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AUTUMN 1954

VOL. 5 NO. 1

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*Leisure Magazine of the Atomic Energy Research Establishment*



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*Volume 5 No. 1*

*Autumn 1954*

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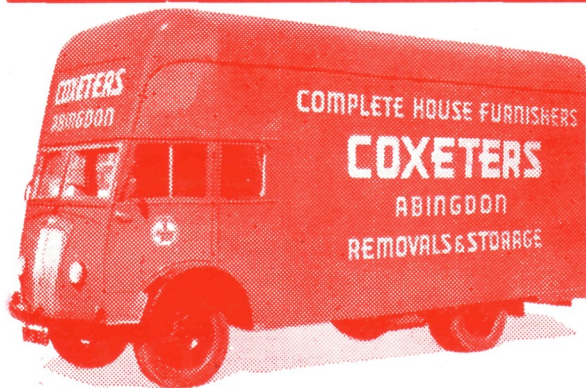
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## CONTENTS

Foreword by Sir Edwin Plowden	...	6	The Best Policy? by S. L. W. Galloway	...	30
Editorial	...	9	Application Sinister by Jill Cave	...	31
Those were the Days by D. R. Willson	...	13	Outdoor Sketching in Water Colour		
Roll out the Barrel by R.O.T.	...	19		by the Art Editor	32
Chartres and the Loire Valley by G. C. Ashworth		20	The Ancient History of Wessex and the Creation		
Special Effects by D. Pantall	...	22		of Berkshire by D. J. Behrens	34
The Changing Face of Harwell	...	24-25	Letter from Windscale	...	36
Harwell Character No. 2 by Cyril Robinson		26	Sports Day 1954	...	37
The Tale of the Phantom Chaise	...	27	Competitions	...	40
Saxophobia by Taurus	...	29	Proof Readers Competition	...	42
			Crossword Puzzle compiled by D. J. Behrens		44

Contributions are welcome at any time, but for inclusion in the next number should reach the Editor by October 15th.

*Since the last issue of "Harlequin" the atomic Energy Authority has come into being and taken over responsibility for atomic energy research, development and production in the United Kingdom.*

*The following is reprinted from the Chairman's message of August 1st, 1954 :—*

THE Authority consists in law of the present heads of the three Groups—Sir John Cockcroft, Sir Christopher Hinton and Sir William Penney—the Member for Finance and Administration, Sir Donald Perrott, the part-time members Lord Cherwell, Sir Luke Fawcett and Sir Ivan Stedeford, and myself as Chairman. I am sure I speak for those of the other members who, like myself, have had nothing to do with atomic energy until recently when I say that it is a privilege to join you in the project which has such spectacular achievements already to its credit and which promises to make such great and important progress in the future.

I send you the best wishes of the Authority for continued success under the new organisation. The work for which we are responsible will continue to be fundamental to the defence of the country and will be of increasing importance to its industrial future : it will call for the best from us all.

You will each be offered employment in the Authority's service in due course. The conditions on which you will be invited to serve are being worked out with your representatives.

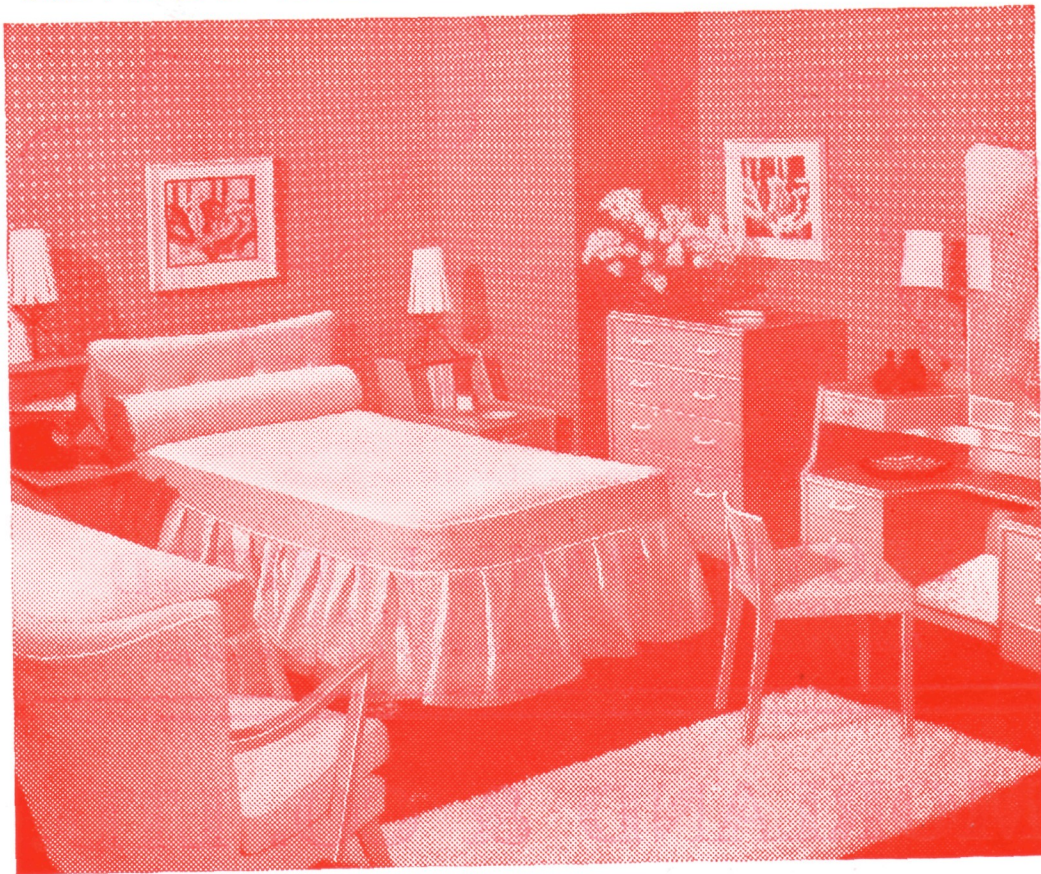
It will be one of the Authority's main aims to ensure that the conditions are acceptable to you, and so to preserve the happy relations within the project that are such a valuable inheritance from the existing organisation.

Meanwhile we can look forward to the future in the knowledge that the Authority is taking over a wealth of experience and ability gained in one of the most striking scientific and industrial ventures that this country has ever known.

E. PLOWDEN.



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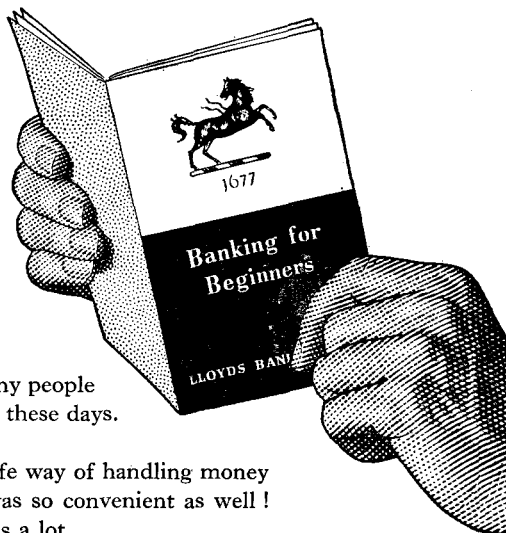
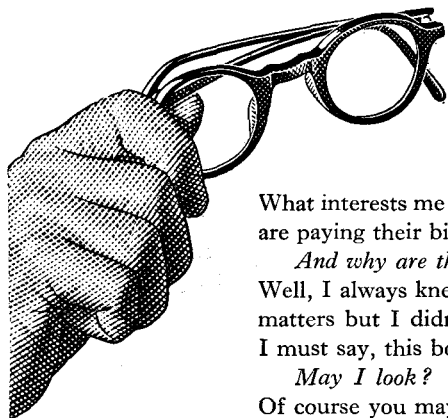
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Uppermost in most of our minds are thoughts concerning our recent change of employer. However, apart from an "Out of the Frying Pan" dance no great celebrations or wailings were noticed at the time when the Authority officially took over. There is no great observable change in A.E.R.E. itself, although our notepaper no longer depicts the lion and unicorn, and we are gradually beginning to realise that we are now the "United Kingdom Atomic Energy Authority."

This number is quite a lot concerned with the changes in Harwell; Mr. Willson, concluding his enjoyable series "Those were the days" helps us to look back and notice changes that have taken place, while various cartoonists help us to imagine what life here will be like in the future. Past history we cannot change; indeed, as far as A.E.R.E. is concerned, few would wish to. We may look back with pleasure and some justifiable pride on years of steady progress, punctuated occasionally by some more startling discovery.

The future, however, is not so inflexible. Whether or not A.E.R.E. looks like it has been depicted in cartoon, whether it improves or degenerates in the next ten years depends largely upon what everyone brings to their work, and what they get out of it; and it is generally true that the more we give to our work, the more enjoyable does it become.

How do we regard our work here at Harwell?

Merely as a means of earning our livelihood? It is that, certainly, (although we all enjoy thinking that our remuneration is not as great as we deserve!) but if it is no more we are surely the most miserable of people. Perhaps it is just "as good as anything else" or perhaps we rather enjoy the particular sort of work on which we are engaged. With neither of these two outlooks will we give the best to, nor derive the most benefit from our work. Only as we see the larger view of our work as a contribution to the wealth of scientific knowledge at man's disposal shall we be taking our full part in the life of the Establishment, under whatever system of control it may operate. And this applies to everyone: storeman, Director, clerk or physicist.

Three men employed to break stones for the building of Liverpool Cathedral were asked by a visitor what they were doing. One replied that he was "earning ten bob a day"; the second that he was "breakin' stones: ain't yer got eyes?" The last replied that he was "helping to build a Cathedral." Three men with the same job, but only one had the vision to see what he was really doing.

If everyone in A.E.R.E. has that wider vision we need have no fears about the future, under whatever authority or department it may be set. In that much the cartoonist is certainly right; the future is ours! Let us go to it, and see that our future under the Authority is the best we can make it.

# As others see us —and as we see ourselves

## “STAFF MOVEMENTS”

So they've posted me? Ah well . . .  
Great Scott! It's to Harwell!  
To look after physicists' wealth!  
T'would be most unattractive  
If radio-active  
Emissions affected my health!

The Philosopher's Stone  
Used to be quite a bone  
When Gold Standards were standards in Christendom  
But our base cupro-nickel  
Might be even more fickle  
From a crank who inhabits a Nissen room.

I shall pay out these geezers  
With pantograph tweezers  
And check up the till with a Geiger,  
Lest I witness the cash  
Disappear in a flash  
Leaving naught but the smile of the tiger!

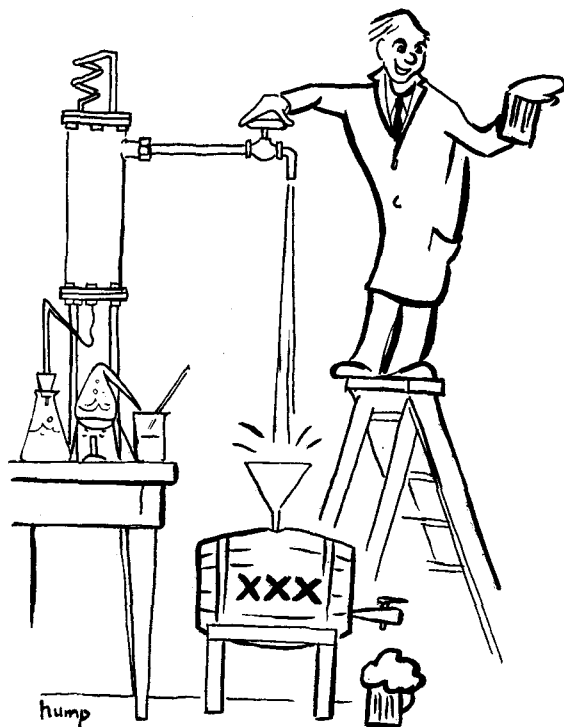
ERIC HALFPENNY

(From "The Dark Horse"—Magazine of Lloyds Bank Ltd.)

In a report (A.E.C.U.-2900) which has just arrived on a reactor conference held at Oak Ridge recently, is a paper on "European reactor projects", in which A. M. Weinberg comments (p. 179) that "Incidentally Harwell is the only nuclear energy laboratory I have seen anywhere which has a fully licensed bar."

Dad. "What kind of work are you going to do when you grow up?"

John (aged 6) "I'm not going to work. I'll go to Harwell with you."



One of the entries for the Cartoon Competition:  
others will be found on later pages; the winning  
entry, by P. J. Mulford is on page 38

## Have you found any mistakes yet?

Prizes of 1 guinea, half a guinea and book tokens are offered for the finding of deliberate mistakes in the advertisements in this issue. Start looking! For further details see page 42.

Don't forget the lucky number on the back cover. Winners will be announced in the A.E.R.E. News in due course.



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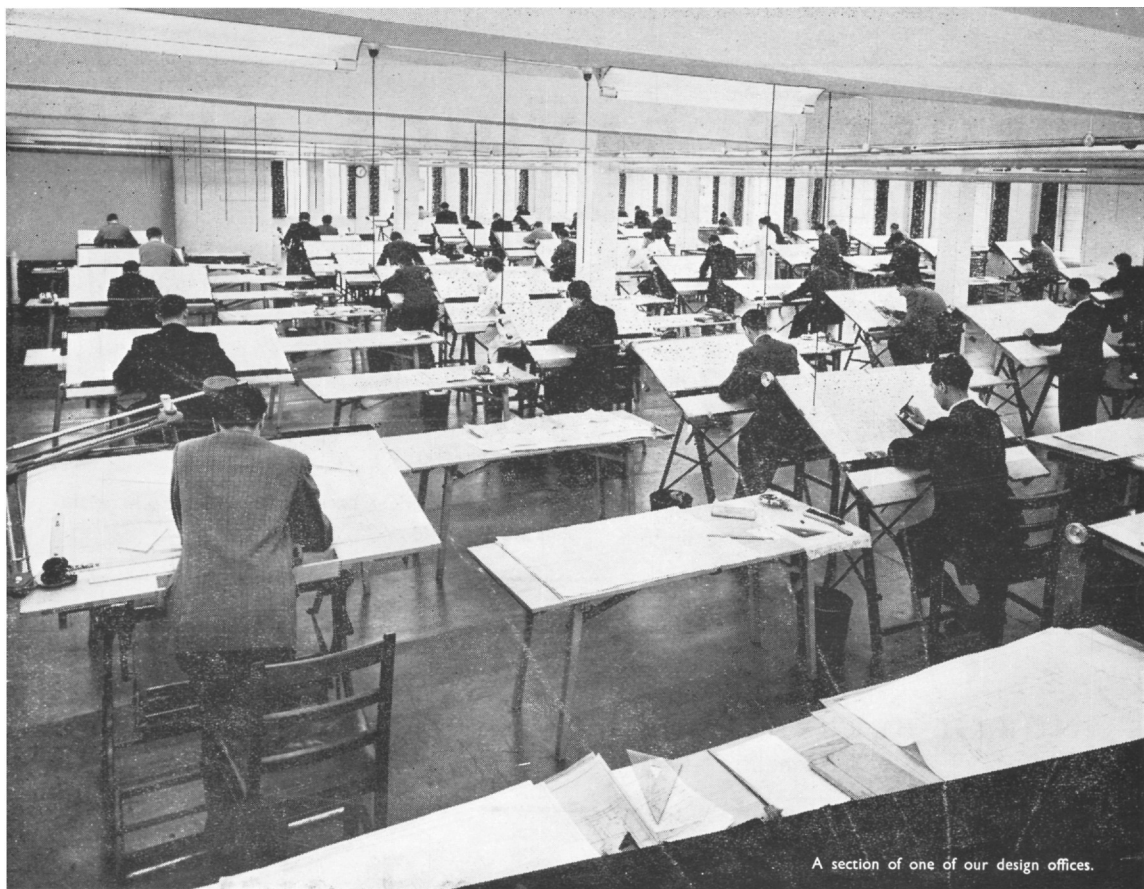
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*Details of Fees, Time Tables, Enrolment, etc. will be found in the Prospectus, obtainable free from the end of August at the Abingdon Public Library, the Education and Training Officer, Harwell, or the Abingdon Further Education Office, Boxhill School, Abingdon (Telephone Abingdon 1062).*



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# THOSE WERE THE DAYS

*Part III (Conclusion)*

By D. R. WILLSON



ON the 1st January, 1948 the staff of A.E.R.E. were delighted to see in the New Year's Honours List that a knighthood had been conferred on the Director. The news spread rapidly round the site and congratulations poured into the Director's Office. During the previous year, the Establishment had increased greatly in complexity as well as in size, and the first Steering Committee of 1948 started a systematic review of the entire programme of work, and of the allocation of staff among the formidable number of projects. The workshop and design office arrangements were also discussed, and it was decided to supplement the main workshop in Hangar 9 with a number of divisional workshops to give more direct support to the laboratories. The Safety Committee was formed during this month under the watchful eye of the Chief Engineer, to co-ordinate and control safety measures throughout the Establishment. The Fitzharry's estate at Abingdon was by now largely occupied, and on the Wantage estate a number of steel houses to the B.I.S.F. design were being erected (for the sake of speed) in advance of the brick ones. The first fourteen steel houses were completed and allocated in January. In Abingdon, we had bought Fellows Close for conversion into a hostel to supplement the A.E.R.E site hostels, and we were already negotiating for Cosensers House in the grounds of Abingdon Abbey.

Up to this time, the 'bus service between A.E.R.E and Didcot had been operated by the establishment, but on the 11th January, the "White's Special" made its last run and this route was taken over by the City of Oxford Motor Services. The Black Beetle Canteen on

the site, opened in 1947, was already seriously congested and a third sitting for lunch had to be started. All the indoor and outdoor clubs of the Recreational Association were being strongly supported and two new ones started up this month—the billiards club and the car club. On the 26th January, Sir Ben Lockspeiser who was visiting the Establishment, gave an evening music recital with Holoubek and Kuchemann in Ridgeway House. Early in February the Caledonian Society held its first social evening and elected Dr. Cockburn as its President, Harry Atkinson providing piping for the eightsome reels.

A series of five lectures on Atomic Energy was given in Abingdon during February by senior members of the Harwell staff. They were similar to the lectures given the previous year in Didcot, and which had proved so successful. For Harwell staff and their families, the A.E.R.E Cinema was able to show the film "Atomic Physics" on the history and development of Atomic Energy. There was a great demand for admission tickets and extra showings had to be arranged. At the end of February the Dramatic Society presented Bernard Shaw's "Misalliance"; the performance was excellent in spite of the primitive state of affairs that still existed backstage in the gymnasium, and although the temperature was little higher than in the refrigerated early days of 1947, the audience soon warmed up to the play.

On the site itself, the graphite core of the BEPO pile was complete and double shifts were being worked on the remaining engineering construction. About this time, expressions of acute anxiety appeared on the faces of those responsible for producing the uranium charge ;



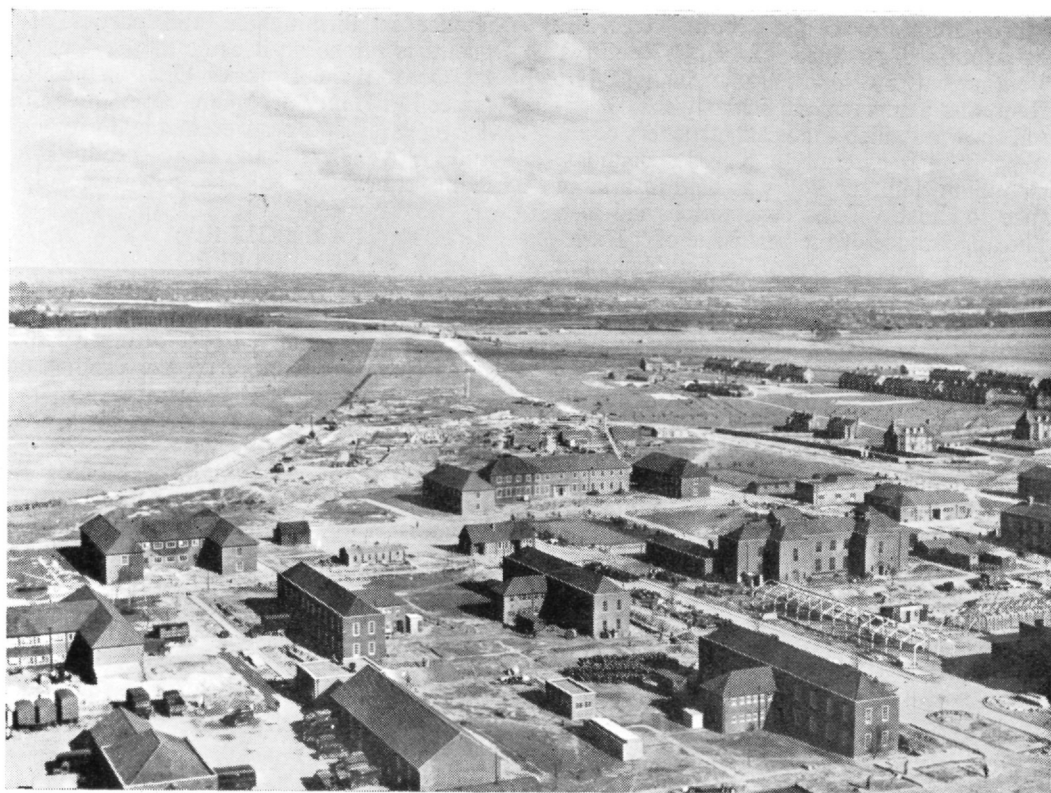
*Construction of weir for effluent outfall at Sutton Courtenay, Feb. 1948*

*(Crown Copyright Reserved)*

serious snags had arisen in its production and doubts were felt on whether the pile could start on the planned date. The pile physicists and engineers were undeterred, and evolved a detailed programme for the start of operations. Dr. Lewis visited us from Chalk River and reported that in spite of many delays the NRX pile there had now started and was running well on low power. At Harwell the monthly total of isotope irradiations in GLEEP had passed the hundred mark. The physicists operated their 4 MeV linear accelerator for the first time in March. Erection of the cyclotron magnet in Hangar 7 had commenced in February, and by the end of March over four hundred tons of steel were in position out of the total of six hundred and seventy tons. Another large magnet for the main electromagnetic isotope separator was being erected in Hangar 7 at the same time. The radioactive chemical laboratory (Building 220) was up to ground floor ceiling level and work had been started on Building 353 for the chemical engineers who were beginning to return from Canada. A large active chemical engineering laboratory (Building 351) was planned for construction later.

The idea of taking into Harwell a number of vacation students from Universities was discussed, and plans laid for the first batch to come in the summer of 1948. The number of committees on the site was found to have grown to more than thirty, and some drastic pruning was done. One sadly reflects that, as in horticulture, this merely strengthened subsequent sprouting. The "Atomic Train" exhibition organised by the Atomic Scientists Association visited Oxford in March and Reading in April, and attracted a good deal of attention.

Local transport facilities were still inadequate for our needs, and on the 11th April Harwellians welcomed an hourly 'bus service to Oxford and Newbury from the site—the previous ration had been one 'bus every two hours. On Good Friday the new swings were opened on our children's playground—the children's delight was matched by that of the keener gardening fathers, who felt that the hazards facing their exhibition specimens had hereby been reduced. Schooling arrangements were still a problem, and after discussion with the Director of Education, Berkshire, a site at Chilton was selected



*A.E.R.E. Site looking North, Feb. 1948*

*(Crown Copyright Reserved)*

for a new primary school. On 17th April a presentation was made in the Social Club to two founder-members of the Recreational Association who were departing—John Fisher to Canada and Sandy Milne to Croydon. These two had played a major part in building the Association, and their departures were keenly felt.

On May 7th the first Caledonian Ball was held in Ridgeway House and on the 12th and 13th the Dramatic Society gave an excellent performance of "Saloon Bar" with Peter Stewart in the leading role. The total pay-roll on the site was now approaching 2,000, and canteen facilities were again overloaded in spite of three lunch sittings in the Black Beetle and extra lunch services in Ridgeway and Icknield Way House. A new contractor's canteen was therefore planned on the west side so that Building 150 could be freed to become the main A.E.R.E. Canteen. There were many complaints about lack of co-ordination of the 'bus timetables to Didcot with train arrivals and departures, and shopping requirements. The problem proved so difficult that it was officially handed to the A.E.R.E. mathematicians in the Theore-

tical Physics Division to solve. This method of attack helped to improve matters later in the year, but perfection was of course unattainable.

The structure and equipment of BEPO was now complete and undergoing acceptance tests. Enough of the uranium charge to start the pile had been finished in spite of the snags, and on the 2nd June loading of metal into the pile started with a very informal ceremony, at which the Director and others concerned with the BEPO project each pushed in a uranium slug. During this month the British Railways, the Home Office and the Ministry of Civil Aviation visited Harwell to discuss isotope transport arrangements, and some postal deliveries of isotopes were started.

On the 3rd July, a number of senior visitors came to Harwell to witness the start-up of BEPO. All went well though some alarm was observed among the uninitiated when the automatic trip sent the safety rods in with a bang. Britain's second pile could now operate on low power. Many of those who had had such an anxious time during the later stages of its construction were able to celebrate with a dinner in Ridgeway House on 16th July, and then to



turn their attention to the second A.E.R.E. Annual Sports Day, held on the 17th July. The weather was much worse than in 1947, but the event was a success, particularly the Horticultural show at which the keen gardeners could now display their carefully-nurtured specimens. A Caledonian Summer Ball was held in a large marquee to finish off the day, which had also seen the appearance of the first issue of "Harlequin." By this time the size of the Establishment had made it difficult for recent recruits to know much of what went on outside their own laboratories. An Open Day was therefore arranged at which parties of junior staff could make a tour of the entire Establishment. Its success led to the later introduction of the Saturday Divisional Open Days at which wives and close relatives could visit the site. A notable newcomer in August was Mr. R. G. Elkington who joined us as the first Secretary of A.E.R.E.

The Establishment had by now firmly established its reputation as a scientific research centre, and we were getting many distinguished visitors. In September, many members of A.E.R.E. took part in a Nuclear Physics Con-

ference in Birmingham and parties of other scientists attending it came to the site. On the 1st October the Isotopes Division was formed under Dr. Henry Seligman. Over three hundred deliveries of isotopes were made during October and November, and their production was being transferred to the new pile.

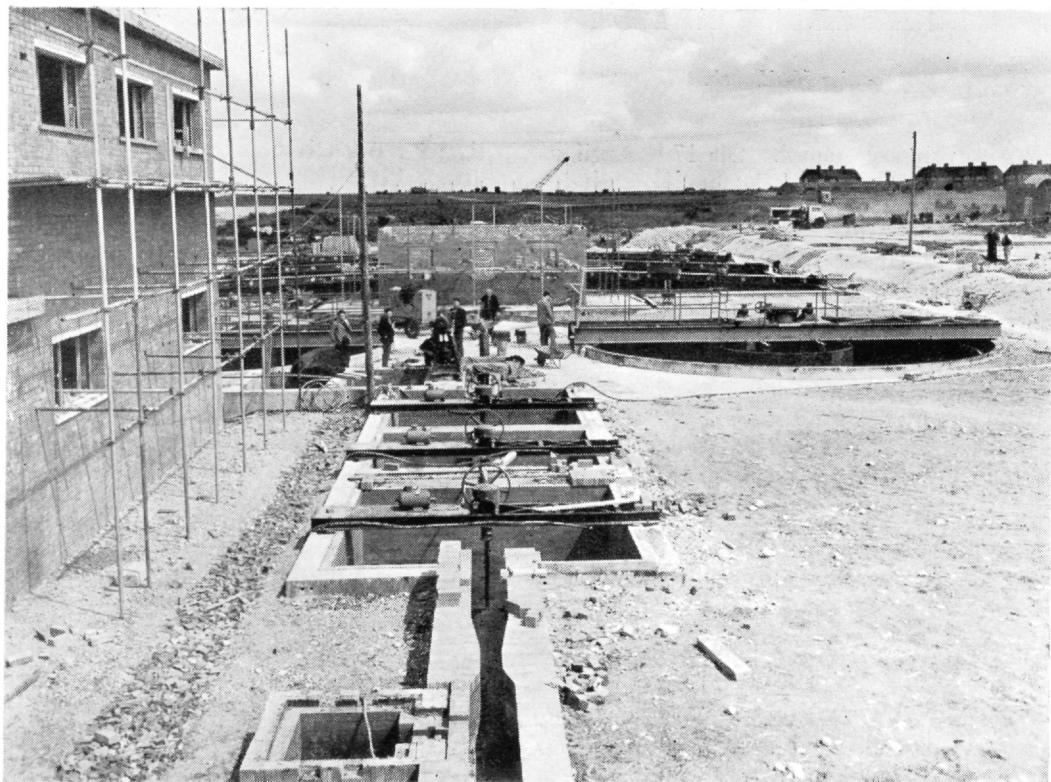
"Weep  
for the GLEEP  
Now that BEPO  
Of isotopes is the depot."

(H. W. B. Skinner)

An A.E.R.E. team visited Göttingen University in Germany to lecture on the production and use of radioisotopes. September also saw the opening of the Nursery School at A.E.R.E. in the capable hands of Miss Harrison.

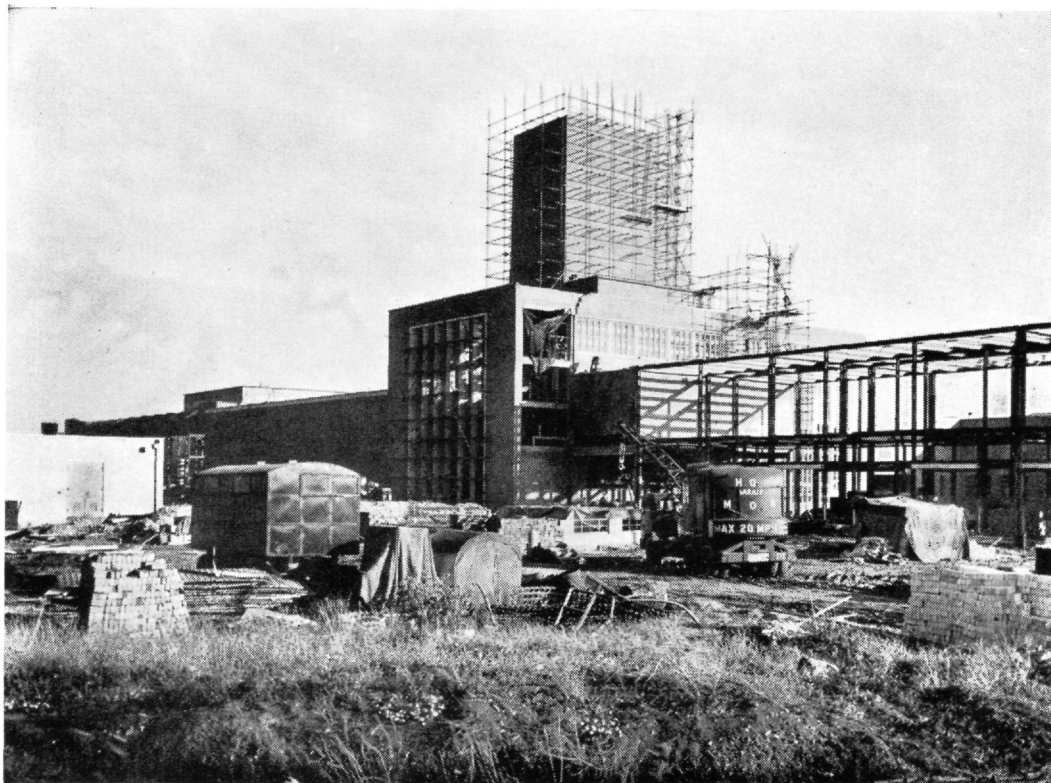
The building programme was going steadily forward and the engineers proudly moved into the west wing of their "palace" in Building 329; countering envious comments from the less well-housed staff by stoutly maintaining that for its size and type of construction it had been the cheapest building on the site!

Standard hutting accommodation was now



*Effluent Treatment Plant, June 1948*

(Crown Copyright Reserved)



*Radioactive Chemistry Laboratory (Building 220), Nov. 1948*

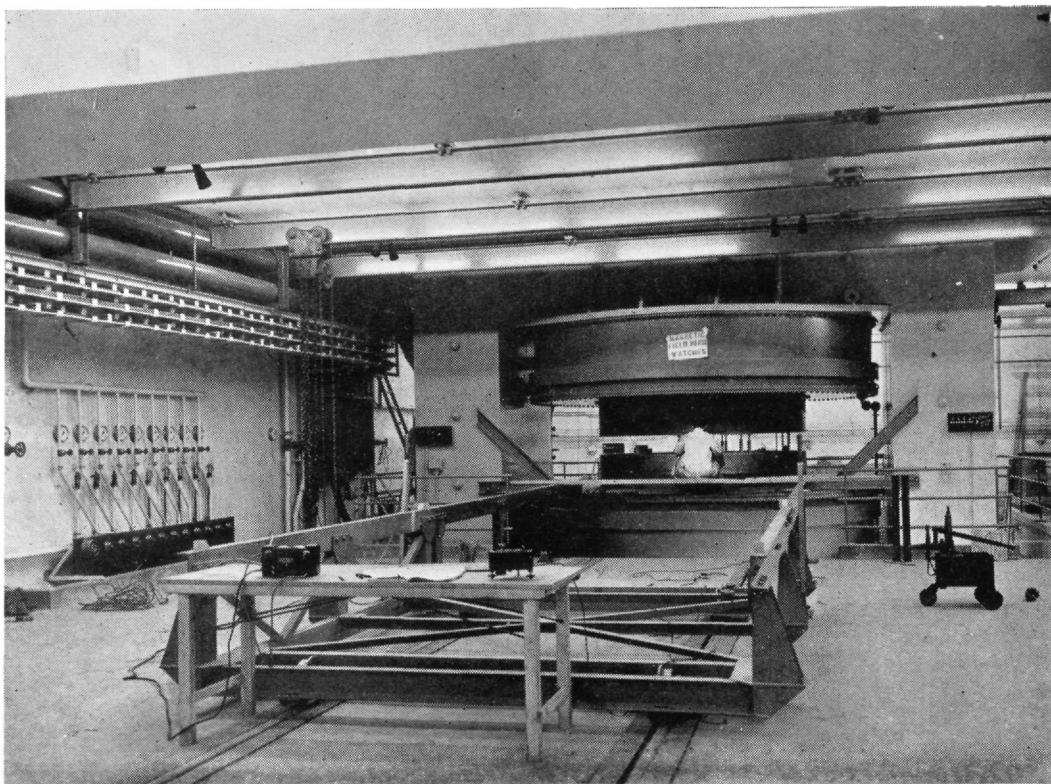
*(Crown Copyright Reserved)*

ready for the Health Division, the M.R.C. Unit and the Photographic Group as well as for the Electronics Group which transferred from Malvern to Harwell on the 30th September. The BEPO pile was running well but a continuous whine from the exhaust system was causing badly frayed nerves on the site. Since it could frequently be heard by visitors on arrival at Didcot Station, and was as loud by night as by day, the effects on the residents of the Aldfield Farm Housing Estate can well be imagined. In November, they petitioned the Director, asking if anyone really cared whether they retained their sanity or not. The Pile Engineers were, however, by no means indifferent to this menace and they had already called in the assistance of acoustic experts from the National Physics Laboratory. This help was extremely effective and in a comparatively short space of time the noise had disappeared, to the great relief of all concerned. At the end of October the Dramatic Club had presented "Murder without Crime" for three nights instead of the usual two. During November the B.B.C sent a recording unit to A.E.R.E for

the "Down Your Way" programme; the subsequent broadcast showed an astonishing variety of musical taste among our staff. In December a Christmas Bazaar was followed by two concerts given by John Tennison's Orchestra to raise funds for the Children's Parties which were held on the 17th and 18th of the month. The second issue of "Harlequin" appeared and sold well.

The Health Physics Division was formed this month under Dr. Marley to centralise all work on radiation hazard control, which had become a complex business with the many active laboratories operating and the large staff. The cyclotron and the main electromagnetic isotope separator were approaching completion, although they did not operate until 1949. It was decided to improve the Sick Bay facilities by converting one of the South Drive houses.

The year ended with no fewer than three New Year's Eve Dances—a Rugger Club Ball in Ridgeway House, an Icknield Way House Dance and the Caledonians celebrating after their own fashion in the Social Club. The occasion marked, perhaps, the end of the first



*Cyclotron Magnet and Coil Assembly, Dec. 1948*

*(Crown Copyright Reserved)*

stage in the development of A.E.R.E. In its first three years, Harwell had changed from an R.A.F. airfield into one of the country's greatest research establishments. Most of the projects originally conceived for it were complete or nearly so ; both its piles and several particle accelerators were operating ; a large programme of research and development was under way. Much work had still to be done, particularly by the chemists, chemical engineers and metallurgists, before we could supply our colleagues at Risley with all the data they needed for constructing and operating their factories. But already an appreciable effort was being devoted at Harwell to the theoretical and technological problems of reactors for producing useful power. It was, moreover, clear that this part of the project would steadily demand a greater proportion of our available effort.

A.E.R.E. has grown and changed, since the end of 1948 ; but the process has been essentially

different from that of the early years to which we have looked back in these pages with amusement, some pride, and occasional astonishment. Could those muffled and booted figures in early 1947 really have been ourselves, squelching in mud, slipping on ice, circumnavigating the trenches, tripping over constructional debris as we pushed the work forward in unfinished laboratories ? Can we still recall the unlovely atmosphere of tobacco smoke mingled with effluvia from the paraffin stoves faintly warming our primitive offices ? Our cars were short of petrol (if we were lucky enough to have them running at all) ; our plates were short of meat ; our wives exchanged our children's clothes to save precious coupons. Yet who cannot also recall the boundless enthusiasm which made it all worth while, the sense of founding and building something to endure. These were the days, indeed. But what of the present, and the days yet to come ?

#### IN THE WORDS OF THE COUNCIL

In a recent newspaper headline, I read that a town council had been discussing the "dethirtification" of a stretch of by-pass road. No doubt the next thing will

be that the Home Guard ask to have the road fortified.

Another local council, just before the 1939 war, approved the "deratization" of the parish hall. It  
*continued at foot of next page*



# Roll out the Barrel

By R.O.T.

SINCE our comparative failure with the atomic powered railway engine, we have turned to less dangerous activities and, after a first successful demonstration, we can announce with some pride the perfection of the Alcohol Bomb.

As with most great discoveries, the constituents of the bomb are very simple, the main ingredients being alcohol and heavy water, with malt as a catalyst; the proportions only being a secret. It was in fact a pure accident that started us on this line of research: the only vessel we could find large enough to hold our stock of heavy water was a barrel which, we later discovered, had originally been a 'Returned Empty' on its way back to the brewers but had somehow become sidetracked. Anyhow, there it was, and we duly filled it with our heavy water, only to discover that 'Returned Empty' should have been 'Returned Half-empty.' Naturally we were not a little annoyed at the waste of precious liquid; if we had realised the position earlier we could have arranged to empty the barrel first, but as it was, the mixture was most unpalatable. The obvious thing to be done was to distil the contents of the barrel and recover what was lost in whatever strength could be obtained, and this was begun.

The first inkling we had that something strange was in the wind was when Fettermere, I think it was, came in one day and asked whose idea it had been to put a purple frog in charge of the still. This sounded like one of his leg-pulls, but when we went to look sure enough there it was, though it wasn't a frog at all but a lizard, and striped like a barber's pole. This was certainly outside the usual run of Process Worker, and I wondered vaguely what the Unions might say if they found out, let alone the R.S.P.C.A., but tea was due about then and we adjourned to discuss the matter.

Though we did not realise it, symptom number two had developed: none of us wanted tea

but all of us felt a strange desire for coffee, hot, strong and black, and this in the afternoon too.

"I've got it" announced Fettermere a good deal later, "it's that stuff in the still having some sort of effect on us. I'll bet that frog wasn't there at all." Mentally substituting my lizard for his frog, I considered his statement. It was a sobering thought, and tea suddenly became attractive again. "You know I believe Fettermere is right," I said, "and if he is, the possibilities are enormous. If we could make a bomb on the lines of the Hydrogen Bomb it would be the most humane and effective weapon ever." "It would certainly put the pubs out of business," said Fettermere reflectively—his father was frightened by a barmaid before he was born—and the seed of the idea was already sown.

Months later, bleary eyed and thick headed, we assembled in the grey dawn of the airfield at Middle Wallop and watched the first Alcohol Bomb being loaded into a waiting bomber. Appropriately we had used for the container the barrel that had first started the whole business. The crew were briefed; the licence for the movement of intoxicating liquors was in order, and all was finally ready. "Time, gentlemen," said someone, and, a trifle unsteadily, the plane moved off down the runway.

Hours afterwards we knew the success of our efforts. There could be only one testing ground for such a weapon, and so it was we learned the result: every living soul in Burton-on-Trent was completely immobilised, while for twenty-five miles around people were suffering from hangovers in varying degrees. All this without damage to a single building.

Now, having handed over the blueprints to the Commissioners of Customs and Excise, we are considering what our next line of research should be. Incidentally, rumours of a Vodka Bomb test are completely unfounded.

was only afterwards that it was found that half the councillors thought that they were voting for the exemption of the building from rates, while the rest had visions of the local rats being exterminated.

It was in south-east Lancashire that a local authority decided, about 1932, to build a by-pass road in order to provide work for the borough's large pool of unemployed. A deep cutting had to be made through a hill, and it was suggested that bulldozers be used.

This drew horrified criticism from several councillors, that it would take work out of honest men's hands, &c. &c., and no agreement was reached until one councillor pointed out that spades and pick-axes took work out of honest men's hands too; could not the number of men on the project be substantially increased by giving them children's wooden spades and pails?

There ought to be a moral in this for the Civil Service, if only I could see it. D.J.B.

# CHARTRES AND THE LOIRE VALLEY

By G. C. ASHWORTH

**T**HERE are many ways of reaching the Loire Valley, most of them easy. You and your car—says one of the motoring monthlies—can fly to Le Touquet in 18 minutes and be in the Chateau country in next to no time. You can take the 90 minute short sea route and head south westwards on your push bike. On a recent sketching tour I tried a third way; I went by air to Paris, on to Chartres by train and thereafter covered most of the Loire Valley by local bus and coach services from two centres—Blois and Tours.

I suppose the great majority of tourists spend 2 or 3 days at most in exploring this delightful region and possibly an odd afternoon in Chartres. In the nature of things my holiday was a more leisurely affair. The first few days were spent in Chartres, mainly sketching, and during the remaining 10 days or so I was in and around all manner of chateaux, from the 10th century stronghold of Langeais to elegant residences built in the 17th and 18th centuries. Some were handy, others remote.

With the exception of Versailles and Fontainebleau, it is probable that Chartres—some 50 miles south-west of Paris,—is the most visited town in France. From the 4th century it has been a spiritual centre and its Cathedral, built by farming folk during the first half of the 13th century, is the greatest architectural glory in the whole of the country.

All the cathedrals in Northern France have some outstanding feature. At Chartres, the windows are the greatest treasure and have made the Cathedral world famous. They are amongst the earliest surviving examples of Gothic stained glass and are also the best. To the men who created them 700 years ago, colour was everything and they used it with brilliance and daring. Blue, red and gold in scores of subtle hues rule the 170 windows and the exquisite blue "Rose Nord" is perhaps the richest gem of all.

From Chartres, I travelled to Blois by local bus. Standards differ rather from our own "Green Line" services and there is no nonsense as to what can and what cannot be carried

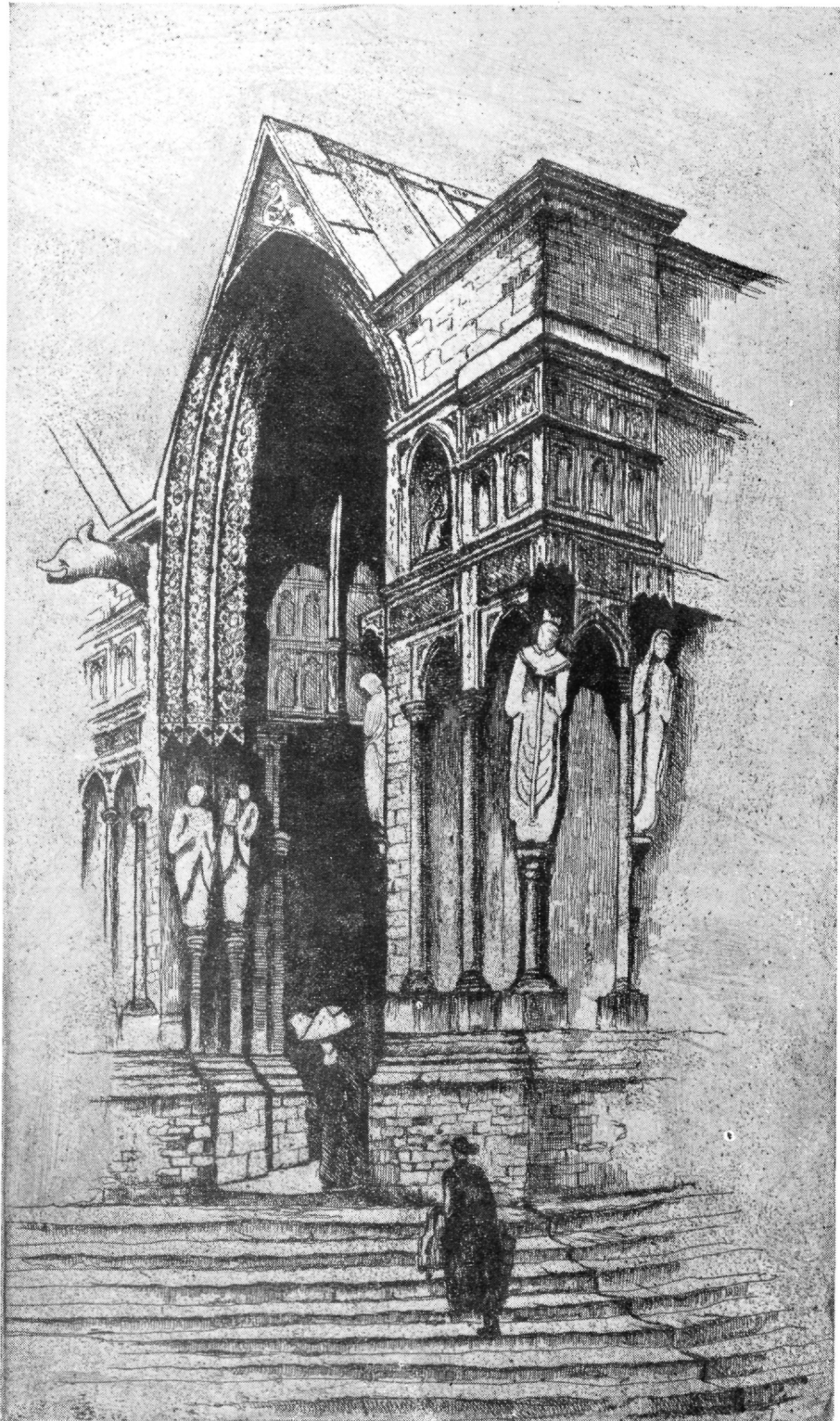
as personal baggage on these country routes; a sack of live fowls or a bedstead, it's all the same.

Blois marks the beginning of the Loire chateaux region proper. Apart from having a chateau of its own, it is an attractive peaceful town and a grand centre for visits to Beaugard, Chaumont, Chambord and Cheverny. Further west, one might easily skip Tours except that it is extremely central for visits to Amboise, Chenonceau, Langeais, Usse, Chinon, Loches and Azay-le-rideau.

These castles range over widely different periods. Many were built when the Court of France was resident in the Loire Valley, that is, from the mid-15th to the mid-16th century. This was an age of intense intellectual and artistic activity—the Renaissance period—and so far as French architecture of that time is concerned, there is ample proof of the manner in which it was influenced by Italy in general and Florence in particular.

There is little point here in giving guide book chapter and verse on this or that chateau. Some will appeal more than others. To me, Azay-le-rideau is the pearl of them all. Surrounded entirely by water, it is purely a residential palace with only a semblance of military ornamentation. Chinon—half fortress, half castle—is now little more than a ruin with a dramatic history. It was here where Jeanne d'Arc, after the long journey from Vancouleurs, found her King. Beaugard, small and comprising little more than a gallery connecting two pavilions is a delightful place in the classical tradition. And so on; the great castles of Chaumont and Chenonceaux, the manor houses of La Possonnerie.

I began by saying that it was easy for the traveller from Britain to reach the Loire. I will end on the same note and just add that if you can visit the district in the autumn, so much the better. The crowds have gone, the days are balmy and the buildings look mellow and serene; and in the countryside it is fun to stop for a word with the peasants working like beavers on the vine harvest.



*North Door, Chartres*

*G. C. Ashworth*



# SPECIAL EFFECTS

By D. PANTALL

**W**E set out, a coachload of Camera Club members and friends on a raw, misty February morning to visit the Technicolor factory, near London Airport. The occasion was of one of our regular Club outings.

The man who greeted us on arrival provided a contrast to the weather outside. His well tanned complexion indicated that he thought English winters were best spent in sunny parts abroad. Our first visit was to the camera overhaul section to which all cameras in the film studios return for checking every night. The first "camera" we saw resembled a giant box camera about four feet cube and needed a strong trolley to move it. However this proved to be a soundproof box into which the actual camera is put. On a bench lay a partially dismantled camera, giving the "experts" of the party their chance to fire numerous technical questions at the technicians:—"How is the light split up?", "What is the lens?", "How is the prism made?", "How many Technicolor cameras are there?", "How much does a camera cost?". The answer, "Running into many thousands of pounds," to the latter question made us decide that perhaps it was just as well Technicolor checked the cameras every night and only hired the eighteen there are in this country, with their operators, to the film studios.

Although Technicolor do not make films they do have a small experimental studio, and it was here that we saw titles for a colour film being photographed against a brilliant background of velvet and satin. After each one the film was wound back for several frames, this being part of the process of fading one title into another. A few yards away we saw the shooting of a film in 3D. I think not a few of us were disappointed, or at least disillusioned, to find the magic camera merely consisting of two perfectly ordinary cameras facing each other, with prisms between to turn the incoming light through a right angle into each camera lens. This is because lenses have to be effectively the same distance apart as the human eyes.

Moving on from the studio came the first confirmation that films are not always what they seem to be. In a 'before' and 'after' demonstration of special effects, we saw 'Background Projection' turn an airstrip into a

medieval courtyard and Falmouth Bay into a South Sea Island Lagoon (for 'Treasure Island'). After getting over our disillusionment we could not help admitting the skill with which this was done. On their own merits the paintings of background scenes were superb in quality.

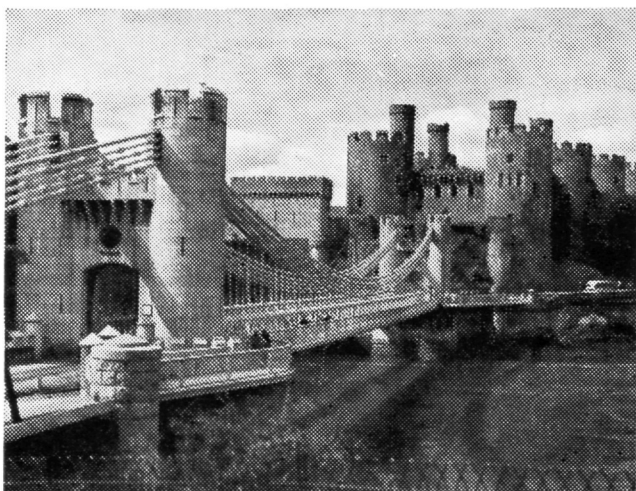
To be quite honest it must be admitted that the strongest recollection of some members was not the lenses, not the film details, not the photographic tricks, but the free lunch. Suffice to say that there was no Special Effect about this except that it was in keeping with the best traditions of the Glorious Technicolor films.

Feeling very satisfied with ourselves we piled into the coach and set off again following our guides' Bentley through the winding lanes of the Middlesex countryside to the Pinewood Film Studios. Here an ex-R.M.S. took charge and without delay started a patter that had obviously stood the test of time: "This green field was where 'Great Expectations' was filmed," "This rusty old tank was the swimming pool for 'Encore'" etc. In front of us towered huge hangar like buildings—the film studios themselves where we saw sets of 'Malta Story' and 'Hell Below Zero.' Of the former the most interesting scene was a number of aeroplane models, suspended on thin wires in front of a huge painted backcloth representing the sky. With the aid of these models were shot the aerial dog-fight scenes that looked so convincing in the finished film. Other sets ranged from bathroom and bedroom scenes to a full size replica of a whale factory ship. The latter was mounted upon a sectional platform which could be rocked to reproduce the motion of the sea. Turning a corner we found ourselves in the ships hold where we soon discovered that the apparently staunch supporting stanchions were not as metallic as they looked. The realism achieved is a great tribute to the skill of carpenters, plasterers and painters whose products looked so convincing. In the plasterers shop itself, every conceivable thing was reproduced in plaster from ships engine rooms to Venus De Milo.

Our visit concluded with tea in the studio restaurant. After making sure the cakes were real, and the tea genuine, we thanked our hosts for a most enjoyable day, and took our leave.

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# THE CHANGING FACE OF HARWELL

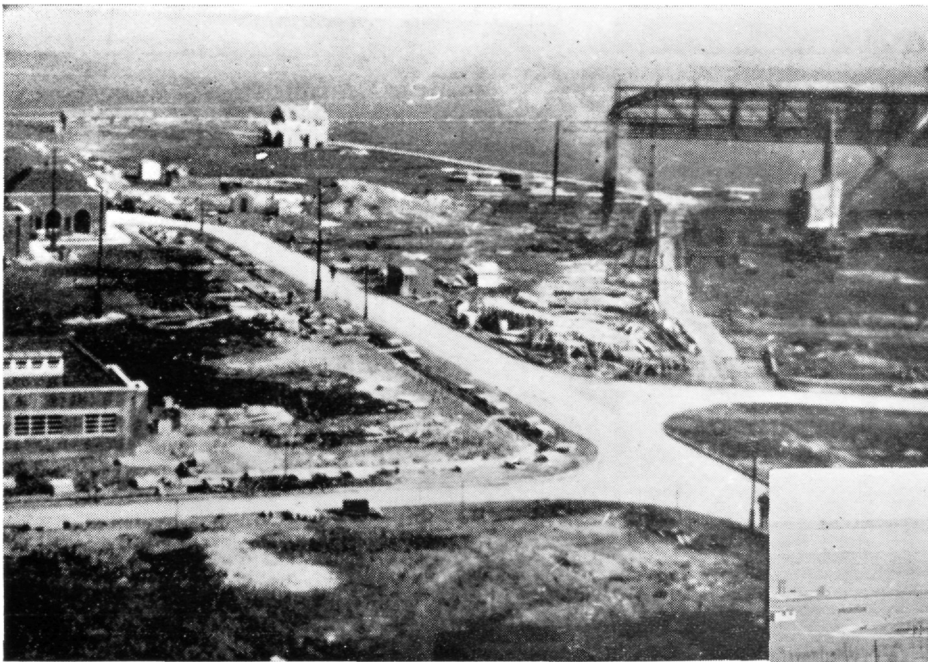


Photo: F. A. Broderick



1. Harwell under Construction 1935, showing the beginnings of the girder structure of Hangar 7. Note the cottage in the background.



Crown Copyright Reserved



3. Harwell in the present. The new West front of Hangar 7 has risen, presenting an imposing appearance, and the garages on its right have become laboratories.



Crown Copyright Reserved



These three photographs taken from the same vantage point, the top of tower, show the changes which have taken place in the Hangar 7 area over the last nearly twenty years; other parts of the site have changed as much. Can we guess what changes another twenty years will bring?



2. In the days of the hangar is building 30 can be right fore-g cottage has





# VIC HITCHMAN

By CYRIL ROBINSON

**I**F you want to know the time, ask a policeman, any policeman ! But if it's the old time that you want to know about, then you must be more particular, and Vic Hitchman is the policeman to ask. For Vic has made the study of local lore one of his chief pastimes and remembers many of the stories of Harwell as it was ; as he heard them from his father and grandfather when he was young.

Vic calls himself a tabby-cat, not a very exclusive name, for anyone born in Harwell can claim the same. It's just a relic of sporting rivalry between the local villages. He was born just after the turn of the century, in a thatched cottage which still stands close to the Chequers. It is in character that not even his first appearance could be without excitement, for the midwife's constant cry of " Hot water, I must have hot water," set the chimney on fire ! This love of flamboyance still remains, as his chuckle, bursting explosively from the back of his throat will testify.

Harwell life in those days was extremely placid, and nothing disturbed the early years. Hero worship of the village footballers, occasional cattle drives down to the railway, a raid on a cherry orchard, these were the pastimes of a country boy of the time. Then, on leaving school, he went to the farm, to follow the plough until he was 18.

The stories that he had heard from his father had often told of life in the Army, and so, as soon as he was old enough, Vic was away down to Reading, to join the Royal Berkshire Regiment. After a few months at Reading, learning the rudiments of his new career, Private Hitchman, V., was posted to the 2nd Battalion at Shorncliffe and soon was on his way overseas. It was about this time that his interest in

sketching began to develop, and in most of his letters home were illustrations of the Tabby Cat's doings. Rifle drill, gun drill, route marches or overseeing the Pyramids, all were drawn with the Tabby with a Cheshire cat's grin somewhere in the picture.

Cats, of course, always land on their feet, or nearly always, but on one occasion this one didn't. In 1935, the regiment was stationed at Port Said, near enough to Abbysinia to feel that sanctions were not sufficient, and that a real soldier's war was required to restrain Italian aggressiveness. Or, at least, two members of the Regiment felt that way. The presence in the harbour of a Caique, flying the Italian flag, and the Dutch courage from a few tots of rum intensified the feeling. Boarding was a matter of seconds only, and none of the Arab crew gave the alarm. Vic and his mate jumped for the rigging, intending to haul down the offending flag. The climb was easy, to cut the flag loose and stuff it in a pocket was easier, and the descent was easiest of all. A length of rope hung from the yardarm, and to slide down it was the obvious way of reaching the deck. Unhappily the rope was only draped over the yardarm, and the controlled slide was, in fact, a headlong plunge to the deck, thirty feet below, into the arms of the crew, and a night in an Egyptian prison.

The war found Vic in India, but, in 1943, after 9 years abroad, he returned home, was transferred to R.E.M.E. and was stationed as an armourer sergeant at Didcot.

His time with the colours expired very soon after Harwell became a NAME as the centre of Atomic Research, and Vic was one of the first of the W.D.C. to be stationed here.

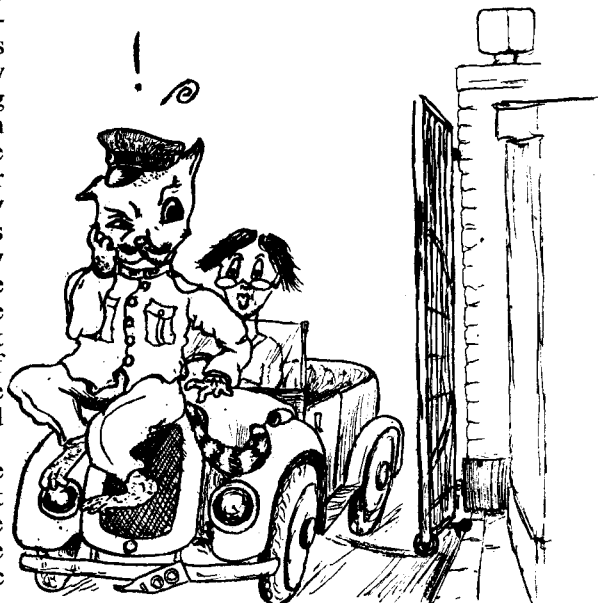
In those days the job of a policeman was none too easy. While Standing Orders were to keep

strangers out of the site, the security fence had not been erected, and the gates formed fenced oases in wide open spaces. These conditions of course gave rise to the stories of scientific correspondents of our national dailies, sneaking in through "gaps in the fence."

A policeman's lot is a fairly happy one. Most people try to co-operate though sometimes they find that the physical conditions prevent it. The scene of the sketch, drawn by Vic himself really happened. A sweet young thing, driving into the site one evening when most people were going home, found Vic on the gate occupied with outgoing traffic. However she coasted gently onwards and eventually found the target of a pair of navy blue trousers far too tempting. With dexterity probably born of long practice she picked him up on the bonnet and slid him, seated astride, as far as the wind screen. When gently chided, in the best Army manner, she apologised for the state of her brakes. Incidentally the car was a bullnose Morris Cowley, so perhaps the car was tempted rather than the driver.

Vic was one of the founder members of the Art Society, and one would have thought that he would have been a model member of the Camera Club as well, but since appearing in the Pathe Gazette Film of Harwell his photogenic properties seem to have been ignored.

Since the demise of the Art Society, his sketching and woodcarving are done by his own fireside, thinking, perhaps a little wistfully of the days when Harwell was just another little village at the foot of the Downs.



*As an example of some of the local lore mentioned above, we print*

## The Tale of the Phantom Chaise

Most famous of all Berkshire tales  
Surviving from bygone days,  
Told far and wide on the bleak downside  
Is the Tale of the Phantom Chaise.

This story has been handed down  
Since the reign of good Queen Anne ;  
Those were the days when the posting chaise,  
And the four-horse Mail Coach ran.

The Gloster, carrying London mails,  
And drawn by a team of bays,  
From the White Horse Vale to Notting Vale  
Outpaced e'en the swiftest Chaise.

T'was winter and the year, we're told,  
Was seventeen hundred and nine ;  
Through a howling gale of rain and hail  
The Gloster was keeping time.

Wantage—Reading, the midnight stage,  
With quarter the journey done,  
Raced with a will down Rowstock Hill  
As the Harwell clocks struck one.

That self same night a youthful pair,  
Eloping from Newbury town,  
With a team of greys and light post chaise,  
Were tearing across the down.

The lover—a cornet of Marlborough's Horse—  
Feared pursuit in the dawn,  
And though the road was bad and the pace was  
mad,  
He shouted the postboys on.

The crash—it came at Rowstock Cross,  
One dashing North, one East,  
'Twas hard to tell in that writhing hell,  
Which was man and which was beast.

The broadside of the Gloster mail  
Had splintered the chaise apart ;  
Its steel-shod pole took a dreadful toll—  
It pierced the maiden's heart.

Still she lay in her lover's arms,  
And never a word he said ;  
He was lifted clear of crumpled gear,  
And they found he, too, was dead.

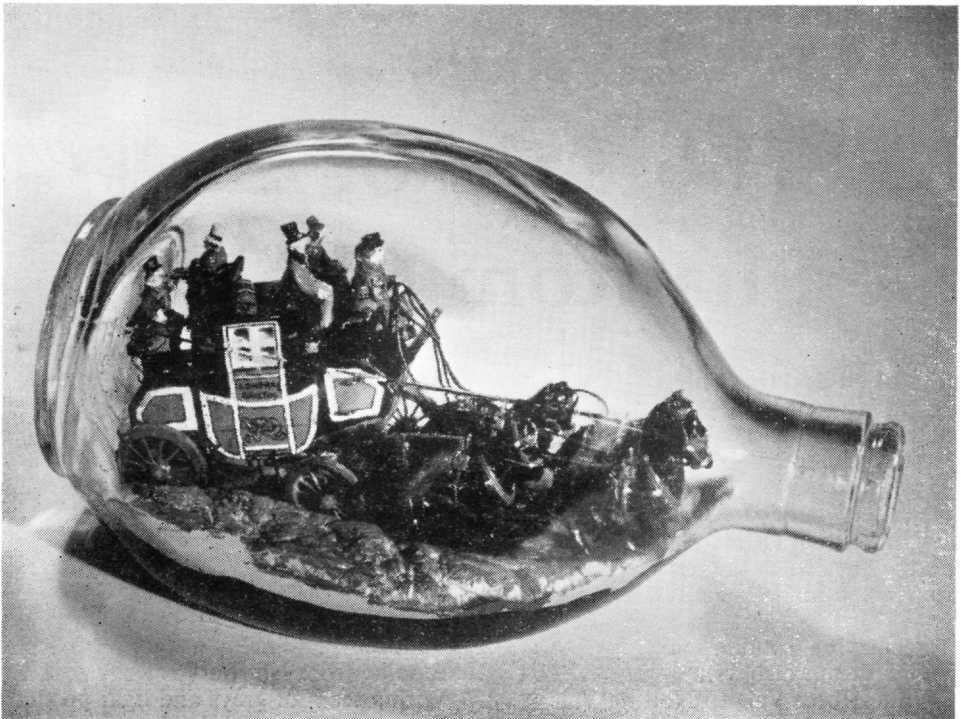
Two hundred winters have come and gone  
Since that night of tragic scene,  
But ever the tale of the Gloster mail  
Bridges the years between.

Stand—if you dare—in Rowstock copse,  
A certain night of the year ;  
At one in the morn you may hear a horn,  
And a strange light will appear.

Then—it may be your beating heart,  
Or was that a muffled cry ?  
As without a sound o'er the frosty ground,  
A phantom chaise glides by.

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*The model below, made by J. M. Hunter of Stores, is of a typical  
'Four Horse Mail Coach', as referred to in the poem above.*





# SAXOPHOBIA

By TAURUS

HAVING had numerous film, radio and television scripts turned down by various moronic producers, it has become obvious to me that the world of canned entertainment is decadent. The Great British Public therefore needs to be encouraged in the art of entertaining itself if it is to regain that inventiveness and mental alertness for which it was so justly famous in the Victorian era. In those days people were compelled to provide their own amusements and this produced a healthy mental outlook which resulted in red plush sofas, gilt mirrors and "Where my caravan has rested," not to mention Oscar Wilde.

By way of a small beginning to my "entertain yourself" campaign, I have (to put it euphemistically) persuaded the Editor to let me say a few words on the art of saxophone playing. For the benefit of those decent types who would hesitate to ask a man bluntly why he chooses to play the saxophone, I shall show by a process of elimination that (with the possible exception of the accordion) the saxophone is the only instrument worth playing. Take the piano, for example; a pianist cannot carry his instrument about with him. This is a disadvantage when attending parties, weddings, funerals etc. Secondly, violinists are shunned by other musicians because they play the melody all the time. This grieves the other boys in the band who would also like a chance to be heard. Thirdly, 'cellists acquire bandy legs. Fourthly, clarinet players, trumpeters, and trombonists dribble on the carpet when practising. Since the saxophone has a U-shaped bend in it, it is difficult for a saxophonist to be a dribbler on carpets unless he plays while standing on his head. Few people do this, except on television.

Since you now wish to go out and buy yourself a saxophone complete with instructions, let me give you a few facts about the instrument. The saxophone was invented by Adolphe Sax, a Belgian who suffered from flatulence. It comes in five sizes; soprano, alto, tenor, baritone and bass—just like people. The two smaller ones (i.e. soprano and alto) produce noises like a factory siren. While practising, I have twice emptied a local factory in the middle of the afternoon; in each case, the management thought it had a strike on its hands and raised wages all round. This is how I happen to be an hon. member of the Boilermakers' Union.

The larger saxophones can be used for blowing magnificent raspberries, but there are cheaper ways of doing this. In any case, it is

obviously more satisfactory to be an hon. member of the Boilermakers' Union than to be a mere blower of raspberries. This therefore reduces our choice to the soprano and alto saxophones. The former, however, generally consists of a straight length of pipe and consequently does not enjoy the non-dribble feature previously mentioned. We are thus led to the conclusion that we should equip ourselves with an alto saxophone.

Having got your instrument, you now wish to play it. Place the smaller end in the mouth and blow. Replace the pictures on the wall and have another bash, with a little less verve this time. If the neighbours complain, blame it on the baby, for people tend to be more tolerant of babies than of saxophones. (If you haven't got a baby, write to me c/o the Editor. I can generally supply ex stock). If however, your next-door neighbour is a foot taller than you, it may be advisable to stuff a duster in the bell of the saxophone. Unfortunately, as well as reducing the volume, this will make it difficult to get the low notes. It is a remarkable fact that saxophone players who have aggressive neighbours are not very good on the low notes.

There are two methods of learning to play the saxophone, or any other instrument for that matter. The first (or old fashioned) method is to open your tutor or instruction book at page 1, and slog away at scales, arpeggios and studies in keys which contain an ever-increasing number of sharps and flats.

You may spend months in this way before you get around to playing "Home sweet Home" in Key C on page 22. The second method is to ignore all tutors, instruction books, and what-have-you and to pick out by trial and error any tune which you fancy, such as Mendelssohn's "Liede ohne Worte." After not more than a week's trial and error, you will be able to play this fairly comfortably and will then be able to 'sit in' with the local orchestra. They may not play the aforesaid "Liede ohne Worte" very often, but the man who learns to play his instrument by ear is not likely to be deterred by the fact that while he is churning out his Mendelssohn, the orchestra is having a stab at 'Tiger Rag.' You can even get away with this sort of thing in public if the audience is sufficiently highbrow. Just attribute it to Schönberg.

Well, having set your feet on the right path, I will leave you with your nose to the grindstone, and if friends and family desert you remember that it's an ill wind . . . . .

# THE BEST POLICY?

By S. L. W. GALLOWAY

IT'S 'ard lines about George, that's what I say. O' course, 'e's always been 'ard up, ever since I've known 'im, and that's a year or two, I can tell yer. I reckon 'e's tried most of the money-making larks—some of the honest ones as well—but they never seem to get 'im anywhere 'cept in the Dock.

'E knows all the local Magistrates personal like, and even the local flatties give 'im a wink and a nod as 'e passes in the street. Which same cramps 'is style a bit, as you can guess. When you're well known like that you 'as to be a bit circumspect like. Y'see, if a crib was cracked anywhere within a ten mile radius, Old George, 'e always got pulled in by the Rozzers for quizzing, even if 'e 'ad been down at 'is old Grannie's all night; well she was always ready to swear 'e 'ad anyway. I expect that cost Old George a bob or two, which cut down 'is profits.

Anyway, I still think it's 'ard lines on the pore old so and so. What am I on about? Well, I'm telling yer, ain't I? Only you keeps interrupting. Well, Old George, 'e thinks up a good scheme what hadn't been done before, so far as I know. 'E had already found things getting a bit 'ot around these parts, as you will know, so 'e goes to live over to Benson. Stays with 'is married sister, 'e does—'er wots married to one of the best poachers in Berkshire. Never lost for grub in that 'ouse, I can tell yer.

Now, it so 'appens that the day 'e takes up 'is residence—if you likes that turn of phrase—was the day of the Parish Church Garden Fete, and Old George, 'e 'as a go at guessing the weight of the Pig. O' course Old George didn't know a thing about pigs, 'cept that you wouldn't get any more gammon rashers if there wasn't any pigs. All the same Old George never could resist sticking his nose into things 'e knows nothing about, so 'e 'as a bash. 'e stands there quizzing the old porker, and the porker lies on the straw a quizzing Old George, but o' course what the pig thought of 'im we don't know. The upshot of it was that the old varmint just said the first thing that come into 'is 'ead—and it turned out 'e'd guessed the weight right to the nearest pound. As a prize 'e got a fine box of Corona-Corona cigars, donated by some big pot or other.

As it 'appens George don't smoke, and neither does 'Arry, that's his sister's old man. *She* smokes, but it's a waste of good cigars to give 'em to 'er. Well, they was sat in the kitchen the next evening chewing over what they'd do with

them when in walks the insurance man. This bloke, the insurance wallah, is one of them cocky chaps what knows it all, and 'e and old George was soon at cross purposes, especially when 'e tried to insure George so 'is sister got a rake off when 'e kicked the bucket.

Insurance blokes are a persistent lot of perishers, and this one ain't no exception. Anyway Old George couldn't see his sister getting anything out of 'im like that, but felt 'e 'ad to insure something, if only to shut the other bloke's trap for a bit. Then 'e gets 'is wonderful idea.

"Wait a minute," says George, and 'e skips up to 'is bedroom and fishes this 'ere box of cigars out of the chest o' drawers and takes 'em downstairs.

"'Ere you are" says 'e, all quiet like, "I wants to insure these 'ere valuable cigars."

"Blimey," says the insurance man "What do you want to insure *them* for?"

"I'll insure them against fire, if you don't mind" says George, "and I reckon a box of genuine Corona-Corona cigars is worth fifteen nicker of anyone's money."

Well, the insurance johnny, 'e sits and gapes at 'im like the old pike in the glass case down at the Blue Boar, 'e seemed to 'ave a job to get 'is breath.

"What's up?" quizzes Old George, "Ain't your people got policies for cigars?"

"My good man," says the other, all posh-like, "We can insure anything. We are even willing to take a risk and insure you. But insuring cigars against fire seems unusual."

"There ain't no risk in that," says George, "'cos I don't smoke. And I'll see no other cuss smokes 'em too. But there, if you can't do it, and don't want the business—well I'll wish you a very good night." Very civil cove George, when it suits 'is book.

"Now, let's not be hasty," says the Penny-for-death man. "I think I know an office which will accept your proposition, peculiar though it may be. I will call in tomorrow with the policy."

Well, that's how it was. George got 'is policy alright, and there 'e was with fifteen quid's worth of cigars, fully insured against fire. Yes, and 'ere's where Old George's big idea began to work out. But first of all 'e had to get away from Benson, for the Insurance fellow seemed to take far too great an interest in 'is well being. Naturally 'e came back to 'is old 'aunts.

# Application Sinister

By JILL CAVE

First of all the cigars 'ad to be smoked, to make the big idea work. Now as I told you, 'e wasn't no smoker, and learning to smoke on Corona-Corona cigars was real suffering. In fact I' eard as 'ow 'e never ate enough to keep a black beetle for the first week ; but eventually 'e got so 'e always 'ad a cigar stuck in 'is chops whenever I seed 'im. This interested the flatties a lot, and I expect the Inspector spent several sleepless nights going back over 'is records for cases of robbery at tobacconists' shops that 'e could pin on to George.

Anyhow, to cut a long story short, by sheer perseverance George managed to smoke all 'is cigars, and when 'ed finished 'e took all the cigar butts and ash, wot 'ed carefully saved, across to Benson to his insurance friend, and made a claim.

The Insurance chap was a bit taken aback, you could see that, but he didn't let on.

"Well," 'e said, "We shall have to put the claim up to Head Office, you know, and they will send their Fire assessors down to take a look at what is left, so if you can manage to stay in Benson for a few days, it would be a help."

"Anything to oblige," says George, patting himself on the back at getting away with a slick little trick. For who could say the cigars 'adn't been destroyed by fire? And if that was so, and they were insured against such a thing, why then the Company was due to pay out. Easy! So he stayed over the weekend.

On the Tuesday two well dressed gents turned up, asking for 'im. 'E had just got back from the Pub and was all eager to see them; took them into the parlour and made them sit in the two armchairs while 'e stood first on one foot and then the other, in 'is impatience.

"Are you George So-and-so?" says one of them.

"That's me" says George, all expectant like.

"Ah yes" says 'e. "You've had some cigars insured against damage by fire. Right?"

"S'right!" says George.

"I understand that they have been burned. May we see the remains?"

"Sure thing" says George, and dives into the sideboard drawer for the box of ashes and cigar butts.

"But these have been *smoked*!" says the first gent, in a pained voice.

"S'right!" says George. "Consumed by fire they have been. And what's what I'm claiming for."

"Well," says the second gent, "I am a police officer, and I am going to arrest you for Arson: setting fire to insured property, and I have to warn you that . . ." and so forth.

As I say, it's very hard lines on poor old George, getting nine months after all 'e suffered.

The witches met on the heath one night  
To discuss the matter of "Modern Flight."  
Said one old hag to another old crone,  
"The broomstick's day has come and gone!"  
Said the same old crone to another old hag,  
"It's all because of the bristles drag,  
When the stick goes round and the brushes roar  
The handle gets hot and your seat gets sore!  
As the revs tick up on the broomstick's flight,  
You must fan yourself with all your might!"  
"Too true, old dame!" another broke in,  
"When you've flown for years, your bearings  
thin."

My poor old Pussy's sick and tired  
Of sitting on a broomstick hell-bent fired,  
*She* wants to try a modern way  
More in keeping with the present day."  
"I'm bound to admit," said the oldest one, .  
"It's high old time something was done."  
The youngest witch got up and yelled,  
"Let's get the broomsticks jet-propelled!"  
Chorused the others, "You crazy dame,  
Think of the smoke and the whacking big  
flame!"

A warlock stooping to stroke his cat,  
Scratched himself and said, "That's that!  
I'll write a spell to the men at A.E.R.E.  
And sign myself the 'Christmas Fairy,'  
Requesting assistance—the idea 's comic—  
In designing a besom-engine, atomic!"  
The witches shrieked with hellish glee,  
"They'll fall for it, I bet! You'll see!"  
Next day on the Lord President's table  
Arrived a letter with a bat's-wing label,  
Requesting "A nuclear besom motor  
To drive a broomstick's wooden rotor."  
Frowning, the President read and signed  
For another big bang to scare mankind.  
While doing so he murmured, "Funny!  
Still, the Corporation needs the money."  
Meanwhile, by churchyard, on moor and lea  
The witches all wait delivery  
Of the first cabalistic velocipede  
Especially designed for Machiavellian speed.  
When you hear the roar over Harwell lanes,  
It's only the witches' atomic planes.  
Remember darlings, just relax,  
Orders *may* reduce the Income Tax!



# Outdoor Sketching in Water Colour

By THE ART EDITOR

**W**HEN I sketch in watercolour, my intention is not to produce a picture in which is portrayed every leaf and stick, every blade of grass exactly as I see it; to do that I would use a camera and a roll of Kodachrome! I set out to create, to make (in every sense of the word) a picture, using the scene I have chosen as its basis. This is not merely a question of applying a mental 'filter' to simplify matters and cut down my labour—for example my picture may well be clothed with a light very different from that actually shining on the scene itself, if I feel that this makes a better picture. If I feel that the composition of my creation will be helped by omitting an awkwardly placed tree, or removing it to one side, I shall feel at liberty to do so; in fact I shall go so far as to insert an extra tree, figure, or a couple of sheep, if by doing so I shall make my picture more alive. This is the difference between painting a copy of what I see, and painting a picture.

Before I start out to paint, I must take some trouble to ensure that when I get to my viewpoint I have no awkward snags with my materials to interfere with concentration on the problem before me. The first item to consider is paper—I have found from experience that it is better to use a substantial paper such as Whatman or Arnold, preferably with a rough surface. Such a paper is handmade, and will cost from 4s. 6d. per sheet of size 30" x 40", but as it can be cut into sizes to suit different needs, this is not really so expensive.

A good mount is made from a piece of hardboard, (or a sheet of very stout cardboard) cut to about 12" x 10"; the paper is trimmed to a size about  $\frac{1}{4}$ " smaller all round. To prepare the paper for use, I immerse it for at least 15 minutes in a bath of cold water, lift it out by one corner, and hold it up until all the surplus water has run off, then I lay it on a sheet of clean blotting paper. After blotting I lay the paper on the hardboard, and quickly tape it down with gummed paper strips, making sure that the tape has properly adhered to both hardboard and paper. The paper is left in a warm place to dry—when this is complete, the paper will be fully stretched, and will not cockle up when I lay a wash of colour on it later. I have to remember that the finished picture must not be removed from the board

until the paper is quite dry once more, or it will develop a permanent cockle and thus become difficult to frame or store in a portfolio.

Before leaving home I make sure that I have everything:—folding stool; paints; water (and a pot to put it in); pencils and rubber (which I never use unless absolutely necessary, for fear of damaging the surface of the paper). I find a china palette of some sort advisable, and a brown paper cover for my drawing paper; of course I never forget my brushes!



*"I never forget my brushes!"*

Let us suppose that I have arrived at my viewpoint and seated myself. I am appalled at the endless complication of the subject I have chosen! What do I start on? Well, I don't start at all for the moment, but sit quietly and look carefully. How much of the view do I take in? To assist in answering this one, I use a piece of thin card, blackened on one side, with a hole (4" x 3 $\frac{1}{4}$ ") of the same proportions as my paper. By viewing the scene through this mask I can soon select what strikes me as the best portion to paint.

Now to begin the drawing, in light strokes, indicating the position of the trees, their branch-structure, and the outline of their foliage. I do *not* draw every slightest deviation of trunk, twig and leaf, but I try to make my drawing a fair *representation* of the tree. Indeed, to ensure that I don't try to include every cranny, I view the scene through half closed eyes, and then draw only what I can still see. My drawing must, however, be accurate in so far as perspective goes, and in that my tree trunk, where I can see it, grows thinner as it rises from the ground.

All the parts that I do draw are correctly drawn although the drawing is not fiddly with detail ; I have to bear in mind that much of the drawing will be covered by the washes.



*"Painting every blade of grass"*

When I start to paint, what shall I tackle first?—The sky, or the trees? I think it better to begin with the lightest washes because I can put darker washes on top of them later—but I simply cannot lay a light wash on a dark one. Bearing this principle in mind I start with the sky, having plenty of colour on my palette, for if I were to run out of colour half way through, I should never be able to make an exact match again, and the result would be messy. I apply the colour wet, let it run down the paper and collect the surplus on a damp brush at the bottom of the wash—on the horizon. Placing the first wash on the virgin sheet can be very deceptive. I mustn't be afraid of overdoing the colour, for it is easy to make it too pale. The sky can look beautifully blue at first, but is apt to look nearly white when the stronger washes are in.

All very fine, but which of the many blues shall I use? No hard and fast rules can be laid down about this, like everything else in painting, and I like to experiment a bit. I often use Permanent Blue for my skies, for it is possible to get some delightful effects by dropping other colours into the wash before it is quite dry. I rock the paper as it dries to trap pigment in the pores, producing a granulated effect, and wash out some of the colour before adding a final wash over the whole sky after it is dry. A clean brush can be used to 'lift' clouds out of the sky while it is still moist.

How about my trees? I see parts of the trees lit by the sun and those parts are a delicious

young green, whilst the shady parts are quite a different, darker green. Starting, as before, with the lighter wash, I put in the fresh young green over the whole tree, except that I avoid carefully those parts where the sky shows through the foliage. I mix the darker wash later and cover the shaded part, and here also I vary the tone by dropping in other colours—permanent blue and light red for instance—before it is quite dry. I treat the grass similarly, steering my wash around the cows and any clumps of Fools Parsley, which I intend to show with white flowers. When it is dry, I can indicate the cattle, leaving a little white paper for the highlights and painting in the shadows with pure blue straight from the box. I usually find I have to modify the colour of the white flowers if they are not to jump right out of the picture ; a faint wash of green in the sunlight and blue in the shade will keep them in their place. I put in fences etc. now, lightly in appropriate brown, strengthened in places with a vigorous touch of pure colour. Finally the distance—where it is advisable to show little or no detail—is best depicted with a wash of cobalt blue.

You see there is no mystery about it all, and no rigid code to follow : so why not have a go yourself? Your first effort will no doubt be a complete disappointment, and will not look at all as you had intended it to do. Don't allow this to discourage you. You have broken the ice, you have sat before the problem and tried to get a solution. Next time it will be easier for you and will bring to your work all the



*"A representation of a tree"*

little things you have learned from this first attempt—and so you will progress. I should feel most concerned about you if you came home feeling *satisfied*. I should know then that you would *never* learn to paint.

# THE ANCIENT HISTORY OF WESSEX AND THE CREATION OF BERKSHIRE

*(In memory of Ine, one of this country's great Kings : A.D. 688-726)*

By D. J. BEHRENS

THE period between the withdrawal of the Roman garrisons from Britain in A.D. 410 and the coming to the throne of King Alfred's grandfather in A.D. 804 is often referred to as "the dark ages" and, if some historians were to be believed, we might think that it was a time of which little is known, and still less is of interest. It is true that little is known: at some periods our knowledge is so scanty that alternative theories can be held of the course of history. But, whatever the period may have been, it was certainly not dull.

After the Romans had left Britain, the northern half of the province suffered more or less continuously from the inroads of the Picts and Scots, and the British (who after four centuries within the Empire were very largely romanized) were very sharply divided into two political camps. The one, headed by Vortigern (a weak man, but much maligned by later historians), was of the opinion that the northern border could not be held without help, and called Hengist and his Jute and Saxon followers over the sea to strengthen the defence. The other party, led by Ambrosius Aurelianus (a great grandson of the Emperor Maximus), felt that the Saxons were if anything an even greater menace than the Picts and Scots, and within ten years of Hengist's landing civil war had broken out. In this war, Ambrosius was largely successful—Vortigern was captured in 460, and shut up in a castle in Wales which then caught fire in rather mysterious circumstances, and that was the end of Vortigern. Two of Hengist's sons had also been disposed of by then, but Ambrosius had to tackle not only the Saxons and what were left of the British collaborationists (to use a word coined in France some fifteen hundred years later), but had also to deal with the continued inroads of the Picts and Scots. This was more than one army could account for on its own, and Ambrosius' nephew Arthur took command of the second army with which he achieved a notable series of victories. The legends about Arthur (so-called King Arthur) which were written centuries afterwards by Nennius, and subsequently rehashed by

Tennyson and other romancers, may appeal to the sentimentally-minded, but they hardly do a service to the memory of a very great leader in this country.

One of Arthur's greatest victories was at the battle of Mount Badon, the site of which lies probably near the village of Liddington, about five miles south-east of Swindon. Here the Saxons were routed in A.D. 497, and driven headlong down the valley of the Thames until little remained to them but the marshy districts of Thanet and around the coast of Kent. Forty years later, Gildas—a British historian—was able to write that apart from sporadic raids by Saxons in coastal districts the whole country had been at peace for a generation.

And yet by that time the seeds out of which Wessex was to grow had been truly sown. One, but by no means the most important, of the Saxon chieftains who had been defeated at Badon, was called Cerdic. (Actually, we have no evidence that Cerdic was present at Badon, but, as the flower of the Saxon forces fought there, the inference is a reasonable one). He must have felt that, in the narrow territories to which the Saxons were afterwards reduced, his own prospects of advancement were none too rosy, and in 499 he set sail with three ships and followed the south coast as far as a place which he called Cerdices Ora (Cerdic's Beach). It is not known exactly where this is, but Gilbury Hard on the Beaulieu River seems to agree better than anywhere else with the descriptions of the place. The Britons in that place were defeated, and for nine years the West Saxon colony built up its strength in that small and rather inhospitable corner of territory south-east of the New Forest.

Meanwhile, Ambrosius had defeated a Pictish tribe led by one Natan Leod—Leod was a title of honour, and has come down to us in the surname Lloyd. Instead of disposing of Natan, Ambrosius allowed him and his tribe to take up their abode at Netley Marsh, just west of where Southampton now stands, and there they were allowed to stay on sufferance, provided that they acted as a buffer between the Britons and the newly-arrived West Saxons. However,

in 508, Cerdic felt strong enough to deal with Natan Leod ; the battle was short and decisive, and the territory of the West Saxons was more than doubled.

Ambrosius Aurelianus died in A.D. 504, and the Romano-Britons promptly took to fighting amongst themselves. In 518, Arthur was fatally wounded at the battle of Camlann (possibly the same as present-day Camelford), and the last leader who might have successfully resisted the Saxons had gone. The next year, 519, saw a substantial increase in the West Saxon strength as further ships sailed round from Kent, and at this time Cerdic and his son Cynric took to themselves the title of King. The story of Wessex had begun. In the same year an indecisive battle was fought at Cerdices Ford (Charford), and for the time being no further attempt was made to expand north-westwards. In 527, however, an important victory was won at Cerdices Leag, the site of which has been tentatively identified with Sharland, half a mile east of Hursley on the Winchester to Romsey Road. From this time we hear no more of Winchester as a Romano-British settlement, and it seems that it must have been abandoned by its inhabitants.

Cerdic died in A.D. 534. In the reign of Edward the Elder (900-924) there was a barrow known as Cerdicesbeorg near to Hurstbourne Priors : no trace of it remains today, but it seems likely that this was Cerdic's burial place, and that an attempt was being made to turn the defences of the important Romano-British settlement of Calleva Atrebatum (modern Silchester) by taking the defensive position now known as the Andover Devil's Dyke. This attempt must have been unsuccessful, as the next advance was not made until A.D. 552, and that in the direction of Old Sarum. It should be mentioned here that, about A.D. 540, the Saxon kingdom of Rochester was partitioned between its neighbours Kent and Essex, and that there is strong archeological evidence that a substantial number of the defeated Rocastrians made their way into Wessex ; this must have strengthened the forces at Cynric's disposal very considerably.

In A.D. 556, another major victory was won when the Britons were defeated at Beranbryg (Barbury Castle, five miles south of Swindon). In 560, Cynric died, apparently from natural causes, and there is every reason to think that he must have been at least seventy years of age. He left three sons, of whom Ceawlin, the eldest, succeeded him. A steady advance was made into and down the Thames valley, and about 566 the inhabitants of Silchester, in danger of encirclement, appear to have abandoned the settlement and retired to London while this was

still possible. There is good archeological evidence that Silchester fell quietly. Two years later, Ceawlin defeated Aethelberht, the young king of Kent, and threw him back right across the Darent (north of Sevenoaks). A large sum in reparations was exacted (not for the last time) from the Kentishmen.

The campaign of 571 saw the boundaries of Wessex pushed well north of the Thames ; Limbury, Aylesbury, Bensington and Eynsham were captured during this year. It is probable that some sort of treaty was entered into between Wessex and London, at that time still in British hands, by which London was allowed to remain as a buffer state between Wessex, Kent and Essex (into the last of which the city was eventually absorbed). Having stabilized his eastern border, Ceawlin again turned westwards, and in 577 captured the cities of Gloucester, Cirencester and Bath.

A revolt in the northern part of the kingdom was put down at Fethan Leag (Fethelee, in the parish of Stoke Lyne) in the year 584, and in this expedition Ceawlin's only surviving brother was killed. Ceawlin gave way to a ferocious campaign of revenge, and from this time an opposition party to his rule began to grow up, and, with it, the strength of Wessex began to ebb.

In 591, Ceol, a nephew of Ceawlin, pretended to the throne, and Ceawlin was forced to abdicate in the following year. Civil war went on, however, and Ceawlin was killed together with two of his sons in 593 in a battle whose site we do not know. There is good reason to believe that the revolution was actively supported by Aethelberht of Kent, who at any rate certainly benefitted from its results.

The seventh century was not a happy one in the history of Wessex ; there was a long story of internal factions and external defeats. The throne passed through eight hands in less than a century, and none of them seems to have been successful by any standards. From 672 to 688 there were four reigns in sixteen years ; this was a period of intrigue between the houses of the three sons of Cynric, who formed and reformed alliances of two against the third one with bewildering rapidity. Finally, in 688, Ine came to the throne. He was a great-great-great-grandson of Ceawlin, but appears to have been supported also by Saint Aldhelm, who was a descendant of Ceawlin's youngest brother. Ine is the first king of whom we have definite evidence that he could read and write. He married Aethelburg, a great-great-granddaughter of Aethelberht of Kent and his wife Bertha, who in turn was a granddaughter of Clovis the first king of the Franks. Ine gave Wessex its first code of laws. He was also responsible for the creation of the shires ; hitherto, each



member of the royal family had ruled as a sub-king owing allegiance—often only very nominally—to the king. Ine altered all that; he divided his kingdom into shires, over each of which he set an ealdorman responsible to him and removable by him, and charged with maintaining order and justice within the shire. In order that the new system might be acceptable to the existing sub-kings, most of these were allowed to be the first ealdormen of their new shires; but they now held office at the king's pleasure, not in their own right. We do not know the exact date at which the shires were created, but it must have been during the first decade of the century, and what little evidence exists seems to point to 704 as the most likely year. If this is so, we can this year celebrate

one-and-a-quarter thousand years of Berkshire's existence, since Berkshire was one of the first group of shires to be created.

In doing so, let us give a thought to the memory of Ine. He had a breadth of vision in advance of his time, and built better than he knew. His reforms were not popular in his own days, and opposition to him grew. But he refused to plunge his people into civil war, and abdicated, a disillusioned man, in 726. Broken in spirit, he went to Rome, where he died during the following year. But the history of later years has shown that he did not live his life in vain; on the foundations which he laid was built the strength of Wessex in the ninth and tenth centuries, and from this strength comes a very large part of our national heritage today.

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## Letter from Windscale

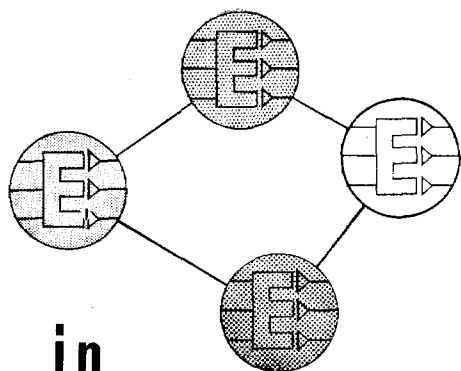
An earlier article set out the writer's impressions of life in this part of the world, from the viewpoint of living conditions, social and other amenities and the like. It has been suggested that a brief personal account of the nature of the work of the Research and Development Branch would be of interest and might help to remove some misconceptions. This article represents therefore, the thoughts of the writer, a founder member of R. & D.B. (Windscale), on the role of this organisation generally, and specifically in relation to A.E.R.E.

Our work is closely integrated with that of Harwell as is both logical and proper. Indeed in some respects we resemble an "outpost" as it were, of Harwell, but with one important difference. As members of the Industrial Group we have at all times to take care that *our* feet are firmly on the ground. We leave to our colleagues at A.E.R.E. the luxury of thinking "high, wide and handsome" without worrying, at least in the early stages, whether the ideas come within the sphere of practical or economic feasibility or not. This again, is both right and proper. There is a need for such unrestricted thought and experiment, and though I do not in any way seek to imply that a disproportionate amount of the work carried out at A.E.R.E. comes into this category, nevertheless such as is required to be done, is best done at Harwell.

By comparison one of the main tasks of our Branch should be to ensure that the original research and subsequent pilot plant work, carried out by whatever team and wherever located,

should be fully interpreted to the Industrial Group. This involves not only the performance of research and development work by the branch itself, but the close collaboration in, and knowledge of, work carried out elsewhere. The object is that of presenting clear, unambiguous and fully worked out flowsheets to the Design Offices and the further interpretation of these, where necessary, in the shape of actual guidance and help on the plant itself alongside the production personnel. This is no mean task, and the writer feels that at least one part of it viz. the follow-up work on the plant in collaboration with the plant operators, is worth re-emphasising. It is unfair to the production man to present him with a complicated plant and process, even if the latter has been fully worked out in the laboratory and on the pilot plant scale, and expect him to put it in to immediately successful operation. It is equally unfair to the research worker who, with less knowledge of the limitations imposed in many directions on the process proper, merely by its translation to the status of a factory process, may well wonder on occasions why production personnel appear to be making heavy weather of his ideas and so often wish to change them. The R. & D. Branch, should be in the best position to resolve the difficulty. Ideally they will have been associated with the investigational work from the outset, will be aware of the reasons governing the choice of a number of alternatives, will know the limitations of the

*Continued on page 40*



in

## nucleonics

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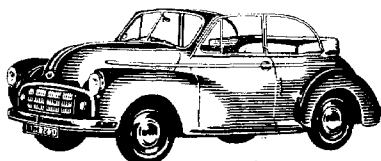
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# COMPETITIONS

Competitions in the last issue attracted a good number of entries. Details of the ever popular proof-reader's competition will be found on another page, as also will a new crossword.

The children's painting competition produced a number of interesting entries, at least one of which was of a very high standard. The exhibition of these paintings on sports day was much enjoyed, and it is to our regret that none of the prizewinners' paintings are suitable for reproduction in this magazine.

The cartoon competition produced a crop of amusing entries, and a number of these are reproduced in other parts of this magazine. It shows a healthy atmosphere when we can laugh at ourselves in this way !

And now for the competitions for this number. Everyone has their anecdotes about A.E.R.E. "Do you remember the time when . . . ?" Well, we want you to write them down and send them in. Prizes are offered for the best. They should be kept as short as possible, be true, and not likely to lead to an action for libel !

As an example, we are told that on one occasion a certain item was ordered "urgently" from the stores. On ringing the stores a day or two later to enquire why the article had not arrived, the user was politely told "If you wanted it urgently you should have ordered it sooner !"

Now it's up to you ; but remember, we want stories we can print.

Those of you who think you know a thing or two about the establishment can try your skill at the problem below.

When you think you have the answers, turn to page 46.

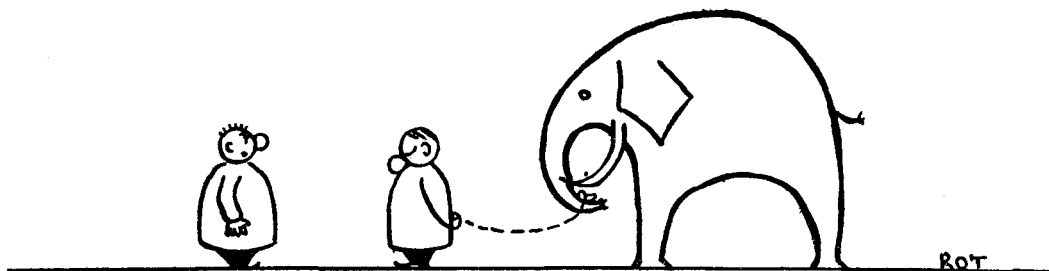
Competition Entries should be sent to "Harlequin Competitions," c/o Central Registry, A.E.R.E., Harwell, Berks, by October 15th.

Q. Where in the Establishment, is there a photograph of J. V. Stalin listening to G. M. Malenkov making a speech ? (The photograph belongs to the Establishment ; not to an individual).

**LETTER FROM WINDSCALE—Continued**  
process, and where and to what extent it is possible to permit relaxations of stated conditions in order to overcome snags which appear only when full scale operation on the plant has commenced. At the same time, being located in, and closely associated with the work of, the production factories, they will be acutely conscious of the peculiar difficulties which can arise on the plants and above all are on the spot for continuous consultation and advice if this proves to be necessary. They above all therefore, should be able to hold the balance between what is technically permissible and what is operationally desirable.

This, to my mind, is the most important function of the Branch and, indeed, the justification for its existence. In the foregoing I have stated an ideal to which we strive, not, I think, unsuccessfully though we are still young in years and have some way to go. Nevertheless the successful attainment of this objective can only result in the greatest all-round benefit to the project since a positive link will have been forged between the research worker with his fertility of mind and the production worker with his accumulated experience and technical "know-how."

K. SADDINGTON.



I said "Collect the EFFLUENT" !



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# PROOF READERS COMPETITION

For this competition in the last number there was no dropping off in the number of readers regularly sending in their entries. Of the first attempts, also on the increase, some came from unusual addresses: one from the director of a business house, one from the editor of a magazine ("for amusement only") not forgetting a near-correct entry from Lieut./Cmdr. D. M. Greaves, aboard the 'Ark Royal'.

In the write-up of the previous competition mention was made of those who, having donned their deer-stalker caps and lit their meerschams, then set to work on 'Harlequin' with the perspicacity of Sherlock Holmes. It would have been paradoxical for the winning entry to have come from Prof. Moriarty and, as it happens, it was from J. B. Sykes (Dr.) of Theoretical Physics that the most correct entry arrived. The following deliberate errors found by him are taken from his list:

All Power Transformers (p. 2)

" $\pm 0.1\%$ " should read  $\pm 0.1\%$

Coxeters (p. 3) "Fascilities" for 'facilities'

Ushers (p. 4) 'tranport' for 'transport'

Bradley (p. 33) 'jewelers' for 'jewellers'

(although this is accepted American usage)

The Pollards (p. 33) 'Heart' for 'Hart'

Abraham (p. 34) 'Recreation' for

'Recreational'

Two deliberate mistakes that missed Dr. Sykes' eagle eye were spotted by Michael Crew, a young scientific assistant of Chemistry Division. These raised his entry to second place and earned half a guinea. They were "1 Ohms" for "1 Ohm" on page 2 and the cleverly-concealed mistake in the announcement of the Alfréd Press which will now be more easily detected:

"The little jobs—the awkward jobs—the big jobs—we have the plant and the experience to tackle them all  
SUCCESSFULLY"

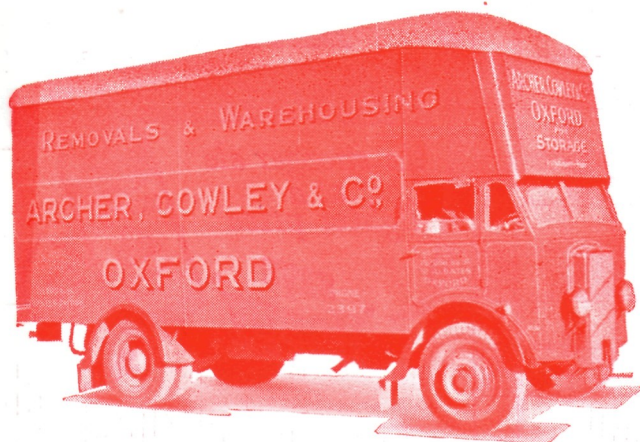
After this came the search for unique entries

in which a deliberate error was listed that was otherwise unnoticed by competitors. Mr. R. F. Jackson of H 8 was alone successful in spotting the comma in wrong fount in the address of Read & Partners (p. 6) (With two R. F. Jacksons on the Establishment there was nearly a genuine mistake on our part in forwarding the book-token). Another book token went to F. J. Westlake of B.347 for being the only reader to report the misspelling in the "Interplanetary Times" in which the "Ko-op" announce they will be "opening shorlty" on Venus.

The above then were deliberate mistakes in the spring number that (with the exception of the last) were arranged by kind permission of the business houses concerned. We hope that no one will assert that the insertion of "The White Heart" for "The White Hart" was contrary to our assurance that "no local knowledge" was called for. As always red herrings have been the cause of many readers being led off on the wrong scent: the shoes in Bailey's announcement which have no laces visible at the top, may surely have been tied by the Baden Powell method, but we are not prepared to reveal how the plane on page 4 flew without propeller or jet air intakes; nor are we prepared to say 'whether a three-legged' horse is pulling the stage coach in the same announcement: it was no doubt our own that the reader was pulling.

Now you will be ready to tackle the deliberate errors which have once again been inserted by the co-operation of the firms concerned. We announce a prize of a guinea for the most complete list, half a guinea for the runner-up, and the usual book tokens for any unique entry in which an error is listed that was missed by other competitors. Again at least two mistakes are concealed in the advertisements on the pages now facing you.

The closing date is Oct. 15th, and entries should be addressed to 'Harlequin Competitions' c/o Central Registry.



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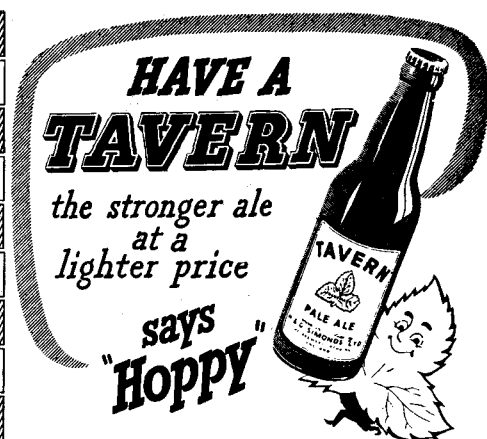
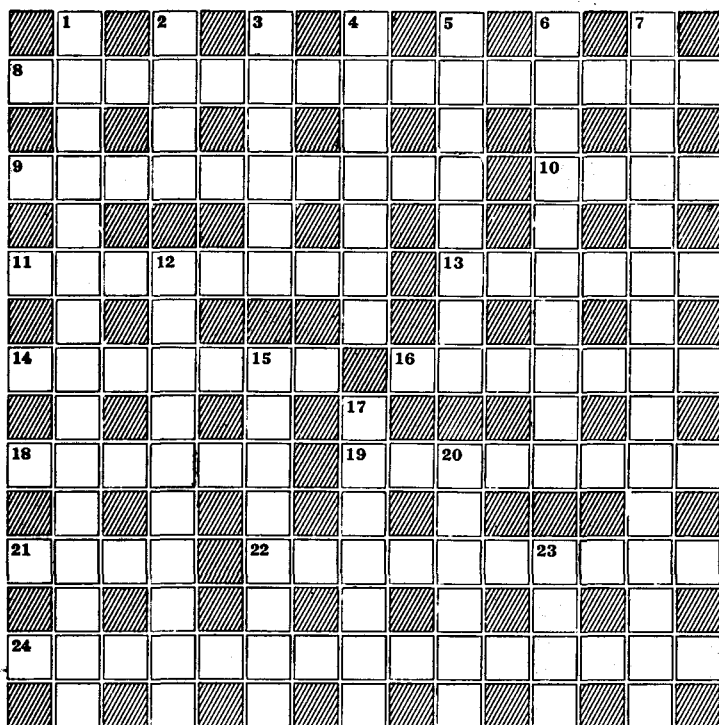
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## HARLEQUIN Crossword Puzzle

Compiled by D. J. Behrens

No. 13

### CLUES ACROSS

8. He is employed by 12 down in a 2 down with a charter. (7, 8)
9. Nor a smoker, to be found in Wiltshire. (10)
10. Season found in a mixed diet. (4)
11. Acts more than sculpture. (8)
13. Is about broken greenery and draws conclusions. (6)
14. Achieves goods and chattels—may be sound. (7)
16. Glue: it's no oil painting. (7)
18. Nor the seat of honour. (6)
19. Fruit-gardens with an unyielding interior. (8)
21. Castor, for example. (4)
22. Without shame or regret. (10)
24. "No people's critic" (anag.) (6, 9)

### CLUES DOWN

1. Still in danger like beer from a bottle. (3,3,2,3,4)
2. (See 8 across). (4)
3. Has tag disordered in dismay. (6)
4. Tongue under reptile to denigrate. (7)
5. Urgent. (8)
6. "Was a cert, if . . ." (anag.) (4, 6)
- 7 & 12. His name has the highest cathedral spire in England. (4, 9, 2, 3, 7)
15. Sit in lee of G.P.O. equipment. (8)
17. The apostles' is glorious. (7)
20. The first half of the covering is tin. (6)
23. In this is whole. (4)

Half a Guinea will be awarded for the first correct solution opened by the Editor. Closing date Oct. 15th.

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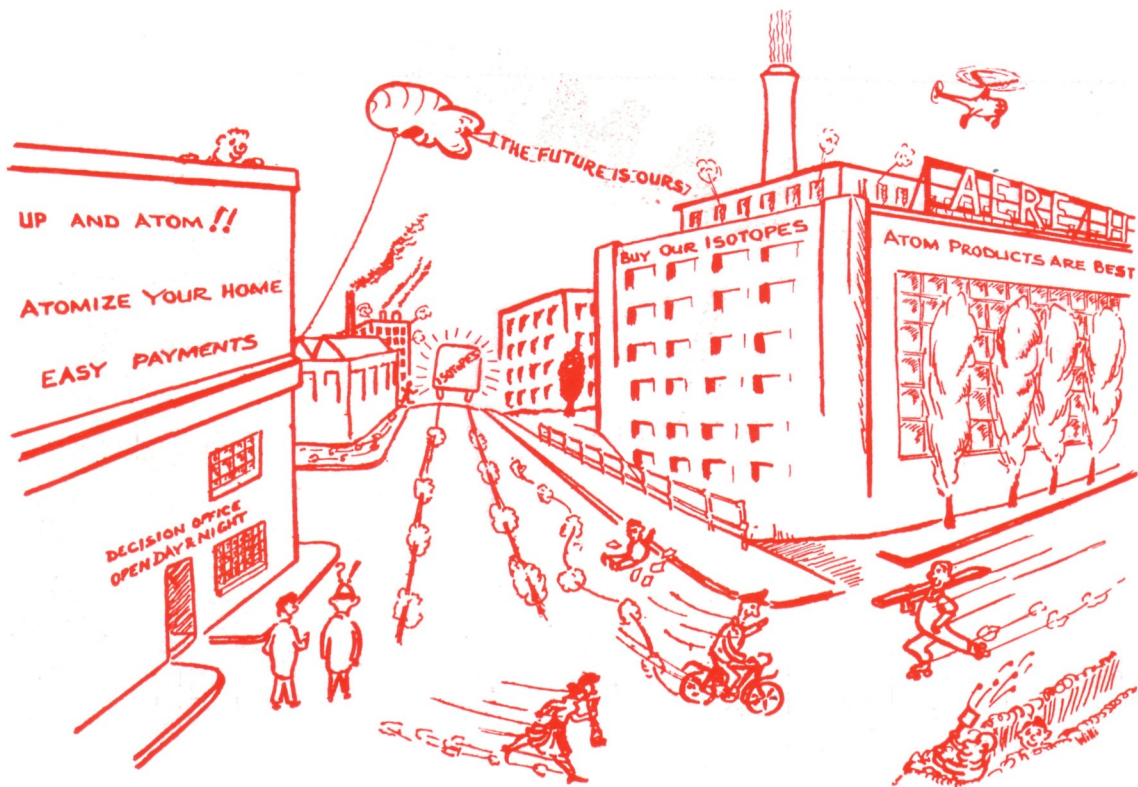
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"Quite a change in the old place!"

*On this page is shown two more of the entries for the Cartoon Competition—"Life at Harwell".*

*Answer to problem—In the Library. (Encyclopaedia Britannica Year Book for 1953).*



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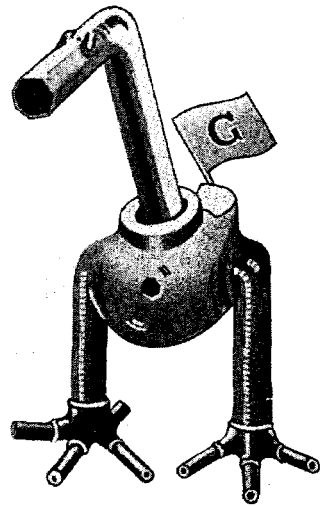
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