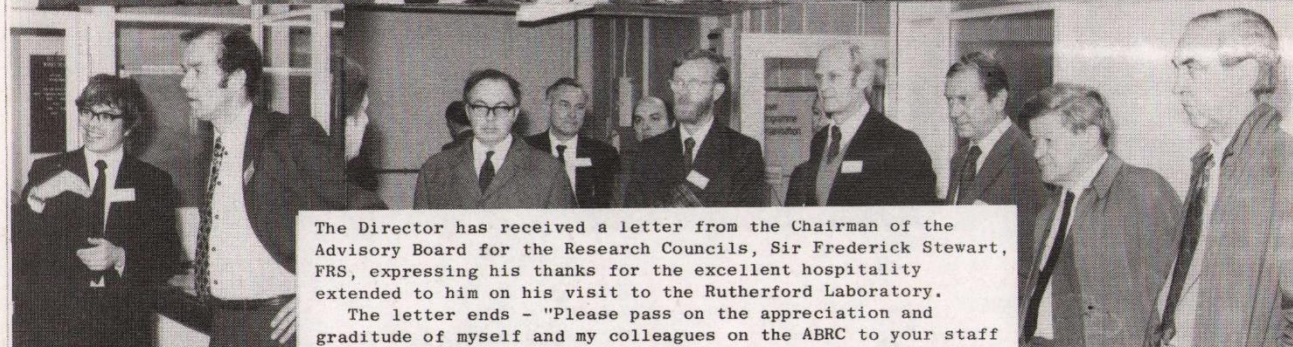




COMMON/CSCAL/IBM ,NERR,NCH,NGAP,ISCAN,NBR,NGR,NSCAN1,NRO  
1IYSEL,IYSEU,IYMAX,NTRACK,NSCAN,NES,NFAIL,MAXTR,MAX  
2NBEGIN,NTK,NTRY,NMISS,NSSR,NFID,MAXMIM,NFIRST,NEND  
COMMON/GFID/MFX(20,3),MFY(20,3),NFDX(10,3),NFX(3) (3)  
STAB(2,20,3),NX(100,4),NY(100,4),XN(2),Y(8),TB(100),ID  
F IDY(100,2),JDX(4),JDY(4),IHS(4),ICV(2) bulletin 5  
S NCF(16),IFS,NFS,FX,FY,JK,PIC,KPIC,NCOUNT,NBIN,MAXOV,MAX  
T MAXN,CTA,CTB,MX,MY,JA,JB,JC,JD,JE,JE(2),JF(2),JG(2),JH(2),JI(2),JJ(2),JK(2),JL(2),JM(2),JN(2),JO(2),JP(2),JQ(2),JR(2),JS(2),JT(2),JU(2),JV(2),JW(2),JX(2),JY(2),JZ(2),KA(2),KB(2),KC(2),KD(2),KE(2),KF(2),KG(2),KH(2),KI(2),KJ(2),KK(2),KL(2),KM(2),KN(2),KO(2),KP(2),KQ(2),KR(2),KS(2),KT(2),KU(2),KV(2),KW(2),KX(2),KY(2),KZ(2),LA(2),LB(2),LC(2),LD(2),LE(2),LF(2),LG(2),LH(2),LI(2),LJ(2),LK(2),LL(2),LM(2),LN(2),LO(2),LP(2),LQ(2),LR(2),LS(2),LT(2),LU(2),LV(2),LW(2),LX(2),LY(2),LZ(2),MA(2),MB(2),MC(2),MD(2),ME(2),MF(2),MG(2),MH(2),MI(2),MJ(2),MK(2),ML(2),MM(2),MN(2),MO(2),MP(2),MQ(2),MR(2),MS(2),MT(2),MU(2),MV(2),MW(2),MX(2),MY(2),MZ(2),NA(2),NB(2),NC(2),ND(2),NE(2),NF(2),NG(2),NH(2),NI(2),NJ(2),NK(2),NL(2),NM(2),NN(2),NO(2),NP(2),NQ(2),NR(2),NS(2),NT(2),NU(2),NV(2),NW(2),NX(2),NY(2),NZ(2),OA(2),OB(2),OC(2),OD(2),OE(2),OF(2),OG(2),OH(2),OI(2),OJ(2),OK(2),OL(2),OM(2),ON(2),OO(2),OP(2),OQ(2),OR(2),OS(2),OT(2),OU(2),OV(2),OW(2),OX(2),OY(2),OZ(2),PA(2),PB(2),PC(2),PD(2),PE(2),PF(2),PG(2),PH(2),PI(2),PJ(2),PK(2),PL(2),PM(2),PN(2),PO(2),PP(2),PQ(2),PR(2),PS(2),PT(2),PU(2),PV(2),PW(2),PX(2),PY(2),PZ(2),QA(2),QB(2),QC(2),QD(2),QE(2),QF(2),QG(2),QH(2),QI(2),QJ(2),QK(2),QL(2),QM(2),QN(2),QO(2),QP(2),QQ(2),QR(2),QS(2),QT(2),QU(2),QV(2),QW(2),QX(2),QY(2),QZ(2),RA(2),RB(2),RC(2),RD(2),RE(2),RF(2),RG(2),RH(2),RI(2),RJ(2),RK(2),RL(2),RM(2),RN(2),RO(2),RP(2),RQ(2),RR(2),RS(2),RT(2),RU(2),RV(2),RW(2),RX(2),RY(2),RZ(2),SA(2),SB(2),SC(2),SD(2),SE(2),SF(2),SG(2),SH(2),SI(2),SJ(2),SK(2),SL(2),SM(2),SN(2),SO(2),SP(2),SQ(2),SR(2),SS(2),ST(2),SU(2),SV(2),SW(2),SX(2),SY(2),SZ(2),TA(2),TB(2),TC(2),TD(2),TE(2),TF(2),TG(2),TH(2),TI(2),TJ(2),TK(2),TL(2),TM(2),TN(2),TO(2),TP(2),TQ(2),TR(2),TS(2),TT(2),TU(2),TV(2),TW(2),TX(2),TY(2),TZ(2),UA(2),UB(2),UC(2),UD(2),UE(2),UF(2),UG(2),UH(2),UI(2),UJ(2),UK(2),UL(2),UM(2),UN(2),UO(2),UP(2),UQ(2),UR(2),US(2),UT(2),UU(2),UV(2),UW(2),UX(2),UY(2),UZ(2),VA(2),VB(2),VC(2),VD(2),VE(2),VF(2),VG(2),VH(2),VI(2),VJ(2),VK(2),VL(2),VM(2),VN(2),VO(2),VP(2),VQ(2),VR(2),VS(2),VT(2),VU(2),VV(2),VW(2),VX(2),VY(2),VZ(2),WA(2),WB(2),WC(2),WD(2),WE(2),WF(2),WG(2),WH(2),WI(2),WJ(2),WK(2),WL(2),WM(2),WN(2),WO(2),WP(2),WQ(2),WR(2),WS(2),WT(2),WU(2),WV(2),WW(2),WX(2),WY(2),WZ(2),XA(2),XB(2),XC(2),XD(2),XE(2),XF(2),XG(2),XH(2),XI(2),XJ(2),XK(2),XL(2),XM(2),XN(2),XO(2),XP(2),XQ(2),XR(2),XS(2),XT(2),XU(2),XV(2),XW(2),XX(2),XY(2),XZ(2),YA(2),YB(2),YC(2),YD(2),YE(2),YF(2),YG(2),YH(2),YI(2),YJ(2),YK(2),YL(2),YM(2),YN(2),YO(2),YP(2),YQ(2),YR(2),YS(2),YT(2),YU(2),YV(2),YW(2),YX(2),YY(2),YZ(2),ZA(2),ZB(2),ZC(2),ZD(2),ZE(2),ZF(2),ZG(2),ZH(2),ZI(2),ZJ(2),ZK(2),ZL(2),ZM(2),ZN(2),ZO(2),ZP(2),ZQ(2),ZR(2),ZS(2),ZT(2),ZU(2),ZV(2),ZW(2),ZX(2),ZY(2),ZZ(2),  
DIMENSION NCTR(144),NGR(20),CTR(112),CKR(12),MODE(21)

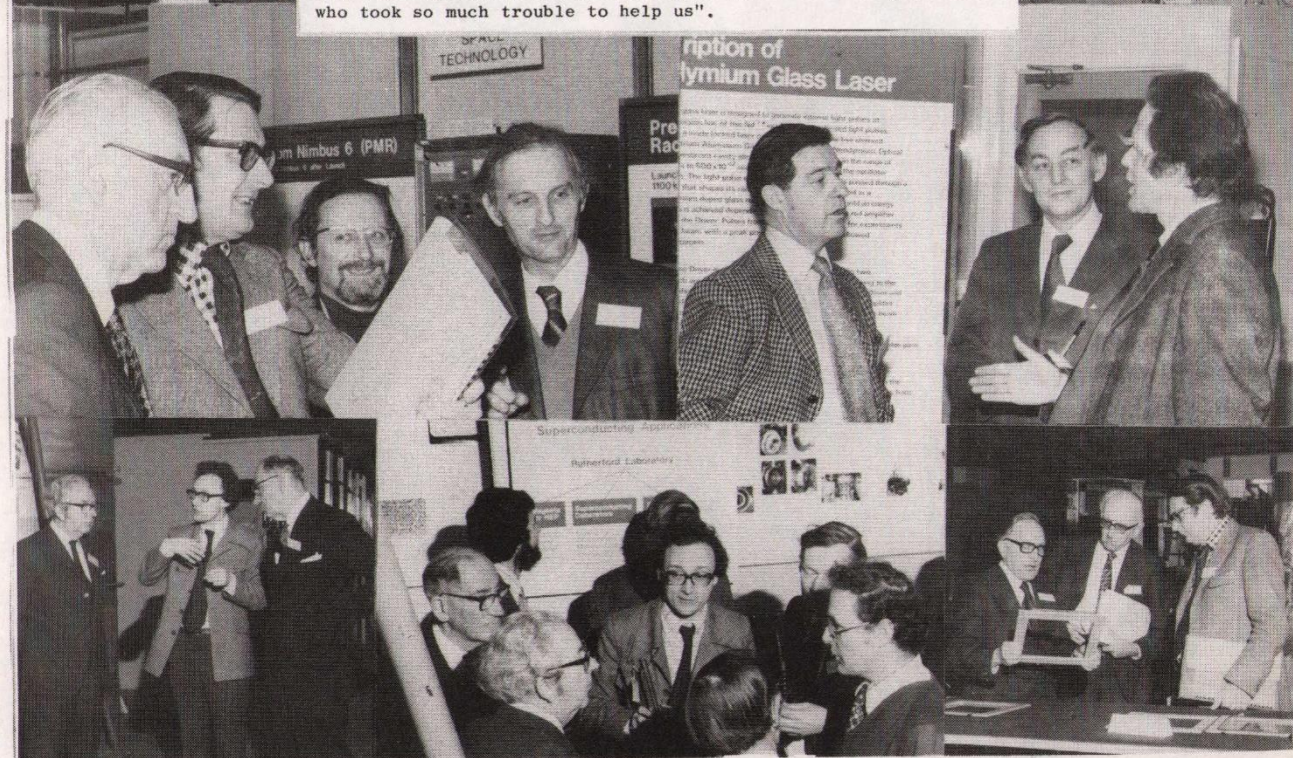
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**8 - 22 March 1976**



The Director has received a letter from the Chairman of the Advisory Board for the Research Councils, Sir Frederick Stewart, FRS, expressing his thanks for the excellent hospitality extended to him on his visit to the Rutherford Laboratory.

The letter ends - "Please pass on the appreciation and gratitude of myself and my colleagues on the ABRC to your staff who took so much trouble to help us".





# INTERNAL EVENTS

## NIMROD LECTURE SERIES

Monday 8 March  
11.30  
Lecture Theatre

## PROPOSAL TALKS

Tuesday 9 March  
10.30, 11.30 & 12.30  
Lecture Theatre

## HEP SEMINAR

Wednesday 10 March  
11.00  
R61 Conference Room

## SAFETY FILM SHOW

Wednesday 10 March @ 13.15  
Thursday 11 March @ 12.30 & 13.15  
Lecture Theatre

## NIMROD LECTURE SERIES

Monday 15 March  
11.30  
Lecture Theatre

## HEP SEMINAR

Wednesday 17 March  
11.00  
R61 Conference Room

## HEP DATA HANDLING SECTION SEMINAR

Wednesday 17 March  
13.30  
R61 Conference Room

## RUTHERFORD LABORATORY LECTURE

Thursday 18 March  
15.51  
Lecture Theatre

## SEMINAR IN COMPUTING

Friday 19 March  
11.00  
R61 Conference Room

## FILM SHOW

Friday 19 March  
12.40  
Lecture Theatre

Measurement of Associated Multiplicities in High  $p_{\perp}$  Interactions at the ISR

*Dr P D Grannis/Stonybrook and UCL*

Proposal No. 176 - "A Proposal to Investigate Direct Electron Production in Hadron Interactions using BEBC Equipment with a Large Track Sensitive Target (vTST)" - Bologna/Glasgow/RL/Saclay/Torino.  
*Talk by Dr G E Kalmus/RL*

Proposal No. 175 - "A Proposal to Build an Electron Detector to Contribute to a Search for Multiparticle Decays of High Mass States Produced in Association with  $\psi(310)$ " - Imp. Coll/Southampton Uni.  
*Talk by Dr D Owen/Imp. Coll.*

Proposal No. 177 - "A Proposal to Study the pp Interaction in the 4.1 GeV C M Energy in the OMEGA: Search for new Bosons and Charmed States"-  
*Talk by Prof I Hughes/Glasgow U.*

Monopoles in Gauge Theories

*E Corrigan/Durham*

In Safe Hands - a 31 minute, colour film which shows a positive approach to the training of fork lift truck drivers. It concentrates on the skills needed for safe handling and operation with experienced instructors at work. Several types of truck are shown in action - diesel, electric, high-reach - in a variety of situations.

Regge Poles : Requiem or Phapsody?

*Dr A Irving/Liverpool*

Reggeon Field Theory in Production Processes

*J Bartels/University of Hamburg*

New Ideas in Machine Architecture

*J Scott/Imp. Coll.*

Antibodies: The Body's Defence at a Molecular Level

*Dr R Dwek/Dept of Biochemistry, Oxford (see 'news' for details)*

Parallel Computers - *R W Hockney/Reading U.*

Comparisons will be made of the CDC Star, Texas Instruments Advanced Scientific Computer, Illiac IV, CRAY I and, ICL Distributed Array Processor. Some benchmark results will be given.

An Impression of World War II from contemporary German and British Newsreels and propaganda films selected from the British Film Institute's Library.

## RUTHERFORD LABORATORY BULLETIN

*Published by the Scientific Administration Group*

*Editor: H F NORRIS*

Deadline  
for  
Insertions

1000 hours Wednesday 17 March

Room 42 Building R20  
Rutherford Laboratory  
Chilton Didcot Oxon  
Abingdon 21900 Ext 484



## EXTERNAL EVENTS

LEEMT. PART. PHYS. SEMINAR/NP DEPT. OXFORD - 1430 hrs.  
17 Mar: Dr R Jaffe/MIT - Recent Work with the M.I.T.  
Bag Model for Hadrons.

NUCLEAR PHYSICS SEMINAR/KING'S COLLEGE - 1400 hrs.  
17 Mar: Dr J L Darell/Manchester - Deeply Inelastic  
Transfer Reactions.

DEPT. OF PHYSICS LECTURES/WESTFIELD COLLEGE - times below  
12 Mar. at 1400; 15 Mar. at 1200 and 1500 - Three  
lectures on "Reggeon Field Theory" by  
Dr J Bartels/Hamburg.

THEOR. PHYS. SEMINAR/QMC - 16.15 hrs.  
15 Mar: Prof B S DeWitt/Austin & Oxf Quantum Problems  
in Curved Space.

PHYS. & GEO-PHYS. COLLOQUIUM/ROYAL FORT, BRISTOL U. 1700  
hrs.  
15 Mar: Dr W Hayes/Clarendon, Oxf. - Superionics.

PHYSICS DEPT. COLLOQUIUM/READING U. - 1700 hrs.  
15 Mar: Prof K Dolder/Newcastle - Interactions Between  
Charged Systems.

THEORY & HEP SEMINARS/SOUTHAMPTON U. - 14.30 hrs.  
12 Mar: Dr R W Tucker/Lancaster - Relativistic Models of  
Extended Particles.  
19 Mar: Dr D K Sinclair/Oxf. - The Harmonic Oscillator  
- An Introduction to Lattice Gauge Theories of  
Quark Confinement.

HEP SEMINARS/4th Fl. SEMINAR RM., MANCHESTER U. - 1500 hrs.  
12 Mar: Dr F E Close/RL - New Particles, New Quarks, New  
Mass Scales and their Implications.  
12 Mar: at 1400 hrs: I S Barker - 'Nuclei' with Baryon  
Number Zero.

THEOR. PHYS. SEMINARS/MANCHESTER U. - 14.30 hrs.  
10 Mar: Mr G S Mani - The Statistical Mechanics of  
Ecosystems.  
17 Mar: Dr P C W Davies/King's - Particle Production in  
Gravitational Fields.

LECTURE SERIES/DARESBURY LABORATORY - 1400 hrs.  
16 Mar: D Sivers/RL - A Survey of Charmed Particle  
Properties.

THEORY SEMINAR/DARESBURY LABORATORY - 1400 hrs.  
15 Mar: D P Woodruff/Warwick - Angular Resolved Electron  
Emission Studies from Crystal Surfaces.

THEOR. PHYS. DIV. SEMINARS/CONF. RM. BLDG 8.9, AERE - 1415  
hrs.  
12 Mar: Dr I G Halliday/Imp. Coll. - Solitons  
19 Mar: Dr J Vail/Manitoba - Dynamical Theory of  
Electronic States in Ionic Crystals.

NP DIV. COLLOQUIUM/CONF. RM., HANGAR 8, AERE - 1530 hrs.  
18 Mar: Miss R Millett - Market Intelligence - Can it  
help you?

ROYAL SOCIETY DISCUSSION MEETING - 11 Mar; 1000-1800 hrs.  
"The New Particles and the New Quantum Numbers".  
(Further details from the Editor).

REVISED RESEARCH GROUP STANDARD AEC(R) 37 : FEB 1976 - MECHANICAL  
TEST PIECES. This Code of  
Practice is now available, on  
request, from Standards Section, Engineering Division,  
Building 424, Harwell, Ext, 2125.

The new addition reviews the principal mechanical  
testing equipment available at Harwell, gives advice on  
the selection of test pieces and includes manufacturing  
specifications for standard tensile and impact test  
pieces.

Copies of the previous edition of AEC(R) 37 : April  
1965 and AESS (R) 11406 are superseded by the above  
document and should be destroyed.

CERN COURIER The Rutherford Laboratory has now  
undertaken to distribute all copies  
of the CERN COURIER within the United Kingdom.

We would be grateful if readers could notify us of  
any errors in addresses or if further copies are  
required.

All correspondence should be addressed to:- The  
Librarian, Rutherford Laboratory, Chilton, Didcot,  
Oxon, OX11 0QX.

ROAD WORKS ON A34 The Post Office are laying  
cables in sections, southward  
along the A34 towards Rowstock corner.

Traffic lights have been in operation on each section  
between 9am and 4pm each day. These limited hours have  
delayed the work and to expedite it, the traffic lights  
will be operational 24 hours a day from Monday 8 March.

Delays will be inevitable and drivers are advised to  
avoid using the section of the road between Esso House  
and Rowstock corner if they can until the work is  
finished.

BLOOD DONOR CLINIC The next clinic will be on  
Tuesday 23 March and Wednesday  
24 March. It will be held in the Recreational Hut, R15  
and will be open from 1000-1200 and 1330-1500.

RUTHERFORD LABORATORY LECTURE Dr Raymond Dwek of  
the Department of  
Biochemistry, Oxford, is the speaker and the title of  
his talk, to be given in the Lecture Theatre at 15.15 on  
Thursday 18 March is -

Antibodies : The Body's Defence at a Molecular Level

Antibodies are the basis of the body's defence; the  
way in which these molecules recognize the enemy (the  
antigen) arises from the three-dimensional complementarity  
between the antibodies, combining site and the antigen.

The lecture will describe physical methods in solution  
for studying and identifying the arrangement of the amino  
acid residue of the combining site.

OVERSEAS VISITS The Director, to Frascati, 5-7  
March, to attend ECFA Meetings on  
the use of PETRA.

Dr R W Newport, to CERN, 9-11 March to attend meeting  
on Rapid Cycling Bubble Chamber.  
Dr L C W Hobbs, to ILL Grenoble, 17-19 March, to attend  
Scientific Council meeting and for discussions.  
Prof. F R A Hopgood, to Paris, 19-21 March, to attend  
Organising Committee of International Graphics Workshop  
to be held in April 1976 in France.  
Dr R T Ross, to CERN, 19 March - 15 April, to work on  
Bubble Chamber experiment.

SALES TO EMPLOYEES Sales of scrap metal/plastics  
as set out in RLN 12/73 will  
be made on 12 and 26 March.

MISSING EQUIPMENT The following items of equip-  
ment have been reported

missing.  
Stanley Electric Handsaw - AERE No 18272  
Avometer Model 8 - Ser. No 17098-565  
Anita Calculator Type 1021 Ser. No SM 5124 RHEL No. 02630.  
Anyone with information on the present whereabouts of  
these items please contact Inventory Section, Room 48  
R20, Ext. 570.



## NEW FLAVOURS IN PHYSICS

Following the discovery of the  $\psi/J$  resonance, a whole new area of particle physics has come into being. The initial tempo of discovery, encompassing work with  $e^+e^-$ , hadron, photon and neutrino beams, has been maintained to a remarkable extent; yet crucial questions remain unanswered. This is the background behind the very successful three-day meeting held at RL from 18-20 February in which 120 British physicists heard first-hand reports on the current status of experiments at SLAC, FNAL, CERN and DESY, and theoretical reflections on the present situation.

Heading the list of excitements were reports of two new and potentially very important findings which have recently figured in the newspapers, the publication by the Columbia-FNAL group of preliminary evidence for a new narrow state changing to  $e^+e^-$  of mass about 6 GeV, and the observation of  $e^+\mu^-$  neutral strange particle events in neutrino bubble chamber experiments at FNAL and CERN. Besides these came a wealth of detailed new information on previously-explored topics, for example a much improved delineation of the highly structured  $e^+e^-$  to hadrons spectrum around 4 GeV.

The dominant issue continues to be the search for the 'charmed' states where existence is implied by the favoured model for the  $\psi$ s. Charmed states should reveal themselves in a variety of weak decays to ordinary particles. So far, the only really plausible candidates are the neutrino-induced dilepton events; other decay modes are being pursued with intensifying vigour. Meanwhile, theorists speculate about further new 'flavours' in addition to charm. All in all an exciting future seems guaranteed.

## FILM BADGE NOTICE

It is Period 3. Colour strip - RED for  $\beta\gamma$  films and neutron packs. Please check that you are wearing the correct dosimeters and all old ones are returned.

**NATIONAL SAVINGS.** SAYE, third issue, is a new form of saving whereby you agree to make 60 regular monthly contributions over five years. Third Issue SAYE is related to the cost of living, as measured by the monthly Retail Price Index (RPI). Each of the 60 contributions will be adjusted in line with any change in the RPI that has occurred between the time of making the contribution and completion of the agreement.

On completion of a five year contract you may opt to leave the money invested for a further two years. No further contributions are made during this period. If you choose to do this, your contributions will be adjusted in line with the RPI on the 7th anniversary of the start date of the contract. In addition you will receive a TAX-FREE BONUS equal to two monthly contributions. If you ask for repayment between the 5th and 7th anniversaries of the start date of the contract, you will receive back whatever was due to you on the 5th anniversary.

If you are unable to continue your monthly contributions you will receive tax-free interest of 6 per cent per annum on the sum saved, provided repayment is made at least one year after the start date of the contract (otherwise you will simply get the contributions back). Index-linking does not apply to uncompleted contracts (except in the case of death - see prospectus).

You can save any sum (in whole  $\pounds$ ) between  $\pounds 4$  a month and  $\pounds 20$  a month, and you can take out an SAYE - Third Issue (Index-Linked) contract in addition to any contracts of earlier issues you already hold.

The full terms of the offer are set out in the prospectus attached to the proposal form, which can be obtained from the Salaries Officer, R20.

## JUST CHECKING!

Would any person at present in possession of any audio equipment on loan from the Office Services Section please inform the Assets and Inventories Section Ext. 570.

# SOCIAL NEWS

## SRC GOLF TOURNEY

The 1976 SRC inter Establishment Golf Tourney is being organised by Appleton Laboratory who have arranged to play the fixture at Wentworth G.C. on Friday 4th June this year.

It was with some trepidation that John Delury advised of these arrangements as the cost is  $\pounds 10.10$  per competitor. However, because of the stature of the Club it was felt that prospective players would accept that fee which is all-inclusive for the day, excepting transport costs and refreshments.

The Brian Flowers Trophy will be competed for by teams of 6 - each establishment limited to two teams - the best four net scores for the day in each team to count. In addition to the team trophy there will be four individual prizes.

Will those golfers in the Establishment who are current holders of a handicap, either Club or Society, and who wish to be considered please advise John Jenkins, Room 7, Building R20, Extn. 475 as soon as possible.

## RECORD CONCERTS

Tuesday 9 March at 13.15. PLEASE NOTE TIME - DO NOT ENTER LECTURE

THEATRE UNTIL PREVIOUS MEETING IS OVER.

'HUMPH' AT THE CONWAY - a recording of a live Humphrey Lyttleton Jazz concert at the Conway Hall in Red Lion Square (near State House) in 1956.

Tuesday 16 March at 12.40 - as usual in Lecture Theatre. TCHAIKOVSKY : SERENADE FOR STRINGS IN C MAJOR, played by Staatskapelle Dresden, conductor Otmar Suitner. A delightful work, very suitable for this time of year, when "Spring is in the air!"

## CHRISTIAN FELLOWSHIP

March 12. All are welcome to attend a Bible Study on Pauls letter to the Colossians. Although we have not pro-

gressed far into the first Chapter many interesting and enlightening aspects of the Christian faith have arisen. Why not come along and share with us God's Word at 12.30 pm in the R12 Conference Room.

Ernie Newbold who worked in the Accounts Section two years ago will be leading the fellowship at 12.30 pm in the R12 Conference Room on 19 March. We are sure that he would like to meet old friends and colleagues again so why not come along if you know him?

## CHESS TOURNAMENT

The 1975-76 chess tournament is nearing completion with only two rounds to go. The table after six rounds shown Peter Craske in a strong position -

Peter Craske	-	5½ points
Jim Riddle	-	4½ points
Peter Hemmings	-	4½ points
Peter Kent	-	4 points
Mike James	-	3½ points

Mike Elder, Vic Sounders, Barry Whittaker, Dick Apsey and Roy Redgrave all on 3 points.

Peter reckons that as long as he stays awake for the next 2 rounds and his opponents doze off, he has a sporting chance!