

CHANCE CROOKES

and British eyes

Almost anywhere in the world there are people whose eyes need protection against excess of light. The acceptance of Chance Crookes lenses is world-wide and it is good to remember that they are an all-British achievement.

The original research was carried out (at the request of the Royal Society) by the renowned physicist Sir William Crookes, in close collaboration with Chance Brothers' research staff. The range of glasses which they developed, for the benefit of industrial workers, made available to the ordinary man and woman protection of which many of them were equally in need—protection not only from glare, but from the potentially harmful radiation at the extremes of the spectrum.

Today Chance Brothers are still the only British manufacturers of spectacle glasses with these selective qualities; since densities and absorptions are held within very close limits, you can prescribe, with confidence, either:—

CHANCE CROOKES ALPHA: with high ultra-violet absorption and a very faint pink tint; suitable for use at all times, in daylight or artificial light.

CHANCE CROOKES A2: giving rather more all-round protection; pale blue in colour.

CHANCE CROOKES B: for protection against glare; smoke-tinted.

CHANCE CROOKES B2: a darker glass, with greater glare protection and ultra-violet absorption.

This is the property of
**Smethwick Heritage
Centre Trust**
Tele 0121 429 1223

Transmission curves will be sent on request. Requests for Chance Crookes labels should be addressed to your usual lens supplier.

Chance
***** **GLASS** For Science, Industry and the Home

CHANCE BROTHERS LTD., Glass Works, Smethwick 40, Birmingham. Tel: West Bromwich 1824
London Office: 28 St. James's Sq., S.W.1. Tel: Whitehall 6002. Branch Works: Glasgow, St. Helens & Malvern

"This is one of a series of advertisements at present appearing in the Optical Trade Press."

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Chance

COMMENTS



NOVEMBER—DECEMBER 1951

3^D

Chance

COMMENTS

THE Magazine of Chance Brothers Limited, Smethwick published in alternate months for the interest, entertainment and information of all employees of the firm.

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EDITOR A. OGDEN

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Making B. PATRICK
Process S. STOCKIN
F. TATTON
Sales MISS L. RATLIDGE
Warehouse MRS. A. KEYS
Buying & Stationery MRS. CANTY

Engineering

Drawing Office S. DORAN
Electrical D. PRICHARD
Grinding MISS MUGLESTONE
Machine and Fitting F. CARTWRIGHT
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Stores J. P. DEELEY
Sumo Office S. BROWN
Sumo Works A. HEATH
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Welding and Blacksmiths
Works Staff D. EDWARDS
Export A. SLEIGH
H. V. SKAN

Flat Glass

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VOL. 4, No. 5

NOVEMBER—DECEMBER 1951

The Solid that's a Liquid

EVERYBODY knows what glass is. How many would care to define it? Scientifically speaking, the word can refer to any one of a whole range of substances which differ from each other in chemical composition and physical properties, yet which share an essential characteristic . . . that of having cooled from a molten to a solid state without crystallizing.

To put it another way, glass at room temperature can be regarded as a liquid of such high viscosity that it behaves as a solid.

Common to glass as most people know it, and as Chance make it, is the staple ingredient, silica, or sand. Other elements may be added to determine the nature of the glass, but the right kind of sand is the first requirement, and often a difficult one to fulfil. Our only native supply suitable for optical glass, for instance, is a mine at Loch Aline in Argyllshire, and the importance of that particular deposit lies chiefly in the lowness of its iron content—for all natural sands contain iron, cause of the familiar green tinge in beer bottles and glass marbles.

The first stage in the manufacture of glass is to prepare the "batch", which consists of a carefully regulated mixture of new raw materials (sand and chemical compounds)

called "frit", with broken glass from previous makings, called "cullet". This mixture is introduced into a furnace at temperatures which range between 1,300 and 1,600 degrees Centigrade: reactions occur between the raw materials as they melt, and large quantities of gas are evolved, until a stage is reached at which they become a glowing, heaving, viscous mass, full of bubbles which rise to the surface and escape. A glance through the inspection port of a big tank furnace is as good an introduction as any to Dante's *Inferno*.

Once the contents of a furnace have reached the required condition, they are ready for fabrication by blowing, pressing, pouring, rolling or drawing; and here the long history of the glass industry



keeps over-lapping itself. For all these processes are now performed automatically in large-scale production, having been evolved from their hand counterparts—yet the earlier hand methods have never been entirely supplanted, so important is human skill in certain operations. Thus handblowing and mechanical blowing flourish at the same time, whilst continuous production presses (such as the rotating robots which fashion Chance Britannia and Spiderweb tableware) imitate the skilled worker at his hand press in the neighbouring shop.

The human operative works from a pot furnace, a single crucible (though it is generally one of a battery) which is filled, heated and opened as a cycle of operations. The machine works from a tank furnace, drawing a continuous supply of molten glass through rollers or down a feeder from the working end, while the tank is automatically replenished with fresh raw materials fed in at the other end.

At each pot furnace a "gatherer" as he is called, takes a gathering of glass from the mouth of the furnace on a gathering-iron or "punty", or it may be on a pipe

THIS MONTH'S COVER

Petrol Pump Globes for many leading Petrol Companies are blown in and decorated in the Blown and Pressed Division.

which he hands to the blower (master, incidentally, of an art invented by the Romans in the early Christian era). The men work, smoothly and expertly, in teams of two or three. The machine is its own gatherer, its own fabricator, and the products as they leave it are often carried on automatically through further processes, such as annealing, or controlled cooling to eliminate internal stresses which would otherwise occur.

Those are the basic principles of glass manufacture, though there are many variations for special products such as optical glass. The process chosen in each case by Chance Brothers is the one which gives the highest efficiency—and the trend, needless to say, is towards automatic production, with its greater output, lower costs and prices.

But if hand processes die hard, so does the ancient language of glassmaking. Cullet, batch, punty . . . the business bristles with such terms. Here are a few more of the most usual (or unusual):—

Bait: The tool dipped into molten glass to start any drawing operation.

Boot: A suspended enclosure in the nose of a tank which serves as a gathering opening.

Brown's Nose: A cast iron tool used for levering up pots.

Chevally: A rack for holding glass articles when warm.

Chunks: Random sizes of glass sheets which are smaller than standard.

Crizzle: An imperfection in the form of a fine surface fracture.

Doghouse: A small box-like vestibule on a furnace, into which the batch is fed.

Eye: The opening which the flame enters at the bottom of a pot furnace.

Feathers: An imperfection, consisting of clusters of fine bubbles.

Glory Hole: A heated cylindrical hole, used to keep a "gathering" of glass warm during processing.

Gob: A portion of hot glass (generally as delivered by an automatic feeder).

Lehr: A long tunnel-shaped oven for annealing glass by continuous passage.

Marver: A flat plate on which a hand gather of glass is rolled, shaped and cooled.

Moil: The waste glass remaining on a punty or blowpipe after use.

Monkey: A small pot furnace.

Nedding Hole: A hole in the side of a furnace for running off surplus metal from broken pots.

Nose: The working end of a tank.

Parison: A preliminary shape or blank from which a glass article is to be formed.

Pig: A rest for blowpipe or punty during the gathering operation.

Putty: A white polishing compound.

Seed: An extremely small bubble in glass.

Siege: The floor of a pot furnace.

RECREATION CLUB ANNUAL PRIZE DISTRIBUTION

and

SMOKING CONCERT

in the

PAVILION

on

Friday, 14th Dec., 1951

Sweet: Term applied to easily workable glass.

Teaser: The worker in charge of a furnace operation who regulates the introduction of batch and adjusts the temperature.

Teeming: Another term for casting.

Tweel (tuille): A counter-weighted furnace door, opening vertically.

A vocabulary like this can have its surprises for the outsider. Once, when the Chairman of Chance Brothers was entertaining a particularly pompous visitor, an untidy head was thrust round his door. "Sir!" said a voice, "Sir!" . . . "Shall I whitewash the monkey?"

EDITOR'S NOTE.—The above article was taken from "MIRROR FOR CHANCE" which was recently distributed to selected customers and contacts both at home and overseas.

FROM LEARNING TO EARNING

IT has long been the policy of Chance Brothers Limited to organise an annual Pre-Entry Training Course for the new entrants into the Chance Training Scheme.

This year some forty-six boys and fifteen girls joined the Company having left school in the Summer to enter a wide variety of careers such as Shorthand Typists, Carpenters, Glass Decorators, Analytical Chemists, Draughtsmen, Physicists, Cost Accountants, and the Engineering Trades.

The course opened with the Managing Director, Mr. John Raymond welcoming the entrants and throughout the remainder of the course, Directors, General Managers, Sales Managers, Works Managers, etc. addressed the group on the various aspects of the work undertaken in their respective divisions or departments.

Visits were also made to the Production Divisions.

At the end of the Course, trainees were invited to submit

an essay on their impressions of the programme, and the following are some extracts from these:—

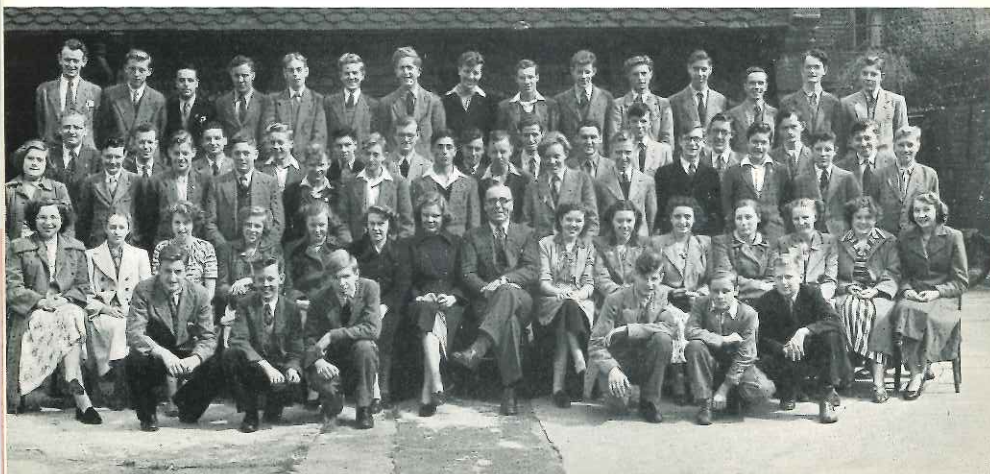
"I came because of the excellent Training Scheme and because I think it is a Company I can be proud of."

"This generous action had much to commend and little to condemn. It was planned skilfully and presented in a pleasing manner."

"I started the course with some doubt about whether I had made a good choice by coming to work at Chance Brothers. The past history, the present work, and the general impression given by the course, have shown me that I have started work at one of the outstanding firms in industry."

"I think everyone appreciated the time the Managing Director and Sir Hugh Chance spent in introducing us to the Works. I left these days with a happy thought in my mind of how well the apprentices were thought of by the heads of such a great Company."

A group of young people who attended the Pre-Entry Training Course this year.



BOUQUETS & BRICKBATS



To F. W. Cooper, who has been appointed Principal of The Chance Technical College to succeed Harry Garratt when he retires in December. Mr. Cooper went to the College as a member of the staff in 1944, after 20 years' service at Chance Brothers where he was Chief Mechanical Designer and Assistant to the Works Manager in the Engineering Division.



A prominent notice in one of the Company's warehouses reads: "No loitering except on business."



"It is quite a good job that I have at present, but the company isn't half so pleasant as at Chance Brothers . . ."
an extract from a letter from an ex-employee.

*Next Xmas day's on
the 25th
And Tuesday's the
day of the week
I've got a problem
on my mind
And this is the answer
I seek.*

*Will Mr. Editor please help me
To get my calendar tidy
If the Gala Ball comes on the 18th
How the H—— can it come on
a Friday?*

(Editor's Note:—In the last issue it was announced that the Gala Ball would be held on Friday, 18th

December. The date of the event is Friday, 28th December.)



Although some 24 suggestions are received each month, the Suggestion Scheme Committee seldom receives any ideas from our lady employees.



Margaret Bennett from the Typing Pool and Joyce Nicklin of the Personnel Dept. were selected to attend the first Course for Girls at the Outward-Bound Mountain School at Eskdale.



The Editor regrets using the wrong captions for wedding photographs which appeared on Page 17 in September/October issue. The top right-hand photograph was of the wedding of Miss Burt and Mr. W. Owen, and the bottom photograph was of the wedding of Miss Loader and Mr. McCarthy.

OUR NEW TELEPHONE NUMBER

The telephone number of Chance Brothers Limited and its associated Companies at Spon Lane has been changed to:—

West Bromwich 1824

This number has been chosen to mark the foundation of Chance Brothers in 1824.



THE 24th Annual General Meeting was held in the Pavilion on Wednesday, 10th October, 1951.

The President, Mr. J. W. Chance, was in the Chair and was supported by Mr. John Raymond, Mr. H. L. Barman and Mr. C. J. S. Newman (Vice-Presidents).

The Club's Officers and Group Representatives were elected at this meeting, and the General Committee is now made up as follows:—

★

OFFICERS

Chairman	...	Mr. J. R. Cheetham.
Vice-Chairman	...	Mr. A. Ogden.
Treasurer	...	Mr. L. G. Hinton.
General Secretary	...	Mr. A. Farley.
Board's Representative	...	Mr. F. W. G. Beaumont.
Women's Welfare Supervisor	...	Miss A. M. Stock.

GROUP REPRESENTATIVES

1. Rolled Plate, etc.	...	Miss W. Walker.
2. Coloured and 7-storey	...	Mr. R. Fardell.
3. Optical	...	Mr. E. Edwards.
4. Pressed & Silvering...	...	Mr. J. Yates.
5. Globe	...	Miss E. M. Dirdin.
6. L/H. Fitting and Machine Shops	...	Mr. F. Walker.
7. L/H. Electrical, etc.	...	Mr. H. Mills.
8. Millwrights, etc.	...	Mr. R. Turley.
9. Carpenters, etc.	...	Mr. E. Bullen.
10. Garage, Transport, etc.	...	Vacant.
11. Glassworks Offices	...	Mr. J. F. Allen.
12. L/H. Offices...	...	Mr. R. Ward.

SECTIONAL REPRESENTATIVES

Archery	...	Mr. R. Cumming.
Angling	...	Mr. V. Cooksey.
Badminton	...	Mr. D. Hill.
Bowling	...	Mr. J. Hartley.
Cricket	...	Mr. G. Woodcock.
Darts (Ladies)	...	Miss W. Davies.
Football	...	Mr. R. Courtnell.
Golf	...	Mr. H. Turner.
Tennis	...	Mr. J. Cashmore.
Table Tennis	...	Mr. J. Cashmore.
Netball	...	Mrs. B. Crimes.
Pavilion Entertainments	...	Mr. I. Flook.
Variety	...	Mr. W. Kent.

PAVILION ENTERTAINMENTS SECTION

The Section is making an important contribution to the Club's improved position, not only by raising much-needed funds, but also by providing relaxation to members in the form of concerts and dances. The Saturday Dances and Sunday Concerts are now firmly established, but the Section would welcome a bigger attendance at Olde Tyme Dances on Mondays and at the Wednesday dances (admission 1s.).

NETBALL SECTION

The Section won its first outside competition by soundly defeating Salters Recreation Club in the Final of the West Midlands Association's Shield.

FOOTBALL

The "Hugh Chance" Cup was won by Sumo, who defeated Globe by 3 goals to 2.

ANGLING SECTION

The annual contest at Holt Fleet on the 9th September was won by L. Richards of B. & P. with a weight of 2 lb. 8½ ozs.

A team has been entered for the "Sports Argus" trophy, and has been



John Cheetham, who has been elected Chairman of the Club.

drawn against the "Lockhead Leamington Working Club" in the first round.

TABLE TENNIS

The Section have now started their matches in the Cinema Room. The first team started well by beating last year's "runners-up" by 8—2.

5th ANNUAL GALA BALL

at
WEST BROMWICH BATHS HALL

on
FRIDAY, 28th DECEMBER, 1951

DANCING 8 p.m. to 1 a.m.

to
VINCENT LADBROOKE
AND HIS BROADCASTING ORCHESTRA

Exhibition of Ballroom Dancing

by
LEONARD SCRIVENOR and NELLIE DUGGAN
(British "Star" Professional Champions 1951)

LATE BUSES

TICKETS 5/-

MEET OUR YOUNG PEOPLE

ARTHUR EAST

ARTHUR joined the Company as a probationary apprentice on the 18th September 1945 after leaving the Smethwick Hall Senior School at the age of 14.

He became a trade apprentice in the Carpenter's Shop on 27th August 1947 since when he has attended the Chance Technical College on one day and one evening per week. He was successful in July 1951 in passing his Intermediate Certificate examination in Carpentry and Joinery of the City and Guilds of London Institute.

His ambition in life is to become a Foreman Carpenter.

Arthur has been a very keen Rover Scout since he was fifteen years of age. He is a member of the St. Paul's Church Choir and his hobbies include model making and photography.

★

RON GROSVENOR

RON started work in May 1949 and became a Technical Apprentice in August of the same year. He was educated at the James Watt Technical

Arthur East.



School where he completed a three-year Technical Course.

Starting off in the Lighthouse Time Study Office, he has since undergone training in the Lighthouse Machine Shop and is at the present in the Tool Room.

He is attending the Chance Technical College one day and one evening per week and is studying for his Higher National Certificate in Mechanical Engineering. He will be sitting for his Ordinary National Certificate in July next year.

His ambition is to become a Production Engineer.

Ron plays a trumpet and is a keen jazz fan. He is a member of the Birmingham Locomotive Club and spends a considerable amount of his spare time studying the History of Railways.

He is also a member of the Malt House Youth Centre and joined the party that visited the South of France in July 1950.

When asked what he liked best in life he replied "staying in bed in the morning". The thing he most dislikes is "cycling against a strong wind".

★

JOHN JONES

JOHN Jones was born in Llanwrtyd Wells, Breconshire, South Wales, and lived there until he joined the Company on 28th August 1951 as a Technical Apprentice in the Lighthouse Production Control Office.

He was educated at Builth Wells Grammar School where he obtained matriculation certificate with credits in Maths., Physics, English Language, English Literature, French, History and Biology.

On completing his full-time education John knew it would mean leaving home to be trained as an engineer as there were no facilities in the area. He was interviewed by the local Youth Employment Officer who submitted him to this Company.

He attends the Chance Technical College one day and two evenings per week and is studying for the Higher National Certificate in Mechanical Engineering.

John finds the West Midlands a contrast from the Breconshire hills but is rapidly settling down to his new surroundings.

He is a very keen footballer and saw his first 1st division football match between West Bromwich Albion and Charlton Athletic here. He is also very keen on all indoor and outdoor games and is a member of the Malt House Youth Centre.

When asked what he liked most in life he replied "his home life" and his greatest dislike is people who brag and boast.

★

GORDON ROWE

GORDON joined the Company as an apprentice on 20th April 1949 after completing a three-year Engineering Course at the James Watt Technical School.

He originally intended to become a draughtsman but has changed his mind and is set on a career on Metal Plate Work in the Boiler Shop in the M. & C. Division.

During his period of training to date he has received training in the Drawing Office and has been sent by the Company to a local foundry for a period of six months.

He attends the Chance Technical College one day and one evening per week and is studying for his City and Guilds of London Institute Certificate in Metal Plate Work.

Gordon is a very keen footballer and is in the last line of defence between the goal posts. He is also a keen cyclist and very interested in music and is receiving tuition in piano playing.

When asked what he liked most in life he replied "eating" and his greatest dislike is "girls who smoke in the street".

Gordon's father was employed for many years as a Micro Blower in the Coloured department.

His ambition in life is to complete his trade apprenticeship and then become a professional footballer.

★

Above right: Ron Grosvenor; Centre: John Jones; Below: Gordon Rowe.



From your COMMITTEE ROOM

PROVIDENT SOCIETY

The Provident Society has received a Valuation Report from the Actuaries, and this discloses that the Society is now more financially stable than it has been for very many years. There is, in point of fact, some surplus and at a special General Meeting of members called in October it was decided to alter the Rules so that sickness benefit can be paid to members who were absent due to industrial injury or industrial disease. Previously benefit was payable in cases of sickness only and not industrial injury.

It is apparently not generally known that all employees on the Works are members of the Provident Society, and after thirteen weeks' service sick pay can be claimed for any period of absence which extends beyond three days. The benefits are:—

- 8s. od. per week for the first four weeks;
- 7s. od. per week for the second four weeks, and
- 6s. od. per week for the third four weeks.

Benefit will, of course, be paid only where medical evidence of illness is produced, and the Society uses sick notes which are sent to the Company in accordance with the Works Rules.

It is surprising that more employees do not take advantage of the Rule which provides that the Company will accept the production of a National Insurance certificate as evidence of incapacity to work. These State notes should not, however, be sent to the Company through the post, but should be presented by the employee or his representative to the Personnel Department, where relevant extracts will be made and the note handed back to the employee or his representative.

SUGGESTIONS SCHEME

Since the last issue of CHANCE COMMENTS the Suggestion Scheme Committee has held two meetings and distributed awards amounting to £26 2s. 6d. W. Southall from the Lighthouse Tool Room received £5 for suggesting that the disc wheels for the Test Tube cutting-off machine be made from scrap milling cutters. £5 was awarded also to W. Berry, Millwright, who proved that the Millwrights' Shop could make burner nozzles cheaper than outside suppliers. G. King, Blown and Pressed Inspection, received £4 2s. 6d. for his ideas concerning the shape of the weir on the tubing machine. G. T. Savage of the Blown and Pressed Division suggested that the gathering bars made by the Stonemasons be cut from Frisil bricks and thereby effect a substantial saving. This idea was awarded £3 15s. od. A

suggestion by W. G. Chambers of the Decorating Department resulted in the elimination of the risk of water getting into decorating colour material and £2 was awarded. J. Hood and H. Robinson of the Rolled Plate Department submitted a joint suggestion concerning the fitting of inspection plates on the Rolled Plate tanks, and £1 was awarded.

Three employees at our St. Helens Works received 17s. 6d. each, namely A. Black, T. Nelson and T. Naverty. Other successful contributors to the Suggestion Scheme were W. Downing, Electricians, 12s. 6d.; T. J. Sandy, Malvern Works, 12s. 6d.; R. Busby, Optical, 10s. od.; F. Walton, Gatehouse, 7s. 6d.; E. A. Whitehouse, Electricians, two awards of 5s. od. each.

WORKS CONSULTATIVE COMMITTEE

At the September and October meetings of the Works' Consultative Committee a number of subjects were discussed including a training course for workpeople's representatives, paper economy, road tidiness, window cleaning, long-service privileges and fuel economy.

The most vital matter was, of course, the problems of power cuts and fuel economy and the article by the Chief Engineer which appears on page 22 is a clear and positive statement on the position.

After receiving reports from the various Departmental Production Sub-Committees and the Canteen Sub-Committee, the Chairman, Mr. John Raymond, gave a brief review of the manufacturing position in each of the Divisions.

The Flat Glass Division was doing exceedingly well in regard to Rolled

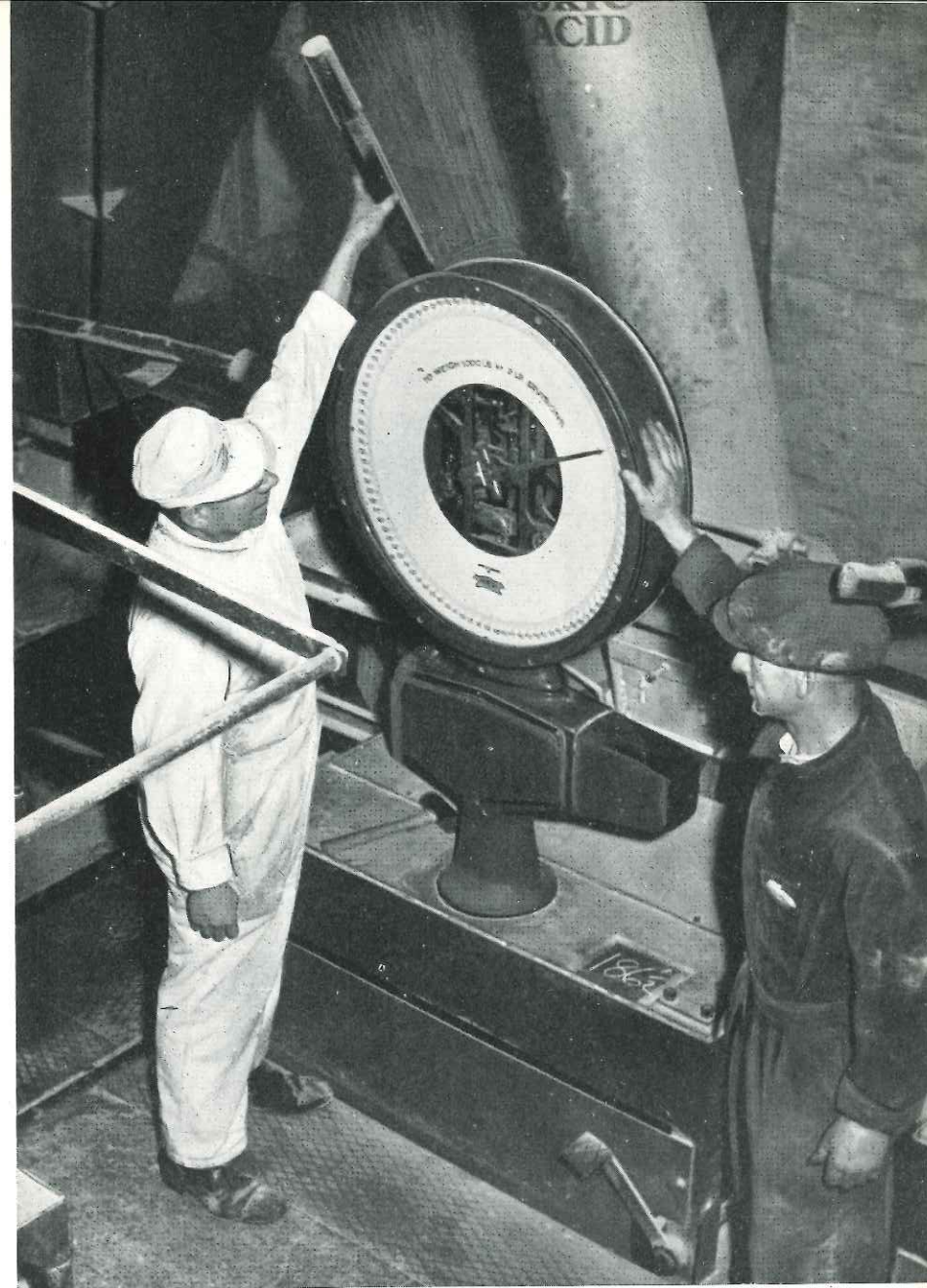
Plate glass, but with the approach of winter and the consequent shortening of building work some reduction in orders must be anticipated. Mr. Raymond stressed that the price at which we sell rolled glass had increased by less than 10 per cent. since 1948, and that this was only possible as increased efficiency had largely offset increased costs for materials and labour. The demand for spectacle glasses had dropped off in the Optical Division, but the orders for pure Optical Glass were considerable and included contracts for armaments and for commercial use in all parts of the world.

In the Blown and Pressed Division the automatic machines were now working most successfully, but an anticipated heavy demand for Christmas sales had not materialised. Decorated domestic glass was, however, selling well and the Cathodes section was exceedingly busy. This Division was almost embarrassed by the volume of orders for hand-pressed and mould-blown products, and in an endeavour to increase the skilled labour force determined efforts were being made to recruit and train youths and young men. Mr. Raymond gave a dramatic picture of the new Tubing venture at the Glasgow Works, and stated that this was the most up-to-date plant of its kind in Europe. The tanks had been lit up and production would commence at the end of November.

The Engineering Division continued to be very busy in all Sections. Sumo Pumps were in great demand for overseas, and a new 4in. pump was now coming into production.



● Ron Butler testing a power switchboard for telecommunication service in Syria.



● Harold Lloyd (left) and Arthur Darby in the Mechanical Mixing Plant.



From all Departments

MOSTLY PERSONAL

BLOWN AND PRESSED

The Blown and Pressed Sales Staff were glad to see the Division's representatives at the Works at the end of August for the bi-annual meeting.

Mrs. Bladen is, unfortunately, ill in hospital and the Sales Staff extend best wishes for a speedy recovery.

The Globe process shop welcomes back Mrs. L. Ashford after her illness, and the Production Control Office welcomes Antoinette Green who has joined the staff.

★

ENGINEERING

The Engineering Division welcomes several newcomers including J. White, Sumo Sales; D. Cull, Lighthouse Sales and Derek Cotton, Drawing Office.

The Electrical Shop has had to part with George Jenkins and Dennis Allan, who have been called for National Service with the R.A.F. Sumo Sales congratulate Raymond Willetts on his R.A.F. promotion to Leading Aircraftsman.

The Machine and Fitting Shops extend congratulations and best wishes to Douglas Lightwood on the occasion of his marriage on 22nd September to Margaret Green.

Recent twenty-first birthdays include Margaret Parkes, L.H. Buying; Bill Cox, Machine Shop; George Jenkins, Electrical, and John Osborne, Drawing Office.

★

LABORATORY

Ivan Molyneux has now returned to the University of Sheffield to complete his three-year scholarship which he

obtained from the Chance Education Trust.

B. Cumberlidge and J. Bennett have commenced their full-time course at the College of Technology, Birmingham. They have each been awarded a scholarship by the Chance Education Trust for the purpose of taking the final examination for an External B.Sc. Degree of the University of London.

The Laboratory Staff congratulates Marjorie Brown on the occasion of her wedding to Tom Whieldon of the Optical Division.

★

MAINTENANCE AND CONSTRUCTION

This month we have to report no fewer than three weddings involving four of the Old Hall personnel.

Taken in chronological order, Sid Scriven of the M. and C. General Office was the first followed by Harold Weaver of the D.O. and a little later Norman Plant and Barbara Barratt tied for last place. We offer all these our sincere good wishes.

Eric "Laugh With" Farley, who was already the father of two fine boys, is to be congratulated on the arrival of a daughter.

A welcome is extended to Ken Perks of the Glass Design section and to Kevin Moore, Reg Flavell, Will Bedford and Jim Weston.

Geof. Lavender is back in the D.O. again after a spell in the shops, and we also welcome Jean Parkes who has come to the Buying Office from the Blown and Pressed Division, and Dora Beckett who is a newcomer to the M. and C. General Office.



The wedding of Tom Whieldon and Marjorie Brown.

Graham Johnson has now returned to the Royal College of Art, London, to complete his Scholarship.

John Farrington, Carpenters, is congratulated on having attained his majority.

★

OFFICES

The Cost Office welcomes J. Tutak and Beryl Povey, who have joined the staff, but regret to report that H. H. Hartland, Brian Withers and Sid Simmonds have left the Company.

T. A. S. Green has resigned his position in the Export Office. John Proctor is welcomed to the department's staff.

★

OPTICAL

The Optical Division congratulates both Dorothy Clement and Doris Slingsby on the birth of sons.

★

PURCHASING AND PRINTING

Ten private cars drawn into a side road, and drivers and passengers frantically scanning newspapers, scratching heads and exchanging viewpoints. This was the scene on the New-castle-under-Lyme road near Trentham Gardens when the Purchasing and Printing Departments "Surprise" outing in the form of a Treasure Hunt

took place on Saturday afternoon, 8th September. Assisted by good weather, all members enjoyed a pleasant afternoon and excitement grew as they collected clues from various carefully and cleverly laid trails. Finally all members met at Trentham Gardens for tea and completed a very enjoyable afternoon, for which everyone extends hearty thanks to Mr. F. J. White for his witty and clever planning of the outing.

The Printing Office welcome to their staff Gillian Whitfield and Amy Phillips.

★

PERSONNEL

The Personnel Department and many of the Works Departments were delighted to see Joan Beer (now Mrs. Saxton) who paid a visit with her husband last month during her holiday in England. Soon after her visit Joan sailed to Australia, and plans to return to Malaya in the New Year.

A welcome is extended to Audrey Burchett, who has been appointed Secretary to the Personnel Manager.

★

TRAFFIC

Congratulations and best wishes are extended to Kathleen Hampton of the Traffic Office who, on 8th September, was married to George Fellows.

The office welcomes Betty Fellows who has joined the staff.

George Fellows and Kathleen Hampton on their wedding day.



News FROM OUR BRANCH ESTABLISHMENTS

● GLASGOW

The Rolled Plate department at Glasgow continues to be fully occupied on orders for both export and the home markets.

On account of delay in delivery of material for the Tubing process entirely outside our control, the lighting-up date of No. 60 furnace was postponed until the 22nd October, and in consequence the production of Tubing will commence on or about 19th November. RECREATION: Table Tennis section.

Ladies' Team played two League games.

1st—Won 7-2 (At home).

2nd—Lost 9-0 (Away).

The Gent's Team also played in two League games and won both 9-0.

In the first round of the Maxwell Wilson Cup we lost to Paisley Y.M.C.A. 5-0.

Margaret Paton marries J. Cunningham.



The Badminton Club play Beatties' Bakeries on Monday, 22nd October in the League.

The Football Club are in the 2nd round of the Glasgow Welfare Cup and now play Pressed Steel's. The team has been successful in winning their first two games in the Scottish Welfare Cup and are now in the 3rd round.

On the 5th September, Margaret Paton of our Invoicing and Typing section was married to J. Cunningham, engineer on the *Empress of France*. Margaret received an appropriate wedding present from her many friends together with best wishes for the future.

● LONDON

London Office had the pleasure of a visit from Mr. Michael Wilding, the well-known film star, on Monday, 15th October. He was most impressed with our range of products and particularly intrigued when he was shown Micro, the glass that can be bent by hand. He revealed the fact that he had attempted to purchase a disused lighthouse—unfortunately he was unsuccessful. He considered our Fiesta glass most attractive and we made him a present of a set.

The teleprinter to Smethwick "stole the thunder"! Immediately his eyes lighted upon it he was like a small boy with a new engine. When Rene Davies the Smethwick operator was informed that Michael Wilding was in the office her reply was "Pull the other leg"! Eventually she was convinced, and rapid repartee ensued between her and Michael Wilding—at least it was rapid on her part; he performed quite well—with one finger!

We are happy to relate that smelling salts were *not* required for the lady members of our staff on this auspicious occasion although it must be confessed that there was a good deal of furtive powdering of noses and sly glances in pocket mirrors!

Miss Hemp and Miss Staddon, two members of our secretarial staff, paid a visit to the Smethwick Works recently and were able to acquire very useful information on our products which will serve them in good stead when dealing with our customers.

Our congratulations to Mr. and Mrs. Kenneth Sutton-Jones on the birth of a second son.

● MALVERN

At the Malvern Optical Division a welcome is extended to John Baxendale, Win Kite, and Yvonne Hill.

We are sorry that Doris Powell has had to leave for health reasons.

Following the loss of a spanner from the cutting machine, three of the girls in the shop wrote the following lines:—

*Dorothy, at the cutter stands,
With bits of glass and work-worn hands.
She works like mad to earn the tanners,
And never fails to lose her spanner.
Then to the foreman goes old Dot—
He says "You are a clumsy clot".*

*All ye workers when tools do skit,
Just ask your foreman for a chit.
Down to the Store, Arthur will go—
His footsteps—are they rather slow?
A new one; now hurrah let's go—
Back to the bench to earn the dough.*

*Now Dot, at last with spanner found,
Will waste no time in looking round
For Arthur, with some ingenious scheme
To attach the spanner to her machine.
And now that peace has been restored
Production of her work has soared.*



The wedding of Ellen Forrest to G. Ashton.

● ST. HELENS

We have still a very full optical melting programme, in fact we have called on the Spon Lane melting section to manufacture a number of crown meltings to supplement supplies of large pieces for us to process. Cast blocks are still being made to the maximum and we have recently had better success in the casting of large discs.

Congratulations and best wishes to K. W. Appleton (Production Control) on the occasion of his wedding on 27th September, and to Miss Ellen Forrest on the occasion of her marriage to G. Ashton on 1st September.

It is with deep regret that we find that at the end of the month we have to say goodbye to one of our longest serving members, Mrs. Davies. Irene as she is known to us all started here when the factory first opened 10 years ago, as Umbroc Limited. Unfortunately, she has not enjoyed good health of late. She has our best wishes for the future in health and happiness.

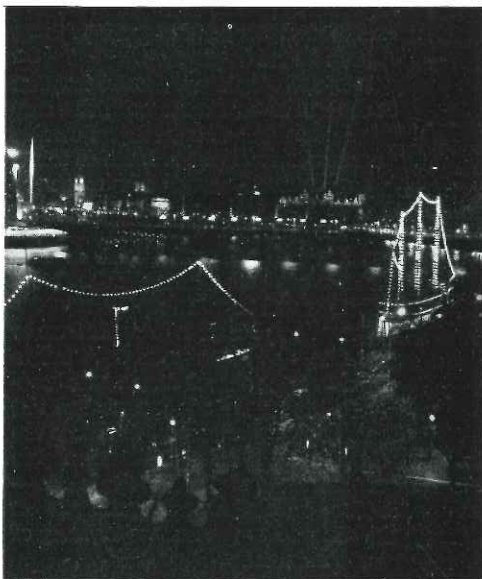
Our "Buzz King" tells us that one or two pieces of information have leaked out about our annual dance. The committee have gone one better than last year, and have managed to secure the Town Hall. This information has started a spate of gossip in the Works—Ladies, on clothes, the gentlemen on the distance to the nearest building of alcoholic interest.

Jottings *of shorter items and employees' contributions*

A SEARCH FOR ANCESTORS

The following is an extract from an interesting letter received by the Company last month . . . "I am trying to trace my ancestors and wonder if you can possibly help me. I know that my grandfather, William Armstrong, was in your employ for a number of years and I understand that he and his brother came from Scotland to work as Glass Blowers about 100 years ago. Have you any old records of this?"

After a search had been made of such records as we still have relating to the middle of last century, we find that a William Armstrong entered into a four-year agreement to work for us as a Sheet Glass Blower from 1857 to 1863. At the same time there were three other Sheet Glass Blowers of the same name working for us—Geoff. Armstrong, John Armstrong and George Armstrong.



PERMUTATIONS

In these days, when so many people are hearing quite a lot about Permutations, usually in connection with Football Pools, I propose to examine this system and hope the following notes will be of interest.

A combination, in mathematics, is a selection of a number of objects from a given set of objects, without any regard to the order in which they are placed. The objects are called elements, and the combinations are divided into classes according to the number of elements in each.

Let the given elements be the four letters, a, b, c, d; the binary combinations, or selections of two, are ab, ac, ad, bc, bd, cd—six in all; the combinations of three are abc, abd, acd, bcd—four in all; while there is only one combination of four, namely, abcd.

Permutation, again, has reference to the order of arrangement; thus, the two elements a and b may stand ab or ba, so that every combination of two gives two permutations; the three elements a, b and c may stand abc, acb, bac, bca, cab, cba—one combination of three thus affording six permutations. The combinations of any order with all their permutations are called the variations. Formulae are given in works of algebra for calcu-

★

As a farewell tribute to the South Bank Exhibition, we publish this very fine night photograph of the site with the Shot Tower on the left. The photograph is reproduced by courtesy of Mr. M. Bruce Milne, who took it from his flat in Temple Gardens. The two-minute exposure was timed by the flashes from our lighthouse optic.

lating the number of permutations or combinations in any given case.

For simplicity, suppose there are seven lottery tickets marked 1, 2, 3, 4, 5, 6, 7; and that two are to be drawn; if it is asked, how many possible pairs of numbers there are, this is a question of the number of combinations of seven elements, two together, which is found to be 21.

If we require the number of different combinations the seven numbers make, the formula is:—

$$7 \times 6 \times 5 \times 4 \times 3 \times 2 = 5,040.$$

This simple example shows that the theory of probabilities is founded on the laws of combination.

Apply these facts to Football Pools and the number of possible combinations . . . and then, take my advice and trust to LUCK.

J. H. RICHARDSON, *Shop Clerk.*

OUR CHURCH

Yes, I think we can call it our Church and there are many reasons why.

The Church was built by Chance Brothers in 1858, and since 1860 it has been the Parish Church of the parish in which these Works are situated. From time to time its beauty has been enhanced by the gifts of stained glass windows, oak panelling, oak flooring in the chancels, a children's corner, a Lady Chapel, a fine organ, and a beautiful carillon of bells in memory of those who have passed on, most of whom were in some way or other connected with our Works.

Attached to St. Paul's are a Parish

St. Paul's Church.



W. G. Redley, Administrative Manager. Drawn by Wal. Johnson.

Room and a Parochial Hall; the vicarage is in West Park Road.

The Church has a capable organist and a well-balanced choir, including some of our employees and employees' children.

Two of our directors are Trustees of the Living, and several of our employees at the present time (including five of our Supervisors) hold offices and are members of the Church Council.

JOE FORSYTH.

Chance Products on Parade

INTERCHANGEABLE ALL GLASS SYRINGES

THIS product of the Malvern branch, Optical and Special Glass Division, is made from Hysil tubing produced in the Blown and Pressed Division, Spon Lane. Syringes are used extensively in the medical profession and, no doubt, most people at some time have had an injection given with this type of instrument.

The Chance Syringe, the first interchangeable syringe to be made in this country, differs from the conventional type in that the component parts, plunger and barrel, of a given capacity can be interchanged at will. This feature has two main advantages for the user:—

(i) in the case of breakage of the plunger or barrel, only the broken part need be replaced (not the complete syringe, as with the conventional type). (ii) Chance syringes lend themselves admirably to

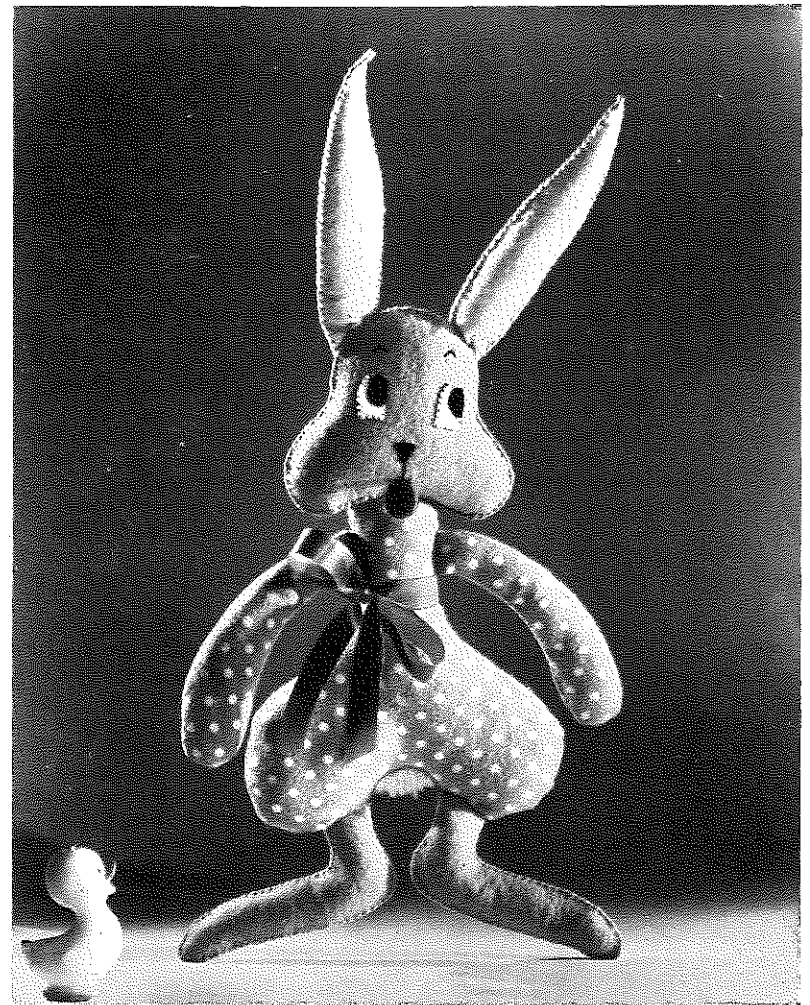
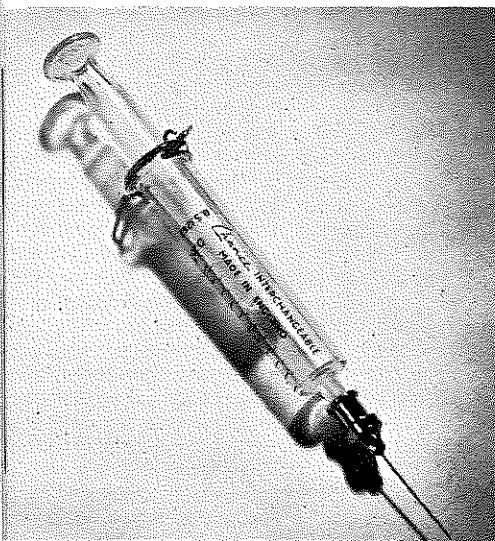
the new system of batch sterilization of syringes, recently recommended for hospitals; interchangeability avoiding the necessity to identify two particular components before assembly.

The word "interchangeability", when applied to the Chance Syringe is perhaps worthy of further explanation. It will of course be understood that it is easy to make parts interchangeable with each other, if no other factor but interchangeability has to be considered. In our case, however, a most important factor is the amount of leakage allowed between the plunger and barrel of the syringe when it is under pressure. To conform in this respect, to the B.S. Specification for syringes, it is necessary to manufacture the parts to a dimensional tolerance of one and a half-tenths of a thousandth of an inch (that is about a tenth of the thickness of a human hair). The first class gauging facilities necessary to manufacture to these tolerances have been established at Malvern and the fact that we have received no complaints regarding non-interchangeability of our components is proof of the success of our methods of dimensional control.

While good measuring equipment and great care on the part of all our operators are important points in connection with our product, quality of Hysil tubing is equally important. We, at Malvern, hope that this brief article may help the people engaged on the production of Hysil tubing to appreciate the usual "dimensions closer than standard" endorsement on Malvern tubing orders.

T. K. SHARP.

Interchangeable all-glass syringe.



★ Woman's Feature

Christmas Bunny

HERE'S a bunny to whom every child will open his heart. Bunny is just longing to be loved, and he's decked himself out in gay spots with a large bow, specially for the Christmas season. He's such an easy toy to make, too, so apply to the Personnel Department for the free Penny Wise sewing directions.

IT'S UP TO YOU

AS I write this article the sun is shining, it is warm and we are in the middle of an Indian Summer, and to talk of fuel shortage and power cuts seems crazy.

There is, however, not the least doubt that given a cold December, wet and snow in January, then cuts in electricity will be our daily dose, low gas pressures a constant headache, shortage of coal and coke both in the home and at work a nightmare.

Now for hard facts. We have been told by the Midland Electricity Board that from November to March, inclusive, we must reduce our maximum demand by 20% (not 10% like last year) during the hours of 8 a.m. to 12 noon and 4 p.m. to 5.30 p.m. Well, that's a tall order for a Works on continuous production, with furnaces to safeguard and on the face of it we just cannot do it. However, by cutting off supplies to Engineering Division and using our Diesel sets, not using our motor generating sets for D.C., saving current wherever we can, we very nearly reach our goal. Now the rest is up to you. I can do no more if we are to keep away from having to operate a staggered system which I am sure you don't want. It is the last lap that counts. Those odd lights left on, that machine left running, that man-cooling fan left on during shift breaks. They all count and that is where your responsibility comes in. See that waste is completely eliminated. Besides this reduction each

day, we are faced with possible complete cuts in daywork production on Thursday of each week and this is a matter completely beyond our control except that if we save during the week we are helping to reduce these Thursday cuts to an absolute minimum. I know this sounds very tame when presented, but believe me I dread the first few months of 1952. 1947 was bad enough, but I am afraid we are in for trouble unless we save continuously from now on.

The position regarding gas supplies is as bad if not worse than last year. There is a serious shortage of plant and at the same time, a special type of coal has to be used for making gas and this is in short supply, so once again we find ourselves in a very serious position. We are rationed with the amount of gas we can use each week during the winter and only by extreme economy can we hope to get through. Do you realize the gas rings in the works consume 10,000 cu. ft. of gas per week? If you *have* to use a gas ring to boil water all well and good, but for heaven's sake shut it off after you have finished using it. Shut down pilot lights to a minimum. It all counts. Well that's the tragic picture for this winter and once again it's up to YOU. Our fuel engineers will do their share to make your life as easy as possible, but please make our job easier by helping yourself.

W. E. BARRETT, *Chief Engineer.*

SUCCESS

"THE heights by great men reached and kept
Were not attained by sudden flight
But they while their companions slept
Toiled onwards upwards through the night."

* * *

For hundreds of years our British craftsmen and technicians have acquired their skill through the jealously-guarded apprenticeship system, and in maintaining the system at Chance Brothers Limited we have evolved a scheme which attracts applications from all over the West Midlands.

The theoretical side of the apprenticeship is covered by part-time attendance on one day a week at Technical and Commercial Colleges in the area. The Company has always been proud of the successes attained in professional and technical examinations by its Trainees. Below are details of the principal successes in the Summer Term Examinations, 1951.

B.Sc. (SPECIAL) UNIVERSITY OF LONDON EXTERNAL DEGREE

Part 1

R. COLEMAN Laboratory

NATIONAL CERTIFICATES IN MECHANICAL ENGINEERING

Higher Certificate

A. SPROSTON Glass Works Drawing Office
R. GREEN Engineering Drawing Office

NATIONAL CERTIFICATE IN ELECTRICAL ENGINEERING

Higher Certificate

A. BROWN Electrical

Ordinary Certificate

B. CHEW Pyrometry
C. P. BENNET Engineering Drawing Office
R. DULLER Engineering Drawing Office
M. HILL Electrical

NATIONAL CERTIFICATE IN PRODUCTION ENGINEERING

Higher Certificate

J. HORTON Production Control
D. BUTLER Engineering Drawing Office

SUPPLEMENTARY ENDORSEMENT OF THE HIGHER NATIONAL CERTIFICATE in the subjects of Theory of Machines and Property and Strengths of Materials

N. J. BIRCH Engineering Drawing Office
Ordinary Certificate
D. H. TAYLOR Engineering Drawing Office

CITY AND GUILDS OF LONDON INSTITUTE (INTERMEDIATE EXAMINATION)

Machine Shop Engineering

First Class

R. NICHOLLS Fitting
K. O'CONNOR Machine Shop

Second Class

R. DEALLEY Machine Shop
S. COLLINS Millwrights

Sheet Metal

First Class

H. ISHERWOOD Boiler Shop

Electrical Installation—Course B

Second Class

K. GARRY Electricians

Carpentry and Joinery

Second Class

A. EAST Carpenters

ROYAL SOCIETY OF ARTS

Shorthand

Intermediate—80 words per minute

JOYCE NICKLIN Personnel
MARGARET LONGMORE Typing Pool

Elementary—50 words per minute

HEATHER JONES Typing Pool

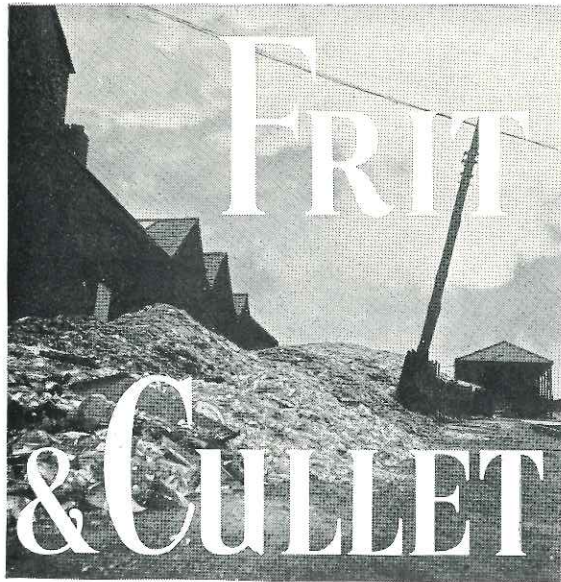
Typewriting

Intermediate—Second Class

MARGARET LONGMORE Typing Pool

Elementary with Credit

EVELYN COX Typing Pool



DO YOU KNOW?

1. Which of the following are edible? Bamboo shoots, rhubarb leaves, bracken shoots, young nettles, laver, palm hearts, rattlesnake, python, octopus.
2. Is a Flying Phalanger (a) a novel by Jules Verne; (b) a squirrel-like animal; (c) the name of an airship; or (d) a famous racehorse?
3. Is PERELLI (a) a fashion expert; (b) an Italian dramatist; (c) a character in a play by Edgar Wallace; or (d) a make of car tyre.
4. What are the names of the various grades of the Scout and Guide movements?
5. What are the classic horse races?
6. The Middle Ages lasted from:— (a) 500 to 1500; (b) 200 to 1500; (c) 450 to 1500; (d) 1000 to 1500. Which is right?

THIS MONTH'S PUZZLE:

Taking from his pocket a stack of seven pennies a man laid the top one on the table. It was a "head." The next one he put on the bottom of the pile and laid the third one on the table. It was a "tail." Again he put the next

penny on the bottom and the next one on the table. It was a "head".

And so he went on alternately—one on the bottom of the pile and one on the table, until all seven coins were on the table. They were then seen to be alternately "head" and "tail". In what order were the coins when he first took them out of his pocket?

JOCK'S CORNER

Foreman: "You should have been here at six o'clock!"

Workman: "Why what happened?"

The Month's Wayside Pulpit:

Blessed is he who has nothing to say, and can't be persuaded to say it.

ANSWERS

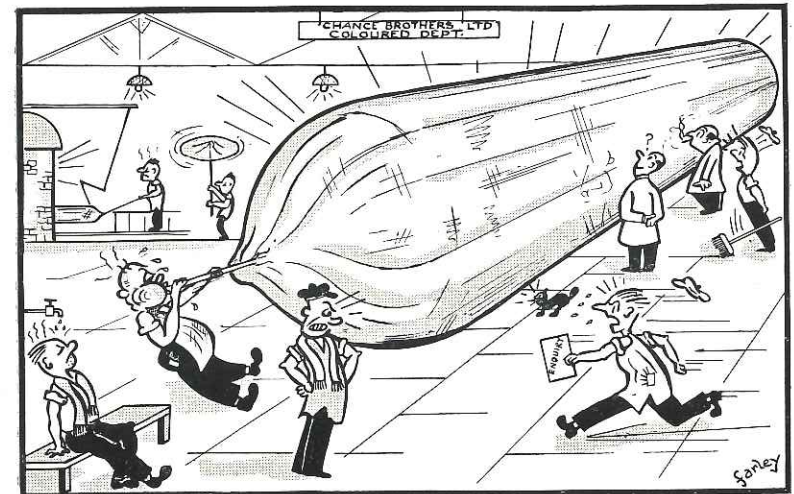
- Puzzle:**
 1. All except rhubarb leaves, though bracken shoots are not recommended.
 2. A squirrel-like creature.
 3. A character in "On the Spot" by Edgar Wallace.
 4. Wolf Cubs, Scouts and Rovers for boys; Brownies Guides and Rangers for girls.
 5. Two Thousand Guineas; One Thousand Guineas; Derby; Oaks; St. Leger.
 6. From 500 to 1500.
 Head, tail, tail, head, head, head, tail.

Do you know?

LAUGH WITH FARLEY



"We're still waiting for a building permit!"



"Stop blowing! It's an error in the customer's requirements!"