 4-week visit to the Brookhaven National Laboratory, U.S.A., where he was attached to the Injector Group of the 25 BeV A.G. Synchrotron.

Mr. Salvatore Giordano, from the Brookhaven National Laboratory, is spending four weeks with the P.L.A. Group.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
13th-17th March	King's College, London	Total reaction cross-sections for protons

(A note on the Polarized Proton Source is given as an appendix to this Bulletin).

VISITORS

✓ A party of 30 students from Bristol University Engineering Society visited the Laboratory on Wednesday, 8th March.

VISITS ABROAD

✓ Mr. K. Kandiah (Electronics Division, A.E.R.E.) is due to leave for Vienna on 12th March to assist in the preparation of the Programme for the Conference on Nuclear Electronics to be held in Belgrade from 15th to 20th May, 1961. He will return on 16th March.

✓ Dr. W. A. Smith and Mr. P. A. Chatterton of the Nimrod Magnet Group will visit Grenoble, France on 13th March for discussions with S.A.M.E.S. on E.H.T. generators.

SAFETY NOTICE

Attention is drawn to the display of Safety Footwear in Building R.9. Further information, including details of Ladies' Safety Footwear not displayed, can be obtained from Mr. P. Dunk, Administration Office, Building R.1.

UNCLAIMED MAIL

The following letters are awaiting collection from Mr. E. Newberry, Building R.1:

1. From Messrs. Teledictor Limited, Tipton, Staffs. (in reply to an enquiry regarding digital voltmeters, addressed to the Revo Electric Co. Limited).
2. From Messrs. Taw Manufacturing Co., Ltd., Hornsey, London N.8, regarding stainless steel spinings.

INTERNAL EVENTS

X Mon., 13th March, Nimrod Prof. J. Hamilton "Low Energy K-
11 a.m., Conf. Room, Lecture (University College, Mesons."
Building R.1 Series London)

Mon., 20th March, Nimrod Prof. E. H. S. Burhop "The Use of the
11 a.m., Conf. Room, Lecture (University College, Nuclear Emulsion
Building R.1 Series London) Technique with
High Energy
Machines."

EXTERNAL EVENTS

Tues., 14th March, Harwell Sir George Thomson, "Nuclear Energy in
3.30 p.m., Cockcroft Lecture F.R.S. Britain during the
Hall, A.E.R.E. last War."
(Tickets, limited in number, are obtainable from Mr. E. Newberry,
Building R.1)

X Tues., 14th March, 10 a.m.-5 p.m., Social Club, A.E.R.E.: Exhibition of High
Frequency Recorders, Ultrasonic Flaw Detection Equipment, etc., by
Messrs. S. Smith and Sons (England), Limited.

Tues., 14th March, Transistor Mr. K. Holford "High Frequency
5.30 p.m., Cockcroft Lecture (Mullard Research Circuit Design II"
Hall, A.E.R.E. No. 9. Laboratories) (Oscillators, etc.)

Wed., 15th March, Theoretical Mr. T. Gaskell "A Collective Treat-
2 p.m., Conf. Room, Physics (Manchester) ment of the Electron
Building 8.9, Seminar Gas."
A.E.R.E.

Wed., 15th March, High Energy Dr. S. J. Goldsack "Bubble-Chamber
4.15 p.m., Imperial Nuclear Physics Colloquium Interactions of
College, London. π -Mesons at 1 to
3 Gev."

Wed., 15th March, Inst. Sci. Dr. S. H. Revell "Radiation
6.30 p.m., Imperial Tech. (Chester Beatty Hazards"
College, London Lecture Research Inst.)

Fri., 17th March, Lecture Prof. C. Kittel "Recent Develop-
4.15 p.m. (Univ. of ments in
Clarendon Lab., California) Ferromagnetic
Oxford. Resonance"

B. E. Kingdon
Scientific Administration

10th March, 1961

(Appendix appears on page 3)

APPENDIX

The Polarized Proton Source (Information contributed by Dr. G. H. Stafford)

✓ For the past three years there has been a team working in the P.L.A. Group to develop a special type of ion source which would produce a beam of polarized protons which could be accelerated in the normal way through the accelerator. (A polarized beam is a beam in which the protons are spinning predominantly in a fixed direction relative to their direction of motion).

Nuclear forces are known to be spin dependent and because of this, if the proton spin direction is known, many more experiments can be designed and much more information can be obtained from the experiments.

Since November 15th, 1960, the P.L.A. has been shut down to install this new device. During the week beginning the 20th February the source was successfully tested. A polarized beam was accelerated to 30 Mev and the polarization measured by a nuclear scattering from carbon. Maximum polarization detected was 37% in agreement with that expected theoretically and the maximum proton intensity obtained was 10^8 protons per second, very close to the predicted maximum. At the peak intensity the polarization was 26.6%. Final calculations may change these figures slightly but the results obtained have been quite remarkable for this first measurement. The polarized source was found to behave in a very reliable and controllable fashion and a great deal was learned of its mode of operation which should enable some improvements to be made later in the intensity and in the polarization obtainable.

The successful development of this source is considered to be of considerable importance and greatly extends the range of experiments that are possible with the P.L.A.

The source can produce an unpolarized beam at approximately the above intensity, but if the full intensity that the machine is capable of is needed, it is possible to change back to the old proton source over a weekend.

Several laboratories are known to be working on similar projects but it is believed that this is the first source to be installed on an accelerator and to produce a beam of protons of sufficient intensity to be useful for nuclear experiments.

The success of the project is due to the efforts of scientists and engineers in the P.L.A. Group who, at various stages, worked in collaboration with scientists from the Cavendish Laboratory, Cambridge, from the Clarendon Laboratory, Oxford, and from Birmingham University.

RUTHERFORD LABORATORY BULLETIN No.25

for the week commencing Monday, 20th March, 1961

MEMBERSHIP OF THE INSTITUTE

✓ Dr. J. B. Adams, Director-General of CERN and Director of the A.E.A. Culham Laboratory, Professor J. M. Cassels, Lyon Jones Professor of Physics at Liverpool University, and Sir John Wolfenden, Vice-Chancellor of Reading University, have been appointed members of the Institute in place of Professor N. F. Mott, Sir James Mountford and Sir Basil Schonland, whose terms of office came to an end on February 15th.

VISITORS

✓ Mr. F. Grütter, Chief Engineer, and Mr. E. Hugi, Head of the Electrical Engineering Group at CERN, will be visiting the Rutherford Laboratory on Tuesday and Wednesday, the 21st and 22nd March, to discuss various mechanical and electrical engineering problems of common interest.

NIMROD POWER SUPPLIES

✓ The first stator of the main Motor-Alternator set was delivered at the Laboratory on Thursday, 16th March, from the English Electric Company at Stafford. The stator, which weighs over 70 tons, was manufactured at the premises of Messrs. Harland and Wolff, Ltd., Glasgow.

✓ Four of the eight 12 MVA Rectifier Transformers have recently been installed between Buildings R.3 and R.4. These are supplied by Messrs. Bruce Peebles and Co., Ltd., Edinburgh.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
20th - 22nd March	A.E.R.E.	Time of flight survey, and total cross-sections for protons.
23rd - 24th March	University College London/N.I.R.N.S.	Measurement of spin correlation coefficient in p-p scattering

The P.L.A. Group Seminars are discontinued until further notice, but the usual Scheduling Meetings will be held.

LIBRARY NOTICE

✓ A copy of Annals of Physics, Vol. 5, No. 4, 1958, is missing from the P.L.A. Library, Building R.12.

Would the borrower please return it, as it is required by another member of staff.

UNCLAIMED MAIL

A letter from Messrs. Fireproof Tanks, Ltd., Portsmouth, is awaiting collection from Mr. E. Newberry, Building R.1. This is in reply to an enquiry dated 2nd March, 1961, regarding gas storage containers.

INTERNAL EVENTS

X Mon., 20th March,
11 a.m., Conf.
Room, Building R.1.

Nimrod
Lecture
Series

Prof. E. H. S. Burhop,
(University College,
London).

"The Use of the
Nuclear Emulsion
Technique with
High Energy
Machines".

Mon., 27th March,
11 a.m., Conf.
Room, Building R.1.

Nimrod
Lecture
Series

Dr. P. T. Matthews
(Imperial College,
London).

"Peripheral
Collisions".

EXTERNAL EVENTS

Tues., 21st - Sat., 25th March: 10th Electrical Engineers Exhibition, Earls Court,
London. (Tickets are obtainable from B. E. Kingdon, Building R.20).

X Tues., 21st March,
5.30 p.m., Cockcroft
Hall, A.E.R.E.

Transistor
Lecture
No. 10

Mr. W. L. Stephenson
(Mullard Research
Laboratories).

"Non-Sinusoidal
Circuit Design".

Wed., 22nd March,
2 p.m., Conf Room,
Building 8.9, A.E.R.E.

Theoretical
Physics
Seminar

Mr. J. R. Gabriel

"Dynamical Nuclear
Polarization by
the Overhauser
Effect".

Wed., 22nd March,
4.15 p.m. Imperial
College, London

Nuclear
Physics
Colloquium

Dr. D. M. Binnie

"The Radiative
Decay of the
Pion".

B. E. Kingdon

Scientific Administration

17th March, 1961

RUTHERFORD LABORATORY BULLETIN NO. 26

for the fortnight commencing Monday, 27th March, 1961

ROYAL SOCIETY ELECTIONS

✓ Professor B. H. Flowers, Langworthy Professor of Physics in the University of Manchester, has been elected a Fellow of the Royal Society. Professor Flowers is a member of the Physics Committee and the Visiting Committee of the Institute.

HYDROGEN BUBBLE CHAMBER

✓ The British National Hydrogen Bubble Chamber Management Committee, set up by the D.S.I.R., will hold its next meeting at the Rutherford Laboratory on Wednesday, 29th March. The meeting will be preceded by a tour of the Laboratory.

VISITS ABROAD

✓ The Director will visit C.E.R.N. on the 26th March to attend a meeting of the European Advisory Committee on the Brookhaven Accelerator Conference, which is to be held in September, 1961.

✓ Dr. D. J. Thompson and Mr. F. Harden of the Nimrod R.F. Group will visit Messrs. Phillips at Eindhoven on the 4th April for discussions on ferrite frames.

VISITORS

✓ A party from the Physics Department, University College, Dublin, visited the Laboratory on Friday, 24th March.

P.L.A.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
27th-30th March	Birmingham University	Polarization Experiments

UNCLAIMED MAIL

A letter from Imperial Chemical Industries, High Holborn, London, W.C.1, is awaiting collection from Mr. E. Newberry, Building R.1. This is in reply to an enquiry dated 15th March, 1961, regarding a niobium-tin compound.

INTERNAL EVENTS

Monday, 27th March, 11 a.m. Conference Room, Building R.1	Nimrod Lecture Series	Dr. P.T. Matthews (Imperial College, London).	"Peripheral Collisions"
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EXTERNAL EVENTS

Tuesday, 28th March, 4.15 p.m., Imperial College, London.	Nuclear Physics Colloquium	Mr. N.C. Barford	"Bubble Chamber Interactions of Slow K-Mesons"
Tuesday, 28th March, 5.30 p.m. Cockcroft Hall, A.E.R.E.	Transistor Lecture No.11 (last of series)	Mr. D.B. Jarvis (Mullard Research Laboratories)	"Transistors in Computers"

EXTERNAL EVENTS (contd.) /

EXTERNAL EVENTS (continued)

Monday, 27th and Tuesday, 28th March, 10 a.m. - 4 p.m., adjacent to Social Club, A.E.R.E.: Mobile Exhibition of Electronic Equipment by E.M.I. Electronics Limited.

NEWS FROM C.E.R.N.

✓ A recent experiment at C.E.R.N. to determine the extent to which the muon (μ -meson) may be identified with the electron despite their difference in mass, has provided new evidence supporting the view that the muon can be visualised as a heavy electron. It had been foreseen that if the muon was indeed a heavy electron, it should be possible, using quantum electrodynamics, to calculate its magnetic moment. Any experimental deviation from this calculated value could hint at a real difference between the two particles. The results of the experiment have established that the magnetic moment of the muon is in agreement with the value predicted by theory, within the limits of two parts in 10^5 .

(Full details are given in C.E.R.N. Press Release PIO/4/61, which may be seen in the N.I.R.N.S. Library, Building R.1)

B. E. Kingdon
Scientific Administration

24th March, 1961.

MSG.

RUTHERFORD LABORATORY BULLETIN No. 27
for the week commencing Monday, 17th April, 1961.

VISITORS

✓ Professor K. Kaneshige, Member of the Japanese Atomic Energy Commission, accompanied by Mr. N. Yoshida and Mr. S. Tamiya, visited the Laboratory on 11th April.

Professor Arthur Roberts of the Argonne National Laboratory will be visiting the Rutherford Laboratory on 24th and 25th April. (See "Internal Events" below).

Dr. T. E. Calverley and Mr. R. J. Sanders of the English Electric Company, Stafford, will visit the Laboratory on 19th April for discussions with Mr. P. Bowles regarding the magnet pole-pieces for Nimrod.

VISITS ABROAD

✓ Mr. H. Hadley and Mr. J. H. Foster of the Engineering Design Group will be visiting Brown-Boveri Limited at Baden on 23rd April for discussions and tests on the Nimrod magnet power-supply timing equipment.

P.L.A.

✓ No experiments will be carried out on the P.L.A. this week, owing to R.F. valve installation on Tank 1.

UNCLAIMED MAIL

The following letters are awaiting collection from Mr. E. Newberry, Building R.1:

- (i) From Messrs. Heaton & Dugard Ltd., Birmingham.
(In reply to an enquiry dated 27th March, requesting catalogues, etc.)
- (ii) From Messrs. Sydney Smith & Sons, Ltd., Nottingham,
(enclosing catalogues of pressure gauges, etc.)

EXTERNAL COURSES

A full-time two-month's course on Nucleonic Techniques and Measurements commenced on 10th April at Borough Polytechnic, London, S.E.1. A large proportion of practical work is included, and places are still available.

The Italian Physical Society is convening the International School of Physics Summer Courses, to be held at Varenna in May to August 1961. A course on Nuclear Physics is included.

(Details of the above two events are given on the N.I.R.N.S. Library Notice-Board, Building R.1)

The Engineering Department of the Oxford College of Technology proposes to hold a course of lectures on Servomechanisms, on Thursday evenings at 6.30 p.m. commencing 27th April.

(Further details can be obtained from the Technical Training Office, Building 328T, A.E.R.E.)

INTERNAL EVENTS

✓ Tues., 25th April, 3 p.m., Conference Room, Building R.1	Nuclear Physics Seminar	Professor A. Roberts (Argonne National Laboratory)	"Spark Chambers and other Instrumentation for High Energy Physics at Argonne"
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EXTERNAL EVENTS

Monday, 17th - Wednesday, 19th April, at Birmingham University: Institute of Physics and Physical Society Conference on Nuclear Physics.

Tues., 18th April, Transistor Mr. W. L. Stephenson "Non-Sinusoidal
5.30 p.m. Lecture (Mullard Research Circuit
Cockcroft Hall, (Postponed from 21st March) Laboratories) Analysis"
A.E.R.E.

Tues., 18th April, A.S.E.E. Mr. R. T. Wright "Fault Tracing
7.30 p.m., Lecture (Evershed & in Electrical
Employment Exchange, Vignoles, Ltd.) Apparatus"
St. Aldates,
Oxford.

Thursday, 20th April - Thursday, 4th May (excluding Sundays): Olympia, London:
Engineering, Marine, Welding and Nuclear Energy Exhibition.
(Tickets are available from B. E. Kingdon, Building R.20)

B. E. Kingdon
Scientific Administration

14th April, 1961.

MSG.

SUPPLEMENT TO RUTHERFORD LABORATORY

BULLETIN NO. 27

The Nuclear Physics Seminar "Spark Chambers and other Instrumentation for High Energy Physics at Argonne", which was to have been given by Professor Arthur Roberts on Tuesday, 25th April, will now be held on Thursday, 20th April, at 3 p.m. in the Conference Room, Building R.1

B. E. Kingdon
Scientific Administration

18th April, 1961.

RUTHERFORD LABORATORY BULLETIN NO. 28

for the week commencing Monday, 24th April, 1961

VISITS ABROAD

✓ Mr. W. Walkinshaw, representing the Director, will visit C.E.R.N., Geneva, on 26th April to attend the meeting of the European Advisory Committee on the Brookhaven Accelerator Conference.

OXFORD ELECTROSTATIC ACCELERATOR

✓ The Treasury has given approval to D.S.I.R. for the construction of a large 20 MeV electrostatic accelerator at Oxford University. The machine will consist of a 10 MeV horizontal tandem Van de Graaff accelerator preceded by a 10 MeV vertical single Van de Graaff acting as injector. The National Institute (Dr. W. D. Allen's Group) will provide design assistance for the injector stage, and supervise the installation and commissioning of the whole machine.

P.L.A.

✓ Dr. J. J. Thresher left for U.C.R.L., Berkeley, U.S.A., on Thursday, 20th April, where he will spend one year with an experimental team working on the Bevatron.

The programme scheduled for the P.L.A. during the current week is as follows:-

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
24th April	Mr. T. P. Flanagan (B.S.I.R.)	Irradiation of glass
25th April	Mr. I. L. Mogford (Metallurgy Division, A.E.R.E.)	Irradiation of iron foils
26th - 28th April	Clarendon Laboratory, Oxford University	Measurement of capture gamma-rays

VACANCIES AT C.E.R.N.

A list of new vacancies at C.E.R.N., Geneva, has been received; details can be obtained from Mrs E. Williams, Personnel Section, Room 51, Building R.20. Among the posts included are several for engineers, physicists, designers, draughtsmen, technicians and shorthand-typists.

✓ EXTERNAL COURSE

A full-time two-week's course on "Design, Use and Maintenance of Electronic Equipment used in Nuclear Physics" will be held at Borough Polytechnic, London, S.E.1, from 26th June to 7th July. A large proportion of practical work is included. Full details are given on the N.I.R.N.S. Library Notice-Board, Building R.1.

UNCLAIMED MAIL

The following letters are awaiting collection from Mr. E. Newberry, Building R.1:-

(i) From Messrs. Ferranti Ltd., Electronics Dept., Oldham, Lancs.
(Advice note dated 12th April, regarding six samples "F.O.C.", type YS10).

(ii) From Johnson, Matthey and Co. Ltd., Hatton Garden, London, E.C.1.
(Quotation for 60 kilos of Lithium Nitrate).

(iii) From Messrs. Hunke and Jochheim, Iserlohn, Germany.
(Reply to letter dated 12th April, regarding 600 plastic plates No. 66).

LIBRARY NOTICE

Would the persons who have the following library books in their possession please return them to Mrs. W. M. Dance, Electronics Group Library, Building R 12.9, Ext. 2981:-

✓ "Handbook of Chemistry and Physics", by Charles D. Hodgman (Ref: Ha4271).

"Nuclear Magnetic Resonance", by E.R. Andrew (Ref: Ha16649).

INTERNAL EVENTS

X Monday, 24th April, from 10 a.m., in the North Car Park: Mobile Exhibition of Machine Tools and Equipment by the Colchester Lathe Company. (Enquiries should be made to Mr. E. G. Cook, Ext. 3196/89).

EXTERNAL EVENTS

Wed., 26th April, 2 p.m., Conf. Room, Bldg. 8.9, A.E.R.E.	Theoretical Physics Seminar.	Mr. E. B. Fossey	"A Technical Description of the Auto- code Compiler".
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X Wed., 26th April, 3 p.m., Cockcroft Hall, A.E.R.E.	I. Mech. E. Lecture.	Lt. Cdr. C. P. Parsons, R.N.	"Servo- Mechanisms".
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Wed., 26th April, 5.30 p.m., Savoy Place, London, W.C.2.	I.E.E. Lecture.	Mr. R. H. Franklin and Mr. J. Rhodes	"Data Transmission".
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Wed., 26th April, 6 p.m., London School of Hygiene and Tropical Med- icine, Keppel Street, W.C.1.	Brit. I.R.E. Symposium on Electronic Counting Techniques.	(Papers on counters employing trochotrons, transistors and and magnetic film techniques).	
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B. E. Kingdon
Scientific Administration.

21st April, 1961

RUTHERFORD LABORATORY BULLETIN NO. 29
for the week commencing Monday, 1st May, 1961

VISITORS

✓ Professor Richard Wilson of Harvard University, U.S.A., will be visiting the Director on Tuesday, 2nd May.

VISITS ABROAD

✓ Mr. H. C. Brooks of the Nimrod Operations Group will visit C.E.R.N., Geneva, from 1st to 12th May, to discuss magnet power supply operation and maintenance.

✓ Mr. J. M. Dickson and Mr. J. B. Marsh of the P.L.A. Group will be in Switzerland from 7th to 16th May, to discuss problems on accelerator design and operation with staff at C.E.R.N., and the design of polarized proton sources with Professor Huber of Basel University. They will also visit Sulzer Bros., Limited, Winterthur, to discuss cryogenic problems.

P.L.A.

✓ Dr. R. C. Hanna has been seconded to the P.L.A. Group from Nuclear Physics Division, A.E.R.E. He will be responsible for the Nuclear Physics Section of the Group during Dr. J. J. Thresher's absence at U.C.R.L., Berkeley, U.S.A.

The programme scheduled for the P.L.A. during the current week is as follows:

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
1st - 5th May	Mr. M. K. Craddock (Clarendon Lab., Oxford)	Measurements on the Polarized Proton Source.

INTERNAL EVENTS

Mon., 1st May, 11 a.m. Conf. Rm., Building R.1	Nimrod Lecture Series	Prof. D.H. Wilkinson (Clarendon Laboratory)	"Nimrod and the Nuclear Stratosphere"
✓ Wed., 3rd May, 2 p.m., Conf. Rm., Building R.1	P.L.A. Group Seminar	Mr. J. M. Dickson	"The Polarized Ion Source"
Mon., 8th May, 11 a.m., Conf. Rm., Building R.1	Nimrod Lecture Series	Dr. A. Segar	"Decays of K-Particles"

EXTERNAL EVENTS

Monday, 1st May - Thursday, 4th May, inclusive: Engineering, Marine, Welding and Nuclear Energy Exhibition, Olympia, London. (Tickets are available from B. E. Kingdon, Building R.20).

✓ Tuesday, 2nd May - Thursday, 4th May, inclusive: U.K.A.E.A. Film Magazine No.2 (2nd year). Shown at 12.30, 12.50, and 1.10 p.m., each day at the Cockcroft Hall, A.E.R.E. (No tickets required).

Thurs., 4th May, 5.30 p.m., Chemistry Theatre, Gower Street, London, W.C.1	University College Physics Lecture	Professor J. Hamilton	"Advances in Elementary Particle Physics"
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Friday, 12th May: "That They May Live", (film depicting mouth-to-mouth method of artificial respiration). Shown at 9 a.m., 11 a.m., 12.30 p.m., 2 p.m., and 3.30 p.m. (Admission by ticket only - application should be made to Mr. W.G. Gale, Extension 2568, Building 159, A.E.R.E., before 4th May).

B. E. Kingdon
Scientific Administration

1st May, 1961.