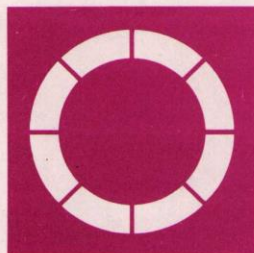


No. 17/69
5 May 69



Rutherford Laboratory Bulletin

General News

VISITORS The following visits to the Laboratory have been arranged during the current week:-

Tues., 6 May:- Twelve engineers from the Oxford and District telephone area.
Wed., 7 May:- Twelve students from Culham College, Abingdon.
Sat., 10 May:- Twenty pupils from the Abbotsfield School, Wantage.

MISSING EQUIPMENT The following is a repeat of the notice published in Bulletin No. 11/69, for 17 March '69.

Solatron Digital Voltmeter, Type LM 1420.2, Ser/No. 261055, AERE Loan Pool No. 5123.

This item has been removed, without permission, from a Storage Rack in R.18 and anyone with information on its present whereabouts is asked to contact Mr. K. J. Harris, Ext. 6170 or Mr. P. A. Braham Ext. 6638/6258.

NATIONAL PHYSICAL LABORATORY OPEN DAYS A limited number of invitations are expected shortly for the open days on 14 and 15 May and will be obtainable from H. F. Norris, R.20, Ext. 484.

CIVIL SERVICE BENEVOLENT FUND The SRC has now been admitted into the above fund (SRC Circular 9/69) and all non-industrial staff are eligible for benefits. Miss M. Prosser who is the Fund's Publicity Officer for this area is making several visits to the Laboratory to talk about the work of the Fund generally. Arrangements have been made for her to speak in various areas of the Laboratory so as to cause the least disturbance to work. Staff can attend whichever time is most convenient although times have been suggested for various areas in order to keep the numbers attending each talk fairly equal. The talk will last about 15 minutes and it is hoped that all members of staff will endeavour to hear it.

Date & Time		Sections	Location
Mon. 5 May	2.00	R.20 East Wing	R.20 Typists Room
	2.45	R.20 Finance & Accounts	R.20 Bill Paying
	3.30	Safety, Radiation Protection	R.20 Safety Section Lecture Room
	4.15	Sci. Admin., Library & Photographic (R.58)	R.20 Board Room
Tues. 6 May	9.00	R.3 & R.4 Power Supplies	R.3 Power Supplies T.IIs Office
	9.45	R.2 Second Floor	R.2 2nd Floor Design Office
	10.30	R.2 Vac. Shift Foremen & Techs.	R.2 G.8
	11.15	Accommodation, Reproduction & R.1 Stores	R.1 Reproduction
	1.30	R.2 Top Floor	R.2 Conference Room
	2.15	R.2 Third Floor	
	3.00	R.8	R.8 Vacuum Workshop
	3.50	R.9	R.9 Mess Room
Wed. 7 May	9.00	R.1 Ground Floor East Wing	R.1 Coffee Lounge
	9.45	R.1 Ground Floor West Wing	
	10.30	R.1 First Floor East Wing	
	11.15	R.1 First Floor West Wing	
	2.00	R.1 Top Floor East Wing	R.1 First Floor D.O. R.1 Top Floor D.O.
	2.45	R.1 Top Floor West Wing	
	3.30	R.1 First Floor Link Wing	
	4.15	R.1 Top Floor Link Wing	

Timetables for the 12th and 13th May covering the rest of the Laboratory will be given in next week's Bulletin.

OVERSEAS VISITS Mr. K. A. Freeston, to CERN, 5 May, in connection with modifications to the S.70 control room equipment.

Mr. T. Perry, to Saclay, Paris, 5-6 May, to discuss the performance of Grove Valves.

Mr. S. C. Maskell, to Italy, 5-10 May to attend ISPRA Nuclear Electronics Symposium at Stresa.

Dr. L. C. W. Hobbs to Italy, 9-11 May to accompany Dr. U. L. Francis on a CERN Committee of Council visit to the site offered by Italy for the 300 GeV machine at Doberdo. He will then proceed to Hamburg to attend meeting of the 300 GeV Ejection Study Group, 12-13 May.

COCKCROFT COMMEMORATIVE PLAQUE AND LECTURE Lady Cockcroft will unveil a commemorative plaque on the Cockcroft Hall at 3 p.m. on Wed., 7 May. The ceremony will be followed by a commemorative lecture by Sir Rudolf Peierls; his subject will be "Physics in Cockcroft's time". Tickets are restricted to Divisional Head level.

Machine Schedules

NIMROD Cycle 5 (13.5.69-3.6.69)

Machine Physics

High Energy Physics

Team	Beam	Experiment	
Birmingham U./RHEL	K12	Kip Differential Cross Section Measurements from 0.45-0.85 GeV/c	Data
Cambridge U./RHEL	K13	Measurement of the Amplitude for $\Delta S = -\Delta Q$ Interactions in K Decay	Data
Oxford U./RHEL	K14A	Polarization Effects in π^+p Elastic Scattering	Setting up
AERE/QMC/RHEL/Bergen	P71	pp Elastic Scattering at Large Angles between 1.5 and 4.0 GeV/c	Setting up

<u>Team</u>	<u>Beam</u>	<u>Experiment</u>	
UCL/RHEL	K8	K^+p Differential Cross Sections between 0.85 and 2.2 GeV/c	Data
RHEL/CERN/UCL	K9	Testing of the Target Facility in the Hydrogen Bubble Chamber	Setting up
Q.M.C.	K12*	Measurement of the K^+ Lifetime	Data

P.L.A.

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
5-10 May	R.H.E.L.	(p,t) Reactions on O^{18} , Fe^{56} , Mn^{55} and Cr^{54}
11-15 May	Oxford Univ.	(p,t), (p, He^3) and (p,) Reactions on Li^6

Internal Events

Mon., 5 May, 11.30 a.m., Lecture Theatre	Nimrod Lecture Series	Dr. P. L. Braccini (Pisa)	Photoproduction of ω on Complex Nuclei
Wed., 7 May, 11.00 a.m. Conf. Rm., R.1	HEP Disc Grp.	Dr. B. G. Kenny	The Parameters in Ke_3 Decay
Wed., 7 May, 2 p.m., Conf. Rm., R.12	PLA Group Seminar	Prof. G. T. Garvey (Princeton/Oxford)	Exotic Nuclei
Mon., 12 May, 11.30 a.m. Lecture Theatre	Nimrod Lecture Series	Dr. Bernard Hyams (CERN)	The Leptonic Decays of Pseudoscalar Mesons

External Events

Mon., 5 May, 4.15 p.m. Clarendon Lab., Oxford	Elementary Particle Theory Seminar	Dr. C. B. Chiu (Cambridge)	Self Consistency of the Hadron Collision Amplitude using Phase Contour Method
Mon., 5 May, 4.15 p.m. Queen Mary Coll.	Theor. Phys. Seminar	Prof. G. Feldman (John Hopkins & Iap. Coll.)	Covariant Angular Momentum Expansions
Mon., 5 May, 5 p.m. Univ. of Bristol	Phys. & Geo-Phys. Colloq.	Dr. P. A. Egglestaff (AERE)	Time - Dependant Correlations in Liquids
Wed., 7 May, 2.30 p.m. Univ. of Manchester	Theor. Phys. Seminar	Dr. M. B. Hooper (Oxford & Manchester)	Isospin Coupling in Transfer Reactions
Fri., 9 May, 5 p.m. Univ. of Reading	Colloq.	Dr. Antoncik (Univ. of Aarhus Denmark)	Impact Ionisation in Semiconductors

EVENTS AT AERE

Tues., 6 May, 2 p.m. Conf. Rm., Bldg. 8.9	Theor. Phys. Seminar	Dr. P. Sikova (AERE)	Aspects of Superfluidity
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Social News

RECORD SOCIETY Tues., 6 May, 12.30 p.m., Lecture Theatre
The famous Sammy Davis Junior, on record

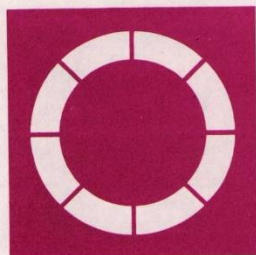
CHRISTIAN FELLOWSHIP On great Civil Engineering sites and many Housing projects can often be seen the inflatable plastic accommodation of the "Outreach to Industry Organisation". The sight of this dome shaped building of the 20th Century John Wesley has aroused the curiosity of many a site worker. Mr. Graham Stokes, one of the missionaries of the Organisation, will be visiting the Fellowship on Friday, 9 May, at 12.30 p.m., P.L.A. Conference Room, R.12, to discuss "Outreach to Industry" - join him!

GOLF ENTHUSIASTS The Bremhill Park Golf Club, Shrivenham will be officially opened on Saturday, 10 May. An exhibition match between Max Faulkner and Brian Barnes will tee off at 2.30 p.m. Tickets are available from the club at 5/-. Bremhill Park is an 18 hole course of 4407 yards length on the main road from Faringdon, just before Shrivenham.

Rutherford Laboratory
2.5.69.

H. F. Norris, Ext. 484
Scientific Admin. Group
Building R.20

No. 18/69
12 May 69



Rutherford Laboratory Bulletin

General News

COUNCIL VISIT On Tuesday and Wednesday, 20 - 21 May, the Chairman and members of the Science Research Council will be visiting the Rutherford Laboratory.

The party will be arriving at 12.30 p.m. on Tuesday following a tour of the Atlas Computer Laboratory during the morning. After lunch they will tour Nimrod and the P.L.A. and will be shown selected exhibits of some of the work of the Laboratory. All staff concerned with the arrangements for this tour have already been notified.

Following a brief visit to the Astrophysics Research Unit at Culham Laboratory on Wednesday morning, the visitors will be returning to the Rutherford Laboratory for a formal meeting of the Council which will take place in the R.1 Conference Rm.

FILM NOTICE It is Period 5. Colour Strip - RED for $\beta\beta$ films. Fast neutron films have already been issued to P.L.A. staff. Issues to Nimrod staff will commence on 13 May. These fast neutron films are also to be worn for Period 6.

CONFERENCE NOTICE The organisers of the International Conference on the Three Body Problem in Nuclear and Particle Physics, to be held at the University of Birmingham, 8 - 10 July 1969 have now arranged for number of places to be made available at the Conference for Research Students at a special rate of £10 instead of the standard £18. Applications should be made immediately, and completed forms with remittances must be returned to the I.P.P.S. by 23 May. Further details from H.F. Norris R.20 Ext. 484.

EXTERNAL COURSES Details of the following courses can be obtained from Mr. T. F. Gubbins, R.20:-

"Design, Use and Maintenance of Electronic Equipment used in Nuclear Physics", two weeks course, commencing Monday, 23 June, at Borough Polytechnic.

"Short Course on Laser Application", Wednesday, 21 May, 4 & 11 June, Oxford College of Technology.

"B.Sc. Course and Part-time B.Sc. Course in Electrical Engineering", starting September 1969, at Oxford College of Technology.

NATIONAL PHYSICAL LABORATORY OPEN DAYS 14 and 15 MAY. The Laboratory is now organised into three Groups of Divisions and Units. Each year one Group only exhibits its work during Open Days. This year the Materials Group is on display, while the whole Laboratory is open for discussions with visitors. Tickets are available from H.F. Norris, R.20 Ext. 484.

QUEST The Spring edition has now been distributed and comments and criticisms are welcomed. Please contact the local correspondent, H.F. Norris, R.20 before the next Editorial Board meeting on Friday, 16 May.

CIVIL SERVICE BENEVOLENT FUND The SRC has now been admitted into the above fund (SRC Circular 9/69) and all non-industrial staff are eligible for benefits. Miss M. Prosser who is the Fund's Publicity Officer for this area is making several visits to the Laboratory to talk about the work of the Fund generally. Arrangements have been made for her to speak in various areas of the Laboratory so as to cause the least disturbance to work. Staff can attend whichever time is most convenient although times have been suggested for various areas in order to keep the numbers attending each talk fairly equal. The talk will last about 15 minutes and it is hoped that all members of staff will endeavour to hear it.

Date and Time	Sections	Location
Mon, 12 May 9.00	R.51 and R.53	R.51 Tech's Office
9.45	R.32	R.32 General office
10.30	R.16	R.16 Outside Manufacturing Area
11.15	R.17, R.18 and R.54	R.18 Crew Room
2.00	R.35, R.37 and R.15	R.35 D.O. Room 19.
2.45	R.12	R.12 Lab. 16
3.15	R.34	R.34 Room 9
Tues, 13 May 9.45	R.25 Top Floor	Lab 2 - 19 Top Floor
9.00	R.25 Bottom Floor & R.50	Lab G.11-14
10.30	Any member of staff who has been unable to attend previous talks.	R.20 Board Room

SCIENTIFIC ADMIN. NOTICE Due to the Whitsun holiday the next Bulletin, No. 19/69 will cover two weeks. Items for inclusion in this issue should be sent to H.F. Norris, Rm. 42, R.20 by Wednesday, mid-day 14 May, or earlier if possible.

VISITORS Sixteen members of staff and pupils, from the Oxford High School for Girls will visit the Laboratory on Monday, 12 May.

OVERSEAS VISITS Dr. O. R. J. Ranft, to DESY, Hamburg, 11 -14 May to attend meeting of 300 GeV Ejection Study Group.

Mr. D. R. Perry, to Petten, Holland, 12 - 15 May, to attend joint meeting of the Association for Radiation Research and Netherlands Radiobiological Society.

Mr. L. Phillips, Mr. P. O'Brian and Mr. E. Towndown, to CERN, 14 May, for the installation of Stage 3 on Dr. Bugg's experiment.

Machine Schedules

NIMROD Cycle 5 (13.5.69 - 3.6.69)

Machine Physics: High Energy Physics (K12, K13, K14A, P71, K8, K9 and K9*). Full details of Cycle 5 were given in Bulletin No. 17/69.

P.L.A.

Date	Team	Experiment
12 - 15 May	Oxford Univ.	(p,t), (p,He ³) and (p, α) Reactions in Li ⁶
16 - 26 May	Shut Down Period.	

Internal Events

Mon., 12 May, 11.30 a.m., Lecture Theatre	Nimrod Lecture Series	Dr. Bernard Hyams (CERN)	The Leptonic Decays of Pseudoscalar Mesons.
Wed., 14 May, 11 a.m. Conf. Rm., R.1.	H.E.P. Disc Grp.	Dr. S. Y. Lo (RHEL)	Chou-yang Model, Current and p-p Scattering.
Mon., 19 May 11.30 a.m. Lecture Theatre	Nimrod Lecture Series	Dr. E. J. Sacharidis (RHEL)	Wide Angle Elastic Proton Proton Scattering at High Energies (Diffraction or Regge Poles?).

External Events

Mon., 12 May 4.15 p.m. Clarendon Lab., Oxford.	Elementary Particle Theory Seminar	Dr. N. R. Nath (Birmingham)	Unitarization of Production Born Amplitudes.
Mon., 12 May, 4.15 p.m. Queen Mary Coll.	Theor. Phys. Seminar	Sir Rudolf Peierls (Oxford)	Use and Misuse of Greens' Function Techniques in Transport Theory.
Mon., 12 May, 5.30 p.m. Imp. Coll., London	Inst. of Maths Meeting.	Dr. E.T. Goodwin (N.P.L.)	Numerical and Mathematical Methods: the Essential Differences.
Tues., 13 May, 2 p.m. Daresbury Lecture Theatre	Daresbury Lecture Series	Dr. T. Jones (Univ. Coll/CERN)	Cascade Beta Decay
Wed., 14 May 2.30 p.m. Univ. of Manchester	Theor. Phys. Seminar	Prof. A. Visconti (C.N.R.S. Marseille)	The Renormalization Group
Thurs., 15 May: Superior Electric Nederland N.V. are holding a Mobile Exhibition of their "Slo-Syn" Numerical Control Equipment for automated machine tool operation and other purposes, at the UKAEA Culham, from 10 a.m. to 4 p.m. (further details from B. E. Kingdon, R.20 Ext. 6297)			
Thurs., 15 May, 4 p.m. Univ. Coll. London.	Elementary Particle Physics Seminar	Dr. R. J. Eden (Cambridge)	Phase Contours and Duality in Strong Interactions.

Social News

RECREATIONAL SOCIETY NOTICE The Annual General Meeting of the Rutherford and Atlas Laboratories Recreational Society will be held at 12.30 p.m. on Friday, 30 May in the Lecture Theatre. All members are asked to make a special effort to attend. (I have been assured that there is more than one member - Ed).

RECORD SOCIETY. 12.30 p.m., Tues., 13 May, Lecture Theatre (all welcome).

Elgar: Violin Concerto in B Minor

This magnificent work, thought by some to be the finest of all violin concertos, is here played in a modern re-issue of an historic recording made in July 1932, with Yehudi Menuhin (then only 16) and the composer himself (at the age of 75) conducting the London Symphony Orchestra.

CHRISTIAN FELLOWSHIP. STOP PRESS: The meeting on "Outreach to Industry" led by Mr. Graham Stokes, at 12.30 p.m. on Friday 9 May will now be held in R.25 Conference Room (1st Floor).

30 minute Break - 12.30 p.m. Fir., 16 May, Conf. Rm. R.25

The Series - Everyman a Bible Student

The Subject - Hypocrisy

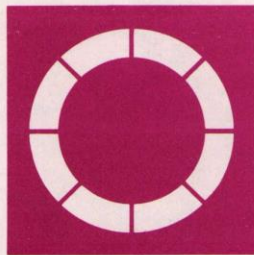
The Speaker - Robin Elliott.

Come along and prove that everyman can be a Bible Student.

Rutherford Laboratory
9.5.69.

H.F. Norris Ext. 484
Scientific Admin. Group
Building R.20.

No. 19/69
19 May 69



Rutherford Laboratory Bulletin

General News

NIMROD ON SCHEDULE. The Nimrod shut down ended on May 13 with the start of Cycle 5. During the past seven weeks an extensive programme of installation, maintenance and modifications has been undertaken. In addition a successful series of tests and measurements have been completed on the magnet power supply.

The installation work was primarily concerned with the construction of a third extracted proton beam which will provide beams of secondary particles for experiments currently being assembled in Hall 3. Setting up of this beam, known as X3 will start at the beginning of June and there will then be a total of eleven beam lines in the three experimental areas.

Work on the Nimrod power supply plant was concerned with the installation and testing of the spare rotor. Since this item embodied solid pole pieces, as opposed to the laminated construction of the two rotors normally in use, a series of measurements was necessary to determine the performance and operating conditions when rotors of different types were being operated together. These tests have shown that the new rotor and one of the old type, may generally be operated when in electrical parallel, as well as when mechanically coupled.

COUNCIL VISIT - EXHIBITION. In connection with the visit of the Chairman and members of the Science Research Council, a group of exhibits has been set up in the P.L.A. Conference Room to illustrate the wide range of engineering and allied techniques needed to support the Laboratory's research programme.

This exhibition will also be open for general viewing by the Laboratory's staff from Wednesday to Friday, 21-23 May between the hours of 2 and 4 p.m.

Any interested member of staff is cordially invited to visit the display during these times providing permission to do so is first obtained from within their respective departments.

MISSING EQUIPMENT. The following item of equipment has been removed from the heavy lab. in R.25 without permission:-

Dynamco Digital Voltmeter, Type 2006, Serial No. 17381.

Anyone with information on its present whereabouts is asked to contact Mr. E. Welch, Ext. 445/6322.

FILM NOTICE. Period 6 commences Monday 19 May. Colour strip - YELLOW for $\beta\gamma$ films. Please return all old films promptly.

Fast Neutron Films - these are not to be returned until the end of Period 6 (16 June).

Regular TLD issues to people with surnames beginning U, V, W, X.

CYRIL SANDERS PRIZE FUND. Cyril Sanders of the Health Physics and Medical Division, A.E.R.E. died on 17 March of this year. To recognise the lifetime of yeoman service that "Sandy" gave to Medical Laboratory Technology generally and to the training of young assistants in particular, it has been agreed to endow a prize to be known as "The Cyril Sanders Prize".

This would be awarded by the Institute of Medical Laboratory Technology to a medical technician for outstanding work during his training period.

Many of the ex-Harwell staff now working at the Laboratory will have known Sandy and may wish to be associated with this project.

Donations should be sent to Dr. N. Stott, Medical Department, Building 364, A.E.R.E., for the Cyril Sanders Prize Fund Account.

OVERSEAS VISITS. Mr. R. Sheldon, Mr. D. Evans and Mrs. J. Wilkinson, to CERN, 18-21 May, to participate in RHIEL/CERN dosimetry experiment.

Dr. S. F. J. Read, to Saclay, 20-21 May for discussions on materials for polarized targets.

Mr. J. A. Fox to CERN, 20-22 May for discussion with Belgian power company representatives on 300 GeV Static Power Supply applications at Focant.

Machine Schedules

NIMROD Cycle 5 (13.5.69 - 3.6.69.)

Machine Physics: High Energy Physics. (K12, K13, K14A, P71, K8, K9 and K9*).

Full details of Cycle 5 were given in Bulletin No. 17/69

P.L.A.

<u>Date</u>	<u>Team</u>	<u>Experiment</u>
19-27 May		Shut down period
28 May		Foil Calibrations
29 May - 9 June	Radiation Protection Manchester University	(p,t), (p,He ³) and (p, α) Reaction Studies.

Internal Events

Mon., 19 May 11.30 a.m. Lecture Theatre	Nimrod Lecture Series	Dr. E. J. Sacharidis (RHEL)	Wide Angle Elastic Proton - Proton Scattering at High Energies (Diffraction or Regge Poles?)
Wed., 21 May, 11 a.m., Lecture Theatre	HEP Disc Grp.	Dr. A. N. Kamal (RHEL)	PCAC and Current Algebra - 1
Fri., 23 May 11 a.m. Conference Room, R.1	Special HEP Seminar	Dr. G. Alexander (University of Tel-Aviv)	Q Enhancement
Fri., 23 May, 2 p.m. Conference Room, R.1	Special HEP Seminar	Dr. D. Atkinson (Imperial College)	Towards a Unitarization of the Veneziano Model.
Wed., 28 May, 11 a.m. Conference Room, R.1	HEP Disc Group	Dr. A. N. Kamal (RHEL)	PCAC and Current Algebra - 2
Mon, 2 June, 11.30 a.m. Lecture Theatre	Nimrod Lecture Series	Mr. J. D. Lawson (RHEL)	Unphysical Physics.
Tues., 3 June, 11.30 Lecture Theatre	Special Nimrod Lecture	Dr. C. Lovelace (CERN)	$\pi\pi$, $K\pi$ and $K\bar{K}$ Phase Shifts and their Off Shell Dependence from Unitarized Veneziano Formulae.

The next lecture in the Rutherford Laboratory series by Dr. Marshall has been postponed until the Autumn.

External Events

Mon., 19 May, 4.15 p.m. Queen Mary College	Theor. Phys. Seminar	Prof. R. A. Ferrell (Maryland and Paris)	Dynamic Scaling Theory of Phase Transitions.
Mon., 19 May, 4.15 p.m., Clarendon Laboratory, Oxford	Elementary Particle Theory Seminar	Dr. G. Ringland (RHEL)	Aspects of the Veneziano Model
Mon., 19 May, 4.15 p.m. 21, Banbury Road, Oxford.	Nuclear Physics Seminar	Prof. A. E. Litherland	Radioactive α Capture using Germanium Counters
Wed., 21 May, 2.30 p.m. University of Manchester	Theor.Phys. Seminar	Prof. M. Kac (Oxford and Rockefeller)	A Review of Some Recent Work in the Theory of Phase Transitions.
Thurs., 22 May 4.p.m., University College London	Elementary Particle Physics Seminar	Dr. S. P. Rosen (Purdue and Sussex)	Double β Decay and a New Limit on Lepton Non-Conservation.
Thurs., 29 May, 4.15 p.m. Clarendon Lab., Oxford.	Theor.Phys. Seminar	Prof. G. T. Trammell (Rice University and Techn. Hochschule Munich)	Gravity Induced Electric Fields in Conductors.

Social News

RECORD SOCIETY. The next presentation will be on Tuesday 3 June.

CHRISTIAN FELLOWSHIP. 30 Minute Break - before Whitsun. A quiet time of prayer and fellowship will be led by Frank Smith in the R.50 Conference Room at 12.30 p.m., Friday, 23 May, in which all can share.

30 Minute Break - after Whitsun.

A Bible Dig, in the series "Everyman a Bible Student", followed by a Group Discussion. Meet with us at the P.L.A. Conference Room, R.12 at 12.30 p.m. Friday 30 May.

Rutherford Laboratory
9.5.69.

H. F. Norris Ext. 484
Scientific Admin. Group
Building R.20.

STOP PRESS

As from Monday, 19 May the Conference Room in R.25 will be closed. A temporary replacement will be available in Room 15, R.50. Bookings for this room, to Mrs. T. Walker, as usual.

CHRISTIAN FELLOWSHIP. Meeting on Fri., 16 May, now in main Conference Room, R.1.

LDB.