HARLEQUIN

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SPRING 1959

HARLEQUIN

NUMBER 26 PRICE : ONE SHILLING

Leisure Magazine of the United Kingdom Atomic Energy Authority Research Group

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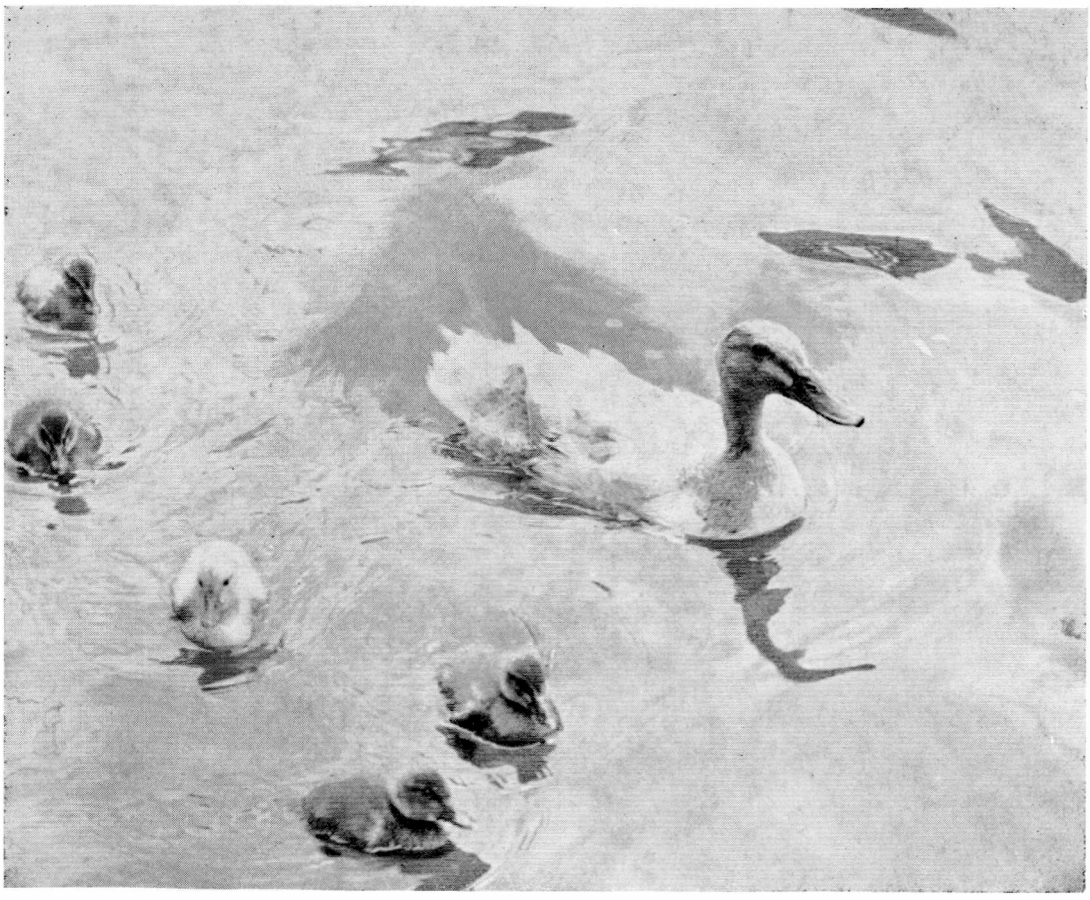

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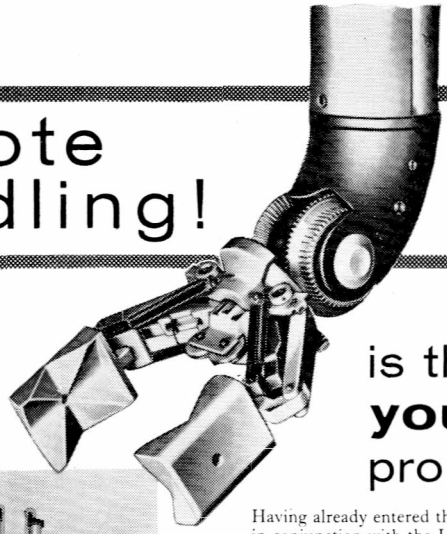

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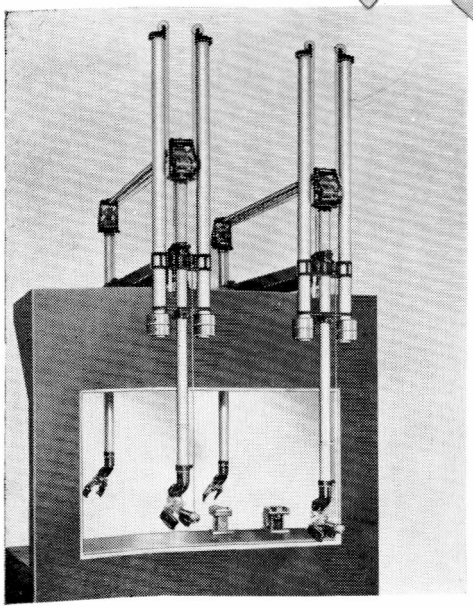

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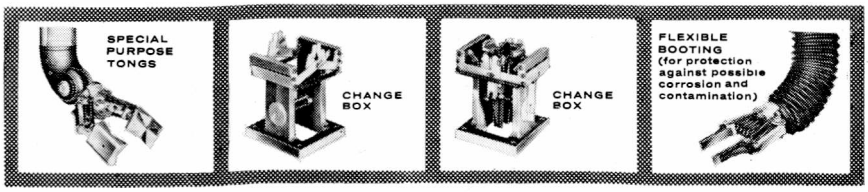

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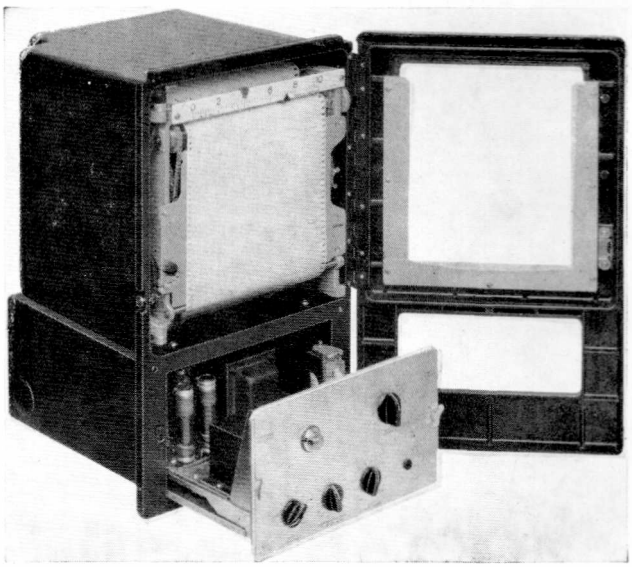

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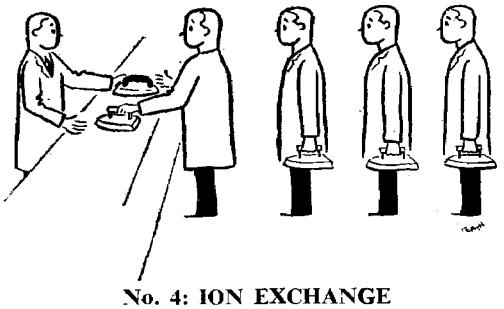

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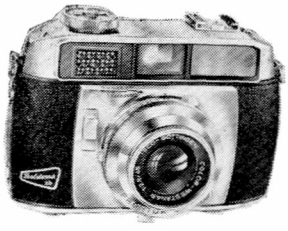

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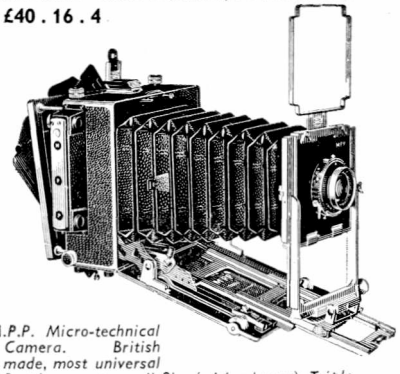

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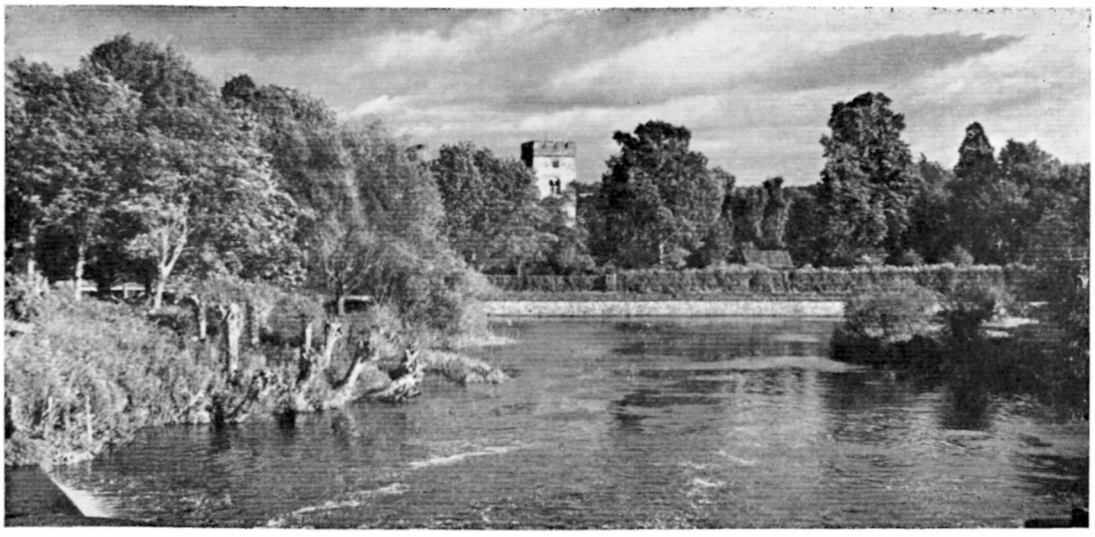

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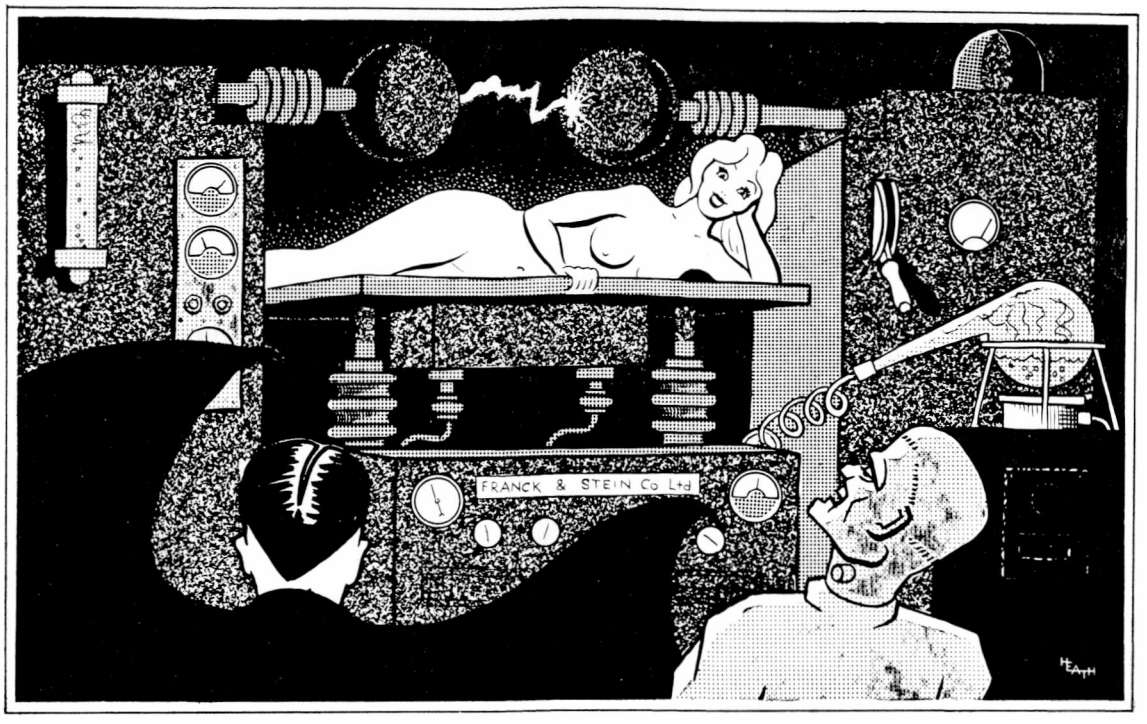

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FOREWORD

THAT knowledge and skills yield no fruit until fertilized by imagination is well illustrated by the success story of Lord Rutherford, after whom the first laboratory of the National Institute at Harwell has been named.

While studying the deflection of alpha particles in passing through matter, Lord Rutherford noticed in 1906 that while some 8,000 particles were deflected not at all, or through only a small angle, one solitary particle was deflected by an angle of more than ninety degrees; that is to say, it was "reflected" back in the direction from whence it came. Rutherford knew that, though in passing through matter the particle would suffer multiple collisions, the probability that these would result in a total deflection of more than ninety degrees was much smaller than that found experimentally.

So the position was reached in which 8,000 observations were consistent with existing theories about the nature of the atom, while one, just one, was not. Who but a man of superb courage would propound a theory completely at variance with ideas and concepts which, till then, had been regarded as axiomatic by the great scientists? Who attack "the faith" in the face of odds 8,000 to 1 against him? Men of imagination are at once more fearful and more courageous than ordinary men, and Rutherford must have been conscious of the danger to his reputation were he to propound a theory based on the one chance which the routine scientist would have dismissed as an experimental error. Rutherford had the courage of his imagination. He discarded the current idea of the atom as being a solid sphere, and postulated the idea that, in fact, the effective mass and electrical force of the atom were concentrated in a minute nucleus one thousand billionth part of the whole atom in size. Rutherford's picture of the atom and, indeed, of all seemingly solid matter, as being composed mostly of empty space, was outrageously heretical, and yet true. True enough, at least, to revolutionize science and to lead to the practical use of atomic energy. The imagination which was sufficiently alert to be stirred by the exceptional behaviour of one solitary particle, and powerful enough to account for that behaviour, was powerful enough to usher in a new age. What Rutherford saw was the deflection of one alpha particle: what we, as a consequence, have seen has been the deflection of the stream of world history.

More and more, Britain is going to need scientists who can explain to non-scientists the importance, needs, methods, findings, and implications of pure and applied science. Increasingly, technologists will be called upon to teach less highly trained men and women how to operate and maintain costly machines and how to carry out complicated industrial processes. The medium of this art is not just language, but language charged with imagination.

Desperately as we need scientists and technologists, we need even more desperately men and women who can interpret and meet the emotional and imaginative needs of their fellow men. New landmarks and new strongpoints have to be set up in a world which daily becomes more strange and more menacing. From the old world which was our home we have travelled too far ever to return; so we, pioneers of a new age, must lose no time in making the new world as homely and warm as the one we have left behind.

GORDON TAYLOR,

Author of "Creative English".

EDITORIAL

IN his foreword to a smaller "Harlequin", for a smaller Research Group, five years ago, Dr. Schonland, then Deputy Director, referred to the amazing range and complexity of activities by which any newcomer must be struck on entering Harwell: *"That it all works smoothly and effectively is probably due to some secret discovery in scientific and human relations. No doubt, the kindly goodwill of the British people and that now declassified invention of theirs, the Committee System, play some part in its mechanism, but these alone would not fully explain it."*

Accepting as a fact that the Research Group still works on the whole smoothly and effectively, why is this? A few years ago it would have been easy to say that we were a young industry, not yet so complex and impersonal as industries of deeper roots. But what of things now? It is true that work in what the Prime Minister has described as "this important field which promises so many benefits for all mankind" brings with it a sense of purpose not found in more commercialised undertakings. There will be some, though, who do not recognise the value of their small contributions to the greater purpose and who find compensation in that almost indefinable something found and valued in life at Harwell and its outstations.

Two years ago we referred to the energy released by our scientists from the reactors as "almost paltry compared with the human energy set free by the enlightened administrator." Despite the intervening achievements of controlled thermonuclear fusion, this is still no extravagant tribute to pay; for those concerned with the design and control of intricate *machines* remain dependent on those who design and control no less intricate *methods* of organization.

But nothing could be achieved without *men*—and, of course, women also. A factor more important than either machines or methods is *morale*. If the Research Group can become large *without* becoming impersonal, then this, of all our achievements, will be Harwell's greatest, and that which offers most promise for the future.

Although giving up his appointment this year as full-time Member of the UKAEA for Scientific Research, SIR JOHN COCKCROFT will combine his work as Master of Churchill College with that of part-time Member of the Authority and, in particular, will continue for the time being to represent the UKAEA on the majority of the various international scientific Committees with which it is concerned.

This article records a journey made as a result of the Geneva Conference.

IMPRESSIONS OF A VISIT TO THE U.S.S.R.

SIR JOHN COCKCROFT, OM, KCB, CBE, FRS.
UKAEA Member for Research.

WITH Peter Thonemann I left Brussels by T.U. Russian jet at 2.40 p.m. on Saturday 8th November and soared up into a clear sky to take a fast, comfortable three-hour flight to Moscow. We were moved into the de luxe forward compartment, which was very comfortable with two couches; I had a nap and we ate caviare and sandwiches, and finally came down at 200 m.p.h. along the runway, bumping up and down till the brakes slowed us down (no reverse props to help). We were half an hour ahead of schedule, since we changed our route, and our reception committee was not lined up. However, we found them in the reception room—Academicians Kurchatov, Topchiev, Emelyanov and Andrew Kapitza to interpret, and an Embassy Secretary. (Andrew Kapitza is a young geographer and Antarctic explorer who has since gone off on an expedition again.) After being photographed and T.V.'d we moved off to the Sovietskaya Hotel, a V.I.P. Government hotel, where I was given a suite with office, dining room, T.V., radio, bedroom, bathroom and hall. Maids with frilly aprons and collars provided pre-revolution service, with shirts washed and ironed in a few hours. The list of dishes available seemed to run to a hundred or so and was available even for breakfast, though I didn't take advantage of the variety. However, I did order roast partridge one evening and it was a great success.

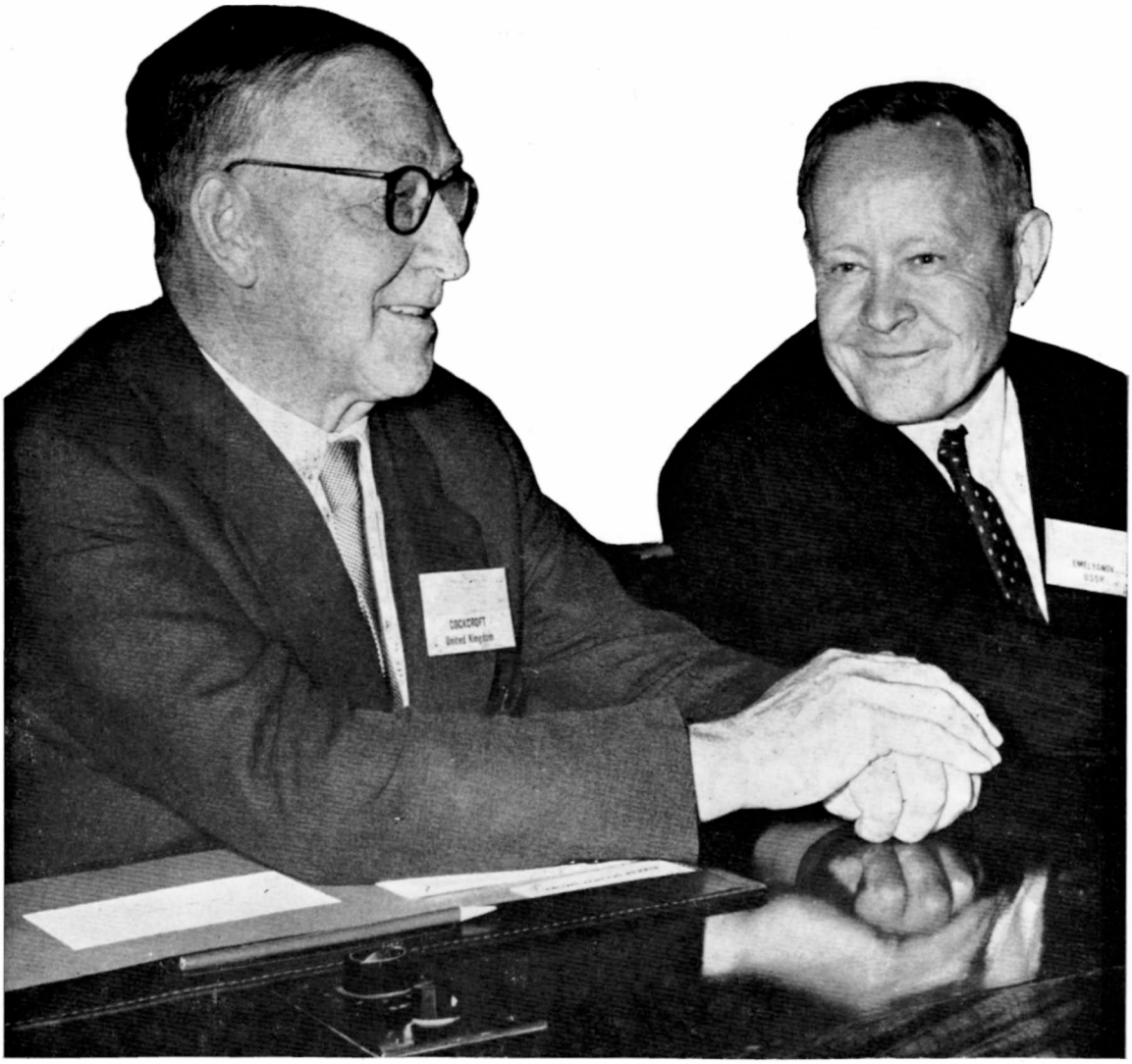
After washing, we had supper with the Academician reception party plus a few others, had the usual toasts and short speeches, and broke up at eleven, as they were obviously tired from the October Revolution celebrations which were going on in the city—the streets being illuminated and masses of citizens walking the streets.

Later the rest of our party arrived—Pease, Thompson, Bickerton—and we visited the Institute for Atomic Energy, built in woods on the outskirts of Moscow, to see the work on controlled fusion. It's a large Institute like Harwell but less well built, and the laboratories look almost temporary in character, but crowded with apparatus and a great appearance of vigorous work. It has four research reactors and a number of zero energy reactors.

We were conducted by Academicians Kurchatov and Artsimovitch round the controlled fusion laboratories. The buildings were overcrowded by Harwell standards; very closely packed with apparatus, tori, straight tubes, mirror machines and their associated condensers. The Russians are evidently able to build very fast on the "do-it-yourself" principle for the smaller apparatus. OGRA, the mirror machine described at Geneva, which has about $4\frac{1}{2}$ times the volume of ZETA, was built in six months by the Leningrad Electro-Technical Institute.

We saw a number of the machines briefly described at Geneva. Amongst these was a torus of about 4ft. diameter and 12 inch bore, on which results similar to ours with ZETA had been obtained. We also saw OGRA and two other mirror machines. I was shown a group of fuel elements which were being tested in their research reactor and saw the underground loop rooms, all well instrumented but with few obvious health physics precautions.

We gave two colloquia to full houses of 300 staff and entry to the colloquia had to be by ticket, so they are evidently a very large Institute. The discussion was very much to the point, especially in Thonemann's colloquium.



WITH ACADEMICIAN EMELYANOV AT THE GENEVA CONFERENCE

Dr. Kurchatov, the Director, is a very good administrator who collects able men round him. They seem to operate with less formality than at Harwell. There were the usual number of sweepers and tea-makers and custodians of coats characteristic of Russian and other laboratories. We did not see the workshops, but they must be good and quick-working. The hours of work seem to be about 8.30 a.m. to 4 p.m. This is low because of radiation exposure. The U.S.S.R. seem to work to the old rules for hospital radiation workers.

We had a large luncheon party in the house of the Director, Dr. Kurchatov. We stayed till 4 o'clock—their closing time—and in the evening went to see a Jugo-Slav Ballet with the Kapitzas, who had called to see me at my hotel. They had just returned from bathing in the Caucasus, where the weather was magnificent.

During the evenings we also went to the Bolshoi Theatre to see Tchaikovsky's opera "Queen of Spades" and a Variety Show in the Kremlin Theatre.

I visited the Nuclear Physics Institute at Dubna, 70 miles north of Moscow in rather Canada-like country; also the Kapitza Institute, rather like his Mond Laboratory at Cambridge only larger. These Institutes are very well equipped, with apparently unlimited financial resources.

Moscow has grown enormously in 22 years and has principal streets wide enough to take five cars abreast in each direction. The sky-line of Moscow has been changed by a mass of huge skyscraper buildings surrounded by elaborate towers. Amongst them is the new building of the University, housing 22,000 students.

The accommodation at Moscow University is luxurious by our standards. It includes an assembly hall for 1,500, a heated indoor swimming bath, gymnasiums, many small theatres for students to put on plays and concerts, and single bed-sitting rooms for 6,000 students. The departmental libraries are well equipped—better than most U.K. university departmental libraries —and they have a conveyor system which will bring books from the main stack in 10 minutes. The main stack has about a million volumes.

The Rector told me that only about 10 per cent. of students fail to complete the 5½-year course. They have considerable competition for entry and select one out of four applicants. Examinations are held twice a year. There are rather more science than arts students among the 16,000 day students. They have also got 6,000 evening students who take a year longer over their course, and about 1,600 post-graduate students. There are no engineering students amongst the 22,000—these being catered for in separate more specialised Institutes. No fees are paid and most students get a stipend—the amount depending on ability and on parents' income. All post-graduate students get a stipend corresponding to about present D.S.I.R. levels (at 30 roubles to the £).

A high proportion of the students come from other countries, i.e. China and the satellites, and some no doubt from African/Asian countries. They have 500 professors and a student–staff ratio about the same as U.K.

Professorial stipends depend on how much time is devoted to University work. Many hold posts in the Institutes of the Academy. From discussions in other circles I judge that a professor will be rather better off than a U.K. professor except for living accommodation, since taxes are only, at most, about 10 per cent. of salary.

Professors are elected mainly on the basis of their scientific work and their appointments are reviewed every five years—though few are rejected at this stage.

I saw the research facilities only in the cosmic-ray department of physics and thought that they were somewhat inferior to similar facilities in U.K. I understand that research in general is not strong in the universities since the Institutes of the Academy take the cream of research students and get most of the funds. However, the government now wants to reverse this policy and strengthen research in the universities.

I went into a department store, and looked at the goods. Luxury goods such at TV sets and tape recorders and 35 mm cameras are plentiful and are about the same price as ours. Other goods such as clothes and textiles are more expensive. Motor cars are scarce, with a waiting queue, but not expensive. Most of the autos produced are trucks which fill up the roads outside the city. There is a large building programme of flats, for accommodation is still very overcrowded.

I left at 10 p.m. Friday, being seen off in style, and took an Air India Constellation to Tashkent, on the southern border, landing in a snow storm, and had fried eggs for breakfast with Indian delegations and Mongols. Then we took off and flew over two snow ranges, seeing the Himalayas fully exposed, looked down on Afghanistan and the Khyber Pass, and got to Delhi about 2 o'clock. We went to the Deputy High Commissioner's house to sleep for three hours and then had supper with him.

I left at about midnight by K.L.M. and got to Bangkok in about eight hours, and then on to Manila and finally about eight hours on to Tokyo. Here we were three hours late, arriving at 3 a.m. to find the reception party still there, so we had much photographing and then on to the Tokyo Imperial Hotel where I stayed in luxury. In Tokyo I had a succession of meetings, luncheons, dinners and went to see a Japanese Theatre—very dramatic. We also visited their Harwell, 2½ hours out by train—quite a nice place in the woods by the sea. We were treated with great ceremony, the station-master proceeding in front and bowing us to our compartments. Japanese trains run on time—very different from British Railways —and their roads are poor so everyone goes by rail.

We had two oriental meals. One was a small barbecue party, where we sat on cushions round a low horseshoe table with a pit to put our legs into. The chef fried prawns, skate, oysters and nuts which he handed round in turn. Chopsticks were used to manipulate the eatables.

Two girls poured out sweet wine into little cups.

The dinner on Friday evening was a Geisha Party. We sat round the sides of a room and each had a cushion and back rest. The Geisha girls brought the food to a low table and knelt in front and served the wine with bows and made conversation in which they are well trained. They also put on a dance—a Lion Dance—and if we'd been able to stay longer would no doubt have put on "Geisha Games."

We motored out Friday evening with a party of physicists including Dr. Yukawa to a mountain resort 2½ hours from Tokyo and stayed at a fine hotel with hot springs and Japanese baths built in the middle of the rooms. However, I didn't go through the bathing procedure which included being well soaped outside the bath by attendants! We went to see the view of Fujiyama from a mountain top—it was covered with snow and looked very beautiful. We also went to a lake with another view of Fuji.

I left Tokyo at 11 a.m. on Sunday; we flew 9½ hours to Alaska and landed at Anchorage, a huge U.S. base, in the dark. It was cold and snowing and we stayed an hour and then had a 17½ hours flight to Paris via the Alaska mountains, Northern Canada, Greenland and Iceland. I saw the sun rise and set again 4—6 hours after departure and could see wide glaciers with fearful cracks and then the Greenland icecap. Air France fed us well—breakfast nine hours after leaving, and lunch two hours before Paris at 7 a.m.; so time was out of joint: altogether a tiring but most interesting visit.

WITH ANDREW KAPITZA AND DR. PETER THONEMANN

In the next issue R. S. Pease will give his impressions of this visit to the U.S.S.R.

A.E.R.E. RECREATIONAL ASSOCIATION

THE A.E.R.E. Recreational Association is now in its thirteenth year, having held its first meeting on 7th August, 1946. Officially, the objects of the Association are "to organise and promote amateur sport and recreation for the employees of A.E.R.E. and to encourage the formation of Clubs and Societies for these purposes."

Membership of the Association is open to all persons employed at A.E.R.E., whilst the Management Committee has powers to admit to membership other persons considered to have suitable connections with A.E.R.E. The subscriptions by members are 1d. per week for all weekly paid employees of A.E.R.E. and 5/- per year for all others. The Association has powers to admit to life membership, without further subscriptions, members or other persons who, in the opinion of all the members, expressed at the Annual General Meeting, have rendered signal service to the Association.

It was decided at the inaugural meeting in 1946 that there should be a President, Vice-Presidents and a Management Committee. The President is Sir John Cockcroft, and the Vice-Presidents include the Director, Deputy Director, Engineer-in-Chief and the heads of the various Divisions. The Management Committee is formed from representatives of all the affiliated clubs, societies and recognised tenants' associations, together with three independent members, elected at the Annual General Meeting.

The Management Committee or Central Committee, as it has become called, meets once a month and at its April meeting elects its officers for the ensuing year. The officers con-

sist of Chairman, Deputy Chairman, Treasurer and Secretary and for the year 1959/60 are:

Chairman—Mr. S. J. Waldron (H.10);
Deputy Chairman—Mr. J. W. Wallace (H.9);
Treasurer—Dr. N. F. Goodway (Bldg. 147);
Secretary—Mr. D. H. Rowe (Bldg. 393).

The Central Committee decides on all matters of policy and general business of the Association, but has no powers to alter the rules, which can only be done at the Annual General Meeting of all the members of the Association, usually held in the third week in September.

To assist the Committee in the detailed discharge of its business, four sub-committees have been formed. These are:

1. Business Committee, which advises on all financial matters;
2. Bar Committee, which manages the day-to-day running of the bar and catering services;
3. House Committee, which controls the good housekeeping of the Social Club and arranges the use of the rooms;
4. Grounds Committee, which deals with all matters affecting the sports grounds and tennis courts.

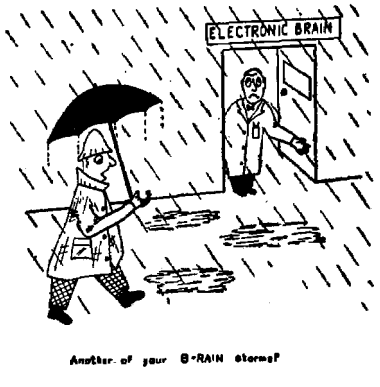
The indoor activities of the Association are centred on Building 161 (known as the Social Club), where facilities are available for certain indoor games, and rooms can be booked for club meetings and activities. There is a bar, licensed for members, and a lunch-time catering service which can be extended to cover club dinners or dance buffets. The Rifle Club meet in Building 183, where they have a ·22″ range, whilst the Camera Club has its studio and dark-rooms in Building 155. The squash court is close to the garages behind Ridgeway House.

Outdoor activities are centred around the pavilion, and pitches for Association and Rugby football and for hockey are provided. A cricket table is in the centre of the sports ground facing Ridgeway House, whilst hard tennis courts are available. The Association is now proceeding with the laying of grass courts so that tennis players should have a surface to meet their needs.

The various sports and recreations are under the control of the clubs affiliated to the Association. These, with a representative from each, are as follows:–

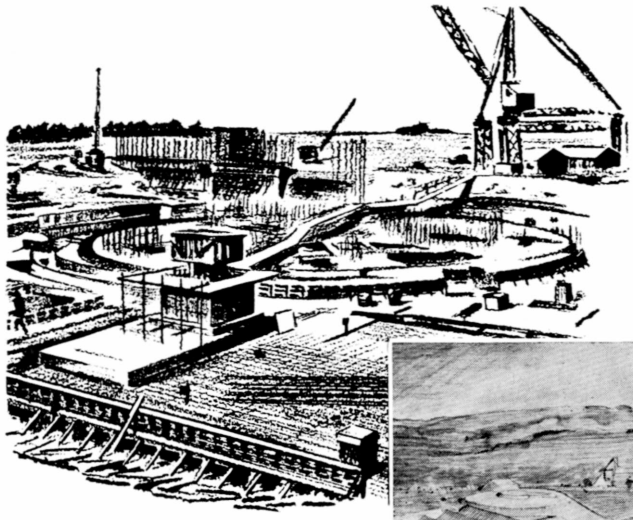
Angling Club—Mr. J. M. North (Building 220)
Apprentices' Association—Mr. G. Arnison (Hangar 9)
Archery Club—Mr. A. Fox (Building 429)
Athletic Club—Dr. J. A. Cade (Building 146)
Astronautical Soc.—Mr. M. J. Redman (Building 149)
Badminton Club—Mr. D. L. Trotman (Building 412)
Boys' Sports Club—Mr. S. W. Osborne (Building 36)
Bridge Club—Dr. D. A. Barber (Building 383)
Caledonian Society—Mr. F. R. Dell (Building 353)
Camera Club—Mr. A. R. Kenyon (Building 392)
Charlton Residents' Association—Mr. J. R. Rutter (Building 220)
Chess Club—Mr. J. C. H. Waldron (Building 10.5)
Christian Fellowship—Dr. J. R. K. Savage (Bldg. 383)
Cricket Club—Dr. N. F. Goodway (Building 147)
Dramatic Society—Mr. R. G. Davies (Reactor School)
Film Society—Mr. J. J. Syrett (Building 10.28)
Football Club—Mr. A. Palmer (Building 383)
Golf Society—Mr. W. L. Baker (Building 424)
Hockey Club—Mr. J. A. C. Marples (Building 220.8)
Horticultural Society—Mr. G. H. Williams (Hangar 8)
Icknield Way House—Mr. J. York
Judo Club—Mr. C. J. Kenward (Building 451)
Motor Club—Mr. M. J. Lee (Building 424)
Music Club—Mr. R. H. Jones (Building 418)
Rifle Club—Mr. G. Biddle (Building 338)
Roman Catholic Society—Mr. M. J. Moreton-Smith (Building 353)
Rugby Club—Mr. M. J. Davies (Building 10.23)
Sailing Club—Mr. C. W. McDonald (Building 424)
Scouts Club—Mr. J. Wallace (Hangar 9)
Squash Club—Mr. M. F. Smith (Building 401.4)
Table Tennis Club—Mr. R. W. Wilkinson (Building 146.3)
Tennis Club—Mr. G. F. Snelling (Building 424)
Townswomen's Guild—Mrs. O. Webb, 5 Coln Road, A.E.R.E.
Whist Club—Mrs. M. Walting, c/o Mr. Walting (Building 328 T)
Women's Club—Mrs. Dewhurst, 50 North Drive.

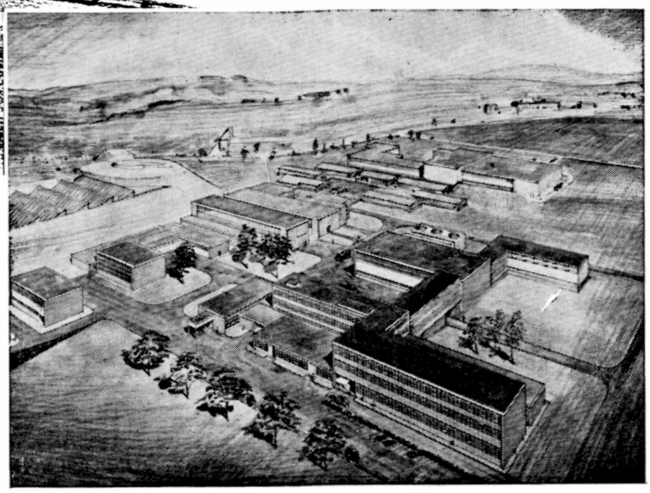
Only Members of the Association are eligible to join these clubs. They are, therefore, truly representative of the sporting and recreational activities of those associated with Harwell.



R. S. Sharpe (Metallurgy)

THE NATIONAL INSTITUTE





By J. A. V. Willis
(Secretary, N.I.R.N.S.)

THE Rutherford High Energy Laboratory, now rising rather impressively on the airfield beside the A.E.R.E., is the first and as yet the only major project of the National Institute for Research in Nuclear Science. The Government's decision to set up the National Institute was announced on the 14th February, 1957, and the main object of the Institute was then very clearly stated: to provide, for common use by Universities and others, facilities and equipment which are beyond the scope of individual Universities and institutions carrying out research in the nuclear field. It was also stated that the Institute would be financed in the main by grants through the A.E.A. from the Atomic Energy Vote, and that the universities' expenditure would be confined to the payment of the salaries and expenses of their own academic staff using the facilities provided by the Institute.

Shortly after this first announcement the sixteen Members of the Institute were appointed: Lord Bridges as independent chairman, seven representatives of the universities (including one former member of the A.E.R.E., Jack Diamond), three representatives of the A.E.A. (Sir John Cockcroft, Sir Donald Perrott and Dr. Schonland), two each of the University Grants Committee and the D.S.I.R., and one of the Royal Society. The Members are incorporated by Royal Charter as the National Institute for Research in Nuclear Science.

The purpose of incorporation is to form a legally recognised body which can own property and transact business. There are of course other methods of incorporation: under the Companies Act, which is by far the commonest, or by special Act of Parliament, as in the case of the A.E.A. It is quite unusual for a Royal Charter to be granted at the outset to a newly-formed body, and this may therefore be counted as a special honour. The Royal Charter itself, engrossed on vellum and carrying the Great Seal of the Realm, may be seen at the present offices of the Institute in a suitably dignified case which has been made for it in the A.E.R.E. workshops.

The form of the Royal Charter has a grammatical result which may at first seem odd: the National Institute are a plural body. Despite

The 7 GeV proton synchrotron building on December 7th, 1958, showing the circular magnet hall.

the precedent of the A.E.A., their name has such strongly singular associations that at first one can not think of it readily in the plural. In an impersonal sense, however, the name may be used in the singular.

THE RUTHERFORD LABORATORY

In November 1957 Dr. T. G. Pickavance was appointed by the National Institute as Director of the Rutherford High Energy Laboratory, on secondment from the A.E.R.E. The name "Rutherford High Energy Laboratory" was the happy suggestion of Dr Schonland. One of the first decisions of the Institute, after careful consideration, was to establish the Laboratory at Harwell, where a site was immediately available, and where it could draw extensively on the services and resources of the A.E.R.E. Soon afterwards, in May 1957, the general specification of the 7 GeV proton synchrotron, drawn up by the A.E.R.E. Accelerator Group, was approved, and the A.E.A. were formally asked to continue to take responsibility for the design of the accelerator and the supervision of its construction. Later, it was decided to transfer the 50 MeV proton linear accelerator, already under construction as an A.E.R.E. project, to the Institute in April 1959. The main activity in the area at present is the construction of the accelerators for the Institute by the A.E.R.E. and their contractors, and there is very little as yet to distinguish the laboratory from an extension of the A.E.R.E. Very close links will always remain, since it is expected that the A.E.R.E. will provide the majority of the engineering and administrative services required by the Laboratory, as well as being one of the users of the experimental facilities. As the main interest shifts from accelerator design and construction to experimental nuclear physics, however, the Laboratory should become more like an outpost of the Universities, and less like an A.E.R.E. Division. The beginning of the process should already be apparent later this year, when a considerable proportion of the work with the proton linear accelerator will be done by University visitors. The aim of the Laboratory when in full operation will be to provide the best possible conditions for University use of the accelerators, and of the Laboratory as a meeting-place for high-energy physicists.

Particular attention will have to be given to making visitors quickly at home and able to start effective work. No doubt some Universities may maintain a group at the Laboratory with a senior lecturer posted here for several years, but in addition the Institute plan to maintain small resident research teams whose functions will include helping the visitors as well as carrying on their own research work. The resident teams will be led by Group Leaders on the Institute staff who will also assist the Director of the Laboratory in directing the operation of the accelerators and scheduling the experimental programme. Dr. G. H. Stafford

A photograph of February, 1959, showing the floor of the experimental area.

was appointed in March 1958 as Group Leader for the proton linear accelerator.

A good deal of care will be required in making laboratory and office accommodation, stock equipment, machine time, workshop effort and many other laboratory requirements all available at the right times for each visiting team. Good hostel accommodation and some housing for the visitors will be required. While permanent arrangements are being made, the Director, A.E.R.E., has kindly agreed that we may use A.E.R.E. facilities.

PROGRESS IN CONSTRUCTION

The progress which has been made with the 7 GeV accelerator and the main laboratory buildings since the placing of the main construction contract in December 1957 can be seen from the illustrations or, if you are at the A.E.R.E., even more strikingly by looking across the airfield. The visible achievement so far is mainly that of our old friends Messrs. Chivers, who secured the contract. Two large buildings have already been completed and handed over, while the massive main accelerator building has risen from the depths of the "big hole" and has now reached roof level, and the pouring of the concrete roof of the magnet hall is about to start. It will finally be covered with 20 feet of earth. The Industrial Group team who are supervising the building construction also have their proud, if temporary, monuments. The three magnificent cranes in use on the main building were brought by them from Dounreay to speed the work.

While the buildings rise steadily, the even bigger task of designing and constructing the accelerator itself goes on in the Project team drawn from the Accelerator and Engineering Divisions, and at Contractor's works. The design of this accelerator, the largest single project ever undertaken at the A.E.R.E., is wholly an A.E.R.E. responsibility, and it is noteworthy that the design is being carried to the point where almost all the main plant items are being obtained at fixed prices by competitive tender.

Construction is due to be completed by the end of 1961. The first experimental teams will have to begin their work a long time before then, since much of the equipment required is itself extremely large, complex and expensive. In the mean time, with the transfer of the 50 MeV proton linear accelerator to the Institute in April 1959, the Rutherford Laboratory should already begin to fulfil its function of providing research facilities for University use, in the fundamentally important field of high-energy physics. ★

(Results of the National Institute Competitions are given on page 45).

Who's Who in the Research Group*

***or rather Who WAS Who at the time of this photograph — August, 1958.**

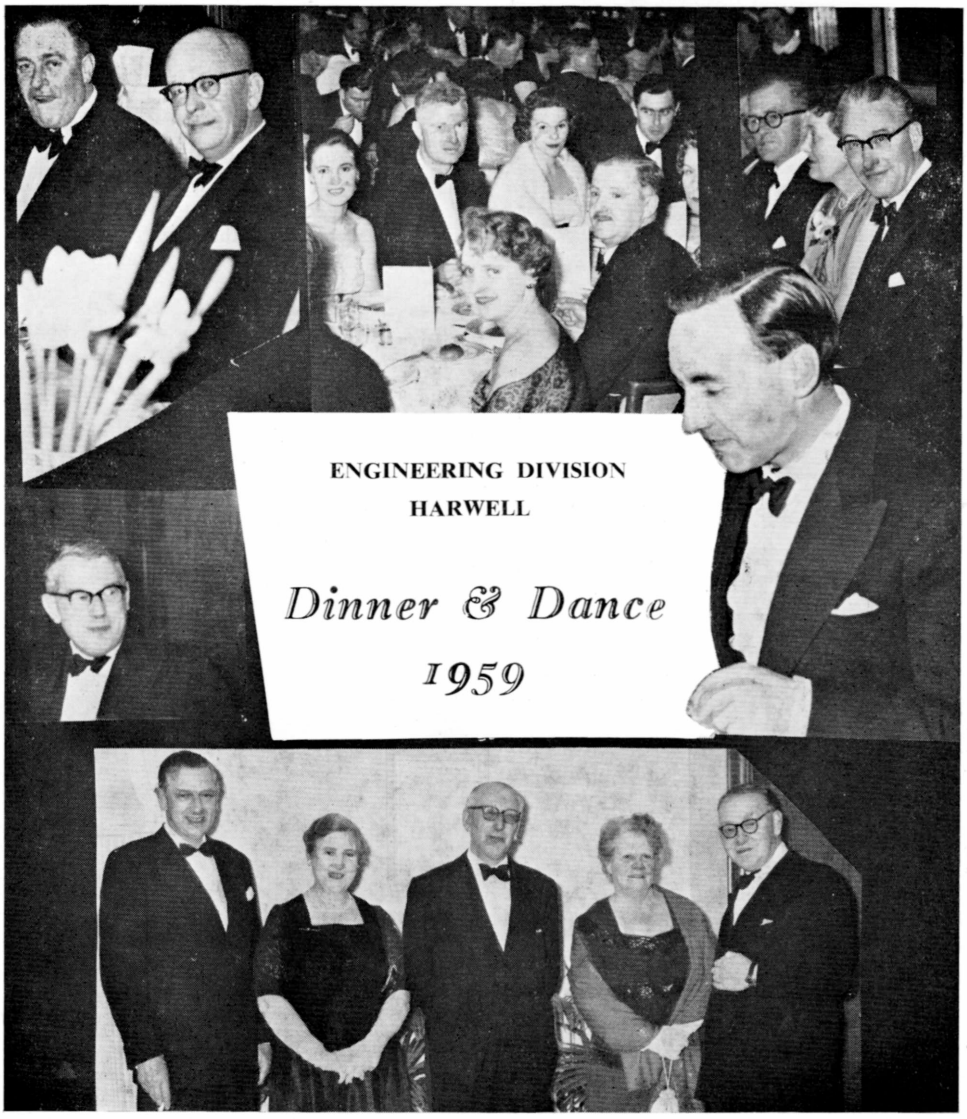
Front row (l. to r.)
Dr. H. M. Finniston (Chief Metallurgist)
Mr. J. R. V. Dolphin, C.B.E. (Engineer-in-Chief)
Mr. D. W. Fry (Deputy Director; now Director, A.E.E., Winfrith)
Dr. B. F. J. Schonland, C.B.E., F.R.S. (Director)
Dr. R. Spence, C.B., F.R.S. (Chief Chemist)
Mr. D. R. Willson, M.B.E. (Technical Secretary)
Dr. J. V. Dunworth, C.B.E. (Head, Reactor Division; now Assistant Director, Reactor Policy and Research)

Middle row (l. to r.)
Dr. P. C. Thonemann (Head, C.T.R. Division)
Dr. W. G. Marley, O.B.E. (Head, Health Physics Division)
Mr. A. S. White (Head, Chemical Engineering Division)
Dr. N. F. Goodway (Head, Industrial Collaboration Office)
Mr. R. M. Fishenden (Head, Scientific Administration Office)

Middle row (l. to r.) (continued)
Mr. T. B. Le Cren (General Secretary)
Dr. T. G. Pickavance (Director, Rutherford Laboratory, National Institute for Research in Nuclear Science)
Mr. H. J. Grout (Chief Engineer, A.E.E., Winfrith)

Back row (l. to r.)
Dr. W. P. Grove (General Manager, Radiochemical Centre)
Mr. E. H. Cooke-Yarborough (Head, Electronics Division)
Mr. J. F. Jackson, O.B.E. (Head, Overseas Relations Office)
Mr. W. S. Eastwood (Head, Isotope Division)
Dr. E. Bretscher (Head, Nuclear Physics Division)
Dr. B. H. Flowers (Head, Theoretical Physics Division)

Not included in this group were:
Mr. L. B. Mullett (Head, Accelerator Division)
Dr. K. Williams (Group Medical Officer)



Proposing the toast to the Guests, **Mr. J. R. V. Dolphin,** Engineer-in-Chief of the Research Group, described the function as the biggest of its kind ever held by the Engineering Division at Harwell and possibly the biggest ever held by the Research Group. In another superlative he described Sir John as the world's biggest traveller, now that Mr. Dulles is out of the running.

In his reply to the toast, **Sir John Cockcroft,** making his last after-dinner speech to the Engineering Division as full-time Member for Research, acknowledged the great help received from the engineers through the years since the time when there were only three engineers on the Project.

Mr. R. F. Jackson, Chief Engineer of Harwell, referred to a statement by Sir John that the Division doubled in size every five years and suggested that the Director (who, it will be seen from our photograph, was also present) had to employ a large number of scientists at Harwell just to use the apparatus made by the engineers.

In reply to the toast to the Ladies, **Mrs. Schonland** also referred to the growth of engineers, and in particular to the growing number of women engineers. "The toast in the future", she said, "may well be 'to the Men'!"

K. J. Ellis & G. F. Williams (Photo: A. R. Kenyon)

AERE ART EXHIBITION

ONE of the answers to the question of what some scientists and their attachments do in their leisure hours was supplied by the A.E.R.E. Art Exhibition that was held at the new shopping centre from November 25th to December 2nd, and then retained for another week owing to the increasing interest which it aroused.

Abstract art was conspicuous by its absence from the exhibition and perhaps one is at last given a clue to why the Russians house their modern scientific apparatus in Victorian buildings; the scientists in Russia are perhaps choosing the art that scientists prefer. Mrs. M. Fishenden and C. J. Fishenden provided exceptions to the rule, though one of the latter's pictures (an excellent use of colour contrasts) seemed to have been painted under the influence of Salvador Dali.

The most popular item in the exhibition was K. J. P. Ellis's large self-portrait: having grown a beard in the mean time, he was able to lurk near by and overhear the complimentary remarks. Ellis was one of a number of professionals exhibiting.

V. H. J. Burroughs' "Traditional Chinese Design", though not to my taste, came in for very favourable comment; William B. Rodgers' "Flower Piece" was pleasing; the Chelsea perennial "Evening at Battersea" was expertly done by A. Sanderson, and a number of other professional efforts deserved mention; nevertheless the main praise must go to the tyros. About half the exhibits were by beginners. D. R. Willson had perhaps the severest test to overcome, his work being placed next to that of G. C. Ashworth, but his two sketches, far from being disgraced by the comparison thrust upon them, were excellent.

I liked J. F. Denzey's "The Glasfryn Estuary" very much. The paintings "Still Life" and "Landscape" by an eleven-year-old, Kay Olliver, were truly exceptional for one so young and showed a remarkable sense of colour.

Mrs. Ferguson's self-portrait was, one gathers, a first effort, which promises well for the future. Among other works I liked Marjorie Stephen's "Chairs in Oxford Attic" (a good water-colour), Pauline Flowerday's "Child in a Red Dressing-Gown", and Kevin W. Clare's "Imaginative Composition". Some of the above may be "professionals", but the dividing line between some of the early efforts and the later ones was very narrow.

Dr. Douglas, Mr. Ashworth, the other organisers, and all whose work they selected, are to be congratulated on this exhibition, which showed that the artistic talent is there, although the ideas perhaps are not so plentiful.

C. S. Sabel.

Art is a very personal matter and the exhibits that we might describe as the "best art" are not necessarily those we should like to have in our drawing-room, nor those that reproduce most effectively in our monochrome supplement. The AERE Art Group is now being formally constituted and its progress will be reviewed on these pages together with other recreational activities of the Research Group.

AERE ASTRONOMICAL AND ASTRONAUTICAL SOCIETY

Are they a collection of space maniacs or science fiction addicts? No "comet"! The group consists of amateur astronomers and those awake to the possibilities of the space age. Two types of Society meeting are held. "A" meetings which are of a popular and non-technical nature and "B" meetings at which more specialised topics are discussed.

On the practical side one telescope, in operation at Wantage, is open to anyone interested, and a 10 inch reflecting telescope is being erected at AERE. The Society encourages the formation of small specialised groups, the telescope group being one of these.

Further information can be obtained from M. F. Banham, Ext. 2736.

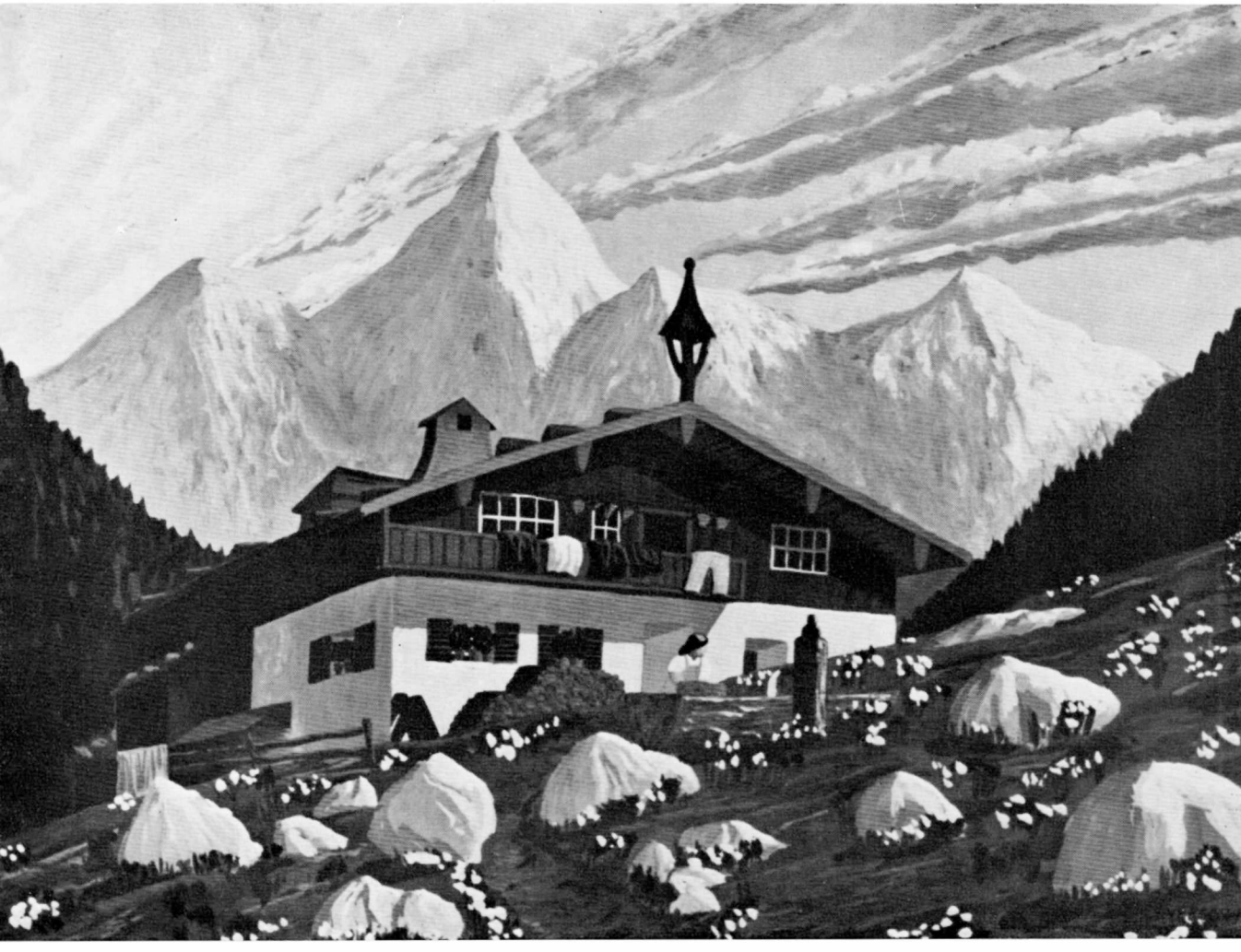
AERE CRICKET CLUB

The Club runs a first and second team, each team playing two games per weekend, and prides itself on having the best ground facilities in Berkshire.

Any person interested in either playing, umpiring, or scoring should contact the Secretary.

AERE CHESS CLUB

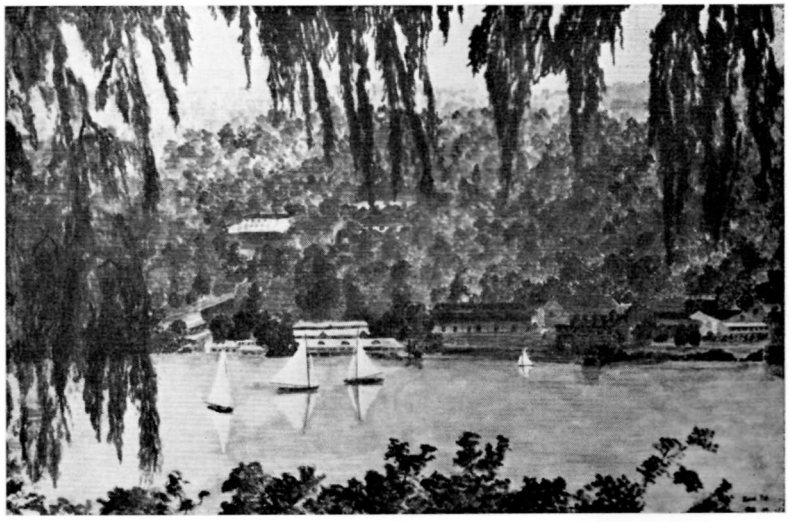
The Club meets every Thursday at 7.30 p.m. in Room 1 of the Social Club. Two teams of six take part in the Oxford and District Chess League, and last season the AERE first team won the league championship against teams from Oxford University, Oxford City, Morris Motors, etc. Friendly matches, simultaneous displays and kriegspiel are other regular events. New players of any strength are welcome. The secretary is J. B. Sykes (Ext. 2031).



ALPINE SCENE

I. EVERSON (Eng.)

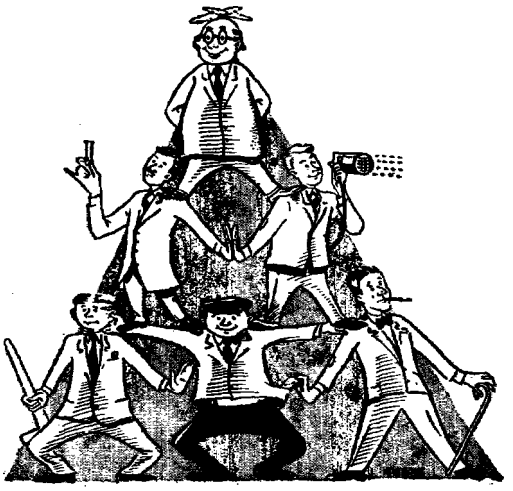
AYRMER COVE
F. ROBERTS (Chem. Eng.)



NAINI TAL (INDIA)
G. F. E. WILLIAMS (Eng.)

Other People's Jobs No. 5

Your Life In Their Hands



IT was decided to resume this series with a look at the safety responsibilities of Electrical Section (Engineering Division), for two reasons. Firstly, their function is an important one, for such things as faulty connections, if neglected, can result in electric shock with, of course, possible injury or death, while a fire endangering the safety of many people may also occur. Secondly, our glance behind the scenes will show something of the interdependence of *men, machines* and *methods,* the theme of this issue of "Harlequin."

The safety of any electrical installation depends basically on sound design, correct assembly, and regular testing and maintenance.

Let us first see what this involves:–

(a) Examination of drawings;
(b) Testing of all new installations;
(c) Advice to scientific staff concerning installations;
(d) Planned maintenance schedule, drawn up to ensure safe and efficient operation;
(e) Earth continuity testing, always in progress, with some 20,000 items being checked annually, as part of routine inspection of installations.

There are many other aspects of safety work with which Electrical Section must concern itself: from work on large installations down to the maintaining and testing of fire alarms, site klaxons and emergency ventilation systems. We can, however, feel assured that such things as substations and switchrooms are well taken care of when we see the attention that even our soldering iron or electric kettle commands.

Portable tools are used by scientific, technical and administrative staff, and vary from aero dryers to welders, from calculators to vacuum cleaners. Including a few hundred allocated to outstations, there are nearly 11,000 portable tools to be considered.

In the same way that an intricate electrical installation is given an initial examination, your kettle or soldering iron is tested before being passed to Stores. It will by now carry a tag with a registration number which is entered on a card in the Electrical Section records office. This registration number it will have throughout its life, as we have our National Health registration numbers; but a feature of the 'health service' for electrical equipment is a 'medical check' every four months.

Three times a year you can expect a knock on your door, with an enquiry for portable tools. If you produce them you will see them tested on the spot, and information recorded on such matters as earth continuity and general insulation. If not in order, your kettle or soldering iron will be taken back to Electrical Section workshop for repair or replacement.

Such calling from door to door of every building every four months would, of course, be ineffective but for the central recording systems, which records all new registrations, cancellations when items are scrapped, and, as well as these 'births and deaths', a complete 'medical history' of tests and overhauls in the life of each portable tool. By means of these records, track is kept of all tools tested by the travelling 'doctors' on their rounds.

Five years ago this building-to-building search for defective electrical tools occupied the testers for the whole of the year—a continuous struggle, like painting the Forth Bridge—but with improvements in both machines and methods only six weeks in every four months are needed. Improved test apparatus, designed and built by the Section itself, has made possible speedier working with less fatigue, aided by improved methods in the working of the records office and of the safety committees in each Division. The saving in time and effort has been made despite the fact that the number of registered portable tools to be checked has increased from some 2,000 in 1950 to over 10,000 today. These figures indicate not only the growth of Harwell but also the benefits of improved machines and methods. It is a pleasure to record this tribute, rather than the statistics of injury in which neglect of safety would have resulted.

After each four-monthly survey of the site, a list of unlocated items is sent to Divisional Safety Committees.

It will be seen that improved machines and improved methods cannot of themselves go all the way. In the last resort, safety precautions designed for our benefit cannot succeed without our co-operation.

It seems, after these on-the-spot enquiries, that there are three things we can do:

(1) Make sure that every portable electric tool bears the registration number that it should have, if issued through Stores; if it was obtained on a special local purchase, the numbering can be arranged by Stores, as can cancellation when the tool is scrapped;

(2) Return a tool for testing if it is suspected to be in a dangerous condition; don't wait for the tester to call;

(3) When testing time comes round, clear out cupboards and shelves; the service is free.

In short, we cannot really regard electrical safety matters as "Other People's Jobs," for, although our life is in their hands, it is in our own hands too! ★

A PLAN for an electronically-controlled tractor, capable of doing a day's work on its own, was reported by Sir John Russell in his presidential address to the Le Play Society at Somerville College, Oxford.

He quoted this example of the possibilities of modern technology in face of the world food shortage caused by the inability of peasant cultivation to cope with the growing world population.

"We cannot even dimly perceive how far the machine will develop, or how quickly," he said.

"Less than a month ago a tractor with its trailer on the Reading University Farm started off with no driver and no human guidance.

Obedient only to the electronic control within itself, it faultlessly followed the prescribed course, obeyed the traffic lights, sounded its hooter, threw off bales of hay at prearranged points and, when its tasks were completed, stopped its engine.

Its producers hope to widen its scope so that without any human aid it will start out from its shed each morning, do its appointed tasks — ploughing, harrowing, or whatever they may be — and return home when the work is done.

One must admit to some feeling of awe when one thinks of the possibilities of machines like this stalking the countryside, meticulously carrying out the programme set by the technician — who may be a benevolent philanthropist or a deep-dyed villain.

It is not all cold-blooded thirst for knowledge. Never have the people of the advanced countries felt greater sympathy for those in the under-developed lands than they do today, nor has there ever been a stronger desire to help them."

★ ★ ★ ★ ★

A WEEK-END school of 100 certified accountants at the Queen's College, Oxford, today was told by Mr. P. A. Bundy, chief accountant of the Atomic Weapons Research Establishment: "In the accounting and commercial world there is still a great deal of confused thinking on how much work computers and other electronic equipment can do, and it is obvious that the time has not yet arrived when the accountant will have available an electronic office which will produce a fully-integrated set of accounting data.

"The electronic machines will never replace the human brain; in fact, the best description of a computer comes from the user who gave his equipment the nickname 'TOM,' 'thoroughly obedient moron'."

Opening the school, Mr. L. A. Hill said: "I venture to say that in from five to ten years from now the computer and related electronic processing equipment will absolutely dominate all the offices in this country — in fact in all civilised countries.

"The trend is going that way. The technical developments are going ahead at such a pace that no one can fail to join in, or they will be left well behind, and not be in a competitive position."

Experts who would address the conference on electronic computers would be regarded in ten years time as "bow and arrow boys".

Mr. Hill said the term "giant brain" was about the worst description that could be attributed to these machines. Although they could do just about everything else, think was one thing they could not do.

"BULL. SOC.— GET DOWN TO IT, DOC."

HOMOLKA

"DOING a paper" may, forgivably, be interpreted as forgetting to put one's money in the newspaper chap's little tin box. At Harwell it means only one thing, for sooner or later it becomes incumbent upon the research worker to have his findings published in a reputable journal. Science expects it. The powers-that-be demand it.

To those professional people who are not obliged to write about their activities—Members of Parliament, fan dancers, company shareholders, jewel thieves, etc.—this writing-up must seem an awful headache.

It is. Unless one knows "The Method."

"The Method" (or "Modus Underhandi") as set out in Guttripe's Lexicon of Scientific Presentation (Ballup and Zimmerdown, 12/6) is to the scientist what rhetoric is to the politician. It helps to present rather mediocre matter in a pleasing, polished manner, and few scientists feel comfortable without their Guttripes.

"The Method" consists of stock phrases and standard arrangements. The phrases, covering most experimental contingencies, never actually violate the ethical code, but give the paper that rounded-off, sleek look. The following are a few examples taken at random from Guttripe. The contingencies are in brackets.

"We tried to narrow the field by . . . "
(It was a rush job. Too many tea breaks.)

"These results suggest that . . . "
(We suggest that . . . The results do not really mean anything.)

"The well-known chain reaction."
(A new one on us.)

"The behaviour of the substance requires further study."
(Some clot threw the stuff down the sink.)

". . estimated using the usual standard method."
(Forget just how we got this result.)

"Duplicate estimations never varied by more than 5%."
(If they did, we kept on doing them until they did not.)

"This evidence is consistent with the view . . . "
(The view was carefully chosen to fit the evidence.)

"Splinks has shown that . . . "

"Dirtymann found that . . . "

"Smellhigh pointed out that . . . "
(They did all the donkey work.)

"It is not clear yet . . . "
(Literally, not clear. Probably dirty glassware.)

"It would appear that . . . "
(Not the result we wanted.)

"This brings it more into line with earlier work."
(We got the same old results.)

"We failed to repeat the experimental findings of Dimklott and Addlebonce."
(They are liars.)

"The initial preparation was somewhat unstable."
(The thing went haywire and blew the lab. roof off.)

The Guttripe arrangement is quite simple and is widely used by most scientists. It consists of an Introduction, an Experimental, a Results and a Summary. The "Results" is the only thing that matters.

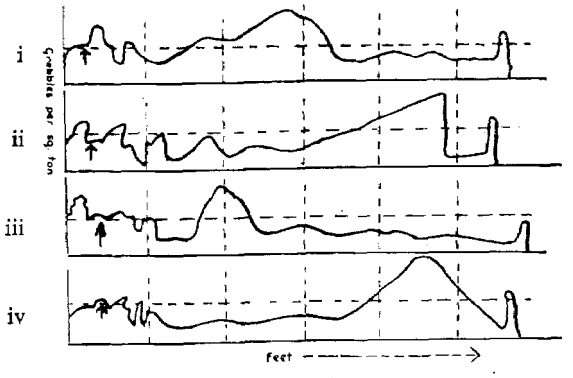


Fig. 1.

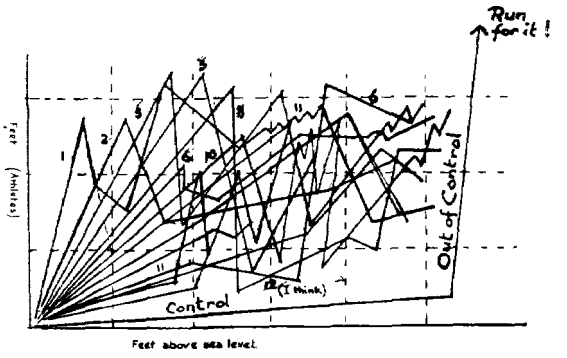


Fig. 2.

The Introduction can be sheer "waffle." Drag in lots of references. If you cannot find any, or it is too wet to go over to the Library, make up some. Russian ones go down well.

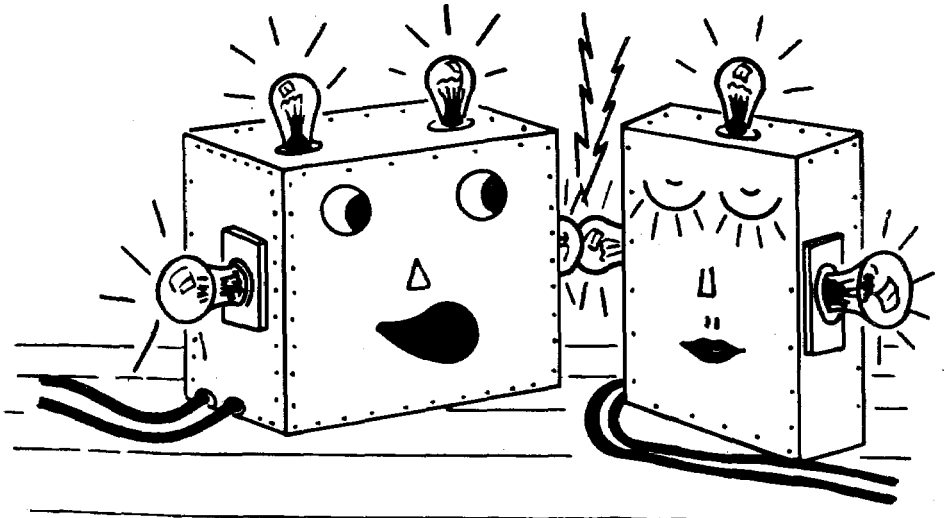
EXPERIMENTAL. "It is amazing", says Guttripe, "how much detail one can get out of reading a barometer or turning a switch. Pad as much as possible. Tell them how you labelled the bottles or greased the taps. Nobody reads this part anyway."

RESULTS. Tables, graphs, diagrams are musts. Some ingenuity is required here and they should be either very interesting or too difficult to understand. Two typical examples from Guttripe:–

Fig. 1 i Typical "Beer" pattern.
ii Classical Naggy-Gabby effect.
iii Slight deviation from Mansfield Curve.
iv Optical effect of Mansfield Curve.

Fig. 2 The curves are self-explanatory and make the variation quite clear.

The Summary should be terse, crisp, factual. Never give an opinion. As you probably haven't a clue what the results—if any—mean, let the reader—if any—worry about it. ★

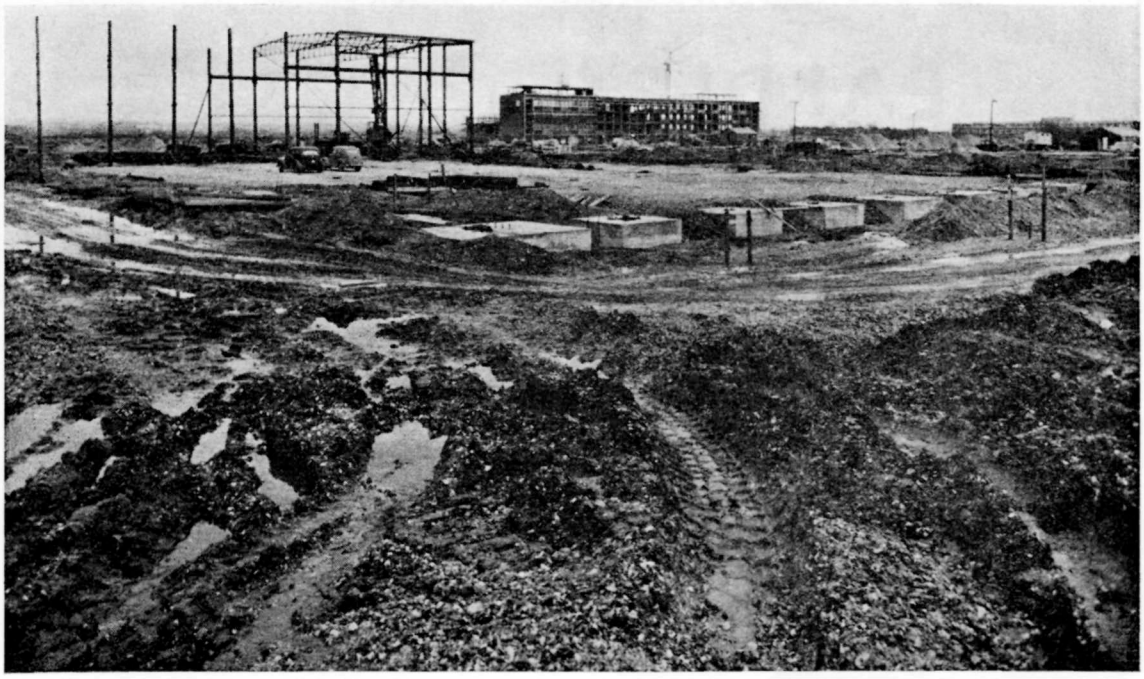


"Oh Ethel, each time your hand touches mine my brain becomes a whirl!"

K. W. Viney (Contracts)

COLUMBINE

A "Harlequin" Supplement on the Second Site



WINFRITH WHISPERS

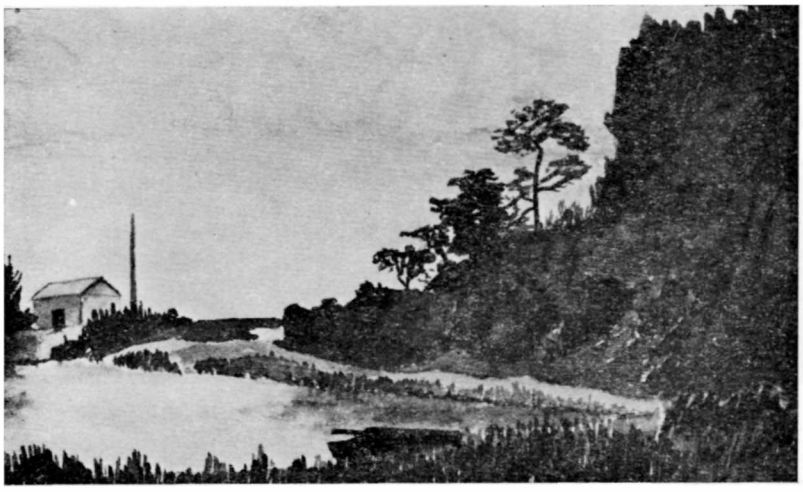
Just after 5 o'clock in the evening the white-clad police (who are even more charming than the Metropolitan police) are very busy controlling the traffic of their own small Piccadilly Circus, where the road from the West that runs past the site offices meets, at the Zero Energy Building, the traffic from General Services Building and the Apprentices' Training School. To complete this evening picture there are even very bright lights which from the main road appear to merge with those of Bovington, across the railway line.

In the marshy land to the north of the railway line, planting will soon take place of cricket-bat willow, as well as red willow and yellow willow. Perhaps M.C.C. will be using an 'atomic cricket bat' in 10 years time! The heath already has its first young silver birches and Scotch pines, which have been planted in the north-west of the site along the eastern verge of Blacknoll Lane.

Winfrith had a few minutes on the B.B.C. Western Region Television News on New Year's Eve, and the General Services Building was shown. This is now partly occupied: a section of Reactor Division is in bay 'F' and the Manufacturing Group and Work Services of Engineering Division are in the south end of the first and second floors respectively.

As people move into more permanent offices, luxury and comfort are gradually coming to Winfrith, but the Winfrith workers are still easily distinguished in the surrounding villages and towns—by the colour of the mud on their boots!

This is the last despatch from Mary Durant-Lewis, our Winfrith correspondent. "Harlequin" sends its best wishes as she leaves the "mud huts" of Winfrith for the "marble halls" of London Office.



REDCLIFFE, WAREHAM by E. W. Pulsford (Scientific Admin.) — The river that flows between Wareham and the sea — 6 miles from Winfrith and 6 miles from Poole.

LETTER FROM WINFRITH

And so we finally arrived at Poole! After various delays and regular greetings of "What, are you still here!" our removal day at last dawned, luckily a fine day, and the twelve-year chapter that was Harwell was ended.

After packing and repacking we were firmly convinced that we never wanted to move again. You certainly don't realise how much a prefab will hold until you try and take it out!

The biggest change in living here is that now there is a half-hour journey to the site, whereas shops and entertainment are right on the doorstep.

Poole is something like a larger version of Abingdon, and already on a Saturday morning it is usual to bump into a number of people from Winfrith. The variety of shops is good and we were impressed by the anxiety to please. Delivery is normal even for casual purchases, and the Supermarket assistant will load your car if required.

We still find Bournemouth the main attraction and, since it is only fifteen minutes' drive, we go often. This is certainly an attractive town—a shopper's paradise (and a husband's nightmare). But this is a seaside town which is not seasonal, and entertainment of every kind is available winter and summer.

So far we haven't been bitten by the sailing bug, but the locals assure us that it is inevitable. In summer, however, there are a number of cricket clubs with attractive fixtures and we found despite the wet summer it made a pleasant change after Harwell fixtures, and most clubs end the match in the proper fashion in the local or club house.

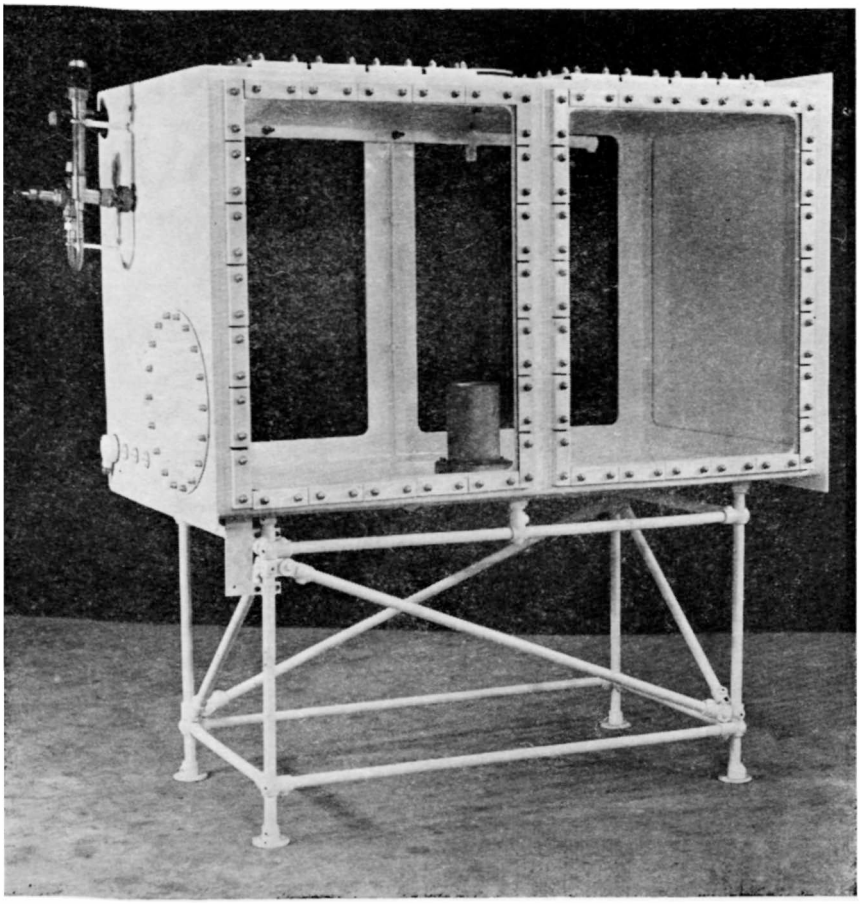
Generally we've found the local people friendly, although there isn't the feeling of a closely-knit community that exists on site at Harwell.

In winter, Dorset is very similar to Berkshire for its rugby. There are no large clubs, but the rugby friendships are the same no matter where it is played and this is quickly widening our circle.

Naturally there are things we miss after the long stay at Harwell, but each week brings another batch of familiar faces, so it will soon be Harwell all over again. So far, though, we've found no local to approach East Hendred's *Plough* and our disappointment in Bournemouth is—no Indian restaurant! Oh, for a Karachi chicken! Perhaps we'll be converted to Bournemouth's Chinese restaurant.

As for Winfrith—you will read elsewhere of progress on site, but there is still some mud about. However, as long as we can remain a bit drier than Poole Harbour, we should win!

Yours etc., GLADYS AND PETER GATES.



A Mk 12 Glove Box,
as supplied to A.E.R.E., Harwell.

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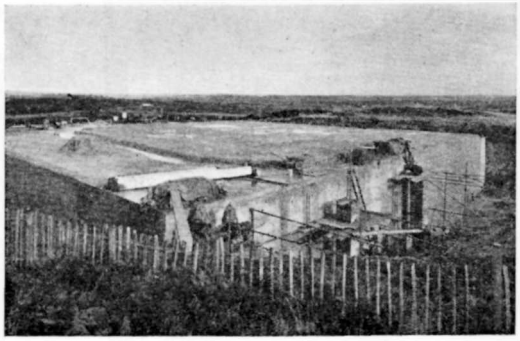
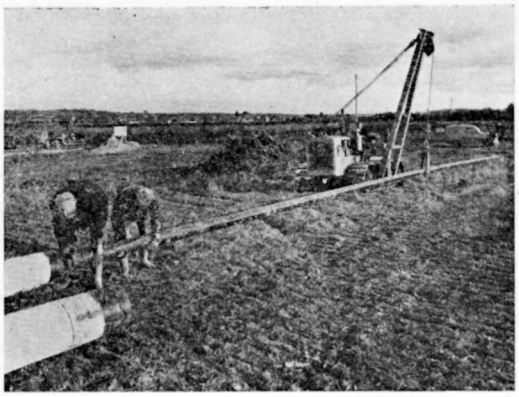


Construction of reservoir at Blacknoll is complete and tests are now in progress.

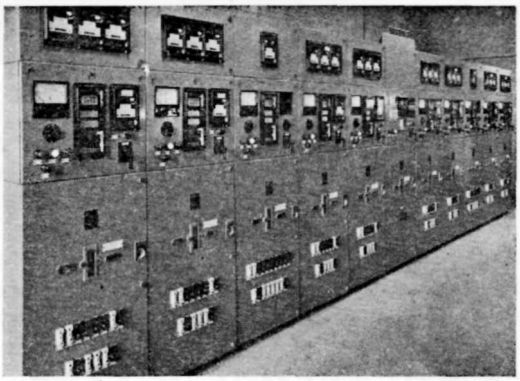
WINFRITH GROWS

Winfrith Grows. At Burton Cross, work on the pipeline which will carry effluent into the sea off Arish Mell has been visible for some time, and now the on-site section from the roundabout at the Zero Energy Building to Burton Cross has been laid and tested.

Opposite the site offices on the northern side of the road, signs of a building have appeared: this will be the Central Technical Building, and steelwork for the light rig and heavy rig bays has now been completed. The building which is perhaps of most local interest is the Zero Energy Hall No. 2, where Dorset's first reactor experiment will be; the building construction is nearly complete. The Zero Energy assembly is being erected and graphite is being laid.



Land section of the effluent pipeline at Burton Cross, with Wool in the background.



Part of the control room of sub-station No. 1.

★ Mr. D. W. Fry has been appointed Director.

★ An international agreement inaugurating the new project, known as "Dragon", was signed at Paris on March 23rd for the development of a high temperature gas-cooled reactor. The project will cost £13.6 million, shared by the countries participating in Euratom, and by Austria, Denmark, Norway, Switzerland and Britain. The experimental equipment will be retained by the U.K.A.E.A. on conclusion of the Dragon project.

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Mr. J. W. Berry of **Reading**, our **Area Manager**, visits the Establishment each week and will be pleased to advise on any of the above projects. Appointments may be made through the Reception Office, Harwell, extn. 2233.

Interviews can also be arranged at **Bracknell, Oxford, and Winfrith.**

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THERE'S SOMETHING ABOUT THE BAGPIPES . . .

. . . THAT REALLY SENDS ONE.

"HARLEQUIN" LOOKS IN ON THE

BURNS CULT

This year saw prolonged and comprehensive celebrations of the birthday of Scotland's national poet. January 25th, 1959, was the 200th anniversary of his birth and, two nights before the great day, the A.E.R.E. & District Caledonian Society took over Building 150 for the occasion.

BECAUSE of the extreme cold, perhaps, few kilts were in evidence this year, although many of the women wore tartan sashes and many well-known Harwell characters were indeed an impressive sight in the Highland costumes of clan MacDiverse.

The Haggis (which we feel bound to capitalise) was piped in "wi' fu' Hielan' honours" by Mr. N. Plush, and was then addressed in traditional style by Mr. J. Wallace with such rich dramatic intensity that even your Sassenach reporter felt moved by the occasion. It was served with "chappit tatties and neeps," which proved to be harmless mashed potatoes and turnips, and the Haggis itself, we found, was not so much to be feared after all.

"Roostit Bubbly-Jock" followed, and Sassenachs, seeing from their menus that "a wee French Fancy" was to come on next, waited for a further dramatic entrance . . . but waited in vain. However, more bounteous store followed in unending succession until there was "wame-fu' " all round.

"Toastin' " began with "The Queen" proposed by the President, Mr. W. A. Atkinson, and there followed "The Land We Live In."

"Hail Caledonia! name for ever dear!
Before whose sons I'm honoured to appear
Where every science, every noble art
That can inform the mind, or mend the heart
Is known; as grateful nations oft have found."

Proposing the toast Mr. W. Strath, then Authority Member for External Relations and Commercial Policy, quoted from an ancient ledger of the monks of St. Albans: "Paid to a Scotsman to make him go away—sixpence." Such a modest sum, he suggested, would today be insufficient. He expressed doubt whether all these years "we have been exploiting the English or they exploiting us." But the English he described as "very nice people" for whom England would be a dull place indeed had they only the Welsh and Irish to sharpen their wits on.

To Brigadier G. B. Bell fell the task of thanking him and all his compatriots, on behalf of all guests present. This he did with such credit that it was possible to feel for just a few minutes that we natives had not in fact lost such a great deal by being born south of the Border. Concerning Haggis, he confessed to not being sure whether one had to shoot it or fish for it, but he was certain of one thing: there was probably no country in the world that had not savoured and been enriched by Scotland's two most famous exports—Scots and Scotch.

The next toast was that of "The Immortal Memory."

Now a toast proposed by a Scotsman to "The Immortal Memory" may often appear to a Sassenach as immortal or never-ending in itself, but the speech by Dr. N. G. Douglas was charged with wit. Calling for whisky "all night thro'," he delivered part of his toast in verse that Sassenachs may not have recognised as a parody of their own poet Rupert Brooke:

"... And to those who sit and plan,
Give them each a bigger dram,
That ambient thoughts—like wayward fishes—
May swim about,—and damn what ADMIN WISHES! ..."

The customary toast to the ladies was, of course, to "The Lassies":

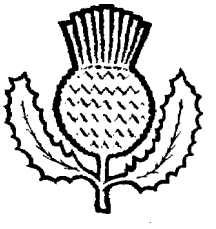
"Go fetch to me a pint o' wine,
An' fill it in a siller tassie,
That I may drink before I go
A service to my bonnie lassie."

Proposed by Mr. G. Bisset, it was effectively replied to by Miss P. Ferries. The toastin' was now finished, but not so the celebratin'.

"Push back the chairs an' clear the ha'
And join the dancin' ane an' a'
Let hornpipes, jigs, strathspeys an' reels
Put life an' mettle in your heels."

This continued until the early hours of the next day, but we left wondering why Burns alone should have his birthday celebrated in this way each year. Why, indeed, are more statues erected to Robbie Burns than to any other person, living or dead? It was not a good time to be asking ourselves this question . . . England has intellectual giants such as Shakespeare who have appealed to the minds of men . . . but this ploughman poet with his surging stream of songs is without doubt a guid dram to warm the cockles o' the heart!

"D. A. MACT."
(Scotch by absorption)



TAKING THEIR OWN MEDICINE

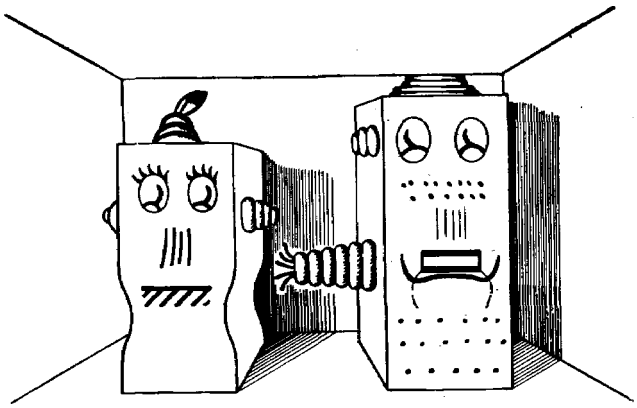
"O. & M." Section Investigated

A CARDINAL principle of officemanship might be to remember the importance of the desk: always to have plenty of trays on it, well filled, no matter with what—old newspapers, old invoice forms, out-of-date correspondence, anything—so long as the things on top are relevant.

Today this advice is less necessary, since modern organisation has created a great amount of official paperwork, much of it relevant and some of it even essential, but where is the dividing line? Are inefficient methods, in fact, masquerading as efficient ones behind the screen of paperwork? It was to find out the answers to questions like these that "O. & M." was created. Not to be confused with "O.M." (Outside Manufacturing), it might yet be interpreted by some as "officious and meddlesome," by others as "old and mild," but the telephone directory gives the official version: "Organisation and Methods."

O. & M. is to an office what a work study group is to a workshop, except that the range of intangibles to be coped with is very much greater. The first object of the O. & M. staff is the avoidance of unnecessary paperwork. Stripping office routines to the bare bones, they ask "Why?" of every action performed and every piece of paper used. Indeed, they go further: their first task is to establish what the routine is intended to achieve and to ask, "Is this really necessary?" It is surprising how often the operators of routines have a struggle to find a valid justification for them.

Accustomed as they are to asking "How?" and "Why?" of others, O. & M. might have been expected to be a little taken aback at being themselves asked these questions. We asked "Shouldn't the man actually in charge see that all routines are good ones? Isn't it, in fact, the duty of all grades to ensure that their departments are thoroughly efficient?" The answers, of course, were "Yes." But the problem of seeing the faults in one's own office is the problem of seeing the wood for the trees. Some executives are, of necessity, very fully occupied with the day-to-day activities of their departments. Some, too, it must be admitted, though first-class men in their own fields of science or engineering, are not experts on many aspects of modern office management. For too long it seems to have been assumed



"I DON'T KNOW YOUR NAME, BUT YOUR PHASE IS FAMILIAR."

Mrs. S. J. Philips (Isotope Division)

that, apart from a sound knowledge of the work in hand, no special skill or technique of office work is called for; that with moderate intelligence anyone can "get along." With the realisation that efficiency and economy are as important in the office as in the laboratory and workshop and equally dependent on specialised knowledge, O. & M. came into being.

Having found the answer to the question "Why?", we set out to find "How." The emphasis here is on the word *advisory,* for O. & M. must never be executive. The all-important factor that prevents many executives from doing their own O. & M. is *time.* But the methods of O. & M. depend on many other factors too, such as

APTITUDE (which covers a great deal, among other things having natural inquisitiveness and common sense, being a good listener and having the courage to challenge accepted routine);

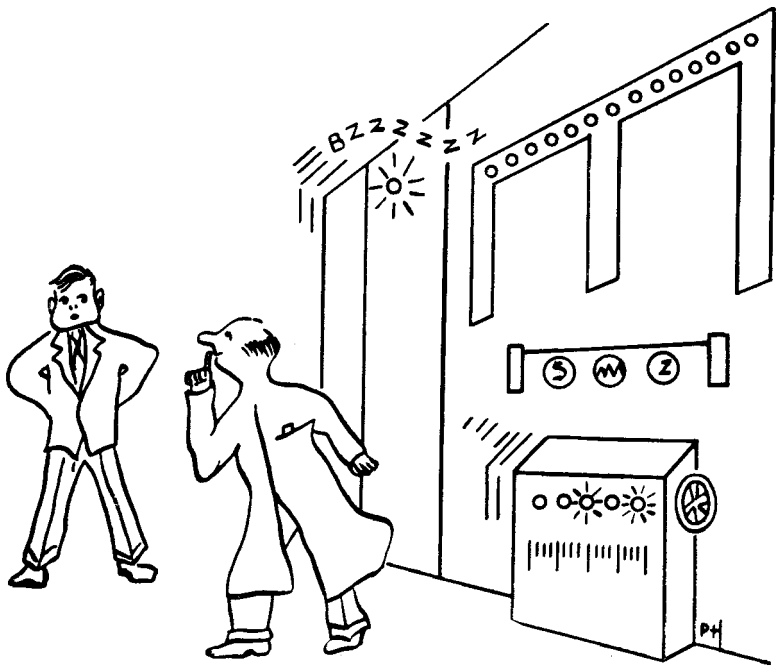
TRAINING (in office systems, machinery, forms, and technique of investigation);

EXPERIENCE (whereby successful solutions to earlier problems can be used elsewhere); and

ENDLESS TACT (in persuading "die-hards" that routines used for the last thirty years are not necessarily the best for the nuclear age and that even the ends, as well as the means, must be scrutinised).

Yet, in these days of specialisation, must efficiency too be the exclusive concern of an expert? Doubtless O. & M., with the humility which must be another of their attributes, would answer, "No." When we called they had received a suggestion, through the Productivity Committee, relating to an assignment they were working on at the time. Even if our ideas never get so far as being written down and dropped in the suggestion box, can we not do as much for general efficiency by acting with consideration for our colleagues and showing a clear knowledge of the ultimate objective of our work?

We thank O. & M. for being willing to take their own medicine. Our next O. & M. investigation will be carried out nearer base—on our own desk! ★



SSSH! IT'S THINKING !

Peter Harrap (Zenith Group, A.E.E., Winfrith)

Winning entry in the One Guinea Competition for cartoons on the theme of the electronic computor.

YOLANDE

E. LYALL (Chem. Eng.)

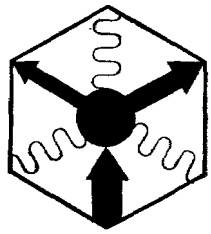
OPATIA HARBOUR
(YUGOSLAVIA)

J. I. DENNIS (Chem. Eng.)

Overleaf:

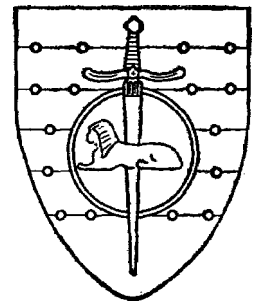
STATUE IN
JARDINS
DES TUILERIES
(PARIS)

E. LYALL
(Chem. Eng.)



Entry by J. D. M. Hughes
(Isotope Division)

THE FIVE GUINEA NATIONAL INSTITUTE COMPETITIONS



Entry by T. R. Walsh
(Accelerator Division)

FORTY-SEVEN entries were received in the competition for a name for the 7 GeV proton synchrotron. One popular form was a more or less apt word ending in -tron, such as NEWTRON, GIVATRON (curiously, no-one actually suggested GEVATRON) and RHELATRON (Rutherford High Energy Laboratory). Several names suggesting size and power were put forward, such as TITAN, OBERON, GEVIATHAN and NIMBUS (National Institute Machine for British University Scientists). The most suitable planet, SATURN, has already been used, but two others were suggested, URANUS and, much better, VENUS (Very Energetic Nearly Underground Synchrotron).

Among the miscellaneous suggestions were The CAROUSEL (supported by a lively if irrelevant essay), S.P.S. ("short, palindromic and suggesting high-level activity") and GIPSY. Among the entries constructed from initials was NIPA (National Institute Proton Accelerator). One weary competitor suggested ASPIRIN which if spelt backwards provides initials for suitable words.

In the final choice, RUTHERTRON, suggested by several competitors, and PROMETHEUS (who stole fire from heaven in a hollow tube, and was chained to a rock) were commended, but the best suggestion was considered to be HEPTATRON which is an easy word to use and emphasises one of the main features of the machine. The prize of two guineas has therefore been divided between C. R. REED and E. R. HARRISON, who both suggest HEPTATRON, and this will be submitted to the National Institute for their consideration.

Although the competition is now closed, good suggestions are still coming in, and the Institute will be able to draw on these also in making their final choice of a name.

The competition for a design symbolising nuclear research provided a disappointing total of only six entries. R.S.S. submitted an ingenious design containing a great deal of symbolism without being cluttered, but it was judged to be insufficiently simple and fundamental. R.W.A. submitted a beautifully drawn and simple design showing the torch of knowledge as the nucleus of an atom. This design, however, was too reminiscent of the former School road sign. E.R.H. proposed an attractive classical diagram of alpha, beta and gamma tracks in a magnetic field. This, however, was considered to be too specific to a particular field of study in which the Institute is not likely to take part.

In the design competition two entries contained very welcome ideas: T. R. WALSH (Accelerator Division) shows a sphinx, representing the riddle of the nucleus, being prized from it by a sword representing a high energy beam. The background is an abacus representing both calculation and counting techniques. The design as a whole is liable to misinterpretation and is unacceptable, but the abacus is considered to be the most original idea submitted in the competition.

The other design, submitted by J. D. H. HUGHES (Isotope) symbolises a nuclear reaction in which a particle interacts with a nucleus, and two particles and radiation are emitted. Although its hexagonal boundary appears to lack significance this design excels in force and simplicity.

* * *

The prize of three guineas has been divided between these two competitors.

South Gate, A.E.R.E.

THE ONE GUINEA QUESTION

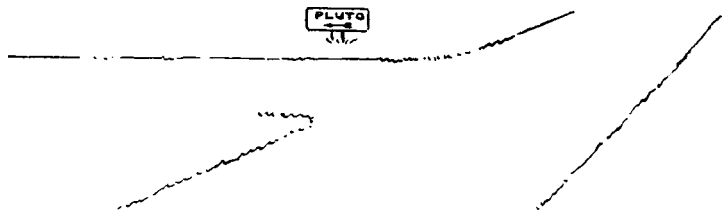
If you're working at Harwell, or at one of its outstations, you're doing so for a good reason. Assuming that you're not forced to stay—perhaps because no one else will employ you or because you might get locked up by the world outside—you have a reason for staying, known perhaps only to you. What it is that appeals to you about the life of the Establishment may appeal to you and no other. Can you extract it from a welter of sense impressions and values and say what it is from your experience?

This competition will afford scope for those who prefer to write in verse, or who see things from a humorous point of view, but one paragraph or sentence may win the *one guinea* first prize. Other entries—for which pen names can be used—may qualify for book-tokens when published in the next issue of "Harlequin".

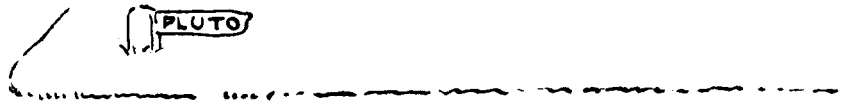
A word of warning: in attempting to answer the question "Why am I here?" or "Is there, in fact, something about the confounded place that still appeals to me?" both analysis of the Establishment and some self-analysis are called for. Should it suddenly dawn on you that you don't belong here at all, then we hope you will be as pleased that we caused you to think about this matter as will be your ex-colleagues. In most things, however, unpleasant features are more easily noticed and remembered than the agreeable which are normally taken for granted. Here then is the question to answer: *What is it about the life of the Establishment that appeals to you and to which you feel tribute needs particularly to be paid?*

* * *

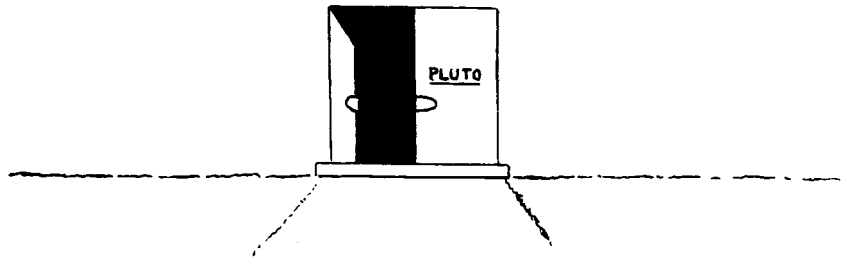
Page 68 gives details of how to send in your entry.



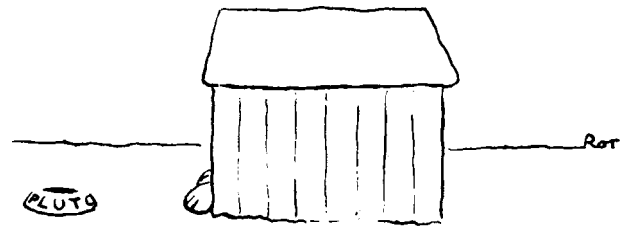
THERE MUST BE MANY PEOPLE, WHO



IN ALL THE TIME THEY HAVE BEEN AT HARWELL,



HAVE NOT YET SEEN



PLUTO.

IDENTIFICATION PARADE

The Christmas 'examination' seems to have been a little less stiff. The first all-correct solution examined was from Miss J. Powditch, B. 419, who receives one guinea. Mark Bretscher and Mrs. P. M. Perks also scored full marks and are commended.

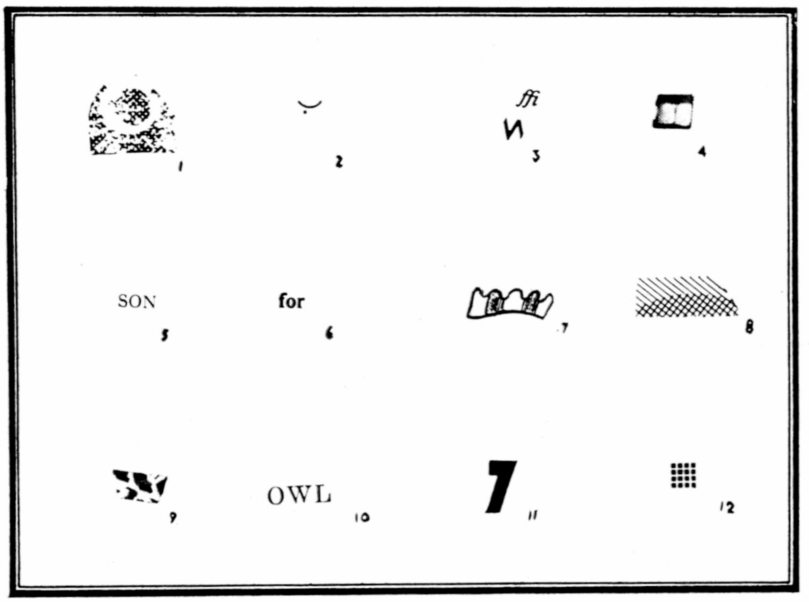
The correct answers were: (1) Combustion Instruments, p. 45; (2) Hunts (Oxford), p. 14; (3) Pope & Co., p. 12; (4) Archimedes-Diehl, p. 61; (5) Monroe, p. 4; (6) Camera Centre, p. 8; (7) Prudential, p. 10; (8) West Anglia, p. 52, and Hartwells, p. 54; (9) Coxeters, p. 47; (10) Economic Motor Co., p. 50; (11) Midland Employers' Mutual Assurance, p. 7; (12) Berkshire Self Drive Hire, p. 48.

No. 8 offered the most difficulty; few got both halves, and some competitors unwisely voted for Trustee Savings Bank, p. 14. You might know if it looks like a V it's bound to be something else!

Try your hand now at the twelve on the opposite page.

CARTOON COMPETITION

One Guinea will be awarded for the best Cartoon depicting *Life in a Research Establishment*. The prize will be shared with an artist if only an idea or rough sketch is submitted, but the winning entry will also be eligible in the tweny-guinea contest detailed on page 68.



'HARLEQUIN' COMPETITIONS

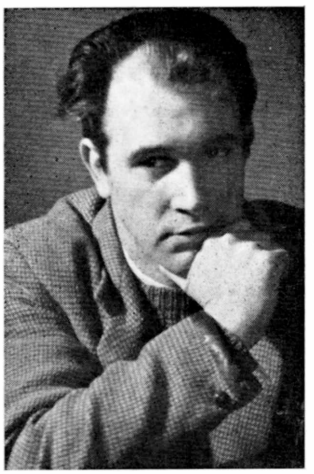
PLACE THAT FACE

These four people are to be found in or around AERE.

One Guinea will be awarded the sender of the most complete and accurate list giving the *building* or *organization* to which each belongs.

Page 68 gives details of how to send in your entries

(2)



(3)

(1)

(4)

. . . any good books lately?

Parkinson's Law by C. Northcote Parkinson.
(John Murray, 12/6).

The success of this remarkable book is due to the unconscious need of the populace for barbs with which to bayonet the bureaucrats. Scientists and engineers will laugh when they read that "An official wants to multiply subordinates, not rivals", and forget that this is their own intention. They will laugh at the officials "who make work for each other" and say, as they ignore a request to return a file or sort out some moth-eaten documents for reclassification: "This is no reason why **they** should make work for **me**!"

Most terrifying of Parkinson's descriptions is that of an organisation in which the "higher officials are plodding and dull, those less senior active only in intrigue against each other and the junior men are frustrated". The last stage of the disease is one in which apathy has taken the place of smugness: "The executives no longer boast of their efficiency as compared with some other institution. They have forgotten that any other institution exists . . . The institution is practically dead".

Although some symptoms of this disease are to be found at Harwell "when a weary voice answers ' 'ullo!' (that most unhelpful of replies)", there are other signs, such as that of a Division Head cycling to work with dropped handlebars, that suggest our continuing vitality. "A research establishment" he describes as "housed as a rule on the ground floor of what was once a private house, a crazy wooden corridor leading thence to a corrugated iron hut in what was once the garden". It is as easy to say that this does not apply to us as to say that some of the almost axiomatic statements apply only to others.

Parkinson's Law would have enjoyed almost as much success if its author (who is a professor teaching in the University of Malaya) had had the less patriarchal name of Smith, or if his law had to be referred to merely as "Jones's Law". Osbert Lancaster (whose paintings in the ballroom of the Randolph Hotel will have been admired by the members of the Engineering Division at their recent Dinner) has aptly captured the satire of the author with his illustrations, some of which we are glad to be able to reproduce in this issue. This mating of minds makes it a "must" for all interested in organisation and, as the "New York Times" forecast, it is being devoured with morbid relish by the very people it ridicules.

Creative English by Gordon Taylor.
(E. J. Arnold & Son, 9/6).

As well as being comprehensive, this book is certainly stimulating. Instead of the downright dreariness of style so often found in similar works, it contains what the author himself teaches: **the language of imagination.**

Although there are, at Harwell and elsewhere, different grades, scientific and non-scientific, there are not two different types of mind. Instead of accepting a murky no-man's-land between science and arts the reader of **Creative English** is encouraged to find a common ground of imagination, in which all knowledge is one. "I claim," writes the author, "to understand better than most people the close connection which exists between the two subjects, for in my boyhood passion for science, I once all but blew my English teacher through the laboratory roof. That exploit was neither creative science nor creative English, but it inspired the teacher to speak the language of imagination with a power which convinced me, once and for all, that if Bacon did not write 'King Lear', that man of science might well have provided the initial shock of inspiration which enabled Shakespeare, the arts man, to do so".

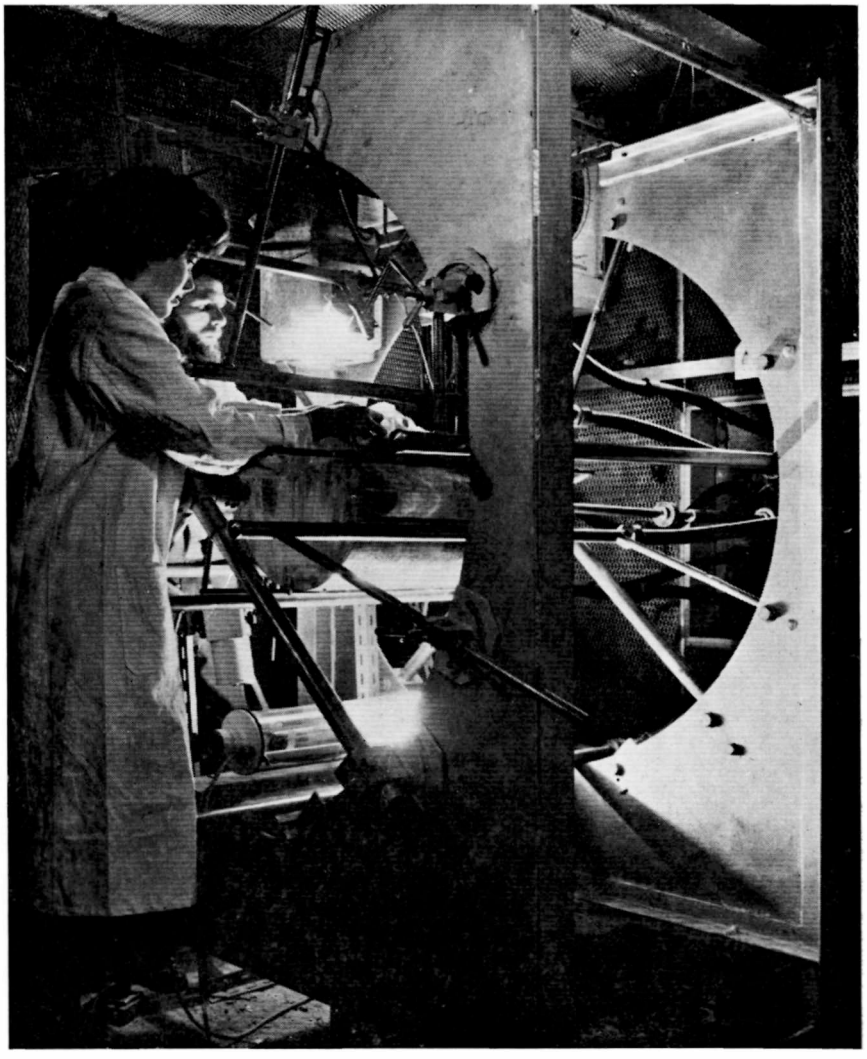
If the arts student has been at fault in failing to see that science must be a vital element in his life, so also has the scientist in understanding the importance of English in his. Advanced English studies, Mr. Taylor suggests, are essential for the scientist, "if he is to:

1. Communicate freely and fully with his fellows.
2. Achieve the imagination which will enable him to become a high-grade scientist as opposed to a routine, rule-of-thumb, technician".

The purpose of communication has remained the same over the centuries, but the means of it and the need for it have changed immensely. Modern industry, recognising this, provides the means in house journals, suggestion schemes and joint consultation, by which ideas flow. The flow of enlightened communications, both from top to bottom and from bottom to top, gives us the knowledge of what we are doing and why. This stimulating book is particularly to be recommended to all in science and technology who would improve their skill in the difficult, but vitally important, art of communication.

Reviews by D.A.T.

ISOTOPES



Placing a sample in one of the irradiation cells at the Wantage Radiation Laboratory. Here the useful applications of large radioactive sources are explored with particular reference to the radioactive fission products which will become available in consequence of the nuclear power programme.

To meet the increasing demand for radioactive isotopes and to improve further their service to users throughout the world, isotopes production and marketing, which have previously been shared between the Radiochemical Centre at Amersham and the Isotope Division at Harwell, have been combined in a single comprehensive organization for production and marketing.

The Radiochemical Centre at Amersham, with its scope widened, will have irradiation facilities at Harwell and its outstations.

Research into the properties of isotopes, and new application of them and their radiations in industry, agriculture and medicine, will be continued by the Isotope Research Division. This Division will continue to operate the Isotope School, which during its eight years' existence has provided courses on the theory and practice of radioisotope technique to over a thousand students from all parts of the world. At present the major part of the Division is at Harwell while the Technological Irradiation Group is at Wantage Radiation Laboratory. By the end of 1959 most of the Isotope Research Division will have moved to Wantage.

Both the Radiochemical Centre and the Isotope Research Division remain—with Winfrith and Bracknell—as part of the U.K.A.E.A.'s Research Group, based at Harwell. ★

YOU know how it is when you leave a place; you intend to keep in touch, and you do for a bit, and then it gets to a Christmas letter, and then a card. That's more or less how it was when I went to Chalk River in 1960 for a long attachment. Harry Davidson kept me posted up to a point, but he moved into some Admin. outfit, and I lost touch.

It was early in 1969 when I got back to the U.K., and, having to visit a Prof. in Oxford, I fixed with Harry to drop in to Harwell on my way.

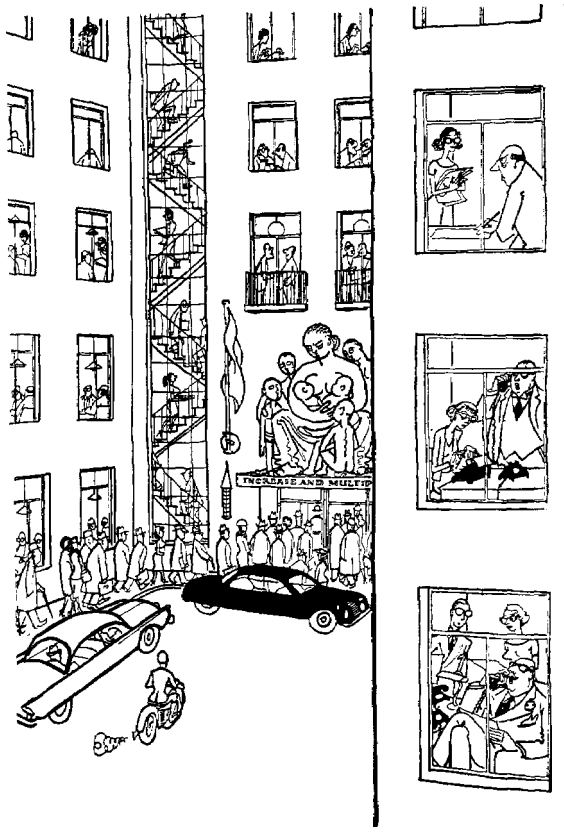
The place looked about the same. The Police Lodge had a cheerful sergeant sporting magnificent handlebar moustaches, who thought I must have been abroad on holiday as he hadn't seen me around. From the Main Gate the buildings looked the same as I walked along with Harry. "There've been a few changes since you left", he said, "a bit of rationalisation to make a more efficient administrative unit." I knew about the Winfrith business of course, and about Isotopes going to Grove, and there had been hints of other changes before I left. By then we were outside Hangar 7. "What finally happened to Zeta?" I asked. "Dounreay in '61, when Metallurgy went to Culcheth and Engineering moved to Risley", said Harry. "The hangar is just right for Financial Records now it's been extended a bit." A horrible suspicion was forming in my mind as we walked between Hangar 8 (Time Study Section) and Hangar 9 (Punched Card Division). "The new library was all very well for a time", Harry went on, "but there was a desperate need for more filing space about the middle of '63, and it turned out to be just the job." Bepo? "Gone long ago. —Just the place for O & M, with their Organising Section and Reproduction across the lawn. Those chemistry labs. converted nicely and the space up above made a fine paper store. This was after Chemistry joined Chemical Engineering at Capenhurst, in '64, I think.

I looked towards the Downs, where a 9-hole golf course had been laid out. Dido and Pluto I knew had gone. "Damn fine squash courts they made, and we got a couple of swimming baths and a Club House out of the move" said Harry. We went on, and so did Harry. "It seemed best to put Health Physics and Medical at Sutton; besides, Attendance Records was just about bursting at the seams, and the Office Efficiency Training School needed a home. When Metallurgy went, Commercial Policy Control took over the building." We

'1969'

came by the Stores, very much enlarged ("We needed more room for Stationery") and by Accountancy Liaison to a building I remembered as full of drawing offices. "Recruitment Section" explained Harry, "part of it was used by the Redundancy Department earlier on, but that closed down years ago. That's the Canteen extension just by Inter-Office Collaboration, which moved in when Nuclear Physics closed down, apart from the lot that went to Malvern, that is." "But why the big Canteen?" I asked, "What's the staff now?" "Well", Harry said, "we're still building up, and the Statistical Branch for instance is well below strength, but I think it's about twelve and a half thousand without the outstations." I didn't feel strong enough to ask about them. "You scientific chaps", Harry went on, "don't realise what a lot has to be done to keep the wheels turning smoothly. It was all haphazard in your day. No control, no figures, no estimating of the probable feasibility of an *ad hoc* economic exploration. Just chaos, old man."

We moved on past the Canteen, which now joined up with the old Social Club, and by some brick buildings. "Housing", Harry told me, "There's all the new estates—Rowstock, Chilton, Streatley, Sutton Courtenay, and Henley, the extra prefabs and the Radley extension of the Oxford Road estate. Then there's Inspection Records, Decoration Schedules and all the rest." "I didn't see any buses", I said, "Where's Transport now?" "Well, the offices are just beyond Hangar 8, but we did an exercise in '63, and got a Winchester firm to do the actual running on a cost-plus basis. There's still the Car Service and the Senior Executive Personal Car Scheme, and of course the railway siding." "Railway! Gosh, couldn't we have used that in '46 with all the heavy stuff to be brought in! What do you use it for now, for heaven's sake?" "Well, there's despatch boxes to the Bournemouth and Bristol offices, and to the Reproduction outstation at Amersham, and we get a lot from London, especially now they've been able to take over all of Bush House as well. It's a real boon—



—from **Parkinson's Law.**

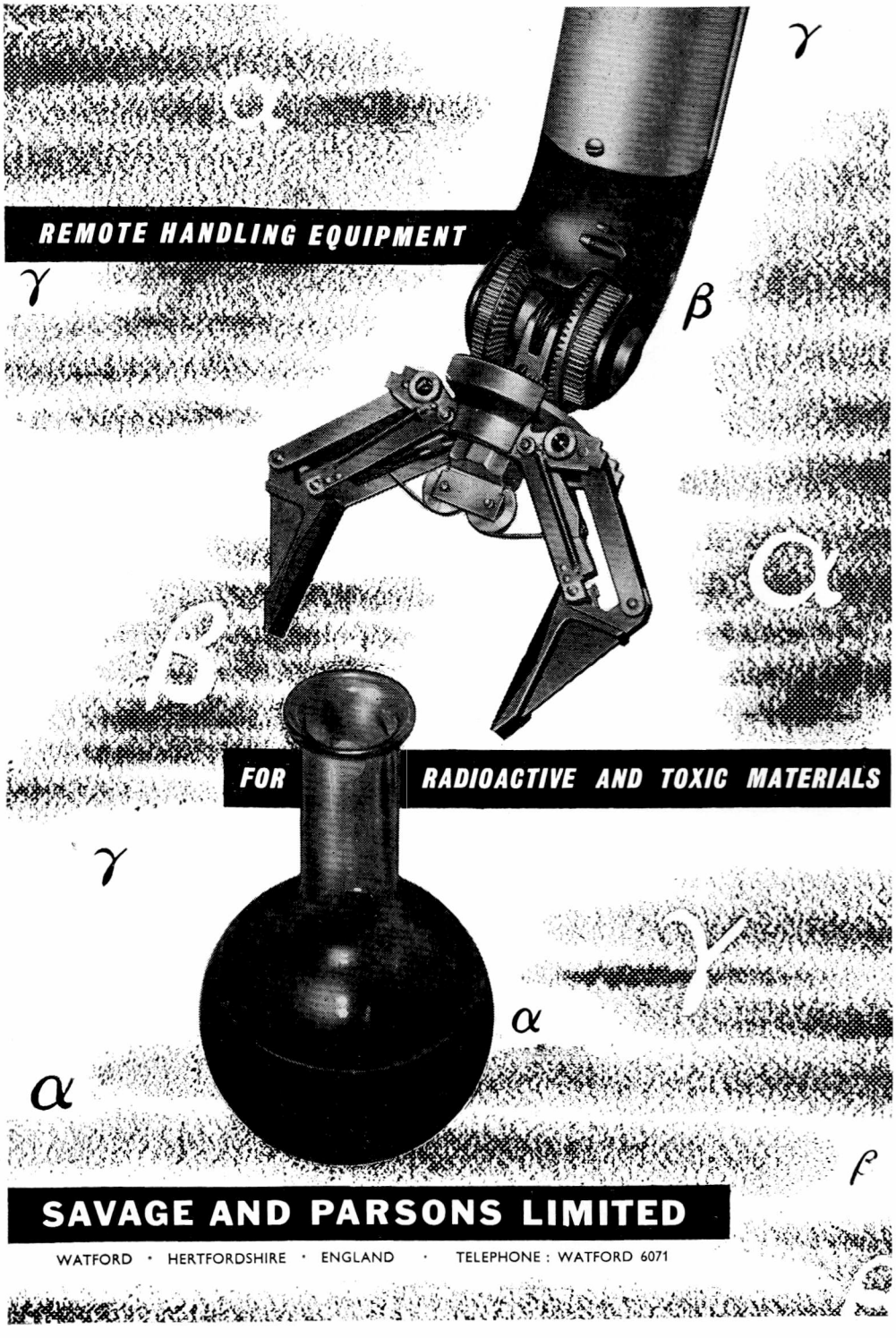
one of the Chief's first ideas when he took over. I wish you could meet him—first-class chap—we've certainly gone ahead since Parkinson came." By Central Admin. we stopped: Harry had to dash. "Must go, old chap,—meeting of Panel G of the Steering Advisory Committee. We've got to get out a first draft of a preliminary paper to the sub-committee of the Policy Council about the allocation of *official* Christmas cards. Sorry I hadn't time to show you Bumphyr—when it's up to power it'll sort 1000 cards a minute. There's lots to see—when the Oak Ridge chaps came in '66 they just couldn't believe their eyes."

Neither could I.

PHOENIX.

It is a sign of the efficient organization that it endeavours to see things both as they are—and as they will be—Sir Eric Bowater.

It is a sign of *our* strength that we can see things both as they are and as they *could* be —Ed.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AT HARWELL—WHERE HIGH-LEVEL AUTHORITY RESTRICTS THE GROWTH OF COMMITTEES BEYOND THEIR USEFULNESS—A STUDENT OF COMITOLOGY ASKS . . .

"ANY OTHER BUSINESS?"

(Parkinson's Law)

THERE are so many ways in which people can meet to discuss and decide on what should or should not be done that a guide to their ways is long overdue. This is written as an introduction for the committee tyros among us.

Committee: the classic form of assembly; like all classics, unpopular and quite out of date. It may have from four to fifty members, but in reality only three or four are of any consequence: the Chairman, the Secretary and an opposition of one or two. Some others, titularly important, merely hold sinecures: the chief one is the Treasurer (or "financial representative" which may be either "U" or "Non-U" for Treasurer). The remainder are nonentities chosen for their popularity, or just to make up the number.

Sub-Committee: a social inferior to the Committee; its title implies a willingness to roll up its sleeves in a way the Committee does not. It reports—in theory, at least—to its Committee, but usually frames its report in an arrogant, unservile manner. The Committee's only real control over its Sub is the ability to kill it. There are some sub-sub-committees; this means that some sub-committees have become committees in the hands of capable empire builders.

Annual General Meeting: The officers of a committee explain what they have done in the past year. Usually between ten and fifty people attend, of whom between four and fifty are on the committee. Failing disclosures of large-scale corruption, the one high spot is Election of Officers, in which the opposition tries to take over the positions of Chairman and Secretary; otherwise the A.G.M. is exactly like a Committee Meeting.

Working Party: If "sub-committee" implies rolled-up sleeves, this suggests pit-face workers; actually a working party meets in as luxurious a room as does a committee, but the subjects on the agenda are less luxurious: things like nuts and bolts are discussed—but rarely produced.

Progress Meetings: the poor man's committee, it is not what it seems. Sometimes it reports change instead of progress, sometimes retrogression; it is usually responsible to other people in so far as the minutes are read by outsiders of consequence: perhaps its *raison d'être* lies in its minutes.

Boards are formed solely to uncover lack of knowledge in victims placed before them. Their motto is "They shall not pass". Occasionally someone slips through and is promoted; this occurs when a board member is so keen to reveal his own knowledge that he answers his own questions, sometimes correctly.

Seminar: Someone addresses a group of people on a subject he could not write up as a

Definition: A camel is a horse designed by a committee.

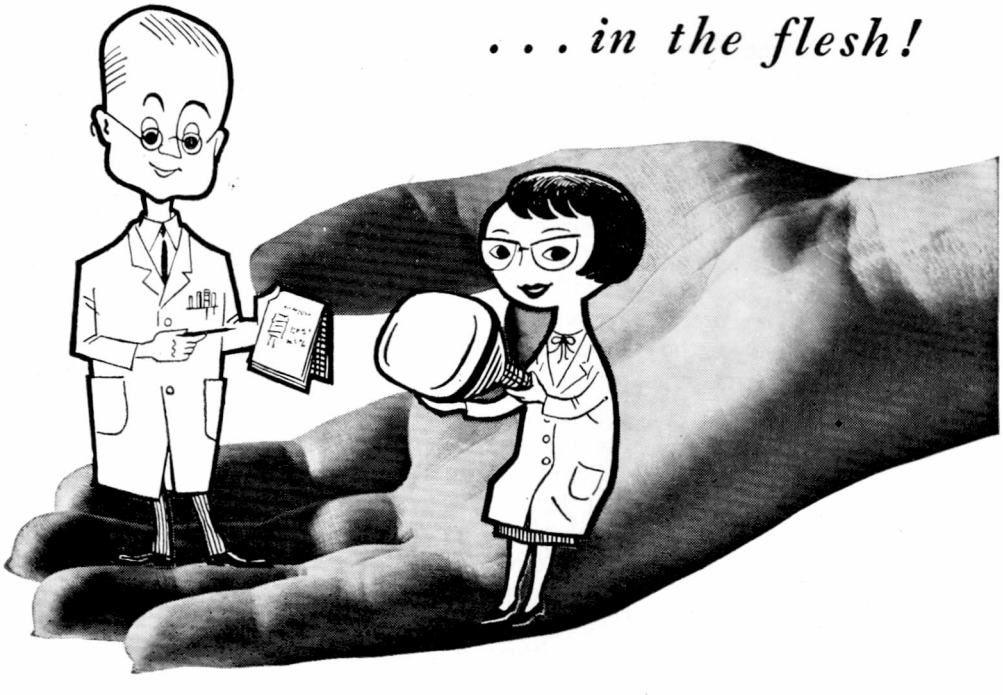
Mike Ron and Milly Torr

We work in a very rarified atmosphere at Edwards. You never know what our research people will do next. They have lived with and worked with microns and millitorrs for so long that now they are even seeing them. And it is not such a bad thing, as it turns out. Mike Ron is, as you can tell from his picture, quite a likeable chap, just bursting with brains and experience — measuring up to vacuum requirements on an international scale. As for Milly Torr, she not only has the backing of the British Standards Institution, but shares with Edwards the closest possible European connections.

They have a magic benevolent touch these two; they make things possible that, without them, just could not be. Medicine, physics, chemistry, nuclear science, metallurgy, foodstuffs and electronics, all these and more too owe something to Mike and Milly—and Edwards.

Mike and Milly don't go in much for high pressure talk, but when it comes to low pressure techniques—well, keep watching these pages.

. . . in the flesh!



"SPEEDIVAC"

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MRI

(Parkinson's Law)

respectable paper; then some people make facile comments to or at the speaker, to prove they were awake or alert. Usually just before or after the talk, tea is served—sometimes with biscuits.

Colloquium: A number of people (in turn) address a group on a subject they could not write up as respectable papers, and virtually everyone subsequently speaks, as proof of continuing life. Tea and biscuits are usually served, sometimes sandwiches also.

Conference: A number of people address others on subjects they could and did write up as respectable papers. Meals are served; trips are arranged; sometimes even wives are encouraged. Senior staff usually attend conferences, which are often held abroad, or at the seaside in summer.

A Congress is a very large conference.

A Session is yet another form of conference. Often the programme says that the Conference is on A with Sessions on B, C and D.

Commissions are bodies formed for a specified task—when something has gone wrong, let us say, or when many people are dissatisfied with the way things are going. Their half-life is about six months. When a commission finally reports, it is bad form to act on its recommendations until a second commission has rehashed its findings some twenty years later. EBONI.

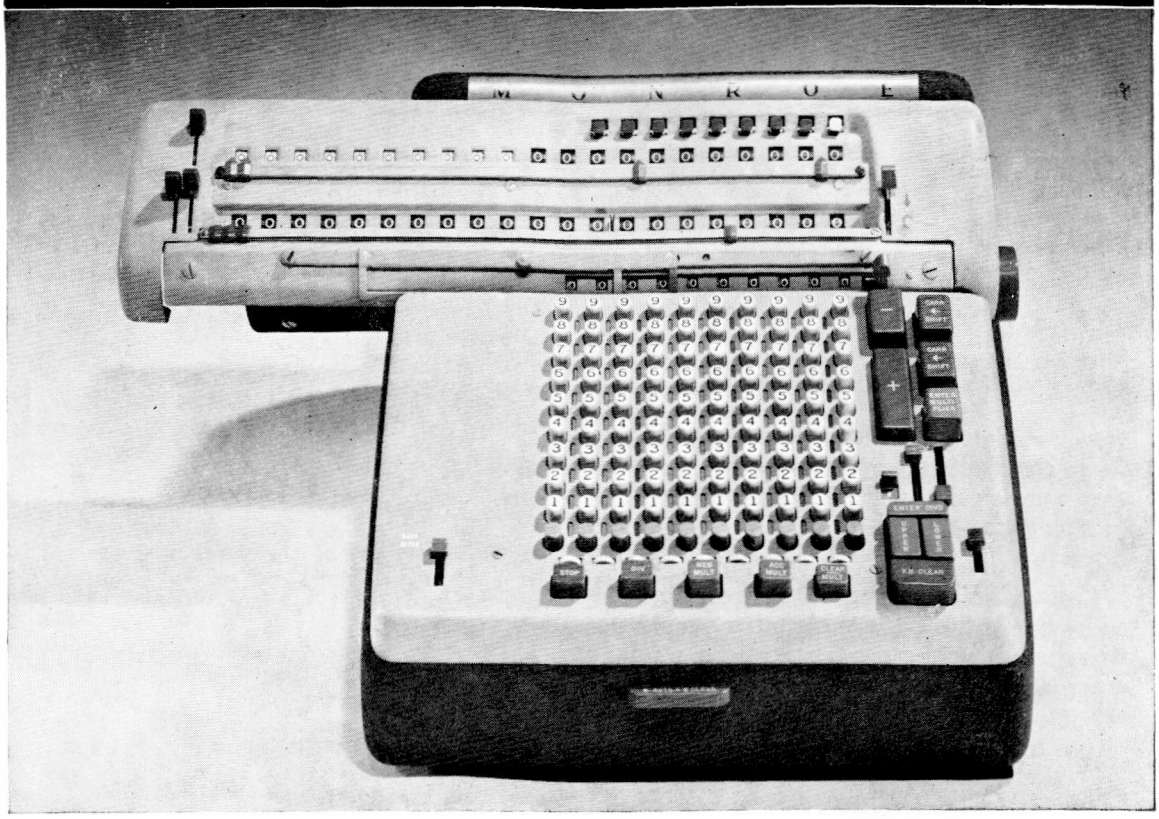
TWO HUNDRED SHOPPING DAYS . . .

(arr. Parkinson; scored Fleck)

On the first day of Christmas my Chairman sent to me
A scientist in a laboratory.
On the second day of Christmas my Chairman sent to me
Two rubber gloves
and a scientist in a laboratory.
On the third day of Christmas my Chairman sent to me
Three test tubes,
Two rubber gloves
and a scientist in a laboratory.
On the fourth day of Christmas my Chairman sent to me
Four filing clerks,
Three test tubes,
etc.
On the fifth day of Christmas my Chairman sent to me
Five shorthand typists,
etc.
On the sixth day of Christmas my Chairman sent to me
Six cleaners polishing,
etc.
On the seventh day of Christmas my Chairman sent to me
Seven designers dreaming,
etc.
On the eighth day of Christmas my Chairman sent to me
Eight managers managing,
etc.
On the ninth day of Christmas my Chairman sent to me
Nine planners planning,
etc.
On the tenth day of Christmas my Chairman sent to me
Ten committees advising,
etc.
On the eleventh day of Christmas my Chairman sent to me
Eleven deputies assisting,
etc.
On the twelfth day of Christmas my Chairman sent to me
Twelve directors directing,
eleven deputies assisting,
ten committees advising,
nine planners planning,
eight managers managing,
seven designers dreaming,
six cleaners polishing,
five shorthand typists—
four filing clerks,
three test tubes,
two rubber gloves
and a scientist in a laboratory.

"Nucleus".

Effortless figuring



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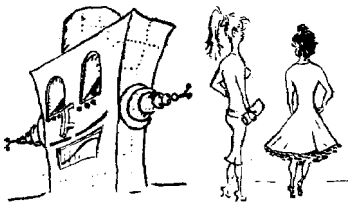
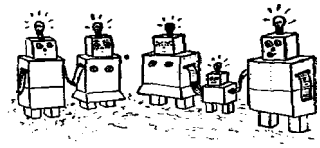


ELECTRONIC COMPUTORS



Drawings by P. Fysh (left) and J. D. Hughes

COMPUTORS are often credited with super-human powers, but cartoonists entering for "Harlequin's" competition on this theme were sometimes content to have them performing more mundane tasks such as being Chairman of a Selection Board! In reality, of course, the machines can do only what human beings order them to do . . . would it be reactionary to hope that this stage of development will not be surpassed?

In another cartoon an operator is depicted feeding coupons simultaneously into *two* computors—"pooling" his resources! The task of putting a problem to a computor is, unfortunately, more involved, and we made a few enquiries to find out what has to be done.

"It's much like chess", said our informant, "in that one must consider all the possibilities and keep several moves ahead. First, the problem must be defined in a *flow diagram* and then *coded*, that is, translated into the actual orders that the machine will have to obey."

Programming a computor is by no means an easy matter, but when it is done, the machine is capable both of normal arithmetic and of making decisions. These it makes by carrying out a straightforward yes/no test, and from the result deciding which alternative to take. By a succession of these simple decisions the computor can follow through logical processes of considerable complexity.

It is one consolation, though, to remember that even these electronic brains can't comprehend what makes them tick. If they could, then the "brain child" of our other cartoonist might become a reality. ★

★ ★ ★ ★ ★ ★ ★ ★ ★ ★

THE LOCAL STAGE

It is always encouraging to see the breaking down of the artificial barrier between science and the arts, and to have in the Research Group so many scientists who are spare-time writers and artists. It was no surprise to find that **H. S. Hoff,** who began as a scientist, and is now a consultant to the U.K.A.E.A., is also author of **Prince Genji,** which with its première on January 26th had a two weeks' run at the **Oxford Playhouse.**

The Play. Based on a classical Japanese novel of life at court, but with the addition of new situations and characters, **Prince Genji** was seen less as an adaptation than as a thought-provoking original work.

The Playwright. After reading physics at Cambridge and holding a technical commission with the RAF, H. S. Hoff was attached to the Ministry of Labour, where his task was the placing of scientists. In 1945 he went to the Civil Service Commission, and in 1950 he became consultant on personnel to the Ministry of Supply, and subsequently to the Authority. He is the author of five successful novels, published under the name of William Cooper.

The Playhouse. With its small but pleasantly unobtrusive interior the **Oxford Playhouse** is one of the few remaining good repertory Theatres in the country. Details of productions are given each week in the "A.E.R.E. News", ranging from new plays such as Prince Genji, to old plays not now seen, as well as established favourites.

LETTER TO THE EDITOR

32 Pineapple Road,
Amersham Common,
Bucks.

Dear Editor,

May I draw your attention to a serious omission on the title page of "Harlequin". Issue No. 23 was headed "Harwell - Wantage - Oxford - Winfrith." Issue No. 24 saw the addition of "Bracknell", and I sat back, like so many readers, to wait for somebody else to tell you about Amersham, which is I think senior to three or four of the other places named in terms of existence under the Authority.

I am leaving for Dounreay at the end of this week, as soon as I have an address for correspondence I shall be sending you an annual subscription for the magazine, hoping to see "Amersham" on the title page.

In closing, may I wish Harlequin all the success which I feel it deserves.

Yours, etc.
Harry O. Vincent.

We HAD heard of Amersham, but, judging by the lack of contributions from the R.C.C., it has not heard of "Harlequin"! In this issue Amersham has been included in the mast-head together with a report on another page. As time permits, it is hoped to produce articles on life and activities around the Research Group to satisfy a demand from readers.

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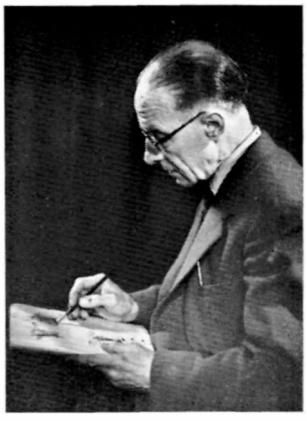
F. ROBERTS (Chem. Eng.)

Awards in the "Harlequin"



V. H. S. BURROUGHS (Eng.)

(A) For the best informative article

Railways Around Harwell was voted first by readers, followed by "Wild Flowers of the Harwell Countryside" (B.L.M.) and "A Cycle Tour in Austria and Bavaria" (R. Parsons).

One of Harwell's all-rounders, **F. Roberts** has previously contributed as a humorous writer, and one of his paintings, exhibited in the recent AERE Art Exhibition, is reproduced on page 28. He prefers to be an artist rather than a critic, to do things rather than sit on the touch-line, and his other interests range from golf to violin-playing.

(B) For the best humorous article

Another of Harwell's all-rounders, **Homolka** exhibited four paintings in the Art Exhibition and, although he describes himself as "a cynical bore", his satirical articles in "Harlequin" have been both pointed and popular. In this issue he dissects the writing of scientific reports, and we hope that other contributors will follow the example of the author of "1969" in challenging the pre-eminence of Homolka.

(C) For the best art work or photograph

Although H. E. Crooks received more votes in total for his two photographs, neither of them got as many as the five-pencil drawing **Atomic Landscape.** A pen portrait of **V. H. S. Burroughs** was given in "Harlequin" No. 23.

For the 1959 competition this section has been split into two with doubled prize money so as to give separate awards for photography and for other art.

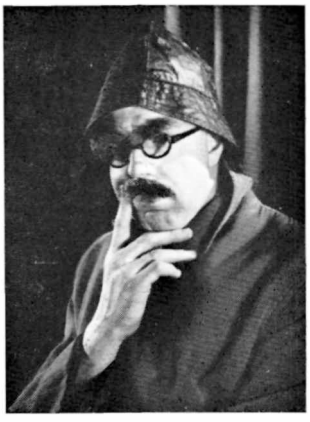
(D) For the most original idea

Among Harwell's humorous artists **Rot** led the field with P. Mulford and J. D. Hughes tied for second place. B. Riley, Clare, Hump, F. W. J. Clark, K. W. Viney, D. W. Kingston and P. Fysh all received votes. A member of Admin. Division, **Rot** has directed his barbs at the scientific fraternity, not only as a cartoonist but as a writer. Needless to say, his appearance in our photograph was assumed for the cameraman, and only to "Harlequin's" auditors can his identity be revealed.

HOMOLKA

1958 Sixteen Guinea Contest

ROT



"Harwell gives the lie to the popular stereotype of the scientist a man dead to the humane arts . . . So Harwell is a place of contrasts. It is relaxed as well as purposeful."

——THE TIMES, 5th March, 1959.

But for Harwell and the whole of the Research Group to be fully reflected within "Harlequin" . . . more talent must be discovered.

For this reason the prize money in the 1959 competition has been increased to 20 guineas.

This competition is to be based on the Spring, Summer, Autumn and Christmas issues of *Harlequin*, 1959:

I	For the best informative article (not specially commissioned)	Four Guineas
II	For the best humorous article	ditto
III	For the best art work	ditto
IV	For the best photograph	ditto
V	For the most original idea	ditto

You may be eligible for more than one award from the TWENTY GUINEAS.

Monday, May 25th

This is the *closing date* for contributions for the second round of the TWENTY-GUINEA CONTEST

Not eligible are commissioned articles, editorial matter, and work exhibited by the A.E.R.E. Art Group or Camera Club. This means that in this issue there were:

in Class I No entries.
II Only three entries: from Homolka (p. 31); Phoenix (p. 56), and Eboni (p. 59).
III No entries.
IV Only two entries: from A. R. Kenyon (p. 3) and H. E. Crooks (p. 9).

Conditions of Entry for all "Harlequin" Competitions

(1) Attach to your entry (or entries) comment—as brief as you like—on
  (a) what you like in "Harlequin",
  (b) what you do not like,
  (c) what you would like to see in future.

(2) The closing date for receipt of entries is Monday, 25th May.

(3) The address is "Harlequin, c/o Post Room" for *internal* mail; "Harlequin, AERE Harwell, Didcot, Berkshire" for *external* mail.

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