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President :
THE LORD CALVERLEY OF BRADFORD, D.L., J.P.

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CONTENTS

Hon. Editor—R. G. ROGERS, "ELMFIELD," STONE, AYLESBURY, BUCKS.

CONFIDENTIAL BULLETIN FOR THE USE OF MEMBERS.

EDITORIAL.

" Time waste differs from material waste in that there can be no salvage."

The Council of the Institution met at The Station Hotel, Newcastle-upon-Tyne, on Saturday, 3rd June, 1950, when the following members were present : Mr. J. H. Hargreaves (Chairman), Mr. G. Jones (Treasurer), Mr. R. E. Rogers (Vice-President), Messrs. H. A. Adams, J. Forsyth, J. C. Chynoweth, W. G. Owen, A. M. Bain, R. H. Smith, L. Hunt, W. F. Graham, R. G. Rogers, C. Oliver, E. Heald, J. Green, H. Partington, R. H. Chesney, F. H. Mills, E. D. Yates, J. D. Lewis, J. W. Brodie, A. MacGregor, A. J. Templeman, H. E. Clutterbuck, H. Wright, H. S. Clarke (Hon. Secretary).

The Meeting was opened by the Chairman at 10.30 a.m. and confirmation of the Minutes of the last meeting held at " The National Hospital " on the 4th March, 1950, having been accepted, were duly signed.

The Hon. Secretary reported the death of Mr. G. Cockburn, of the North East Branch, and Mr. J. Paterson, of the South West Branch, and the members stood to order in sympathy of their passing.

Apologies of absence were received from Mr. J. Tomlinson, Vice-Chairman, Mr. M. Gray, of Northern Ireland, and Mr. J. Strachan, London.

Correspondence received was presented by the Hon. Secretary as follows :—

Hospital Staffs Consultative Committee. This notification was to inform us that particulars will be issued to Hospital Authorities on or about 31st May, 1950.

Appeals on Grading, Conditions of Service, etc. This notification is to inform us that Whitley Council are to set up " Appeals Committees."

A letter of friendly greetings from Mr. Martin Smith, of New Zealand.

British Standards Institution. Two representatives to serve on a new technical committee to prepare British Standards for Tubular Metal-framed Equipment used in Hospitals were requested, and Mr. H. A. Adams and Mr. H. Wright were elected

It was resolved that each member of Council and each Branch Secretary be supplied with a copy of the " Second Report of the Hospital Equipment Standards Advisory Committee," 1950.

The Hon. Secretary reported acceptance of invitations to the Annual General Meeting of our President, The Lord Calverley, Alderman Bambridge (of Leeds Regional Hospital Board), and Mr. Feldon. Outstanding invitations not yet accepted were to be urged in view of booking accommodation.

Enquiries by Management Secretaries for information regarding our Institution were to be encouraged; this was in reference to a letter received from, in particular, one Yorkshire Group.

The National Federation of Hospital Officers having requested prepared recommended salary scales, to compare with scales drawn up by their Standing Committee, your Council were of the opinion that this organization, having no seat on the staff side of Whitley Council, and in no position to arbitrate salaries for Hospital Engineers, were asking for information contrary to the principles of Whitley Council procedure, and regretted that the request be refused.

The Hon. Secretary read correspondence relative to the case of Mr. E. Robinson, of Croydon, whose position as Group Engineer to the Croydon Group H.M.C. was terminated as being redundant, and to the legal arrangements made through the London Branch to investigate the matter. An Appeals Committee will be held on the 19th June, by the S.W. Hospital Regional Board, and Messrs. H. Wright and R. E. Rogers were nominated as representatives of the Institution of Hospital Engineers to attend.

Mr. Chesney raised correspondence received from Mr. Marley, of Shotley Bridge Hospital; sanction to be obtained from Mr. Marley.

Applications for membership were approved as follows :—

Members	4
Associate Members	1
Graduate Members	3
Student Members	2

One application was referred back to the Branch for further particulars. One application was rejected.

Applications to a higher grade of membership were approved as follows :—

No. 421. F. B. Gammon, transferred to Associate Memeber.
No. 725. H. Clegg, ,, ,, Full ,,
No. 722. V. Riley, ,, ,, ,, ,,
No. 733. E. W. Knights, ,, ,, Associate ,,

The Hon. Secretary, in the absence of Mr. Tomlinson, reported on the examinations held in London and Leeds on the 11th, 12th, 13th and 14th April, 1950.

Three members, not having satisfied the examiners in all subjects, are to have the opportunity of sitting in the examination again.

Arising out of the report of the Examination Sub-Committee, *re* the letter received from the Ministry of Health on the 18th April, 1950, it was resolved that all official correspondence relative to the examinations with the Ministry of Health be produced at the next meeting of the Examination Sub-Committee.

The Hon. Treasurer reported on the financial position to date and reported the receipt of the audited accounts for 1949 to be presented at the Annual General Meeting.

On a report from the Finance Sub-Committee, it was agreed to purchase £250 2½% Defence Bonds. It was also reported that £250 Defence Bonds had been purchased as agreed by Council on the 4th March, 1950.

Mr. Oliver, Hon. Secretary and Treasurer of the Benevolent Fund, reported receipt of audited accounts for 1949, also for presentation to the Annual General Meeting.

The Hon. Secretary reported on outstanding contributions, and it was pleasing to note that 30% of payments due had been received since the last meeting.

Arising out of the report on Whitley Council proceedings, the Circulars P.T.B.3 and H.M.C (50) 23 were discussed at great length; many questions were asked and explained by Messrs. J. H. Hargreaves, R. E. Rogers and R. G. Rogers. The setting up of Appeals Committees on Grading, Conditions of Service, etc., are to be carefully considered and examined by the representatives, and it is requested that the fullest possible details be supplied by members wishing to have points in dispute clarified by Whitley Council. Mr. R. E. Rogers is the member to whom all such should be referred, and his address is: Engineer's House, Central Hospital, Hatton, Warwick.

In the absence of Mr. Tomlinson, the Hon. Secretary reported on the visit to Northern Ireland undertaken by Mr. Tomlinson on the 12th May, to interview the Northern Ireland Tuberculosis Authority with reference to conditions of service and salary scales. The N.I.T.A. are meeting on 20th June, when the implementation of Whitley Council recommendations will be considered.

The meetings held in London on the 15th April and 20th May last, called by the S.E. and N.W. Regional Hospital Engineers' Association, were reported on by various members present, and it was agreed that the reports be adopted.

Mr. Green raised correspondence received from Mr. Hill, of Ransome Sanatorium, and it was agreed that Mr. R. E. Rogers have full particulars forwarded.

Arising out of resolutions from the Branches, the matters raised included :—

Whitley Council recommendations P.T.B.3, H.M.C. 50, 23.
Delay in implementation of our Scottish members' conditions and salaries.
Delay in dealing with our members' complaints.
H.M.C. 48, 40.
Employment of Indentured Apprentice Engineers in hospitals.
The meetings called by the S.E. and N.W., R.H.E.A. in London.

All these matters had already been fully discussed during previous business and the Branches' recommendations were fully noted.

The question of Branch Annual Dinner expenses was not pursued.

Council Members' Expenses. No alteration in the method now employed was moved, but members are urged to forward expenses sheets to the Treasurer as early as possible after each meeting.

In order to expedite the work of auditing the Institution's books, and to assist in the prompt return, it was agreed that in future years a date when all books should be in the auditors' hands should be given by the Hon. Secretary.

Modifications to The Companies Act, 1948, and Articles of Association, Rules and Incorporation. The Council discussed and finally agreed to the recommendations of the Special Council held on the 25th March. In view of the lateness of the hour, and having in mind the vast amount of work necessary to be done before presentation to the Annual General Meeting, Mr. Hargreaves moved that Council meet on **Thursday, 31st August,** at Harrogate to complete the work, and it was agreed. Will all Council members please note the alteration of the date and make their reservations as early as possible ?

A.O.B. Arising under this heading, Mr. Hargreaves (Chairman) stated that the Institution was passing through a very critical period, and he therefore offered to attend any Branch meeting, and give his support and encouragement to our members, and assist them in any manner possible. Two or three dates should be offered and time to make the necessary arrangements given to J. H. Hargreaves, Esq., Chief Engineer, Farnborough Hospital, Farnborough, Kent.

A vote of thanks to the Chairman for his generous offer and appreciation by all was moved and seconded by Messrs. J. C. Chynoweth and F. H. Mills.

Mr. R. G. Rogers gave notice of raising the question of Mr. C. Cummings (Hon. Member) at the next meeting of Council.

Membership Certificates were asked for.

Messrs. R. G. Rogers, Editor and J. C. Chynoweth, Sub-Editor of the "News Letter," gave notice that they intend to retire from their respective positions at the end of the year.

Mr. J. W. Brodie moved, and Mr. R. H. Chesney seconded, that the Sub-Committee now dealing with Rules and Incorporation should draw up Standing Orders for Council Meetings, and it was agreed to.

The next meeting of Council is to be held at Harrogate on Thursday, 31st August, and Friday, 1st September, followed by the Annual General Meeting on Saturday, 2nd September, 1950.

The meeting closed at 9.30 p.m.

EDITOR.

COLOUR

Talk given to the Institute of Hospital Engineers on Saturday, March 18th, 1950, by A. R. BARLOW, Esq.

Colour adds more to our pleasure in living than any other single factor in our surroundings.

Imagine for one moment that you were totally colour blind and saw the world only in shades of Grey or Black; or suppose that you lived in an all White world—imagine sitting down to an all White meal on a White plate set on a White tablecloth. It is easy to see that such a meal would be most unappetising. One would have to be very hungry indeed to enjoy a meal of mashed potatoes, rice, White bread, ice cream and milk—even spinach would be appetising in contrast!

Colour is the spice of existence, without it life would lose its zest.

Although colour exerts influence in various ways we can only sense it by vision; we cannot feel, taste or smell it, so a brief consideration of the faculty of seeing may be helpful in gaining a better understanding of colour.

We are able to see because the retina of the eye is sensitive to light and sends to the brain, by means of nerves, the impression it receives.

The retina of the normal eye is capable of receiving two kinds of sensation. The first of these is the impression of Light and Dark (achromatic, or colourless, sensation), the second sensation is that of colour (chromatic sensation) from Red, through Orange, Yellow, Green, Blue to Violet in many shades and tints. It is estimated that the normal eye can distinguish hundreds of thousands of such impressions.

These impressions are said to be received by about 137 million sensitive nerve fibres in the retina; of these nerve fibres about 130 millions are known as "Rods" and 7 millions as "Cones." The "Rods" are sensitive only to Light and Dark, the "Cones" only to colour.

When an impression is received by these nerves it is transferred by connecting nerves to the brain. It is not known what happens, or how it happens, when the brain receives the report from the eye. It is known, however, that changes take place in the body, depending on the sensitiveness of the system, whereby one feels a sense of pleasure or displeasure, comfort or discomfort, ease or strain, relaxation or tension, elation or depression. All these changes affect various organs of the body, influencing their action, and, therefore, man's behaviour.

Some colours are known as " advancing " colours, whilst others are known as " receding " colours.

Red, Orange and Yellow come within the category of advancing colours. Blues and Greens within the second category—receding colours. Generally it is believed that this is an optical illusion, but Faber Birren—the distinguished American student of Colour—says : " These advancing and retiring qualities of hues are not mere illusions but have their basis in optical laws."

An optical peculiarity of the eye is that its lens cannot focus simultaneously on all hues : each colour of the spectrum is refracted differently.

The rays of Red, which tend to bend only slightly, will focus at a point behind the retina ; to compensate for this, and to bring the Red area or object into clearer focus, the lens swells out and grows convex. This action ultimately draws the colour nearer and gives it advancing characteristics.

On the other hand, rays of Blue, which bend sharply on passing through the lens, will tend to focus at a point in front of the retina. Now the lens flattens out, grows concave and pushes the hue back to make it a characteristically retiring colour.

Thus if two patches of colour, say, intense Red and deep Blue, both of the same size, are held at the same distance the red patch will actually look larger. This brings out the old decorators' dictum—" The brighter the colour the smaller its use."

It has been mentioned before that colours have an effect on the mind and body of man. If these effects are understood and acted upon, it follows that a decorative scheme can be evolved which will embody these desirable tendencies—and in the case of a hospital, with its particular class of residents, with benefit to the patients. Evidence of the beneficial use of colour is available from America, where much research has gone into the subject.

Arthur G. Abbott, in his book *The Colour of Life*, quotes Dr. Edward Podolsky, in *The Doctor Prescribes Colour*, as saying :

> " There is as much actual healing in colours as there is in drugs, heat, massage and other physiotherapeutic methods. And these medicinal effects are as real and measurable as any obtained through other means."

Dr. K. W. Baldwin, former Senior Surgeon of the Women's Hospital of Philadelphia, has said :

> " If the body is sick, it should be restored with the least possible effort. There is no more accurate or easier way than by giving the colour representing the lacking energy elements, and the body will, through its radio-active forces, appropriate them and so restore the normal balance. Colour is the simplest and most accurate therapeutic measure yet developed.

"For about six years I have given close attention to the action of colours in restoring the body functions, and I am perfectly honest in saying that after nearly 37 years of active hospital and private practice in medicine and surgery, I can produce quicker and more accurate results with colours than with any or all other methods combined and with less strain on the patient. In many cases the functions have been restored after the classical remedies have failed."

Dr. Knowle Scott, Surgical Assistant at the Royal Waterloo Hospital, London, has observed "the remarkable effects colours exert in a number of diseases."

Research has shown that the psychological aspect of colours can be categorised :—

RED. This hue is stimulating and exciting. It is suggestive of heat and heart beat. It has a physical vibration that stirs the emotions. It increases muscular tension and hence stimulates higher blood pressure and respiration rate.

Scarlet Red, the colour of vitality and action, has a powerful influence over human moods, as it is one of the most primitive and elemental of sensations—to "see red" is usually a sign that the emotions are out of control.

ORANGE. Orange is a thermal colour—warm invigorating quality. Its vibrations of vitality and strength are suggestive of the living, pulsating live force. In its lower vibrations (towards Brown) it is indicative of down-to-earth materialism and the transitory state of decay.

YELLOW. This is an enlightening vibration, the cheerful brightening colour of light and wisdom. The hue transcends the intellectual and reaches up into the realms of intuition, high spirituality and intelligence. Yellow is the hue of highest visibility. The ancients wore yellow armulets to protect them from disease and plague. Yellow light is said to have favourable action on the blood and to benefit human metabolism (action of blood on the tissues). Yellow is popular because of its clear bright beauty.

GREEN. This is nature's colour, associated with verdure and the out-of-doors—cool, fresh and rejuvenating in quality. Psycho logical tests prove it to be a tranquil colour neither exciting nor subduing, which accounts for the fact that hospitals employ it for the decoration of rooms and wards. Being cool in nature, it helps to overcome the physical discomforts of high temperatures.

BLUE is a spiritual colour associated with sky and water, being cool, clear and transparent in quality. The ancients adopted it for the symbol of truth and wore blue armulets as a safeguard against illness. Blue is an electromagnetic colour and emotionally inspires peace and introspection. By test it has been found to be the most soothing, subduing and cooling colour. Leading the mind to thoughtfulness and deliberation, it is the high vibration of the mind and promotes creative ideas. In its negative aspect (dull, dirty blues) it is cold, indifferent and depressing, suggesting the " Blues " !

VIOLET and PURPLE. These are the high frequency vibrations of mystery and martyrdom, representing uncontrolled power. In the higher aspects Violet is dignified and elevating ; it reveals the impersonal life and oneness with the spirit. The ancients associated these colours with patience and sacrifice and wore them as symbols of penance. Once costly to manufacture, Purple was reserved principally for Royalty and State, and became the Imperial colour of Rome in her days of power. These colours are aesthetic, refined and elevating. They show discrimination and tend to suggest things mysterious and occult. In its lower vibrations Violet denotes penance and melancholy.

These theoretical premises are the factors governing the intelligent application of colour and the Hospital is the one place where all the " know how " of paint styling should be employed to the limit. Every ounce of knowledge we possess about the psychological reactions of people to colour should be utilised here to the full.

We should, for instance, use the quieting Blues and Greens on the walls of a ward for surgical patients to soothe and quiet them—suggesting the complete rest and relaxation that is so necessary for their recovery. For patients who have reached the convalescent stage more bright and stimulating colours should be brought into action to advance the rate of progress once the patient is on the high road to recovery. By striking a cheerful enough note the patient's will to recover is speedily fortified.

Corridors.

Corridors should be cheerful places with light tints used to make them seem as spacious as possible, and one rather intriguing experiment has proved that if the walls are painted in different colours the corridor assumes a wider aspect.

In certain corridors a bright, or advancing, colour has been used on the end wall, with the result that the corridor appears shorter ; whereas an atmospheric blue used on the end wall gives an air of

mystery and induces people to continue their walk round the corner. In this connection one might mention—dados. Whether to use a dado or not can only be decided on the site. The criticism is that they break up the wall surface and usually the dado is in harsh contrast to the wall surface above. The advantage of a dado is obvious where a passage is subject to vehicular traffic, *i.e.* trolleys, stretchers, etc., and where damage is likely to occur due to collision by this traffic. The damage so resulting can be localised and where necessary the dado only need be re-painted.

Enough consideration has not been given to the intelligent use of dados by breaking away from the conventional Green or Brown and Cream. Striking effects can be gained by the use of a band of gloss paint at dado height, giving at the same time adequate protection and eliminating the comparative flat masses suddenly changing to high gloss surfaces, as will be found when the wall has been treated in flat colour and finished with a high varnish effect on a solid dado.

Operating Theatres.

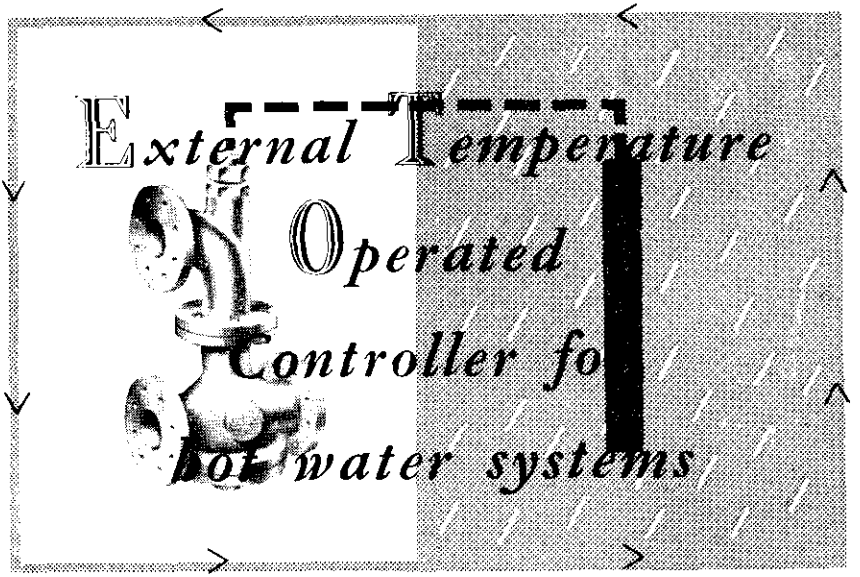
We have had instances where surgeons have demanded that operating theatres be painted black to secure the absorption of reflection outside the sphere or cone of light immediately on the operating tables. Whilst we agree that this, in many instances, is highly desirable and one instantly thinks of Black in this connection, we would offer for consideration the absorbency, especially under artificial light, of such colours as Dark Purple and Navy Blue, or even a very dark Bottle Green.

Reception Rooms.

There is one place in a Hospital which always strikes me as being in dire need of the intelligent use of colour . . . that is the Waiting or Reception Room, which should be kept a bright, hearty place, so that those who come and wait—and wait not knowing what the future holds—will derive enjoyment from the cheerful colour and will in turn convey encouragement to those for whom they wait.

Too many of these rooms are painted with the cold Greens of the Police Station and produce the same chastening effect as this austere type of building, and I often wonder whether originally the designer of the building was inspired to use this Green, which was considered by the public Guardians of the past to be a most sanitary and worthy colour!

To receive the patient in a happy frame of mind must, I feel, put the Doctor part way upon the path to the recovery of the patient.



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H0750

Wards.

It was previously mentioned that the painting of wards should be in instances restful and stimulating, but before we consider this any further there is one point I would like to bring out—namely, Ceilings. To my mind Ceilings are possibly the most important feature of any Hospital ward ; for this reason, much time is spent by the patient lying in bed, and the greatest part of the room he can see is the Ceiling. In my opinion there is nothing more irritating than the stare for any length of time at a high-gloss ceiling in White or Ivory ; every imperfection of the plaster is magnified and produces glare. I, therefore, do suggest this problem be given more serious thought. I would almost always paint the Ceiling in pastel shades of green or blue or pink and I would suggest a matt finish in one of the new synthetic materials that are available today and whose washability and hygienic properties are equal to that of the best gloss enamel. I would go further. I would produce on many ceilings a fine-textured surface, as, by the contained shadow these ceilings possess they are much more interesting and easy on the eye than a flat surface.

With regard to the theory of a sedative ward and a stimulating ward, it is, of course, not always possible to transfer the whole of the patients of one particular ward to another to comply with their varying conditions of recovery and convalescence, but this inability can, to a great extent, be eliminated by what is known as the two-colour effect.

For instance, flank walls can be made to appear to have a separate entity in colour and yet bear a strong harmonic relationship to the over-all scheme of any one room. This doesn't mean to say that Pinks and Blues are necessarily the correct combination ; on the contrary, the tone or range of any particular colour can be used to demonstrate this effect.

Finally, I would give a brief outline of how I would set about preparing a colour scheme.

Here the compass can help you.

The prime consideration of any scheme applied to Hospitals should always bear general relationship to the general lighting, that is to say natural daylight in colour presentation.

The term " warm " is usually applied to those hues you see in natural objects which are associated with the feeling of heat— the fire and the sun are examples—they are the Yellows, Oranges and Reds. In decoration they deserve careful consideration when planning colour schemes for rooms which seem cold or dark.

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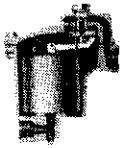
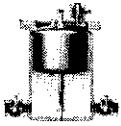


Inverted Bucket Steam Traps

Trap-Strainer Units

Lift Fittings



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The term " cool " is applied usually to those hues you see in natural objects which have an air of coolness about them . . . Water, Snow, Ice, Shadows. They are the Blues and Greens. A neutral Grey frequently gives a similar impression. Such colours are good selections for rooms that shine with the warm afternoon sun. It is, however, not sufficient to say that because a ward or room faces East warm colours must be used. Schemes can be evolved which are progressively coloured in re-actance to the warmth of natural light.

The sun rises in the East and the light given from it is watery or hard and is apt to give a harsh look to colours.

By midday it has reached the South and has become warm, and by the afternoon is in the West, where the warmest light is received. The North receives no direct sunlight at all and, naturally, subtends to being cold. Thus one can say that the Northern aspect should receive the warmest colours such as Yellow, Gold, Rose, Beige, Buff, Maroon, Cream, Daffodil.

The Eastern aspect should have slightly less warm colours, such as Light Grey, Ivory, Cream and Fawn.

The Southern aspect such cool colours as Greens, Light Blues, Grey, Turquoise and Emerald Green ; and in the Western aspect the coolest colours of all, such as Sky Blue, Oyster White and several of the more pale Greens.

The time at my disposal has been so brief to cover such an immense subject that if I have given you any new angle of approach to the subject I am more than satisfied. Because colour is, I feel, perhaps the most important single factor in determining the character of a building more care should be spent on it than is normally the case, for by colour alone can the true value of a building be expressed of the failing mitigated.

In concluding I would like to acknowledge the source of much of the information. This is contained in *Paint Power*, by Lenore Kent, and *The Colour of Life*," by Arthur G. Abbott, both American publications, and I recommend these publications to any student of the subject.

DISCUSSION.

A member remarked that he did not consider the possibility of painting wards in stimulating or soothing colours was feasible because of the difficulty of moving patients from room to room.

Mr. Marlow replied that this was the point he had tried to bring out in his talk and was the reason he put forward for consideration the idea that it is possible to decorate one wall and one end of a ward in a stimulating colour and the other wall and end in a soothing colour. By the simple process of removing the patient from one side of the ward to the other one would produce the effect of taking him into another room. This is a fairly new theory and one that is actually being carried out in a hospital in Wales at the moment. However, it should be remembered that the colours should be kept pale and saturated and should not contrast violently.

A member asked what effect electric lighting would have on a scheme produced under daylight conditions.

In reply, Mr. Barlow agreed that colour schemes can alter under the influence of either fluorescent or ordinary electric lighting.

A scheme should always be built round the use of a room. Some rooms may only be used during the hours of daylight, others may be used under electric light most of the time.

No attempt should be made to finalise on a scheme until actual samples of the paint suggested had been brushed out on a panel and tested under all aspects of the lighting. Consideration should always be given to the lighting of a room as, under certain circumstances, the pigments are fugitive under electric light. Use of a previously painted panel will obviate the use of such pigments.

It should be borne in mind that lighting will sometimes cool and sometimes warm the aspect of a room.

A member remarked on the damage caused to a colour scheme for a ceiling by central heating—where the paint had darkened.

Mr. Barlow remarked that the commonest failure of a colour scheme in the proximity of heating was due to flotation of dust owing to conduction through warm air. The absorbency of the ceiling was not constant and the dust showed generally in bands between the rafters. This was a common fault where there was no complete answer and the best treatment would be the use of a good quality paint and frequent washing before the condition became too bad. The darkening of paint due to the proximity of heating can be eradicated by a careful selection of pigments, and if the manufacturer is informed he should be able to supply a paint which will never darken even though in the vicinity of heating pipes.

The next question was—what type of colour scheme would be suggested for an oak span roof, large roof principals and wooden underboarding?

Mr. Barlow replied that it all depended upon the dimensions and use of the room. If the roof is considered high it may be a good thing to leave it a dark colour, as this tends to bring the roof down. If a dark roof is considered oppressive, then it should be painted in pastel shades, with the roof principals treated with the same colour as the roof.

A supplementary question was asked regarding the roof principals—what if these were painted with bituminous black paint?

Mr. Barlow replied that sealing paints were made which will stop the action of bituminous paint bleeding through subsequent coats.

The bleeding is caused by the oil in the paint softening up the bitumen and allowing this to bleed through.

Synthetic paints, which contain no oil, provide a " buffer state " between the paint system and eliminate bleeding.

A member remarked that gates treated with bituminous paints stand up very well, even though penetration may only be 1/64", and asked whether this treatment is to be preferred to oil painting.

In reply Mr. Barlow pointed out that the questioner had in mind one of the creosote types of treatment which differed from paint in that they penetrated into the wood and were not surface coatings as were oil paints. Many of these have definite wood preservative properties and resist the action of moulds and white ants.

It is very good practice to use these on some of the hard woods, particularly where the grain of the timber is sufficiently decorative to be worth preserving.

Another member asked whether anything was being done towards producing a paint without a smell.

Mr. Barlow answered that the matter is continually under review by paint makers. The chief cause of the unpleasant smell is the volatile and usually the faster drying the paint the more pungent the odour from the volatile. The smell could be minimised by the addition of a deodorant. Great progress has, however, been made in a flat material which includes, amongst its many advantages, the fact that it has a pleasant sweet smell which is non-lingering and disappears on drying. The drying time is only four hours, so the room is fit for occupation very quickly without any discomfort to the occupants. This material is being widely used in hospitals at the moment.

A questioner asked for a recommendation of rust preventative paints and mentioned one that he had heard of containing zinc filings in suspension.

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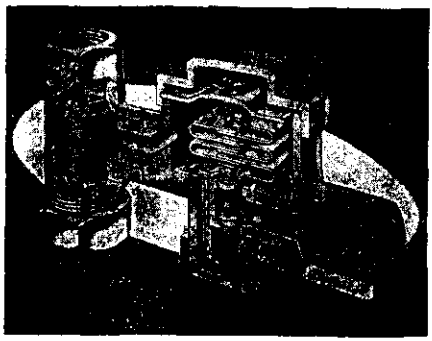

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Mr. Barlow replied that the questioner was probably thinking of atomised zinc dust. The Iron and Steel Federation have put a great deal of research into this question and their findings are available for the use of interested persons.

Rust is like a skin disease, it spreads and cannot be cured by using paint like a dab of ointment.

Red lead or paint made on a red lead base is recommended. although several rust inhibitive primers include zinc chromate, zinc dust and micaceous oxides. *It is essential at all times to thoroughly* clean down the metal and remove all rust before applying any paint. Under such circumstances paint should have a very satisfactory life.

Electricity Boards insist on a life of ten years for their pylons under all atmospheric conditions.

The next question referred to the cracking and crazing of paint —does this occur with synthetics in the same way as with ordinary paints?

Cracking and crazing is always likely to occur when a harder *film is superimposed upon a soft undercoating or previous film.*

Test can easily be made on the existing paint structure before applying subsequent coats.

The next questioner remarked that he had heard of painting " wet on wet "—is there anything in this?

Mr. Barlow said that this system of painting wet on wet is quite common practice in the coaching industry. It can be adopted for the decorating trade except that paint applied under these conditions must be applied by spray and this is not always possible.

A questioner remarked that owing to the proclivity of painters to add too much oil or turps to paint the amount should be stated on the tins.

Mr. Barlow replied that normal paints were sent out ready for use and no thinners should be added. In the case of semi-prepared paints the volume of additive is always stated.

The Chairman remarked that this brought us back to the " human element " and painters were always likely to stick to their own ideas of thinning.

Mr. Barlow added that the greatest trouble was caused by the thinning of primers and undercoatings, as these were covered by a subsequent coat the failure of these was not apparent until the whole of the paint system broke down.

A member asked whether there was a hard stopping for use on outside timber.

Mr. Barlow said that suitable stoppings were provided by manu-manufacturers which were much better than ordinary linseed oil putty. A handy one can be made by the use of white lead, gold size and slate dust. It should be well pressed into the timber and knifed down before the application of the undercoating.

Use of a plaster-type stopping was not recommended on outside timber.

The next questioner asked whether when a paint had been washed and varnished until the surface had " crocodiled " is there anything one can do?

Removal of the old paint is the only satisfactory solution.

A question was asked regarding the treatment of new plaster.

Mr. Barlow replied that the greatest hazard met with in the painting of new plaster was the degree of moisture in the plaster and the action of lime and salts on the oil and pigment used.

When new plaster was reasonably dry, painting with the new type of synthetic material was perfectly safe ; as this contains no oil, there is no danger of saponification.

The choice of earth colours which were inert against the action of lime would prevent patchiness.

The painting of new plaster is dealt with very fully in a bulletin issued by the Government.

A member asked for information on the cause of flashing.

Mr. Barlow said this occurs principally in flat oil paint and is due to the application of the second coat too quickly over the first coat when the brush will pick up the bottom coat and the surface will then dry with a hard shine.

This disadvantage is adequately minimised by the use of the new synthetic types of material.

A questioner referred to the flashing occurring on gloss paint, not flat oil paint. A subsequent discussion elicited the fact that the condition was not one of flashing but one of sinking or blooming.

Blooming is caused by the presence of moisture on the paint film during the critical drying time, causing small craters to form on the film and thus diffuse the light striking the paint surface.

Sinking is usually caused by the over-thinning of the under-coating.

Mr. Barlow was asked whether there is a British Standard Specification with regard to undercoating which would enable undercoating and gloss paint made by different makers to be used.

He replied that this was not good practice. Paint manufacturers never think in terms of a coat of paint but of a paint treatment, and undercoatings are made to harmonise with the finishes, and as far as possible the same maker's finishing and undercoating should be used.

A member asked if there was any objection to using a white lead primer before the ordinary undercoating.

The reply was, No. White lead is a first-class primer, although it is improved by the addition of a little red lead. This makes the primer pink in colour. Care should be taken when buying pink primer that the material is based on red lead and white lead in due proportion, as it is possible to buy cheap pink primer which does not conform to the required standard.

The discussion then closed, and Mr. Barlow was thanked by the Chairman on behalf of the members for his most interesting and instructive talk.

* * *

NORTHERN IRELAND BRANCH.

The Third Annual Meeting of the above Branch was held in the Mater Hospital, Crumlin Road, Belfast, on Saturday afternoon, the 15th April, 1950.

The election of office-bearers resulted in no change taking place for the ensuing year : Mr. W. Gillespie, Engineer, Northern Ireland Fever Hospital, will continue to guide and control the Branch's affairs, while Mr. L. Campbell, Purdysburn Hospital, as Vice-Chairman, who has never missed a meeting since the inauguration of the Branch, will continue to give his wise counsel and advice. The Secretaryship and Council Representative selection showed no change.

After the business of the Branch had been concluded, tea was provided by the Hospital, and after an enjoyable repast, Mr. J. McCullough, M.I.H.E., the Engineer-in-Charge, using the fine projector equipment in the Hospital, showed several films of interest, including a technicolour, taken at the Whiteabbey Hospital, of the Exhibition of Handicrafts—the work of patients in Northern Ireland Tuberculosis Hospitals under the Occupational Therapy Scheme—and the winning exhibits called forth remarks of admiration. A film on Britain's Water Supply, kindly loaned by the Belfast Water Commissioners, was shown and proved very interesting and instructive ; a technical film on Gears and Gearing was also enjoyed.

A tour of the Hospital was then conducted by Mr. J. McCullough. The Steam Generating Plant, Laundry, X-ray Department, Operating Theatres, etc., etc., were all visited. It was noted that the Hospital, which is outside the purview of the National Health Scheme and is maintained by the time-honoured means of revenue, was keeping abreast of the times. The X-ray plant is of the most recent design of the Victor Co., very few others, if any, being in operation in Northern Ireland. New laundry equipment, only a few months installed, was inspected, and fluorescent lighting was noted in this department. Work is commencing soon on the installation of up-to-date steam cooking equipment in the kitchen, and further improvements are contemplated. Additional premises have been cquired for staff accommodation, while the existing Hospital and ancillary buildings compared favourably with others of similar type.

The hospitality extended to our members by the Mother Superioress and the members of the staff left nothing to be desired and was appreciated by the members attending. On bidding me

Au Revoir, the Mother Superioress expressed the hope that we had an enjoyable and happy meeting, and extended an invitation to return at some future date.

The Institution of Hospital Engineers appreciates the co-operation and hospitality of those governing the Hospitals on the occasion of these courtesy visits and the help received to conduct their meetings, and is all to the good to bring about that atmosphere of mutual understanding and respect so necessary and desirable in an undertaking destined to see to the comfort, cure, and well-being of suffering humanity.

MATTHEW MCN. GRAY,
Hon. Branch Secretary.

LONDON BRANCH.

On Saturday, 1st April, 1950, about 42 members of the London Branch paid a visit to the South-Eastern Gas Board's (Metropolitan Division) Works at East Greenwich.

The party assembled at Charing Cross at 9.45 a.m. and were conveyed by coach to East Greenwuch. Here we were met by members of the Board's officials, who arranged us into parties and conducted us around the Works.

We were taken through the coke yard and along the viaduct carrying the conveyor belts which handle the coke from furnaces to sales hoppers at the rate of 100 tons per hour. From here we went to the screening house and through the retort house, where we saw the retorts being charged and discharged by hydraulically-operated rams.

A new plant was in course of erection at the time of our visit, and we were shown over this, and the operation of this plant was fully explained to us. We then proceeded through the mechanical engineering shops, the exhauster house, chemical control room, and through to the coal jetty on the Thames, where we inspected the coal-handling plant.

We were then entertained to lunch in the Staff Canteen, during which the Chairman of the London Branch, Mr. R. G. Rogers, thanked our hosts for the most excellent arrangements which they had made for our visit, and for the splendid meal which we had just partaken, and this concluded a most interesting and instructive tour.

After lunch the party set course for the Westminster School of Medicine, where the London Branch Monthly Meeting was to be held. Officials of the Gas Board attended the meeting, and exhibited a film dealing with the production and uses of gas, after which a discussion followed on points arising out of the film and matters on which members wished to have further information concerning the processes and equipment seen in operation in the morning.

The Institution are greatly indebted to the Eastern Gas Board for affording us the opportunity of inspecting the plant, and for the very excellent arrangements made for our visit.

We also thank them for the kind invitation to us to pay a further visit when the new plant, now in course of erection, is in operation.

EDITOR.

EDITORIAL ANNOUNCEMENTS.

Members are advised that, in the event of becoming involved in a dispute, or being treated in a manner which they consider unfair, and to be of such a nature that they are likely to seek the advice and help of the Institution, they should take no action likely to hinder or retard such steps as the Institution might find it necessary to take in their efforts to reach a settlement, and to this end members should consult their Branch Secretary before taking any other action, or accepting any variation to existing conditions.

EDITOR.

NEWSLETTERS.

A few copies of the following issues of "THE HOSPITAL ENGINEER" are available to members, and early application should be made to the Editor by those requiring them: Nos. 1, 2, 3, 4, 6, 8, 9, 10, 11, 12. Price 3rd each, plus postage, which must accompany the order.

EDITOR.

SCOTTISH BRANCH (SOUTH-EASTERN AREA).

(Extract from *Edinburgh Evening News.*)

Health Service—He Can Read Again.

A family " information service " and electrical ingenuity have enabled Mr. John Scott, a patient in Liberton Hospital for four years, paralysed from the neck down, to read a book for almost the first time since 1945. He gave it up then because it was not always possible to find someone to turn the pages for him. But the hospital engineer at Liberton, Mr. G. Watson, heard from his brother in a similar position at Longmore Hospital, of an electrical page-turning device which had been developed in America, but was then unobtainable in this country.

Mr. Watson literally designed and constructed the mechanism himself, and now, by depressing his chin when he wants a page turned, Mr. Scott can read a book without troubling someone else to turn the pages.

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