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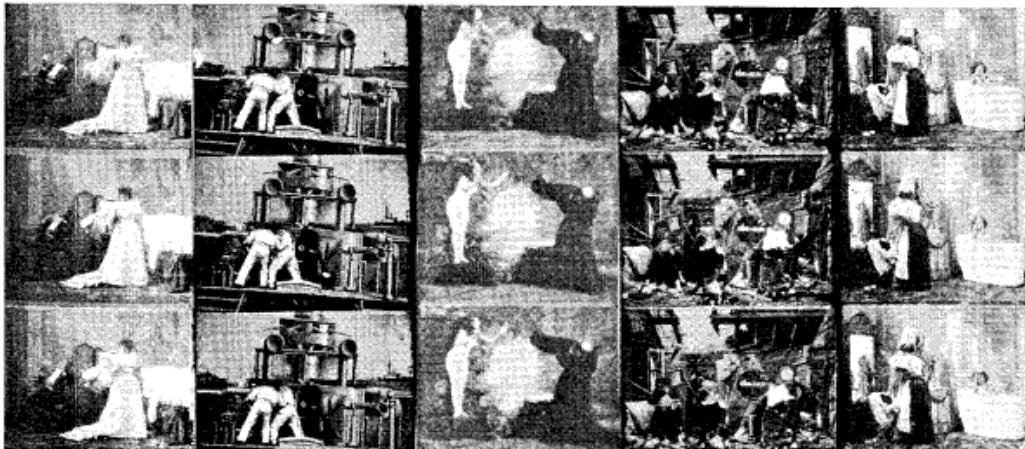
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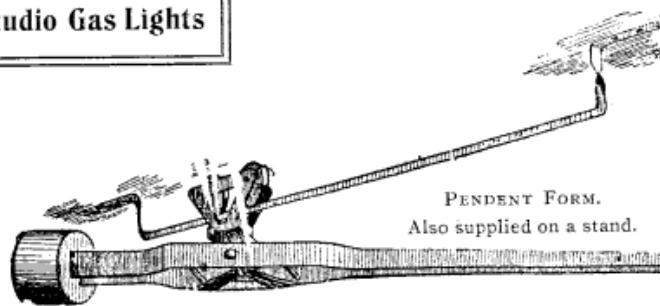
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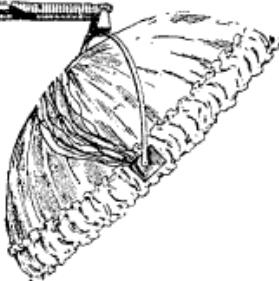
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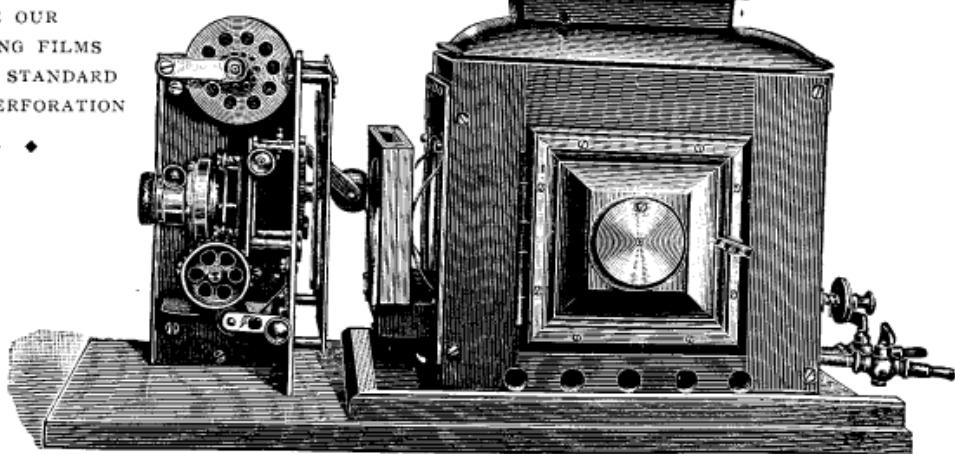
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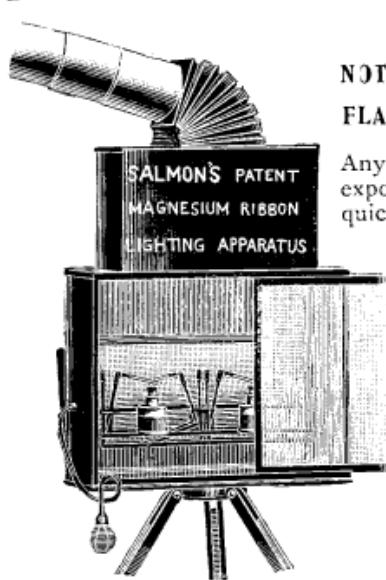
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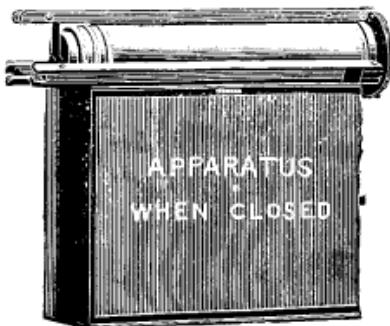
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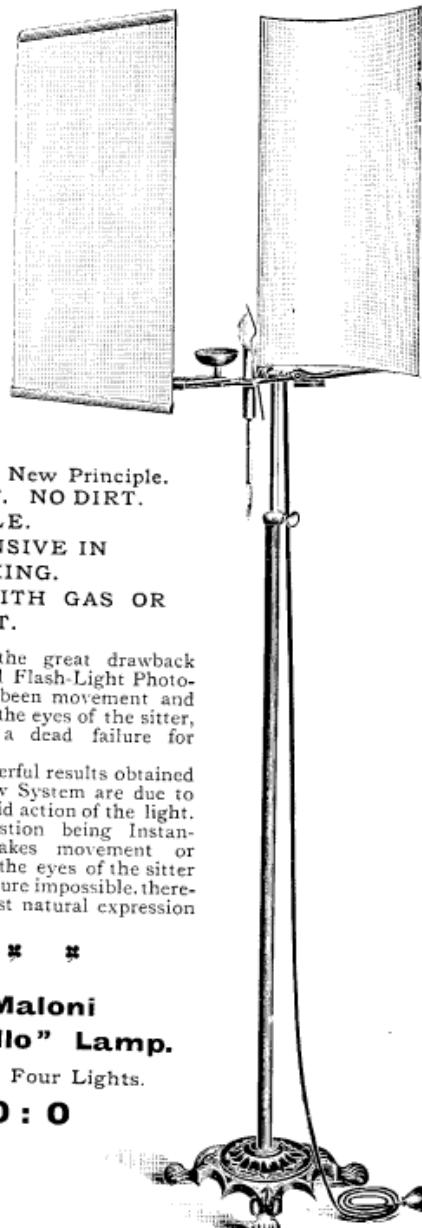


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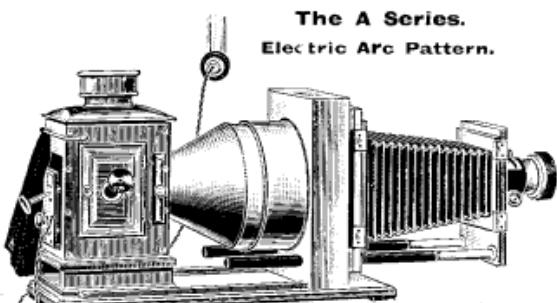
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Hughes' Handsome Biunials, brass-fronted, mahogany-lined, 4-in. condensers, high-class front lenses, £6 10s.; blow-through jets, 8s. 6d.; mixed gas jet, 12s.

Hughes' Moto Photoscope, for living pictures. No shutter, therefore no flickering. Perfection; great results. Illustrated particulars, 2d.

**Great Bargains** in high-class triple, bi-unial, and oil-lighted lanterns, grand effects, lecture sets, etc.; clearance illustrated lists post free twopence. W. C. Hughes, Brewster House, 82 Mortimer-road, Kingsland, London, N.

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**W. C. Hughes**, Brewster House, Mortimer-rd., Kingsland, N.

**Bonaccord Acetylene Gas Apparatus** for Optical Lanterns and studio use. No smell if properly used. No danger. Price complete, ready for use in lantern, 28/- net; send us width of tray. Particulars on application to A. and J. Smith, Opticians, Aberdeen.

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**Vevers' "Vivograph,"** the latest, neatest, cheapest, best silent machine for projecting animated photographs. Fits any lantern, price £5. Special catalogue, 1d. C. C. Vevers, Briggate, Leeds.

**Cinematograph Films** from 15/- Film Winders, 5/-; Tanks, Projectors, Cameras, Printing and Developing Apparatus. Complete outfit. See Vevers' "Vivograph" working daily at 163 Briggate, Leeds.

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**Electric Dynamo** for two ten-ampere arcs or twenty-four incandescents; perfect, £15 10s., splendid for portraiture at night. Hood, Photo-Engraver, St. Bride Works, Middlesbrough.

**Beautiful Cleveland.** "A masterpiece of the photographers' and engravers' art." Artistically-bound copy, gilt edges; sent post free, 2/9. Hood & Co., Limited, Publishers, Middlesbrough.

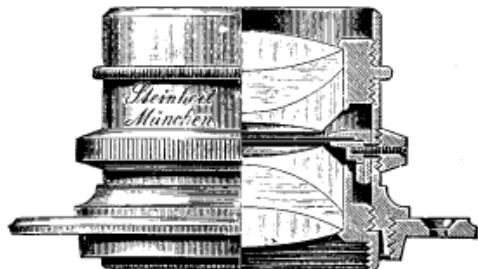
**To Photographers** who have a quantity of Waste Negatives, I am open to purchase for cash at once. Address, Bowen, 56 Devonshire-road, Holloway, N.

**Splendid Invention in Hand Cameras.**—The "Silverite" Gem Hand Camera takes six Gem photographs on one quarter-plate. A splendid camera with six good lenses. Any subject can be taken with this camera; and the price brings it within the reach of all classes. It is well made and neat. We are the only makers of the Silverite Company below.

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**Continued on NEXT PAGE.**

# STEINHEIL'S LENSES



If you are a Photographer, no matter whether amateur or professional, send a post card mentioning this advertisement to No. 1403, The Photogram Office, Farringdon-avenue, E.C., and you will receive something that may be useful, and is sure to interest you.

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**Collotype Machine Minder** (24) desires change to gain further experience. Ten years with present firm. Can make plates and photo-litho transfers, if required. Highest references. Seaside or provinces preferred. Write to No. 1422 Photogram office.

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**Lindsay Hemery**, Tavistock Studios, Brockley-road, S.E. Specialite Enlargements (see below).

**3s.** 12 x 10 specialite Enlargements, nicely touched, and mounted on plate-sunk mount; carriage free. "The enlargement is admired all round."

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**Lindsay Hemery**, Tavistock Studios, Brockley-road, S.E. Specialite enlargements (see above).

**Retouching.** Miss Rowe, 4½ years with Mr. Van der Weyde, retouches at home. Specialite: large heads. Likeness retained. Lessons given during the afternoon or evening. 9 Amor-road, The Grove, Hammersmith, W.

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**Bromide Enlargements**, 8½ x 6½, 1/-; 12 x 10, 1/6; 15 x 12, 2/-; 18 x 15, 2/6; opals, 8½ x 6½, 2/-; 12 x 10, 3/-; finishing in any style. Cartes and cabinets artistically colored from 3/- and 6/- per dozen. Retouching, printing, etc. C. Faulkner, 262 Seven Sisters-road, Finsbury-park, London.

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**Bromide Enlargements from Negatives.**—Best possible results. 10 by 8, 10d.; 12 by 10, 1/-; 15 by 12, 1/4; postage extra; larger sizes equally cheap. Address W. Shepard, 9 Belgrave-road, Leicester.

**Murray's Photogravures** are the acme of photographic printing. No re-biting or handwork. Specimen, two stamps. E. C. Murray, 37 Buxton-road, Walthamstow, E.

**Continued on page xiv.**

**Retouching.** Highest class work only. Cabinet vignettes 2/-; cabinet  $\frac{1}{2}$  and carte vignettes, 1/-. Other sizes proportionate. O. Oliver, 23 Pembridge-grove, Clapton, N.E.

**Artist** to Walery's finishes Enlargements (Carbon, Platinotype, Bromide) in Monochrome and Water-color; copies a speciality; air-brush work; terms moderate. Miss Ferranti, 136 Tufnell Park-road, N.

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**Portraits Painted in Oils** from photo; 12 by 10 size, 10/6. High-class work; satisfaction guaranteed. T. Pinder, Artist, 100 Yorkshire-street, Rochdale.

**Miss Kay**, 289 Radford-road, Nottingham, First-class Retoucher. Cabinet heads, 1/-; Carte heads, 6d.; or at photographers' own prices. Specimen negative retouched free for postage.

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**Penrose's Washed Collodion Emulsion** for Lantern Slides and Opals. W. B. Bolton's formula. Sample  $2\frac{1}{2}$  oz., 2/6. Penrose & Co., Upper Baker-street, Lloyd-square, W.C.

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**Lippmann Process**, special slides with mercury reservoir, for plates  $4\frac{1}{4} \times 3\frac{1}{4}$  inches, adapted to any camera. Penrose & Co., Upper Baker-street, Lloyd-square, W.C.

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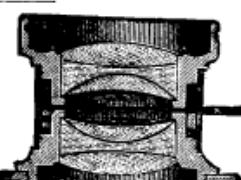


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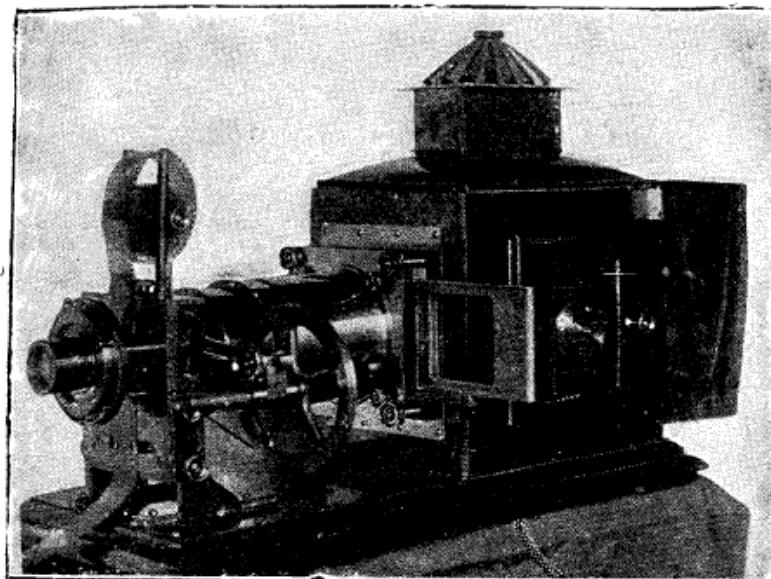
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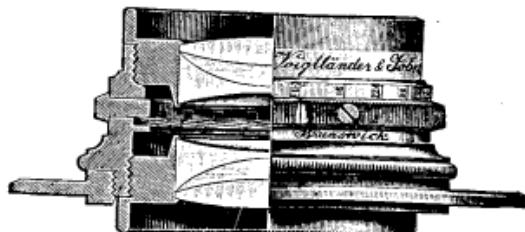
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**NOTICE.**—These Cameras will be sent to any part of South Africa, Indies, Australia, or New Zealand, for **5/-** extra; or to any part of the United States for **7 6.**

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We will give **THREE PRIZES** for the best Photos, six on one plate, taken with our **Gem** Cameras during

**FEBRUARY and MARCH.** Particulars sent along with Camera. All photos to be sent in by the end of March. These Prizes are for the readers of *The Photogram* only.

**First Prize, Lady's Safety Bicycle; Second Prize, Gentleman's Bicycle; Third Prize, £5 5s.**



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# The Guild Record

Vol. 1. No. 11.  
February, 1898.



**The Photographic Guild** is formed to provide the advantages of a photographic society for isolated workers all over the world.

*President.*—Leon Warnerke.

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*Hon. Sec.*—H. Snowden Ward.

*Secretary of Survey Section.*—Henry Newson, Fakenham, Norfolk.

*Offices.*—6 Farringdon-avenue, London, E.C.

Particulars, rules, etc., sent on application to the Hon. Secretary, enclosing stamped addressed envelope

**Owing to the absence** of many members from home during Christmas and the New Year, and the visit of our Honorary Secretary to the United States, there is little to be said about the doings of the Guild since our last record.

**The Guild**, however, is exciting considerable interest amongst our Continental friends, and we have replied to many inquiries from editors of photographic journals and others, who were anxious to know all about the Guild and the work it proposes to carry out. We have always found our comrades of the camera on the other side of the silver streak most hospitable and friendly towards photographers from our side, and if the Guild could, at some future time, extend its operations so as to become international, the band of union and friendship would be drawn still closer.

**The Badges** are ready and only await the approval of the committee before they can be issued. The first idea in connection with the badge was to have a movable centre, so that the date could be changed from year to year, but it was found to be too expensive to put into practice, and has been abandoned. It will be necessary, therefore, to have new badges every year, but as they are very inexpensive this will not be a serious matter.

**The Committee** hopes soon to have the stationery ready for issue to members.

**Miss Edith Nevile** begs to acknowledge with many thanks the receipt of four photographs and 2s. 9d. from L. C. A. Feurtado, Jamaica.

**A few members** have sent us particulars of their status in photography, *i.e.*, whether they are amateurs or professionals, what subjects they are interested in and what line of work they propose to take up. We should be glad to have more such communications.

**A member** inquires whether the photographing of MSS. documents, antiquities, etc., of historical interest is within the scope of the Survey Section. We should say decidedly so. The object of the Survey Section is to supplement existing agencies in every possible way, and to work in harmony with them, so that if the records are not exactly suitable for the collection of the Guild, they can be handed over to the societies who devote themselves to the section of work to which the photographic work in question belongs; in fact we might almost go so far as to say that members of the Guild should regard all as fish that comes to their net, make their negatives, preferably of whole plate size, and then, if they are in any doubt as to the proper destination of their prints, write to the secretary of the Survey Section, who will find a home for them. In the case of photographic records the important thing is to take advantage of every opportunity before the said opportunity vanishes like the Boojum.

## Doomed and Threatened.

53. Brechin Cathedral, Forfarshire. To be restored.

54. Coldingham Priory, Berwickshire. Suggested restoration.

55. Croydon Whitgift Almshouses. Threatened demolition.

56. South Searle Church, Nottinghamshire. To be restored.

57. Turkdean Church, Gloucestershire. To be restored.

58. Wakefield Cathedral, Yorkshire. To be enlarged and restored.

## “The Photogram” Employment Bureau.

Employers wanting assistants, and assistants wanting situations, can be placed on the register until suited for a small fee of one shilling. Employers can have a copy of the register, and full particulars of the entries nearest to their requirements, by enclosing two penny stamps. THE REGISTER will be published monthly in THE PHOTGRAM.

EMPLOYERS must state the class of assistant wanted, salary offered, and such other particulars as will assist us in naming the most likely man on the books.

ASSISTANTS must state (1) Name. (2) Address. (3) Age (optional). (4) Class of situation required. (5) Salary. (6) Nature and length of experience. (7) Names and addresses, and length of time engaged in last two or three situations. (8) Reasons for leaving last situation. (9) Names of persons giving good references. (10) Further brief particulars, especially

whether London, the provinces, or the seaside is preferred or objected to.

**NOTIFY WHEN SUITED.** Applicants must undertake to notify us immediately when suited, and this is very necessary to save the time of other applicants. Once a month we shall write to all names on the list, and cross all from it who do not reply by postcard that they are still UNSUITED.

NUMBERS and outline particulars only will be given in the advertisements, and in the copies of register sent to the stock-houses, etc. Full particulars of the advertisers referred to by any given number or numbers will be sent for a couple of penny stamps.

All communications must be addressed to THE PHOTGRAM Employment Bureau, Farringdon-avenue, London, E.C.

ANNOUNCEMENTS or corrections must reach this office not later than Feb. 14th for the March issue of THE PHOTGRAM.

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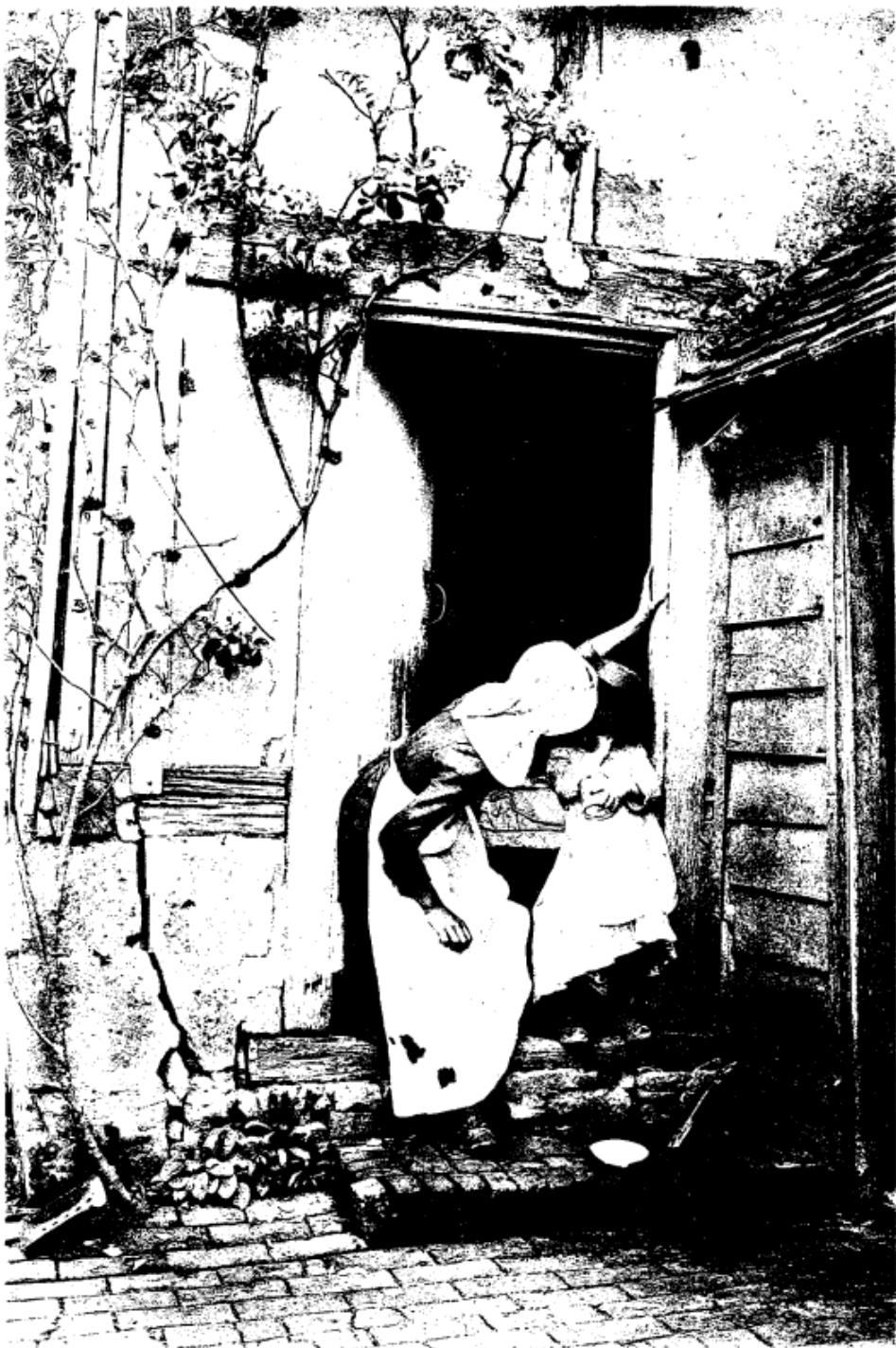
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# The Photogram

## for February, 1898. 5s

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Vol. V.  
No. 50.



### ANATOMY IN PORTRAITURE.

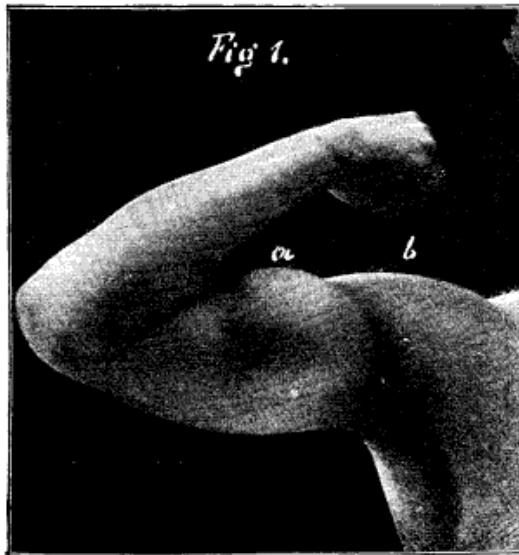
THE same difficulties and objections which have stood in the way of the direct study of the nude by photographers, have prevented publishers of the photographic books and journals (in England, at any rate) dealing with the anatomy of man, beyond in one or two cases the anatomy of the face. When we considered the advisability of translating the following most useful and suggestive article from our contemporary *Das Atelier des Photographen*, the

question was raised by certain members of our staff as to whether the readers would consider the subject a "fit" one for a photographic journal. As it appears to us, the question is really whether photographers wish to continue working ignorantly, or prefer to work with intelligent purpose; whether they are willing to study the same subjects which have been found by the painter to be absolutely necessary, or prefer to consider their own genius so great that they can achieve by intuition what the painter is obliged to acquire by study.

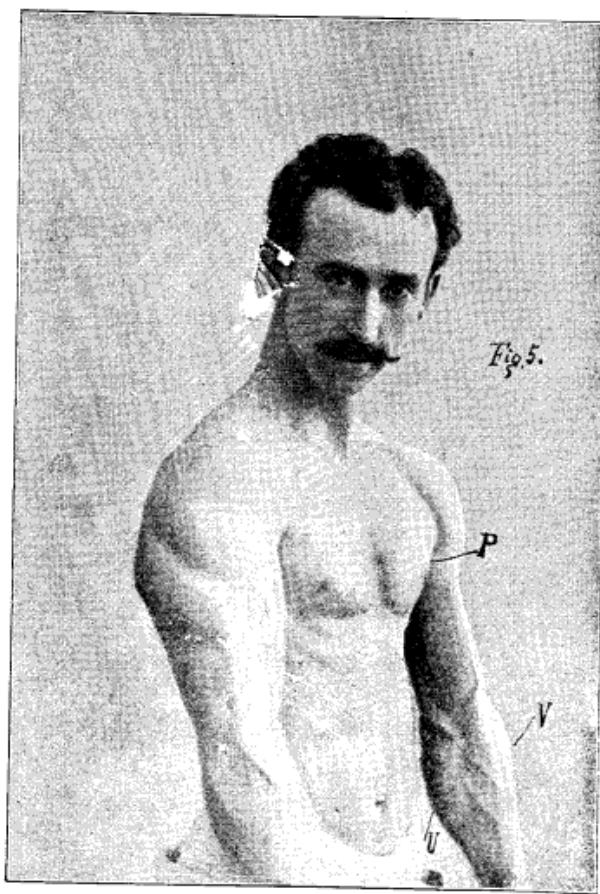
A study of anatomy in such a periodical as this must necessarily be very incomplete. It is sug-

gestive rather than exhaustive. But it has two distinct points of value. In the first place it can point out *something*, a first step beyond what is already realised by most photographers, of the actual muscular anatomy, thus enabling the operator and the retoucher to see more quickly why their lights and shades should have certain forms and take certain directions. In the second place it suggests and encourages original observation, which decidedly needs encouragement, if photographers are to be recognised as original artists, or even as competent craftsmen.

The assertion that a knowledge of the human body—anatomy in short—is essential to the photographer who desires to become an artist in his profession is sure to evoke a good deal of opposition, simply because the



opponents of this theory are unaware of our aims. Of course we do not advocate a study of pathological anatomy, nor even of anatomy in the sense in which the black and white artist, painter or sculptor takes it, although this might possibly be a very interesting study; but we often meet in portrait photography with such senseless, impossible poses that we are led to conclude the utter absence of any knowledge of the formation of the body beneath the clothing on the part of the photographer. We often find most inæsthetic forms of bare and of covered parts of the body, which a photographer with a little knowledge of anatomy might have avoided by, perhaps, almost imperceptible changes in the position of his subject.



with a not too awkward subject, faultless positions in perfect harmony with the character of the face and the person of his model, partly out of his own

It is true that many a photographer, who happens to be endowed with artistic feeling, frequently succeeds in producing, *THE PHOTOGRAM.*

idea, partly from some more or less famous originals, but in such success there is always a certain element of chance which ought to be eliminated. Of course it may be objected that anyone with artistic feeling would avoid awkward positions, but the very people who make this objection would, after a little study of anatomy, soon discover many little defects in their previous work which they would be able to avoid.

We shall then consider anatomy under the following sections:—

1. Construction of the human body (bones and muscles).
2. Symmetry.
3. Centre of gravity and balance.
4. Bones and muscles of the head.
5. Architecture of head and face.
6. The face as the mirror of the soul.

It is the perfection of his internal and outer organism, which together with intellectual power and superiority, secure to man the highest position in the animal kingdom. At all times artists have, by preference, made the human body the subject of their study, and have attained the highest success in such study. Modern views rather avoid the study of the beautiful nude, since they associate it with indecency. Our present day conceptions of morality abhor the



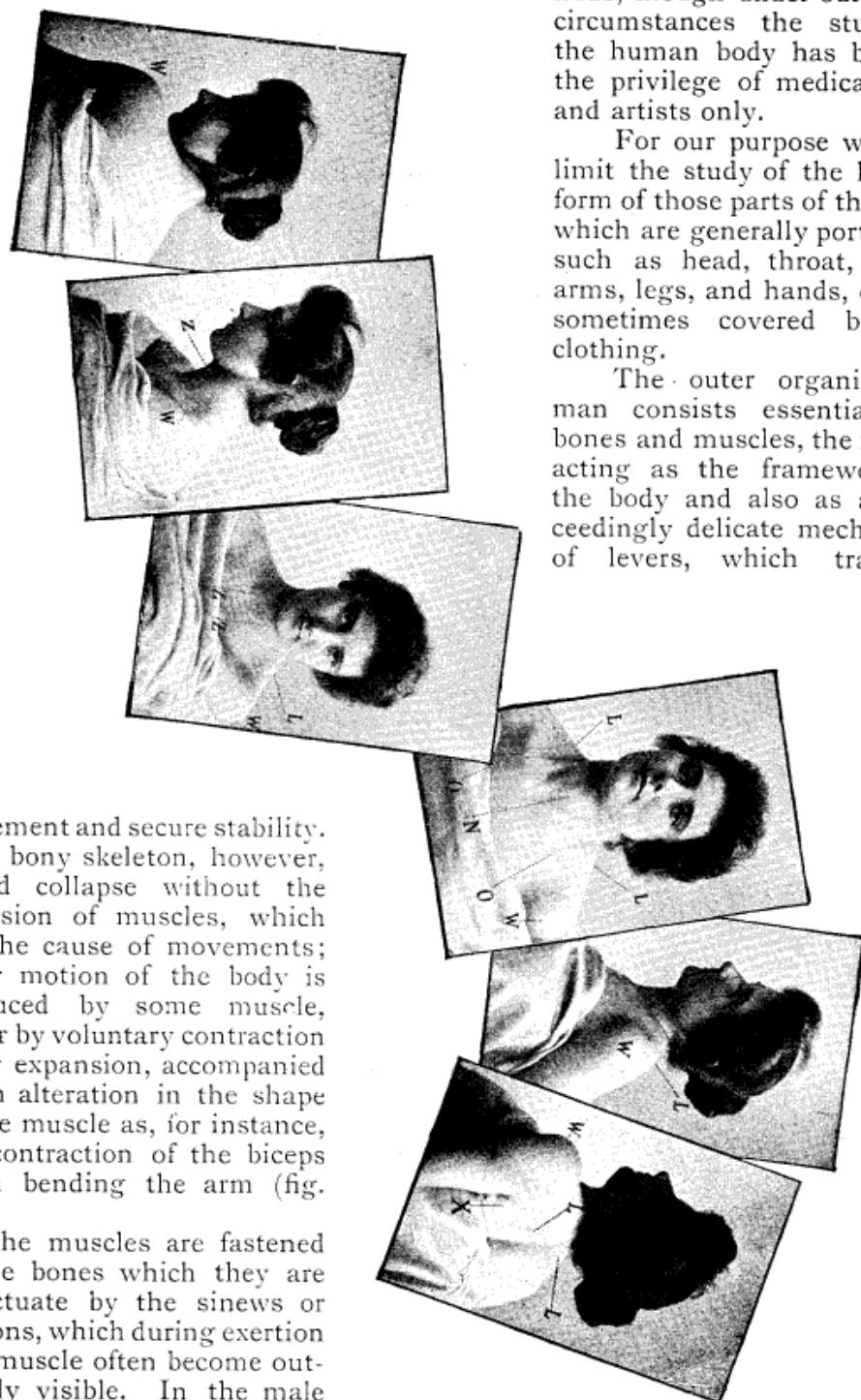
THE PHOTOGRAm.

nude, but quickly recognise the half nude in woman, while good manners dictate that man should hide his body in clothing, which is often hideous and also detrimental to health. Fortunately for the artist, clothing is not grown to the skin, and the most prudish cannot deny the existence of the

nude, though under our social circumstances the study of the human body has become the privilege of medical men and artists only.

For our purpose we may limit the study of the human form of those parts of the body which are generally portrayed, such as head, throat, chest, arms, legs, and hands, even if sometimes covered by the clothing.

The outer organism of man consists essentially of bones and muscles, the former acting as the framework of the body and also as an exceedingly delicate mechanism of levers, which transmit

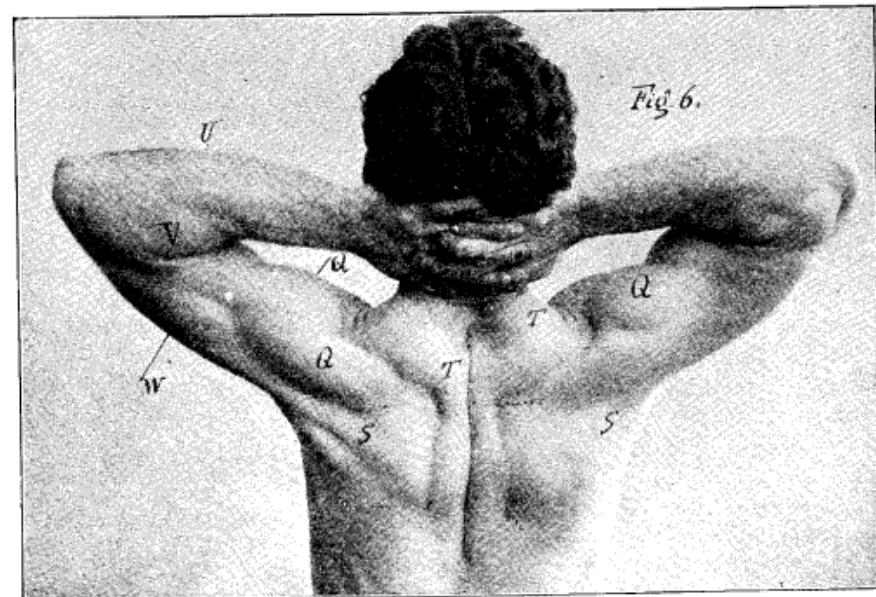
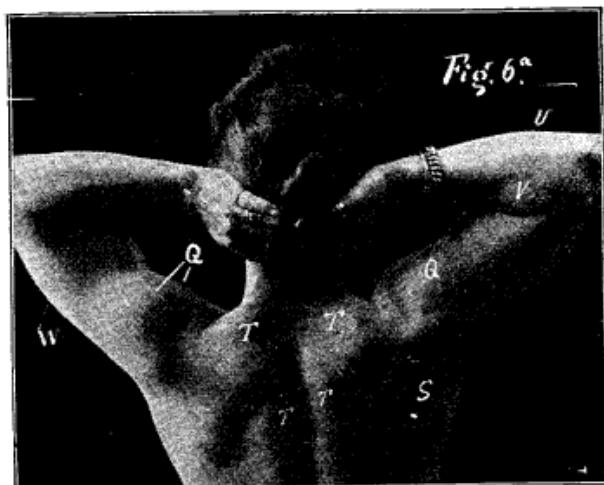


movement and secure stability. This bony skeleton, however, would collapse without the provision of muscles, which are the cause of movements; every motion of the body is produced by some muscle, either by voluntary contraction or by expansion, accompanied by an alteration in the shape of the muscle as, for instance, the contraction of the biceps when bending the arm (fig. 1 a).

The muscles are fastened to the bones which they are to actuate by the sinews or tendons, which during exertion of a muscle often become outwardly visible. In the male body the forms of the superficial muscles, particularly in a state of contraction, are well marked, representing one of the distinguishing features from the female body in which the muscles are less developed.

The reason why we have selected a female neck for illustration is to be found in the fact that the photographer is but rarely called upon to portray a bare male neck, whilst he often has to take portraits of ladies in low cut dresses. The trunk is the seat of the vital organs, its skeleton comprises the spinal column, ribs and the pelvis; outwardly we distinguish chest, shoulders, neck, abdomen and pelvic region. Of the skeleton we need only consider the collar-bones and the ribs; the former (fig. 2 d O and fig. 4 d O) are very discernible in men and children, but very little or not at all in the case of well-nourished women; further, in men and slight women the ends of the upper ribs, where they join the sternum and the ribs themselves, become visible.

Of muscles we can distinguish the great pectoral (fig. 5 P) and the deltoid or triangular arm muscle on the shoulder (fig. 6 and 6 a A); both again are more or less obliterated in the female sex by superlaying fatty tissue (fig. 4 a-f W), while the great pectoral is covered by the bosom. At the shoulder we notice the two shoulder-plates (scapulæ, fig. 7 C R) covered by the trapezius muscle and the muscle S (fig. 6) respectively (fig. 4 f), which



connects the trapezius and deltoid. The chest of the man is higher than that of woman, the collar-bones are longer and straighter, and the breadth of the shoulders is greater. The abdomen in both sexes under normal conditions is very little prominent, though in advanced age it frequently assumes abnormal proportions. In the normal man the pelvic region is smaller than the breadth of the shoulder; in woman, especially old and corpulent women, the reverse holds good.

(To be continued.)

THE PHOTOGRAPH.

## CHOICE OF THE POINT OF SIGHT.

Perspective in Photography and other Matters.

By G. H. NIEWENGLOWSKI.

LET O be the point of sight and T the picture, then the point P, the projection of the point of sight on the plane of the picture is what is called the principal point. The horizontal plane (H) which passes through the point of sight, cuts the plane of the picture according to the line of the horizon (HH'). The choice of a point of sight is made in two ways:—(1) We select a spot with reference to the view to be reproduced; that is, the place to stand, which depends entirely on the artist's taste. He can help himself by the use of a view finder. (2) The place to stand being settled it is necessary to choose the exact position that is to be given to the point of sight in relation to the plate.

(a) First and foremost it can be chosen more or less elevated from the ground, the height Oo can be considered more or less great, that is to say, to give to

the horizon line (HH') such or such a height according to the effect desired; the illustrations, 2, 3 and 4, will show what difference of aspect can be obtained by lowering or raising the point of sight.

(b) A point of sight can be selected more or less distant from the picture, that is to say we must work with a greater or less extension of bellows. As there ought to be a certain relation between the size of the plate and the focal distance of the lens one uses in order to keep the view chosen within the limits of the plate, it is necessary to possess several lenses of different focal

length. It would not be required, to find the necessary size, to change one's position (the position of the apparatus) since the effects are modified by changing the relative proportions.

(c) Finally we can change the point of sight to right or left, which happens when the principal point (P) is moved to either side of the middle line of the picture. It is known that the principal subject of a picture should never be

in the centre. Now, on the other hand, the principal point (P), the meeting point of the sensitive plate and the axis of the objective, is the point of greatest distinctness on the plate; the result being that all interest should be concentrated on the principal point (P) with the principal subject, which is gained easily by a vertical or lateral movement of the axis of the lens [equivalent to use of vertical and lateral swing of the camera back.—EDS.] It is a means little used by artist photographers who could thus obtain many fine effects.

Those who are not willing to admit that photography is capable of producing works of art reproach it as being mechanical. Now it is precisely

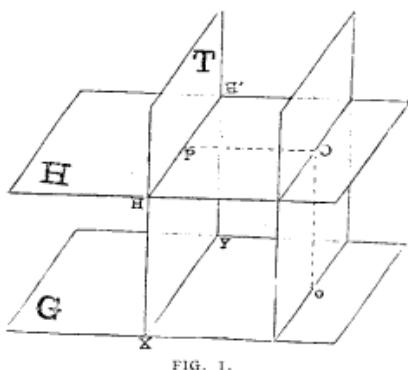


FIG. 1.

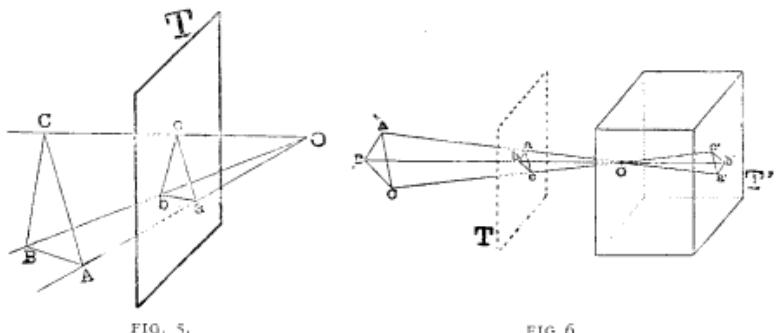


FIG. 5.

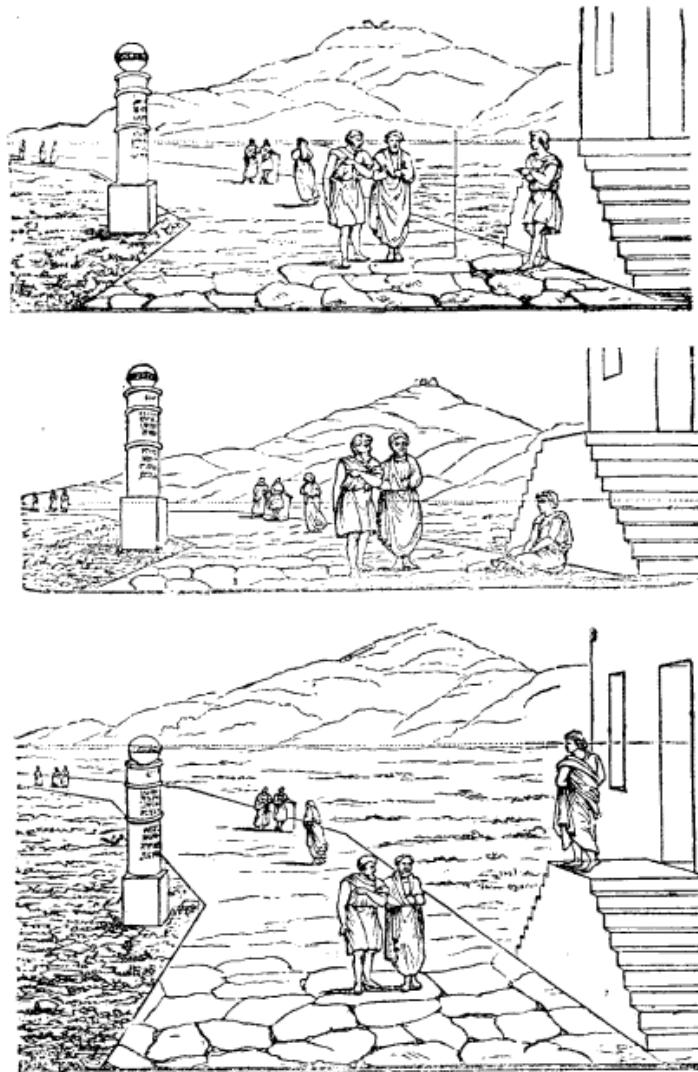
FIG. 6.

the mechanical part of photography which gives it superiority over all the other graphic arts. Thanks to its mechanism, in fact, it is able to obtain correct perspective.

Let us consider the spectator's eye looking at objects of which A, B, C, are the points (fig. 5); let us represent this eye by a single point (O) which will be its optical centre. Suppose a transparent glass (T) to be placed between the eye and the objects it sees according to the vertical direction. The visual rays (OA, OB, OC) meet the glass (T) at the points a, b, c, which for the eye (O) seem superposed on the points A, B, C, of which they are a sort of reversal. Look-

ing at the points a, b, c, the eye at the same time sees the points A, B, C. Together these points constitute what is called the perspective on the picture (T) of the objects (A, B, C) in relation to the point of sight (O). The photographic apparatus allows one to obtain by mechanical means this perspective a, b, c (see fig. 6). It is in fact a dark-room, and O the optical centre of the objective. The points (A, B, C) form on the sensitive plate (T) the images a', b', c', which together form the photographic negative, on which, after development the whites of the object appear black and the blacks white, moreover the image is reversed.

The true meaning as well as the values of the whites and blacks are restored in the positive print. The result is that the image of the positive print can be exactly superposed on the perspective image (a, b, c), which would be obtained on a picture (T) occupying, with relation to the point of sight (O) an exactly symmetrical position to the plate (T'). Treatises on perspective applied to painting teach that in order to have a picture convey a true impression of the object represented it should be looked at with one eye only, placed exactly at the point of sight. Now very few persons observe this rule and yet the picture is not any the less liked. In reality when the principal distance or the distance from the point of sight to the plane of the picture is great enough, a bad position of the eye of the spectator does not destroy the harmony of the composition. It is also and specially true that



FIGS. 2, 3, 4.

the perspective of the picture has not been established from a single and fixed point of sight. The eye of the painter is, in fact, essentially movable like every living eye, and also in proportion as he finishes his work he examines it with two eyes to judge of the effect produced.

On the contrary, the eye of the photographic objective is absolutely fixed and, setting aside stereoscopy, is single.

Besides, while in painting, the principal distance extends sometimes over several metres, in photography it never goes beyond several decimetres. Now, the distortion produced by a bad position of the eye of the spectator is lessened as the principal distance is increased. The result is that, if the single fixed eye of the theorists is a pure chimera when made use of in painting, it is the same thing in photography. A photographic image should give the spectator the appearance of the view represented as seen by one eye placed exactly at the point of sight.

It is necessary also to consider the properties of sight. An object to be distinctly seen should be placed at a distance from the eye superior to the distance called the least distance of distinct vision. This distance, changing with individuals and with age is about thirty centimetres (twelve inches). The result is, that in order to be viewed correctly, a photographic image should be placed at a distance exceeding thirty centimetres, that is to say, should have been obtained with a lens of a focal length at least equal to thirty centimetres. If we look at a photograph obtained with a lens of a shorter focal length, it is placed too far from the eye, and the result is distortion. From this comes the very common error that the so-called short focus lenses distort the perspective; in reality they give a strict perspective no matter which may be the lens, only lenses injured by distortion give false perspective. But, in order to be correctly examined an image obtained with a short focus lens should be enlarged, which can be done either by examining it through a magnifying glass or by projecting it on a screen. To enlarge a photograph substitutes for it an image which should have been obtained with a greater principal distance. To increase the principal distance is to make a photograph resemble a painting. In fact, the greater the principal distance the less is felt the absence of the second representation, seen by the second eye, and less, also, the fact of looking at the photograph with both eyes.

Thus, that explains why in exhibitions of artistic photography enlargements are always preferred to direct prints. It also explains why the small lantern slide, which means nothing when viewed in the hand, delights an audience when thrown on a screen. In this particular case of projections the sensation is still more agreeable because the darkness of the room has the effect of isolating the picture. Seeing only the one thing and not being able to compare its dimensions with surrounding objects causes the sensation of the plane surface to disappear and leave only the actual view represented.

• •

***“Les Papiers Photographiques au Charbon,”*** by Captain R. Colson, of the Ecole Polytechnique, is an octavo volume containing nearly eighty pages on the above subject, the scope and treatment of which as indicated by the chapter-headings, show great care and experienced judgment. The author goes carefully into the history of the question, gives accounts of the various papers and their preparation, also several formulæ, and refers to a number of well-known authorities, mainly French and English. He closes by comparing the Artigue process with the latter one of Cousin, similar in many respects, except that it is not necessary to pay attention to the temperature of the developer as in the former method. M. Colson has written several works on photographic subjects, practical, concise, and therefore helpful. This particular one ought to greatly increase the interest of photographers generally in the use of carbon paper, and find a place among their best-used books of reference. It is published by Messrs. Gauthier-Villars et Fils, 55 Rue des Grands-Augustins, Paris, at two francs seventy-five centimes.

## PORTRAITURE.

BY A. HORSLEY HINTON.

### I.—CHARACTERISATION: POSING AND LIGHTING.

*(Continued.)*

WRITERS on all branches of photography have laid great stress upon the desirability of securing pleasing or striking "effects," until many of us have come to aim at effect by the sacrifice of other no less important qualities. An "effective" picture is sure to be popular with the less cultivated public; but there is effectiveness which will win the approval of the more cultured, without losing the adherence of the others, and which has the additional merit of not becoming wearisome. It is well to remember, as a general principle, in portraiture especially, that effect for effect's sake is wrong, just as suppression of focus and rough-surfaced printing papers become almost ridiculous when used without some very definite intention in view. Because some one produces an eminently successful picture which possesses some particular technical character not commonly seen, imitators arise who, imagining that the success is due to the technical peculiarity, copy this, and believe themselves thereby possessed of the key to success. The mere suppression of focus is not of itself an artistic attribute, but is a method of production which, if used with a definite purpose and intention, may be advantageous. A bad picture does not become a good one merely because it is printed on rough paper, but the employment of a rough surface is a legitimate method which in certain cases may, with advantage, be resorted to for definite ends. Thus one may draw a parallel and say that concentration or accentuation of light merely for the sake of getting a striking effect, by no means carries us the whole way towards a successful picture, still less a successful portrait.

We may get an effectively-lighted figure, or head, possessing attractiveness of a superficial kind. It is effect, and we may have simply gone for effect, forgetting that the effect of strong lighting and contrasts, like other matters already referred to, should be employed only as a means to a definite end, and that end should, in portraiture at least, be *emphasis*. The point that I want to submit is this: Every portrait is successful in proportion as it gives a suggestion of the individual's whole character. It should not be merely a physiological record of the face and figure, nor the instantaneous registration of a momentary phase. As far as possible it should interpret, that is to say, it should open up a suggestion of what that face, now grave, is like when laughing, or *vice-versa*; and should, above everything, apart from a facial likeness, be an indication of the firmness, gaiety, kindliness, shrewdness, or whatsoever is the chief characteristic of the particular person. High-flown and ambitious as this may sound, yet much of it is within comparatively easy reach, though it is, I fancy, often missed through a wrong estimation of the powers at our command.

#### LIGHT—A MEANS OF EMPHASIS.

Strong characteristics, passions and feelings, modify and leave their impress upon the features; this, I doubt not will be admitted by anyone who has studied human faces, and probably the stronger the characteristic the more it is revealed in the face and some part of the face, or some feature will, more than the rest, reveal such inward character. In ordinary portrait practice, it is usual to have such an arrangement of blinds, screens, etc., as shall enable the operator to direct the light, or cut it off where he will. Why? Is not light the one most powerful means in our hands to *emphasise* those things we wish to bring into prominence, and yet do we not, more often, shift

our screens and shades merely to get effect, or else to simply get an all-over even illumination? Is not the first care, often, to secure roundness and an avoidance of deep shadows? Do we in such cases ask ourselves with sufficient deliberation "are roundness and absence of shadow essential characteristics of this or that face which gives an indication of disposition and temperament"? Is there not a danger of aiming after "roundness" for roundness sake, in the same way as a decade ago we aimed at solid high lights and clear glass shadows in every landscape negative, as though all dispositions and moods of nature were the same? What I want to suggest for the serious portraitist's consideration is that, having decided what part of the sitter, and in the face what part of that face best suggests the person's character, then with the power for emphasis which our controlled light gives us, we should seek to illuminate the sitter, so as to bring into prominence that particular part, and not merely to secure "an effective bit of lighting." It may be objected that in ordinary professional practice, the photographer can but guess at the character of his sitter. Precisely! But just as the practised lawyer will at a glance glean something of his clients' circumstances, just as the employer will shrewdly penetrate the exterior of his applicant for office, and forecast his special aptitudes, so surely it is not too much to require that the portrait photographer should apply himself very vigorously to understand and become expert in judging the chief item in his work. Nay, more, unless he possess special instinctive qualifications in this direction, he had better seek some other employment for which he is naturally more suitable.

Does it not sound unreasonable that when a graphic interpretation of character, "a speaking likeness" is required, the photographer should set about getting roundness or an effective lighting which may or may not contribute to the required end, but which, of themselves, are mere evidences of some skill in manipulation.

If in the case of a child with sunny fair hair, we know the parent to be particularly proud of this feature, does not light, properly directed, constitute a means of emphasising the light colored hair? In such a case roundness of face is a desirable quality because this roundness is characteristic of childhood, but the same arrangement of light will not emphasise the character-betraying features of the elderly man with massive jaw, or sharply cut and compressed lips, wrinkled cheek or baldhead, all of which are to a greater or less degree the impresses which pursuits, habits, tastes, feelings, have in the course of years left on the ever plastic and responsive features.

#### EFFECT INAPPROPRIATELY EMPLOYED.

In a vast number of amateur portraits and in professional work of the less advanced kind, I notice how often the face is turned toward the light, and I fancy this is often because, seen on the ground glass, this appears a very effective and pleasing lighting. Here we have an example of just this misconception of the function, and utility of "effect" or lighting, and the characteristic portrait which should have been the motive is forgotten and satisfaction is proportionally rare. I fancy that if all faces were treated in this same manner, by far the greater number would be hardly recognisable as portraits, inasmuch as where mere effectiveness is the chief source of attraction, "likeness" is overpowered and lost to notice even if present. Tone down that effective lighting for a moment and the likeness, if there, will become apparent.

This may naturally lead to the consideration of restraint, both of one's methods and of one's own idiosyncrasies and affections with respect to lighting and posing. It were a good principle to work to, that effect of lighting and pre-arranged pose should be emanations of the subject, or sitter,

and not of the photographer's inventiveness or partialities. That is to say neither scheme of light nor pose should be arbitrarily determined upon by the operator, but he being in a mental and responsive condition, the lighting and pose should suggest themselves upon the unbiased study of the particular sitter. As soon as the photographer allows his personal preferences to weigh against the conditions suggested necessary by the subject or circumstances the faithful portrait is in danger of being lost.

This personal quality may be artistic or otherwise, according to the person, and if the former we get the pictorial treatment which, because the mere "likeness" has not been considered, comes to be called "Study of a Head," etc. Hence if the fidelity necessary in a portrait is to be preserved, personal restraint becomes essential; and to sum up, one may say that the wholly satisfactory portrait, which also possesses artistic merit, is that in which the lighting and pose of subject have been practically self-determined by the characteristic which had to be emphasised, plus just that amount of vigorously restrained personal contribution from the operator as shall in no way make itself felt until purposely sought for.

Now whilst I feel very strongly that pose as well as, and distinct from, lighting, should be largely controlled by the characteristic to be emphasised—and I say this after having studied a great many good typical portraits, with a view to see if this principle could be reasonably sustained—it must also be remembered that there is another quality which has some, and often great, importance, and that is composition or design. The deliberate posing of one's sitter is practically the photographer's equivalent for composition, and as the human eye either consciously or unconsciously, and to a greater or less degree according to its cultivation, instinctively seeks for and feels satisfaction in a well-balanced and symmetrical arrangement of parts, this requirement must receive due consideration.

*(To be continued.)*



## AN APPARATUS FOR ENLARGING, REDUCING, COPYING, ETC.

BY REV. F. C. LAMBERT, M.A.

**M**OST photographers at some time or other desire to make prints, slides, etc., of a size different from that of the original negative. The apparatus now to be described will be found of use for enlarging, reducing, copying, etc., and also for holding apparatus for photography in connection with the microscope. The table or stand shown in the diagrams was made some years ago by the present writer, who lays no claim to any special knowledge of carpentry, and therefore, anyone who has a reasonable amount of patience and can use a saw, plane and square, with average ability, will find no difficulty in making some such stand. The frequent, almost constant use of the apparatus for first one purpose and then another enables the writer to say that it is indeed more than worth the time and trouble spent in putting it together. As it is now some time since the thing was made, no very definite information of its cost can be given, but half a sovereign would more than amply embrace the cost of wood, castors, nails and screws.

In fig. 1 we see the apparatus as arranged for reproduction work. It consists of two chief parts. First we have a table rather long and narrow. The top of the table (*T T*) measures 5ft. 6in. long, 20in. wide, and 1in. thick.

It consists of one solid piece of American white wood without any knots. This is supported on four legs. These are of deal,  $3 \times 3$  in. through, and 3 ft. long. These in turn rest upon four rather large wheel castors, so that the top of  $T$   $T$  is about 3 ft. 3 in. from the ground. When working with a microscope the upper part ( $B$   $B$ ) is removed, and all the apparatus rests on  $T$   $T$ . Its height is convenient for working seated on an ordinary kitchen chair. This brings the eyes up to about the middle of a whole plate camera. From the diagram it will be seen that we have two shelves ( $M$   $M$  and  $N$   $N$ ) under the

table. The stays upon which these shelves rest also serve to make the whole thing firm and rigid. The lower shelf will be found convenient for holding such things as cameras, the upper one will be found handy for smaller things, *e.g.*, lenses. Within reason the more weight we have on these shelves the better, as it all adds to the stability of the stand, and in a measure counteracts vibration.

Towards the left hand bottom corner we may see a rather large focussing screen ( $24 \times 18$ ), resting edgeways on the lower shelf. It is so left in position in order to show how it is quite safe in this position, being held at the upper end by two long narrow strips of wood, one of them fastened to the outside, the other to the inside of the pair of legs on this side. The two form a sort of groove as it were, and will be found very convenient for holding sheets of card-board, the use thereof will very shortly appear. So far, then, we have a long narrow table on castors, with two shelves below and two narrow strips of wood along one side. Each shelf is surrounded by a narrow rim, so as to prevent risk of anything rolling or falling off the shelf. These are shown in the diagrams, which also display the way they are put on so as to contribute something to the general stability and rigidity of the whole apparatus. The second or upper portion of the contrivance consists essentially of a long narrow flat piece of wood ( $B$   $B$ ) held up by supports from the top of the table. This upper piece or base board is again of one piece of American white wood, 1 in. thick, 13 in. wide, and 3 ft. 3 in. long. Upon it may be seen four parts, *viz.* ( $C$ ), the camera ( $S$ ), the shade, *i.e.*, for shading the lens from any light other than that coming through the negative, etc., to be copied. This is held in ( $H$ ) the holder,  $S$  can be moved up to  $H$  when required. Lastly, ( $R$ ) is a sloping stand for holding the reflector which casts light through the negative held by  $H$ .

Next a word as to the way the base board is supported above the table top. After one or two experiments, the following contrivance was chosen:—A piece of wood 2 in. square is cut of length exactly the width of table top. To each end of this is fixed a piece,  $2 \times 4$  in. and, say  $\frac{3}{4}$  in. thick (see fig. 2), where  $D$   $D$  is the 2 in. square piece as long as the table top is wide. To the inside of the lower portion of the end pieces are fixed small runners, these are 2 in. long by, say,  $\frac{1}{2}$  in. square. These form grooves just wide enough to embrace

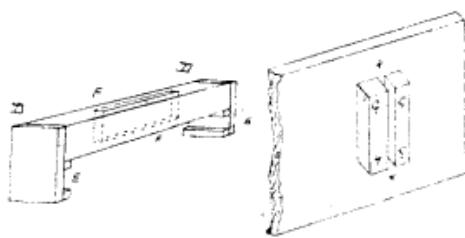


FIG. 2.

FIG. 3.

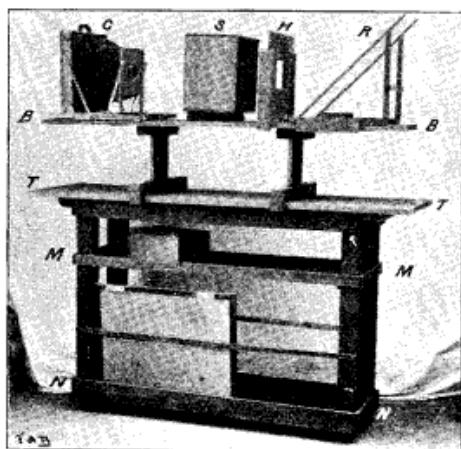


FIG. 1.

the edges of the table top ( $T T$  in fig. 1). Now from the centre portion of  $D D$  is cut a long narrow opening ( $F F$ ), say 9in. long by  $\frac{3}{4}$ in. wide. Of course two of these sliding pieces are required, as seen in fig. 1. Into  $F F$  we fit a flat straight piece,  $9 \times \frac{3}{4}$  (by, perhaps, 12in. long). One end of this goes into  $F F$ , and rests on its end upon the table top. The other end supports  $B B$ . Turning now to fig. 3 we see the under side of one end of the base board ( $B B$ ). To it are firmly fixed, by screws, two pieces about 9in. long, and  $1\frac{1}{2}$  or 2in. square. They are placed parallel and across the length of  $B B$ , with a space between them. The width of this space, of course, agrees with the thickness of the piece which fits into  $F F$ , fig. 2.

Next a word or two about the sliding parts resting on  $B B$ . Turning to fig. 4, we see at a glance the simplicity of the light wooden frame work which holds the reflector. It is made, of course, to slide easily along  $B B$ , by means of small strips of wood fastened to the side pieces, which form a groove very similar to that shown in fig. 2. (It may here be said that the best reflector is a sheet of white smooth—but not shiny—cardboard. A very good but cheap quality can be bought for about two pence per large sheet). For most purposes, when working with a top light, it will be found convenient to have this reflector sloped at half a right angle ( $45^\circ$ ) to the vertical. But if the apparatus is being used in a room with an ordinary window it may be better to turn the reflector holder on its side, and reflect the light sideways, as it were. Top (sky) light is, however, always to be preferred for evenness of illumination.

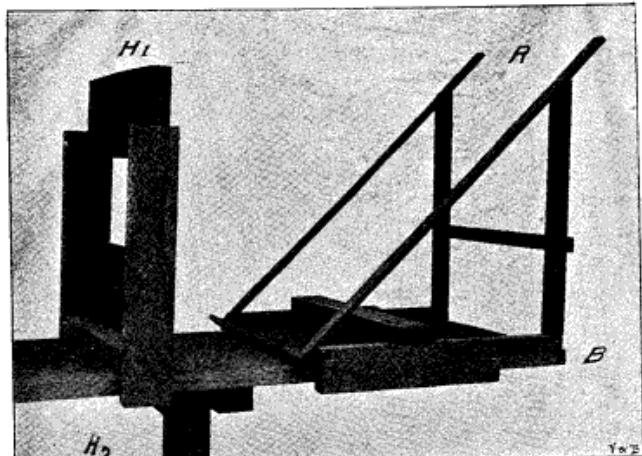


FIG. 4.

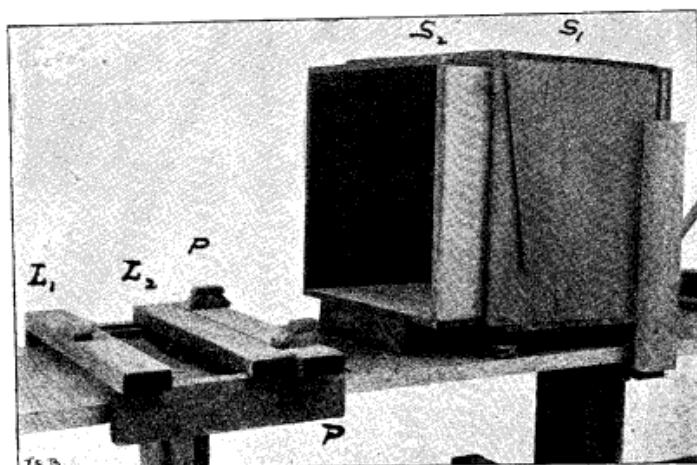


FIG. 5.

consists of two portions, first a sliding stand of two uprights and one cross piece; and secondly, of a set of carriers, each fitting into the next size so that any ordinary size of plates may be held centrally. The sliding part will need no description beyond saying that it is again made on the same general plan as shown in fig. 2. The two tall upright pieces are also provided with a

groove by two narrow strips attached to their inside faces. Into this groove fits the outside of the largest carrier. In the apparatus before us provision is made for  $12 \times 10$ ,  $8\frac{1}{2} \times 6\frac{1}{2}$ ,  $6\frac{1}{2} \times 4\frac{3}{4}$ , and  $4\frac{1}{4} \times 3\frac{1}{4}$  plates. Moreover, the largest carrier is made square so as to fit either vertically or horizontally into the grooves of the uprights. The carriers, painted dead black, rest into each other and are held by small turn buttons, so placed that their edges just coincide with the sight line of the opening. Thus these same buttons will either hold the next small carrier or a glass plate, as occasion may require.

We next come to the lens shade ( $S$ , fig. 1;  $S_1$ ,  $S_2$ , fig. 5). This consists of two square boxes open at each end. One ( $S_2$ ) a little smaller than the other ( $S_1$ ), so as to slide into it if required. It will be seen that to the right hand an end of  $S_1$  rests on a ledge of  $H_2$ . The other end is supported by a small piece of wood. These sliding boxes are of quite thin wood, say  $\frac{1}{2}$  in. thick, and painted dead black inside.

In fig. 1,  $C$  is a  $12 \times 10$  camera, resting directly on  $BB$ , and matters are so arranged that the optical centre of the lens passes through the centre of the openings of ( $H$ ) the holder, so that with this camera the lens, normally, is opposite the middle of the plate. When using a smaller camera, *e.g.*, whole plate size, a sliding stand is required to bring the optical centre opposite the middle of the camera. Such a contrivance is shown in fig. 5. This consists of two side pieces, with grooves made by narrow strips, as in other cases. Two transverse pieces ( $L_1$ ,  $L_2$ ) are fixed. But  $PP$  is a third piece, which is free to slide an inch or two either way across the base board. Wood turned buttons are placed so as to catch the back and sides of the camera base. Thus the whole camera can slide sideways, and yet keep its optic axis perpendicular to the plate in the holder or carrier at  $H$ . In this way a lantern slide can be made from, say, any part of a  $12 \times 10$  negative, the axis of the lens being, at the time, perpendicular to the surface of the negative.

The practical man will need no words as to the general use of this apparatus beyond, perhaps, reminding him that it may be used for copying. A sheet of stout and stiff card just fits the same groove in  $H$  that the largest carrier slides into. To this card the small drawing, etc., to be copied is fixed with drawing pins. If anything larger than this card is to be copied, say a map or plan, the way it is done is as follows:—First a large sheet of card is fixed with drawing pins to the edges of the two uprights of  $H_1$ ,  $H_2$ . The map is fixed to another sheet of card and the two then held together at the corners by four American clothes clips. It will be seen from the diagrams that everything is of the simplest description, and requires nothing beyond a modicum of care and patience to put together. When all is finished it is as well to give the whole thing a rub over with any dark wood stain, and get it to dry as quickly as possible. It is also advisable to use screws (not nails) throughout, so that should any shrinking occur the parts can be readjusted.

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**The British Patent Office** has been described as the office in which the ablest and most courteous of officials work under the worst of laws, and certainly the people responsible for the Patent Office do seem to use their very best endeavors to minimise the disadvantages of our bad patent system. One of the best helps which they offer to the public is a series of abridgements of specifications arranged under different classes. These contain just the same particulars and illustrations as are given in the weekly journal of abridgements, but as they are all on one subject in each volume they save the trouble of wading through an immense series of volumes to find a given item. The recent photographic volume of this class is No. 98, and deals with the period from 1884 to 1888. The fact that it is so far from being up to date is its worse fault, but there is some hope that next year, may see it brought up to 1892 and that the year following may bring us to the abridgements of 1897. The complete set of photographic abridgements is distinctly valuable, and to anyone who is really interested in the subject, it is well worth its price, even as a curiosity. A number of the old claims can hardly fail to strike the modern worker as being extremely humorous, a characteristic which is not entirely wanting even in modern claims.

## APPLIED PHOTOGRAPHY.

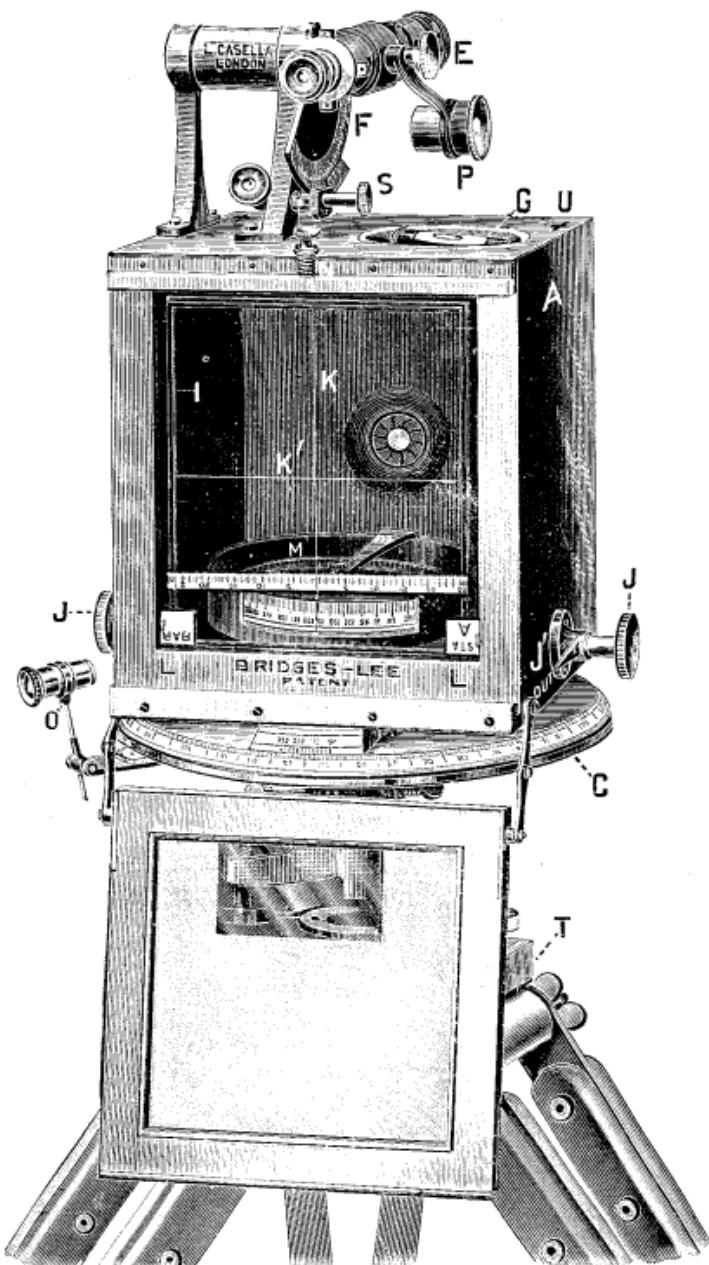
"The 'craze' for photography, as an end in itself, must necessarily die, but photography as a means to an end—whether that end be pure picture-making, scientific research, journalism, or any of the daily increasing applications of the craft—must progress until it attains proportions of which we now hardly dare to dream."

*The Photogram*, December, 1895

### Application No. 11.—TO SURVEYING.

**P**HOTOGRAMMETRY is far from being a novel application of camera work, for as early as 1849 the "father" of the process, M. Laussedat used the camera lucida for topographic work, and about 1854 he took the photographic camera in place of the camera lucida. A paper which he read on the subject in 1850, was published in 1854, and was followed by other papers in which he explained the various improved methods he had worked out. The idea was rapidly taken up by other surveyors, so that the literature of the subject is now quite extensive.

One of the most extensive users of the process is E. Deville, the Surveyor-General of Canada, whose work in connection with the very different subject of "the dot in half-tone," is familiar to the readers of our "Process" section. Mr. Deville has very ably advocated the use of photogrammetry, and has shown that the cost of a photographic survey is considerably less than one-third the cost of a plane-table survey by the older methods. A fine demonstration of the relative values of the two methods was given during the delimitation of the Alaskan boundary, which recently came into such prominence on account of the Klondike gold. The Canadian surveyors, working by photographic methods, finished their labors in much less time and obtained results somewhat more accurate than those of the very experienced surveyors employed by the United States. In 1889, Mr. Deville wrote a little book on this subject, for the benefit of his own staff of surveyors,



but the demand for the publication, when its existence became known, was sufficient to soon necessitate the issue of another edition, and an enlarged treatise, published by the Government Printing Bureau, of Ottawa, in 1895, is the standard work on the subject in the English language. Laussedat, the originator of the work, is at present preparing a large and comprehensive volume dealing with the whole subject in a most complete form.

Of course, with many people practically working such a method, many special forms of camera have been designed, but perhaps the greatest amount of attention to this part of the subject has been given by J. Bridges-Lee, M.A., F.G.S., a barrister, who finds relaxation in scientific pursuits. An example of work done with an early specimen of the Bridges-Lee camera, was reproduced in our issue of May, 1895, and another print, showing some further improvements, is reproduced herewith. Of course, in such



work as this, mathematical accuracy is the first requisite; and nothing can be done without a base-line, containing at least two established points. Two stations being decided upon, and their height above sea-level being known, the data regarding any point which is visible from both stations, can be rapidly, accurately, and easily established from two photograms taken in a properly-constructed and properly-used camera. For instance, since the camera is placed absolutely level, and with its ground-glass truly perpendicular in both directions, the point of the picture which coincides with the axis of the lens must be exactly the same height above sea-level as the camera itself. This point is marked on the photogram by the crossing of two fine hair-lines.

So much being understood, let us turn to the illustration of the camera. Its fittings serve two purposes—first, to secure the most accurate possible adjustment of the instrument itself as regard its relation to points of the

compass, to surrounding objects and to the horizon; second, to automatically record on the plate all the details which will be needed when dealing with the picture for measurement and plotting. To prevent any possibility of the different parts becoming relatively strained or misplaced, the body of the camera is a single casting of aluminium. A rectilinear lens is used, is carefully adjusted to position by the instrument maker, and is, of course, provided with no means of focussing. C is an azimuth circle on which the camera rotates and a vernier for the fine reading of which is attached at the base of the camera-box. E is a telescope with cross-webs which correspond when set properly with the cross-wires in the back of the camera. Beneath, and moving with the telescope, is a vertical limb (F), its edge divided into half-degrees and provided with a vernier and an adjustable magnifying eye-piece (P), to enable the vertical angle of any object cut by the cross-webs to be read. G is a revolving tubular level, and under the camera are adjusting screws whereby it may be accurately adjusted horizontally without interfering with its direction.

To mark on the plate the various records that are needed the camera has a rectangular frame (I) running on engine-planed beds and supported by strong back-stays, cast as part of the main piece. This whole arrangement racks into the camera by means of the milled heads (J J'), which have pointers (J') to show whether the frame is forward or back. Before inserting the slide the back-frame is racked inward, but when the slide is inserted and its shutter drawn the frame is racked back so that it bears against the face of the plate, which is pressed against it by the springs in the dark-slide. This moving back-frame carries two cross-hairs (K, K'), and also a horizontal scale of degrees which is prepared photographically by means of the identical lens used in each camera, and which impresses an image on the dry-plate. In the bottom of the camera (M) is a compound magnetic compass, free to move, and carrying a transparent scale divided in half degrees, from  $0^\circ$  to  $360^\circ$ . The portion of this scale which comes near the plate impresses itself, thus registering the exact compass direction of the view. In the back-frame (above the letters L, L') are small removable slips of transparent celluloid, on which the surveyor marks the number of the negative, date, barometric pressure, or any other data he wishes to preserve.

As the result of experience, Mr. Bridges-Lee prefers to use a  $5 \times 4$  plate, and a lens of about 5 in. focus. Of course, in actual work, the *exact* focus of the lens is a most important matter, so that in building these cameras the adjustments are made to the actual lens to be used with the camera. The negatives are made on isochromatic plates, using a very small lens aperture, and giving a long exposure. Generally a screen of chromium green glass is used in front of the lens. The plate must be a fine grained emulsion to stand enlarging, and ferrous oxalate developer is preferred to others.

The plotting of the information gained by means of these photographs is a very simple matter, but is one into which it is scarcely necessary to enter at present.



BY MISS C. H. CURLE.

THE PHOTOGRAM.

## REVERSAL.

By C. F. TOWNSEND, F.C.S.

**M**ANY photographers are so used to seeing a "negative" produced as the result of exposure to light in the camera and subsequent development, that they regard the production of a "negative" under these conditions as necessarily the ordinary course of events, but this is by no means the case. It may be said, in fact, that the production of a "negative" by the ordinary method of exposure and development is largely accidental. Paper coated with ferrous oxalate gives a positive image on exposure in the camera. If this be washed over with ferri-cyanide of potassium the positive changes to a negative, the image being dark blue on a brownish-yellow ground, instead of pale yellow on a dark yellow ground. If ferro-cyanide be substituted for ferri-cyanide, the result is a positive. In the case of the ordinary dry or wet plate, the reduced image is darker than the unreduced portion, but it is quite conceivable that the action might have been the other way. All this, however, is a little beside the point.

Little is known with certainty about the latent image, but the chemical explanation always seems to me to be the easiest working hypothesis. From this point of view, the action of the light is to convert the silver bromide into a lower bromide of silver, that is to say, to start the silver on the way to the metallic state. The free bromide is probably absorbed loosely by the surrounding gelatine. The greater



the action of the light, the more bromide is set free. Now, all chemical and mechanical actions are reversible under proper conditions. If steam be passed over red-hot iron filings, the iron is oxidized and hydrogen is set free; but if hydrogen be passed over red-hot oxide of iron, steam is produced together with metallic iron, so that the action is completely reversible. Many other instances of this reversibility might be given.

In the dry plate, if the light continues acting for more than a certain time, the bromine set free becomes piled up, as it were, to such an extent, that the back pressure is sufficient to overcome the reducing power of the light, and re-combination of the free bromine with the reduced bromide begins and may go the whole way until the original compound is re-formed. There is no theoretical reason why this should not happen more than once, so that the bromide acted upon by the light should be first reduced, then re-formed, and finally reduced again. In an ordinary over-exposed plate, the sky and high lights have passed the period of reversal, and the bromide in these particular portions of the plate is travelling back to its original condition. The foreground and under-exposed portions, however, are still being reduced by the light. In the general way the effect of this is that the bromide of silver in the high lights, and the bromide in the under and normally exposed portions,

THE PHOTOGRAM.

are very nearly at the same stage at the end of the exposure, although they are travelling in opposite directions, so to speak. When this over-exposed plate comes to be developed, the whole picture flashes up together, and the density is the same nearly all over the plate, giving a flat and dead effect. In cases of extreme over-exposure, the bromide in the high lights has recombined to a greater extent than that to which the bromide in the normal portions has been reduced, or, to use plainer language, the high lights have travelled back until they have crossed the stage at which the normal parts have arrived. Consequently, there is less reducible material in the high lights than in the other portions of the plate, and a positive is obtained on development instead of a negative. Only plates made with a bromide and iodide of silver emulsion are capable of being reversed. Chloride of silver plates, for reasons connected with their relative affinities for hydrogen, which are somewhat too abstruse to enter into here, cannot be reversed. Curiously enough, sodium hypophosphite produces a latent image on photographic plates, and phenomena of reversal can be obtained with it, but chloride plates cannot be reversed. For the same reason silver printing-out or sensitised papers, as they contain silver chloride, cannot be reversed by any amount of exposure to light.

These facts as to reversal are made use of occasionally to obtain a negative from a negative, without having to go through the inconvenient process of making two transparencies. The new negative is reversed as regards right and left, but this is sometimes an advantage. The method is due to T. Bolas, and is carried out as follows:—Soak a gelatino-bromide dry plate for five minutes in a four per cent. solution of bichromate of potassium, rinse once or twice, and then dip into a bath of equal parts of methylated spirit and water. Blot off the superfluous moisture, and allow the plate to dry, all these operations being conducted in the dark-room. Then place the plate in a printing-frame behind the original negative and expose to direct sunlight for three or four minutes. On removal from the frame in the dark-room a faint image will be seen on the plate, which is developed and fixed as usual.

Certain organic substances produce a strong tendency to reversal, if added to the developer. Thiosinamine (allyl-thio-urea) and thiocarbamide (thio-urea) possess this property. The following developer is recommended by Colonel T. Waterhouse for producing reversed negatives:—

A.—Lithium carbonate, saturated solution	-	-	-	-	1 ounce.
Eikonogen	-	-	-	-	5 grains.
Sodium sulphite	-	-	-	-	5 "

Dissolve the two latter in the first just before using it, and add a few drops of

B.—Ammonium bromide	-	-	-	-	1 part.
Thiocarbamide	-	-	-	-	3 parts.

Dissolved in water.

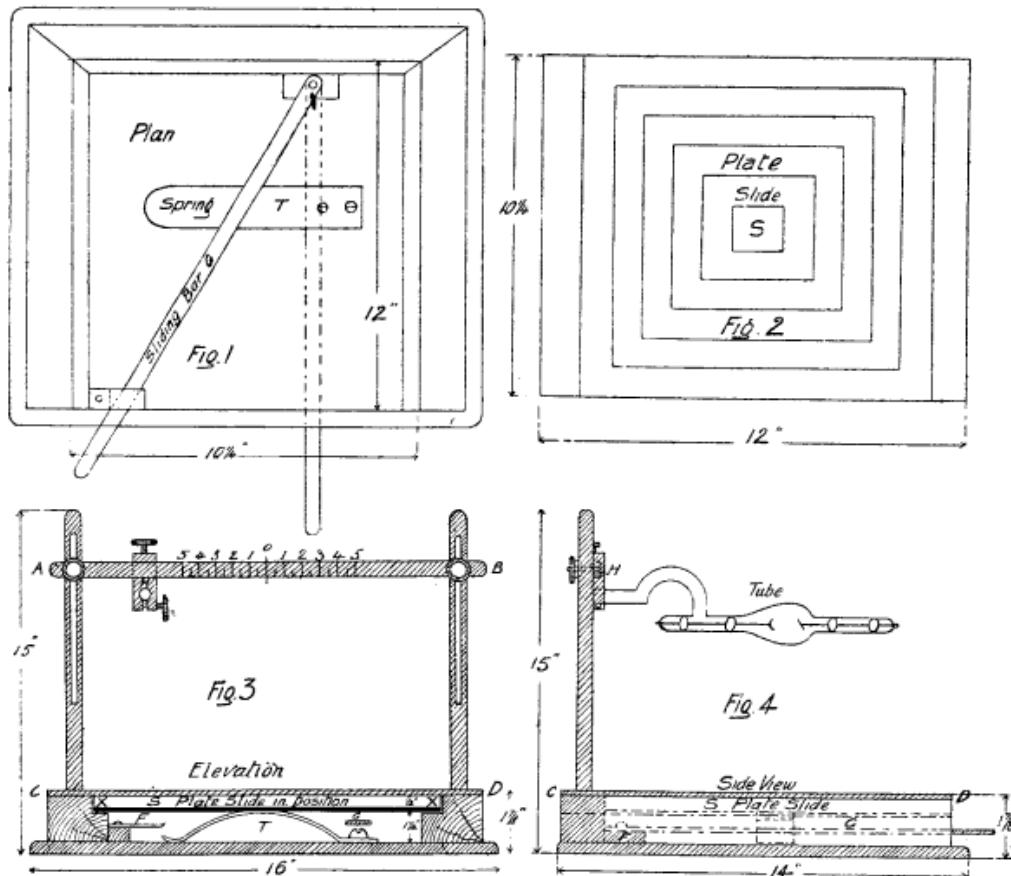
Captain Abney, in a recent communication to the Camera Club, shows that valuable conclusions can be drawn from the physical examination of sections of exposed and developed films under the microscope. The sections from which micro-photograms were taken were magnified 300 times linear, so that it was quite easy to see the structure of the film. In those parts, where much action of light had taken place, the particles of reduced silver were very much smaller than in the parts less exposed, the actual number of particles in each case being about the same. This seems to show that the number of particles capable of reduction is about the same in any case, but the material they have to draw from in building up the dot of reduced silver is very much less in case of over-exposure than under normal conditions.

The illustration from a photograph by T. Aldworth Courts presents a most interesting case of reversal.

## STEREO-RADIOGRAMS.

By A. E. LIVERMORE.

**I**N CERTAIN classes of Röntgen work, stereoscopic effects are often very desirable and important. It may not, therefore, be out of place to give a description of a simple piece of apparatus, by means of which such pictures may be conveniently and accurately produced, and which may easily be made by any amateur. The drawings practically explain themselves. Fig. 1 represents the base board, measuring  $16 \times 14 \times 1\frac{1}{2}$  inch thick, made of hard wood and rounded at the edges to give it a neat appearance. In its centre is fixed a hard steel spring *T*, being made fast one end only, so that it may be suppressed by the sliding bar *G* when desired. Fig. 2 is a thin wooden slide made to run in and out on the ledges *X X* (fig. 3*D*), and having



the squares marked out on its face as shown. This slide is intended to carry the sensitive plate, which, of course, must be enclosed in a light-tight bag. *C D* (figs. 3 and 4), is a thin sheet of ebonite, with squares, corresponding to those on the plate slide *S*, described on its top surface; on this the object to be radiographed is to rest. These squares, which, if preferred, may be made to correspond with the recognised dry plate sizes, are to ensure the object being placed in its correct position with regard to the plate underneath it. The tube-holder *H* fig. 3, is made to slide along the bar *A B*, which may be raised or lowered accordingly as the subject may demand. Now, the spring *T* being confined by the bar *G*, the slide carrying the plate may be put in position and the spring released, whereby the plate will be kept in contact with the ebonite (*C D*) on which the object is placed; one exposure may then be made with the

tube-holder secured about  $1\frac{1}{2}$  inches on one side of  $O$ , on the scale carried by  $A B$ . The exposure made, the object is allowed to remain unmoved, while the exposed plate is withdrawn and another substituted. The holder  $H$ , is then removed to the same distance on the other side of  $O$ , and the second exposure made.

By injecting into the veins and arteries of some severed member a solution of sealing-wax in which bronze powder is diffused in suspension, views of the system may be obtained by this method in all their space relations, such as are possible in no other way, and probably, when more advance has been made in respect to radiographing the softer tissues, this method will be of the greatest importance.



## NOTES FROM AMERICA.

BY THE EDITORS.

OUR first note must be one of welcome to a very large new section of readers, and of congratulation to our old friends on the accession of a few new thousands to their ranks. Our older friends know how interested we have always been in the work of the whole of the world's photographers, and especially in that of the English-speaking workers in the United States and the British Colonies. They will, therefore appreciate, and we believe, fully share our satisfaction on the establishment of a strong and promising branch publication, *The American Photogram*.

When we left England in mid-November we had not the least idea of attempting such a thing, and were surprised, quite as much as pleased, when the gentlemen, who are now the proprietors of *The American Photogram*, approached us about the middle of December, with a matured scheme and proposition to take and run an extensive edition of our magazine in America. In brief, the proposal was that an edition of the inside sheets of *The Photogram*, the whole of its literary matter and supplements should be shipped to America, there to be bound up with a sheet of American notes and other matter, and issued in its own American cover, simultaneously with the British edition. The general proposal was so full of benefit to all parties that it only needed a few hours' discussion of details before we were in a position to cable for the printing and immediate despatch of the sheets for January, 1898. This haste prevented any announcement in our last issue, but we hope the delay will not seem to detract anything from the sincerity of our welcome to a great new company of American readers.

To them we wish to repeat our belief, often expressed during the past few years, that the only successful craft journal is one in which editors, authors, and readers realise that they have a co-operative and mutual interest in its success. We want to keep as fully as possible in touch with every progressive worker, whether he is a beginner or a master. We answer, from the resources of a large staff with varied knowledge, all questions that are accompanied by stamps for reply; we welcome all suggestions for increasing the usefulness of the magazine; and we wish to reproduce for the benefit of the craft any examples of new and suggestive work which may be offered to us. We have many practical activities, as may be seen from our past issues, and though we cannot detail them here, they may be summed up in the words of our first announcement, that we endeavor "to work as well as preach." With so much of explanation we heartily welcome our new American readers as fellow-workers for the advancement of photography.

The proprietors of our new American edition are Bostwick & Harrison, of Marion-street, Brooklyn, N.Y., one of the youngest firms of photographic material manufacturers in the States. Mr. Harrison, the junior member of the firm, is the son of W. Jerome Harrison, F.G.S., of Birmingham, and has been for several years editor of *Anthony's Photographic Bulletin*. Mr. Bostwick was for some time one of the demonstrators for the Eastman Co., and latterly has been the proprietor of a photographic studio in New York. In their hands the American section of the magazine will be perfectly safe, and we know enough of their friends in the trade and in the profession to be sure that they will be very fully supported.

Our old friends, W. P. Buchanan, and Spon & Chamberlain, who have done so much to make *The Photogram* known in America, will continue their interest.

The new edition will in nowise affect the British edition, save that we hope it will enable us the more quickly to place our British readers in touch with American progress.

The photographic interest of a transatlantic trip begins even before the time of sailing, for invariably there are Kodakers hanging over the rail, or standing on the dock as we depart. Then the second or third day out, when the sickly people begin to crawl about the decks, various hand-cameras are sure to be strongly in evidence. Most of them are used without the slightest atom of knowledge, snapping at vessels hull down on the horizon, which could scarce show as specks on the plate; or at people moving about in the shadow of the upper deck, at

times when an exposure of some seconds would be needed to give any detail. One camera-owner, who had a beautiful 5 x 4 Kodak, asked us to "take" for him a number of impossible subjects. We wondered how he knew that we were connected with photography, for so far as we could learn we were unknown to every soul on board. We wondered even more when we found that the camera had been bought six months before, had been carried all over Europe, and not a single exposure made.

In American photographic matters there is, of course, little that can be called revolutionary. The carbon process is evidently increasing very greatly in popularity, and many of the best professionals are making a great and a very profitable specialty of carbon prints upon celluloid. The whole tendency of modern American operating is in the direction of brilliant, striking, strongly-lighted portraits with very dark backgrounds and subdued accessories—very often finishing at the lower part of the figure in a reversed or "Egyptian" vignette effect. To this style of work nothing can be more suitable than the carbon prints; and the appreciation of the public is testified by the fact that many of the photographers are receiving such prices for these prints as might well rouse the envy of any British house.

No more need be said here about the modern American portraiture, which, taking its great impetus about the time of the World's Fair, has developed into a distinct and very attractive class of work. We say no more now, because early issues will contain a few typical examples of the work, with some criticism, and probably with articles from some of the workers.

Platinotype printing has made, and is still making, very good and satisfactory progress. This is largely due to the example and teaching of comparatively very few men. To Willis and Clements much of the credit is due, though they usually fail to receive it because they are commercially interested in the sale of the paper. A small knot of workers in New York, Boston, Philadelphia and Washington—with Alfred Stieglitz as their foremost and most active member—has done excellent work in the same direction; and there are signs that platinotype may soon be very generally used.

Another factor which promises to work strongly in the same direction is the new "Plati" paper, just introduced by the National Photo Paper and Chemical Co. This new product has one or two immense advantages which have caused it to leap at once into favor, to such an extent that the factory cannot, at present, supply the demand. This difficulty is rapidly being remedied by the increase of plant, and unless the paper develops some disadvantages which are not apparent at present, it must take a very strong position in the world's market. The first great advantage of the paper is that it needs no special precaution against damp. Hence it is packed in the same way as gelatino-chloride paper, without any need for calcium tubes. It appears to keep indefinitely, and, at any rate, is good for many months. It prints in much the same way as platinotype paper, giving a pale yellow print, and for development requires only a few seconds in plain warm water (about 85° Fahr.). By the length of time in the water, and by its temperature, the development may be largely controlled. After this development, a short soaking in a weak solution of hydrochloric acid removes the iron from the print, and a washing in water removes the acid. The print remains in platinum, and should be absolutely permanent, but of this we shall be able to say more after careful test.

Another matter, of which details must be deferred to our next issue, is a new kinetoscope, of which E. & H. T. Anthony & Co. hold the sole rights. It makes a revolutionary step in the direction of "kinetography for all," by replacing the expensive perforated film with a simple circular dry-plate, at about one-twentieth the cost. The pictures are recorded, one after another in a spiral band, running round and round the plate, and ever gradually nearing the centre. The apparatus is comparatively simple, is placed on the market at a very low price, and gives promise (for at present it is only made in small size) of being steadier than most of the film machines for projection. It is called "The Spiral," and in time for next issue we hope to have diagrams and full details.

Writing of Anthony & Co. reminds us of their great new store just opened in Chicago, and under the management of C. R. Stevens. In many respects such a place is typically American—a great roomy warehouse floor, on the fourth storey of a large building in the busy part of the city, it must be reached by elevator. Once there, one finds the general office, the manager's office, a private office of the American Aristo Co. (of which Anthony & Co. are the sole agents), and six or eight desks occupied by representatives of the various dry-plate and paper firms whose goods are largely handled by Anthony & Co. This sort of desk-room arrangement is by no means uncommon in the States, though it strikes Britons as very peculiar. The rear portion of such a store is devoted to the usual retailing, warehousing and packing departments.

Our last note this month must be about the great Eastman Exhibition, which is to be open during January. It will include the principal exhibits from the London show together with a fine collection of American work specially made for this exhibition by well-known users of the Kodak. Mr. Jones, who has the details in hand, was over in London during the exhibition there, and the decoration and general arrangement will be based on the London model.

*(To be continued).*

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**A New Photographic Society** has been formed at Ludlow, and was inaugurated by an exhibition at the Assembly Rooms.

## EVERYDAY HINTS.

BY W. ETHELBERT HENRY, C.E.

### VI.—TONING BATHS.

**Use of an Alkali.**—Questions as to the use of an alkali in toning are frequently put by beginners:—In brief, then, an alkali is used to counteract the effect of the acid formed during toning, which would otherwise attack the silver image and reduce its intensity. Within certain limits, the actual amount of alkali present is not of vital importance, provided there is sufficient to make the bath distinctly alkaline; but it is not well to go far beyond this mark or measles will probably be the result.

**The effect of Heat.**—Temperature exerts a great influence on the toning bath, heat accelerating chemical action and causing a rapid deposit of the toning salt, while cold retards it. And in this connection it is well to remember that a rapid deposit of gold produces cold blue-black tones that change materially in the fixing bath; but when slowly deposited the result is a leathery tone far from pleasant, though in reality much more stable than that more rapidly obtained. These are technically known as "blue gold" and "red gold," and the loss of tone in the former case is due to the fixing out of the image beneath, the gold being surface deposited only and not intimately connected with each particle of the image as is the case when the gold is deposited slowly.

**Perfect Balance Best.**—In order to ensure the best results we must secure a perfect balance among the constituent parts of the bath, and keep it at the temperature that practice tells us is desirable; this is, of course, neither warm nor cold, but about 70 degrees F.

**Removal of Free Silver.**—A thorough preliminary washing is essential, if we would have bright prints instead of foggy ones. If we omit this washing, or perform it in a perfunctory manner, the free silver nitrate present will react upon the gold (or platinum) chloride of the toning bath, and not only precipitate the precious metal, but also deposit insoluble silver chloride on the surface of the print, causing a disagreeable veil.

**Influence of the Alkali on Color.**—As is well known, there are many substances that may be used in a toning bath in conjunction with gold, so long as the bath is always kept free from acidity. Each of these salts appears to influence the color of the deposit to a remarkable degree, but the reason for this has not yet been satisfactorily explained. The following are some representative baths suitable for gelatino-chloride paper:—

**BROWN AND PURPLISH TONES.**—Ammonium sulphocyanide, 20 grains; sodium sulphite, 2 grains; gold chloride, 2 grains; water, 25 ounces.

**RICH BLACK TONES.**—Sodium acetate, 60 grains; sodium bicarbonate, 10 grains; sodium chloride, 30 grains; when dissolved add uranium nitrate, 4 grains; gold chloride, 4 grains.

This bath must be well shaken during mixing, and must then be made up to twenty ounces with water. If at all acid it may be neutralised with chalk. Another good bath containing uranium is made as follows:—Borax, ninety grains; uranium nitrate, four grains; gold chloride, three grains; water, twenty-four ounces. Both these baths will keep well and should be made up some hours before use. In each case the gold must be added last.

**PURPLE-BROWN TONES.**—Sodium tungstate, 300 grains; boiling water, fifteen ounces; gold chloride, fifteen grains. When cool it is ready for use and forms a stock solution. For use, mix one part of stock with seven to nine parts of water, and use at a temperature of 70° F.; with albumenised paper it may be used as warm as 80° to 85° F.

**Combined Baths are Bad.**—Beginners are frequently tempted to use the combined toning bath on account of the fatal ease with which toning and fixing is accomplished. I am aware that some large firms of paper makers have advocated its use and I am equally aware that those makers have suffered in consequence to a far greater extent than they realize. The fact is that a bath containing sufficient lead to affect the print at all, and give it those pearly whites for which it is noted, contains enough to cause its ruin so soon as the atmosphere has time to convert the nitrate into a sulphide. Some combined baths are free from lead, but even those are bad since they are almost all in an acid condition, which practically ensures sulphur toning in place of toning with gold. Combined baths are all very well for a beginner who cares not for the life of his prints, but should be shunned by all conscientious workers.

**Reason for an Alkaline Fixing Bath.**—The importance of an alkaline fixing bath is not sufficiently realised; yet it is very desirable. If the hypo bath is at all acid, enough ammonia or chalk should be added to turn red litmus paper slightly blue. Especially is this the case when a platinum toning bath has been used, since platinum, unlike gold, is generally used in an acid condition. It is also well to wash the prints between toning and fixing, when any trace of acid exists in the print. The reason is thus tersely put by Leaper: "If a print containing an acid was placed in the hypo a very considerable reduction of density would occur, and, moreover, the silver chloride present in the whites of the print would become converted into silver sulphite, a substance readily yellowed by light." Ponder over that sentence and you will adequately realise the importance of an alkaline fixing bath.

# Practical Work

cannot easily be seen therein, you cannot see when they are perfectly clean, and they are not so easily procured as the white glass. A good method of preventing light from getting to the solutions is to make a paper cover in the following manner:

Take a piece of brown or black paper a little broader than the height of the bottle and of sufficient length to go round the bottle two or three times. Wrap this once round, and mark where the joint comes, then gum the remainder and wrap round the bottle. Next screw the top of paper to shape of bottle neck, and you will have a paper cover—easily removed to see the solution, and when effectually on, stopping all light. Of course, no gum must be allowed to get on the bottle or the cover will stick.—F. W. C.

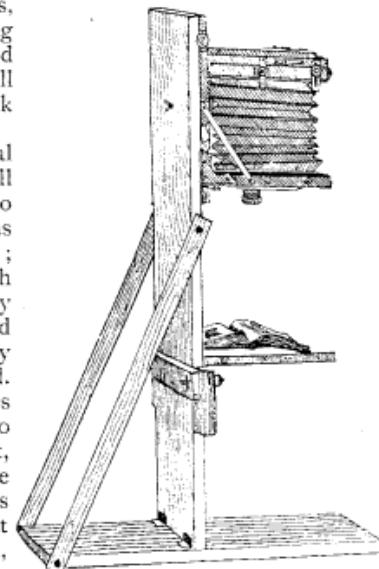
**Acetylene and Development.**—A recent number of the *Photo Gazette* raises the question of preserving developers from the action of the air by adding a few fragments of calcium carbide. By the action of the water acetylene would be given off, which would fill up the air space in the vessel containing the developer, and so keep the oxygen of the air from attacking it. The principal objection is the unpleasant smell of the acetylene. We should think that a few grains of bicarbonate of soda thrown into the solution, with the subsequent addition of a few drops of dilute acid, would serve the purpose equally well, if not better, as carbonic acid is heavier than acetylene, and would escape less easily. Care must be taken, however, to employ only a very small quantity of bicarbonate of soda, remembering that two or three grains of the bicarbonate will give off enough carbonic acid to fill more than an ounce bottle at the ordinary temperature and pressure. Also, care must be taken not to add quite enough acid to neutralise the bicarbonate.—Abst., C. F. T.

**A Simple Copying Stand.**—Most photographers have, at some time or other, felt the need of an arrangement by which they could photograph an object which would not admit of an upright position. A tilting top to the tripod has been used by some for making the camera take the required position, and others again have photographed recumbent objects by means of a prism or mirror. The purposes for which a stand such as the one to be described may be used, are many. It is, perhaps, of the greatest use to scientists for photographing fossils, minerals, shells, insects, anatomical preparations and numerous other things; but photographers in general will find it one of the handiest stands for ordinary copying work they have ever used.

The construction is extremely simple, and by the removal of two screws the apparatus may be folded up, and will occupy a very small space. The one illustrated was built to take a whole-plate camera, and its dimensions are as follows:—Upright, 48 x 11 inches; base board, 30 x 11; platform for objects, 13 x 11; and struts, 34 x 1½; one inch deal being used for all pieces. The camera is supported by a strip screwed to the upright, and the ordinary tripod screw. Owing to the slight cant of the upright there is very little strain on the screw, and the camera is perfectly rigid. The platform can be used at from seven to twenty-six inches from the camera, and is clamped at any distance by two thumb screws, which pull up a loose piece behind the upright, and will bear a considerable weight. A small iron angle bracket is used to keep the board firm and square, but does not show in the sketch. By removing the two screws that hold the struts and taking off the platform, the upright, struts, and base, will fold perfectly flat. For ordinary copying, the great advantage is that the light falls almost vertically on the print to be reproduced, and prevents the grain of the paper showing. In cases where it may be necessary to get the utmost relief, as in the case of fossils, moveable sides may be fixed to the platform, and a front light only used. The upright should be marked with a scale and inches, so that the correct distance for the platform may be found instantly, effecting a saving of both time and temper on the part of the operator.

A very useful addition to this stand is a plate-glass table, against the under side of which the object to be copied may be pressed flat, by means of wooden wedges resting on a shelf below and parallel with the glass. By this means, books of any thickness, or single sheets of paper may be placed in exact focus, and truly flat and parallel to the plate. In many cases it is not at all necessary that the varying sized pages copied should fill the plate entirely, and in such cases it is a great convenience to be able to make the copy in a few seconds, without the trouble of focussing or arranging.—R. S. HILL.

**To Protect Toning Solutions, etc., from Light.**—Toning solution and several other solutions used in photography are injured by exposure to white light. Blue, green, or black glass bottles have disadvantages, the solution



## ROYAL PHOTOGRAPHIC SOCIETY'S EXHIBITION.

**I**N ADDITION to the firms mentioned in our last issue, space has been taken by F. Brown-Johnson & Sons, W. Tylar, W. Butcher & Son, and we understand that there are now, at the time of writing, only five  $24 \times 24$  feet spaces, and a few odd areas left. The larger spaces are to be cut up into  $12 \times 12$  when required.

The arrangements for Section III., Portraiture and General Technical Photography, are well in hand. It is proposed to allow exhibitors to take a definite area of the wall space to themselves, or, if it is preferred, an alcove. On such space they can hang their exhibits as they please, and subject to the general decorations can drape it to their own taste. Over and above this, framed photographs will be received for hanging, as at Pall Mall, by a hanging committee, and for these no space will be reserved by the exhibitors. We understand that some of the professional photographers, particularly those who go in for general photography, are going to take floor space, and have possibly a little reception room.

The loan collections are getting on, particularly those concerned with astronomical photography, many unique objects having been promised.

The firms who are going to exhibit will most of them show, in addition to their usual productions, something special. F. Brown has new things in the lime-light way; Cresco-Fylma & Hannam, Ltd., cameras (hand and stand), and mounts, as well as papers and chemicals; C. P. Goerz, lenses, new prismatic stand, telescopes, Goerz-Anschutz cameras, sector and shutters; Johnson & Sons, fine chemicals; Penrose & Co., a very large camera in complete working order, as a special attraction; Prestwich apparatus for kinetography of various kinds; Salmon & Co., new patent lighting apparatus, and patent adjustable vignette; J. H. Steward, hand and stand cameras, lanterns, arc lamps, etc.; W. Tylar, folding camera, cheap outfits, new form of roller-blind shutter. A large number of other firms have not yet announced the nature of their special exhibits, but we hope by their courtesy to give the information in due course.

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### ***The National Photographic and Allied Trades' Exhibition, 1898.***

The undermentioned firms have taken space for the above exhibition, to be held at the Portman Rooms:—Thornton-Pickard Manufacturing Co., Butcher and Son, W. Tylar, Airs & Co., Price Hill & Co., Spratt Bros., J. Ashford, A. C. Jackson, Blackfriars Photographic & Sensitising Co., Dawbarn & Ward, Ltd., F. J. Borland, O. Scholz, London Photographic Supply Co., O. Sichel and Co., F. Brown, *Amateur Photographer*, *Optician*, D. A. Lowthime, Percy Lund, Humphries & Co., Ltd., Iliffe & Son, Lonsdale Bros., Watson and Sons, J. Lancaster & Son, J. Lizars, Albion Albumenising Co., W. Middlemiss, Watkinson & Co., Wrench & Son, J. Le Couteur, Johnson & Sons, Levi Jones & Co., Geo. Houghton & Son, J. Levi & Co., and J. J. Griffin and Sons.

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***Speaking of the use of Models by Photographers***, George E. Tingley, in *Wilson's Magazine*, makes the following sensible remarks:—"Being a strong believer in the naturalistic school, I advocate allowing all original characters perfect freedom in posing. While talking with them watch their every motion and expression, then select such as seem to furnish the best theme for a picture, make only such changes as seem best for proper chiaro-oscuro or linear composition. A farmer will hold his hoe; a shoemaker his last; a smoker his pipe; or a carpenter his saw, in a way usually far superior to any arrangement an operator can suggest. If you desire to represent a carpenter, *get a carpenter for your model*. Never 'fake' up a subject with wig or costume. It looks too much like amateur theatricals, and always gives itself away. 'The Village Carpenter' model has been a carpenter for fifty years.

## EXHIBITIONS AND COMPETITIONS.

*These particulars are given when the Exhibition is first announced, and again when it is time for entries to close.  
The Secretaries' names are only given when the Exhibitions are open to receive work.*

Name of Exhibition.	DATES.			Prizes.	Open Classes.	Address of Secretary.
	Entries.	Pictures.	Exhibition.			
1. Woolwich Photographic Society - -			Feb. 24, 25, and 26.		Members only.	C. H. Imrie, 60 Heavetree-road, Plumstead, S.E.
2. Edinburgh Photographic Society - -			Jan. 29 and Feb. 26.			J. S. McCulloch, 38 Castle-street, Edinburgh.
3. Manchester International Photographic Exhibition -						F. W. Parrott, Ashfield-road, Altrincham.
4. Photographic Society of Ireland - - -			Feb. 8-13.			Victor E. Smyth, 35 Dawson-street, Dublin.
5. South London Photographic Society	Feb. 19.	Feb. 26.	Mar. 5-12.	G.S.B.	6 Open.	A. E. Allen, 27 Princes-square, Kennington Cross, S.E.
6. Association Belge de Photographic	April 1.	April 15.	May 1-31.			M. Vanderkindere, 97 Avenue Brugmann, Brussels.

A—Amateur. P—Professional. G—Gold Medal. S—Silver Medal. B—Bronze Medal. C—Certificate.  
Cm—Complimentary Medals given to every exhibitor whose work is hung.

## Current Topics

Hinton, J. A. Sinclair, and E. J. Wall. Further information can be obtained from A. E. Allen, hon. sec., 27 Princes-square, Kennington Cross, S.E. An interesting lecture on the "Camera and the Wheel" was delivered on the 6th inst. at Hanover Hall, by F. O. Bynoe (of Messrs. R. & J. Beck, Ltd.) The same society gave their annual concert on the 20th of December, and its success shewed that photography and music are by no means incompatible.

**"Table Talk,"** amongst a liberal allowance of interesting chatty matter, contains some excellent portraits of people of the hour, and many other illustrations, including sketches by Dudley Hardy.

**Ethnological Photographs.**—The Rev. H. N. Hutchinson is anxious to obtain photographs of different varieties of the human race for reproduction in a forthcoming work (See Correspondence column).

**Cinematograph Accident.**—The Christmas entertainment at the Huddersfield Infirmary was somewhat marred by an accident to the lantern of the cinematograph apparatus, the flame causing a slight scare.

**The Annual Exhibition at the Alpine Club** contained some very fine examples of photography among the great mountains. The series shown by Signor Salla and by Dr. Collie, F.R.S. were, perhaps, the most striking.

**The Use of the Camera in War** is one of the features of up-to-date journalism, and we can congratulate Mr. René Bull on the excellent photographs from his camera of the frontier campaign that have appeared recently in *Black and White*.

**Many Successful Photographic Exhibitions** have been held recently in the provinces. Those at Exeter, Liverpool, Durham and Aintree are among the more important. Many Londoners and dwellers in the outer suburbs have been busy in a similar way, notably at Woodford, and at the Borough Polytechnic.

**Darlington's Handbooks Gold Medal Competition.**—The gold medal for 1897 offered by the proprietors of Darlington's well-known series of Tourist Handbooks, for the best photograph taken during 1897 has been awarded to Alfred Taylor, Sefton Park, Liverpool, and the second prize to Daniel Richard Davies, Llangollen.

**"The Artist"** publishes an interesting article in the November issue on the photographic exhibitions. The article is well illustrated, among the reproductions being the child study by J. Craig Annan, entitled "Molly," together with the beaten aluminium frame by Margaret and Frances MacDonald, from the Salon. Both photogram and frame were a source of much delight to us.

**Photography as Applied to Astronomy.**—The first of a series of free technical lectures was delivered at the Birkenhead Town Hall by W. E. Plummer, director of the Liverpool Observatory, on the above subject, to a delighted audience. Amongst other matters the lecturer gave the history of the advances in the aids invented by the human race to enable them to see into so-called space, the latest and greatest of these, perhaps, being the telescope with a photographic attachment.

**The Birmingham Magazine** contains, in its second number, an article by J. Hall-Edwards, L.R.C.P., on "Birmingham and Photography," which takes a comprehensive survey of the art-science as it affects the capital of the midlands. The chapter-heading, by the author, is a very dainty little piece of decorative work. Besides Mr. Hall-Edward's article, the magazine contains much other interesting matter, including a three-color reproduction of a picture—"Brown Eyes and Blue Eyes"—by Arnold G. Mountfort.

**Acetylene for Cycle Lamps.**—Acetylene is coming into use for cycle lamps. The generator is secured to the frame of the machine, a rubber connection passing thence to the lamp. Three minutes suffices to charge the generator, which contains enough carbide to supply the lamp with gas for four hours. On tour it would be quite easy to carry an extra supply of carbide, and there is little risk of the apparatus getting out of order. Another advantage possessed by the appliance is that it can be fitted to any existing form of machine or lamp.

**The Devil in the Camera.**—In some recent lectures in Yorkshire, Mrs. Bishop, who has been photographing in Corea, said that during her travels her camera was considered as the abode of a devil, and that other devils inhabited various parts of the photographic kit. If Mrs. Bishop had been one of the button-pressing school, we should have sympathised with the natives, but she relates the trouble she experienced in developing and printing her negatives, under all sorts of adverse conditions. We have known hand-cameras of the magazine description that have been possessed of devils of the most obstinate character, so that we must not heap ridicule on the unsophisticated Coreans.

**Mr. Packham's Demonstration** of the Gum Bichromate Process to the Affiliated Societies at the Photographic Club passed off very successfully. Unfortunately, owing to prior publication in a contemporary, the report of the demonstration has not appeared in *The Photographic Journal*. Mr. Packham showed that it is possible to get almost any effect with gum bichromate, from fine detail up to (or down to !!) a result which owes more to the brush than to the lens. Success in working the process depends very much on attention to details, but the following is an outline of the method: Suitable paper is soaked in saturated potassium bi-chromate solution, and dried in the dark. When bone-dry, the paper is coated with a solution of gum acacia, in which is worked up an appropriate coloring material, such as red or yellow ochre, burnt umber, etc. Printing is carried out by the aid of an actinometer, as in the carbon process; and development is accomplished by the simple method of flowing water over the print, finishing up by the use of brushes, jets of water, and other mechanical means. The prints are fixed in solution of alum, sodium sulphite, or even the familiar "hypo."

**Lilienfeld's Protalbina Printing Paper.**—The firm of Lilienfeld & Co., of Vienna, has recently put upon the market a printing-out paper, the colloid coating of which is said to be the so-called vegetable albumen or vegetable casein as obtained from the seeds of cereals. Although no details have been published as regards the preparation of the paper, two reports by Dr. Eder justify the hope that the new paper will prove of considerable practical value. The coating is harder and far more elastic than the collodion film of the so called celloidine (Simpson type, or collodio-chloride) papers, and is, therefore, as little subject to being scrubbed off, as is the coating on albumenised paper. Similarly it is not liable to damage by contact with the wet fingers, like the various gelatino-chloride papers. Being alike unattacked by water and alcohol it appears to offer considerable advantages over the two kinds mentioned, and it is about half as sensitive again as freshly prepared albumenised paper. As strong alkalies attack the film the toning bath should not be distinctly alkaline, the acidity of the chloride of gold being merely neutralised with whiting, or a sulpho-cyanide bath may be used. Dr. Eder appears to hope that prints on the new paper will prove less subject to fading than prints on the ordinary albumenised paper.

H. D.

**Professor Lippmann on Color Photography.**—December 14th was one of the red-letter days of the R.P.S., as Professor Gabriel Lippmann came over from Paris to lecture on color-photography. The Society of Arts kindly lent their rooms for the occasion, so that the large audience were able to hear and see in comfort. As most of our readers are aware, there is no such thing as photography in colors in the ordinary sense of the term; the color must be reproduced either by three negatives, or by the method of interference. The results

obtainable by the latter method were the subject of Professor Lippmann's lecture, and many interesting and beautiful examples were projected on the screen. The actual method consists in employing a perfectly transparent emulsion, and backing the plate with mercury, which is driven in by raising a little reservoir connected to the back of the dark slide by a rubber tube. The rays pass through the emulsion, and are reflected back from the mercury mirror, so that the returning waves of light interfere with those coming forward, and action takes place at regular points in the film, which are different for each color. After development and drying, the colors are exactly reproduced; but, like the colors in mother-of-pearl, stagnant water and other surface colors, which these color photographs resemble, they must be viewed at a particular angle. Professor Lippmann showed, by breathing on the films, that it is necessary to have them in the same state of dryness as when they were exposed, otherwise the distance between the deposits of silver on the film are altered, and the colors change or are invisible.

**A Studio on Wheels** is not by any means a novelty, but a novel and improved form of such studio has recently been manufactured by the car-making shops of the Baltimore and Ohio railroad. The car is sixty feet long by ten feet wide, and contains dark room, printing room, water reservoirs, etc., etc., as well as living and sleeping accommodation for the staff of two men. The dark-room, which is directly in the centre of the car, was the result of much study and care. It is fifteen feet long and ten feet wide, made with double tongue groove and bulkhead partitions and narrow doors, having felt battens which exclude every ray of light, and the entire interior surface painted black. Hung from the ceiling by steel bands is a water tank containing 250 gallons—a ton and a half of dead weight. It was on account of this essential water supply that the dark-room was built in the centre of the car, for, in any other position the dead weight would have interfered with the smooth running of the car, if not endangering its actual stability on the track while moving at a high rate of speed. Underneath the tank, and at one side of the room, is what is known as an automatic rocker or developing-table. On the opposite side is a big wooden sink the entire length of the room, with fixing boxes, water taps, and washing boxes. Almost the entire dark-room is lined with shelves divided into little pockets and compartments, dryplate cases and platinum paper boxes, for everything must be held rigid to prevent breakage. The living compartment forward has been devoted to tables, sleeping berths and seats, and the tables are used alternately for printing, trimming, and clerical purposes and eating. In the rear of the car all the chemical preparations and solutions are weighed and prepared on a long table, with deep compartment shelves, and in this room all printing and preparation of meals take place. Above swings a stepladder which, when let down, leads up to a trap-door in the roof, and admits the carrying of the big camera to the top of the car, from which views can be taken. Altogether, the car is unique and up-to-date; and amongst other uses it will be employed by the great New York newspapers. Attached to one of the limited trains it will whirl on to New York as the artist develops and completes his pictures, while the writer can dictate his account to a stenographer.



ingly interesting book, and one which should be of great value to Australasian photographers. *The Australian Journal* has lately been progressing very distinctly, and is a wonderfully well-conducted magazine.

**A New French Periodical.**—We have received the first number of a new French quarterly entitled *La Mise au Point*.

**Gut Licht**, the Year Book of "Apollo" for 1898 is a handy little volume; the text and illustrations are both good.

**The Photographers' Diary** of Letts & Co. is of a convenient size for the pocket, and contains a little Tourists' Directory, and pages for entering expenses, memoranda, diary, etc.

**Technical Photography and Blockmaking** of a very high order are to be seen in the illustrations to an article on "Rookwood Pottery" in the current issue of *The Art Journal*.

**Many good practical articles** are contained in the *Photographers' and Lanternist's Supplement to the Bazaar*. Besides this the current issue contains the result of a competition, the winning prints being of a high order of merit.

**A Christmas Card from Port Elizabeth.**—A souvenir consisting of a number of miniature photographs of events and personages interesting to Port Elizabethians has been sent us by J. W. Goldsborough & Sons, the "Russell Studio," Port Elizabeth, South Africa.

**Photograms at the New Gallery.**—An exhibition of engravings, etchings, photograms and photogravures, is being held at the New Gallery, many fine reproductions of pictures by Sir Ed. Burne-Jones, Rosetti, and other living and deceased masters are shown.

We have received a copy of the *Journal of the Transactions of the Oxford University Scientific Club*, which contains a lecture by Captain Abney on "The Scientific Requirements of Color Photography," this being the sixth Robert Boyle lecture delivered before the aforesaid club. The pamphlet is published by Henry Trewde, price 1s.

**The Composition of "Ortol."**—Vogel & Hanneke, of the Carlottenburg Technical School, have examined J. Hauff's new developer "Ortol," which they find to be a double salt of hydroquinone and methyl-ortho-amidophenol. It is highly commended both on account of its keeping and developing properties, whilst it is very susceptible to the influence of bromide.

**The British Journal Almanac** seems to increase in size year by year at the rate of a geometrical progression. The present volume contains a large number of short pithy articles, mostly of a practical nature, and many illustrations, whilst the advertisements are legion. Our old friend is keeping up its well-earned reputation.

**Anthony's Annual for 1898** deserves notice for its beautiful printing, which is always a strong feature with the "Bulletin." It contains many interesting articles and some good illustrations. We must protest, however, against one of the latter, entitled "The End of the Romance," which is at once inartistic and ridiculous. The Annual includes a useful section devoted to process work, and the whole will be much appreciated by photographers. London: Percy Lund, Humphries & Co.

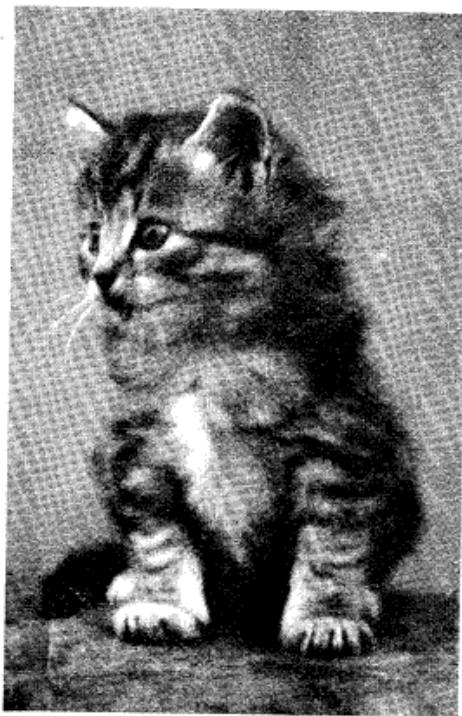
**"The Royal Navy List Diary and Naval Handbook"** has but little direct connection with photography, though it looks like proving invaluable to those who "go down to the sea in ships." Of course, to all who are interested in either our royal, our mercantile, or our pleasure navy, the mass of information, lists, tables, etc., is both of interest and of use. The diary portion provides ample space (a day on a page) of good, ruled paper, with two very useful adjuncts in the shape of an index to the diary and a number of pages for memoranda. Price three shillings nett; postage fourpence; abroad eightpence. London: Witherby & Co., High Holborn.

**A Bibliography of X-Ray Literature** and Research, 1896-7, by Charles E. S. Phillips. Price 5/- (London: *The Electrician*, Limited, Salisbury-court, Fleet-street, E.C.) A well-considered scheme, carried out with much care and judgment, has resulted in a book which should prove an absolute necessity to the radiographer who would really know the history of his subject, and the work that has been done upon it. As preliminary chapters are given a "Historical Retrospect" and "Practical Hints," both by the editor. The bibliography which forms the body of the book is arranged alphabetically, many entries appearing under author's name as well as subject, and cross references being freely used. In very many cases, where it appears advisable, the gist of the communication referred to in the bibliography is given in a few lines. The only fault we have to find with the book is an apparent partial ignoring of the photographic side. There is no reference whatever to the relative sensitiveness of different plates, and we fail to find any particulars of the many methods of attempting to increase that sensitiveness—which surely should be found in a bibliography. We do not wonder at the omission of the few original matters which have appeared in our own pages, but it does seem strange that papers recorded in the *Journal of the R.P.S.* should be over-looked, since that journal is one of the authorities quoted. We have directed attention to this defect in previous books dealing with radiography. Another puzzle is the apparent ignoring of the "Archives of the Röntgen Ray," which surely has contained *some* matters worthy of record in such a bibliography. One other very small matter, probably a printer's error, is the price (four shillings) quoted for A. B. Chatwood's book. This should be one shilling.

THE PHOTOGRAM.



"SUSPENSE." BY JOSEPH JOBLING.  
Crowded out from "Photograms of '97."



BY GEO. D. KETTLEWELL.  
(Hon. mention, Postcard Competition.)  
Crowded out from "Photograms of '97."



Manufacturers sending apparatus for examination and notice, should state distinctly whether, and when, they wish it returned. We specially request that all articles which are not too bulky, be deposited in our public Reading-room for at least six weeks from date of issue of the magazine in which they are noticed.

The following are the new advertisers, and most important new goods advertised in the present issue (with possible omissions of those received at the last minute). In writing to advertisers please mention THE PHOTOGRAM.

#### New Goods, etc., Advertised.

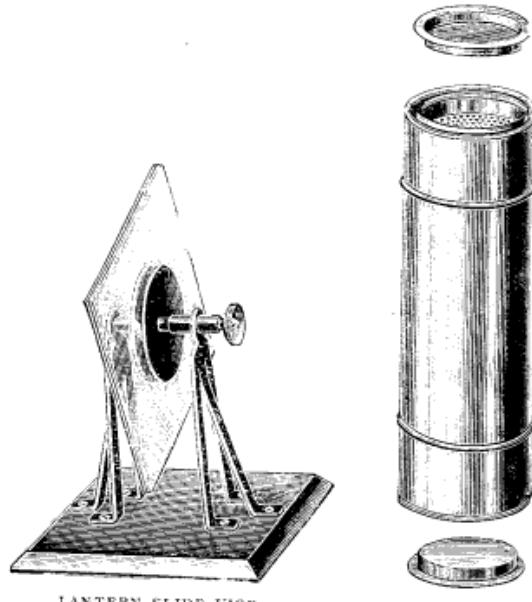
Oxy-Incandescent Gaslight. O. Sichel & Co.  
Lighting Apparatus. Salmon & Son.  
Enlargements. Wilfred Emery  
Fine Art Photograms. Erdmann & Schanz.  
Tixit. Vanguard Manufacturing Co.  
Calcium Tube. David Allan.  
Collotype Prints. Fortescue, Wetherman & Co. Ltd.  
The "Talmer" Hand Camera. Talbot & Eamer.  
"Diphenal." Pronk, Davis & Co.

#### NOVELTIES.

**Adams & Co.** have removed from 81 Aldersgate-street, E.C. to 26 Charing Cross-road, W.C., thus concentrating all their business under one roof. This firm intends shortly to place a new hand-camera on the market. The series will be known as the "Adams de Luxe" and will be fitted with the new Dallmeyer stigmatic lens working at f/6. or a Zeiss convertible anastigmat.

**A Lantern' Slide Vice.**—The excellent little apparatus shown in the figure is made by William Tylar, 41 High-street, Aston, Birmingham. Lanternists will find it most useful.

**An Ingenious Damp-Proof Tin** to hold platinotype paper has just been invented by David Allan, doing away entirely with the necessity for rubber bands. The tin has an air-tight lid at each end; one being devoted to the calcium chloride asbestos and the other to the paper, the former being separated from the latter by the usual perforated zinc.



LANTERN SLIDE VICE.

**Chromo-photography.**—Walford & Co., of New Bridge-street, E.C., are introducing a new method for producing colored photographs. Although a mechanical process, there seems to be a greater control than usual over the results. Mr. George Haité acts as art adviser to the company.

**The Eastman Photographic Materials Co., Ltd.**, have removed their wholesale premises and general offices from 115-117 Oxford-street, W., to 44 Clerkenwell-road, E.C., and all business communications should be sent to this address in future. The new premises are well situated for the despatch of business, the three floors containing an area of 16,000 square feet. The retail premises at 115-117 Oxford-street, will be carried on at that address as heretofore.

**A New Thing in Bromide Papers** is manufactured by the Nepera Chemical Co., and named Velox Paper, samples of the various varieties of which have been sent to us by the British Agents, Griffin & Co., of Garrick-street, Strand. We feel certain that this make of paper, when its advantages are known, will have a large circle of users. Briefly put, Velox papers are very slow Bromide papers, and offer all the advantages of such. There are four kinds giving all the variety that is required:—Carbon, a smooth surface paper of even texture; Rough, a paper having a somewhat coarse texture; Glossy, an enamel surface paper; and Special Glossy a paper intended for soft effects. The prices are, per dozen,  $\frac{1}{2}$ . 6d.;  $\frac{1}{2}$ . 1/-;  $\frac{3}{4}$ . 2/-;  $\frac{1}{2}$ . 4/-;  $\frac{1}{2}$ . 4/2. Chief amongst the advantages due to the extreme slowness of the papers are, firstly, the large amount of light that can be used in the manipulations and the great latitude in exposure. The packet may be opened in a room lighted by gas (or weak daylight) with the flame turned down; the exposure may be made to the flame raised, and then on turning down the flame, the development can be proceeded with 6 or 7 feet away. This is a very great advantage both to the large and small users of bromide papers.

As a guide to exposure, the makers give for negatives of average density 1 to 8 seconds (with the frame held a few feet away from the window) to diffused daylight. With an ordinary gas jet 6 inches away, we find  $\frac{1}{2}$  to  $\frac{1}{2}$  minutes is sufficient. Of course for negatives above half-plate it is better to increase this distance (and consequently the exposure) in order to get even illumination.

Developments may be made with any of the following formulae:—

AMIDOL.

Water	4 OZS.
Sodium Sulphite, crystals pure	200 grains.
Amidol	20 grains.
10% Bromide of Potassium solution, about 5 drops.	

METOL.

Water	10 OZS.
Metol	24 grains.
Sodium Sulphite, crystals pure	1/2 OZ.
Sodium Carbonate crystallized	240 grains.
10% Bromide of Potassium solution, about 20 drops.	

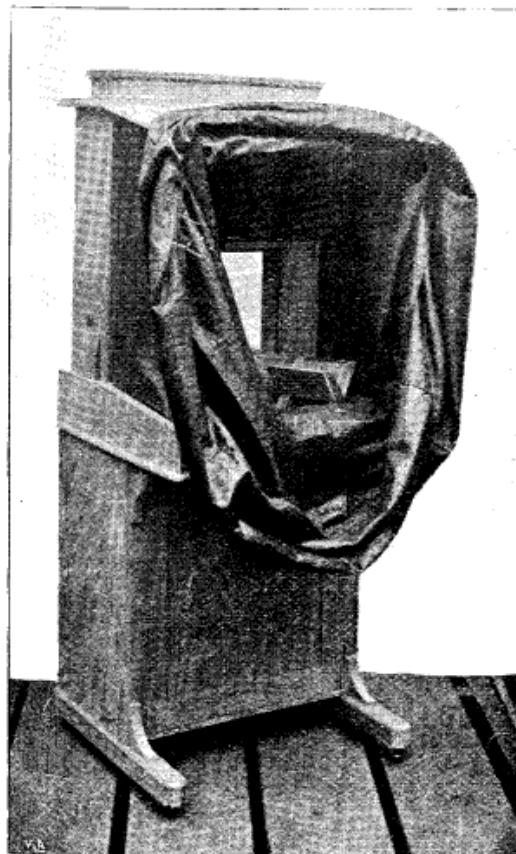
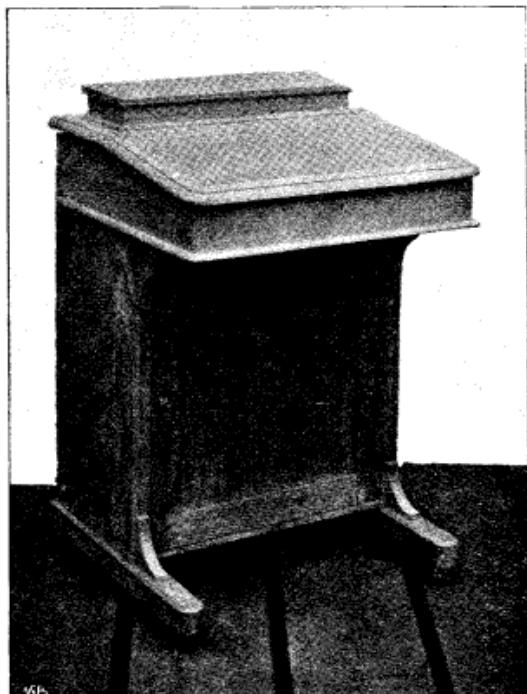
METOL-QUINOL.

Water	10 OZS.
Metol	7 grains.
Sodium Sulphite, crystals pure	1/2 OZ.
Hydroquinone	30 grains.
Sodium Carbonate crystallized	600 grains.
10% Bromide of Potassium solution, about 10 drops.	

Development is very quick, and directly it is finished the prints should be placed in the fixing bath, which is recommended to be made of water 20 ozs., hypo 5 ozs., with a few drops of acetic acid, or add say 1 oz. common powdered alum. The fixation takes place in from five to ten minutes, and then wash half hour in running water. The glossy prints may have a higher surface given to them by squeezing to talced glass or to ferrotype plate. Sometimes streaks will appear on the glossy paper, but these may be removed by clearing with weak ferricyanide of platinum and hypo.

**One of the neatest things** we have seen for a long time is the dark-room contained in a Davenport, devised by David Allan, 157 Whitfield-street, W. In the usual way this useful piece of furniture can be employed as an ordinary Davenport writing-desk, a space being provided for the storage of stationery. When a dark-room is needed, however, the photographer has only to say "Hey! presto!" and lift up the top of the desk, and the thing is done. He

developers and other accessories. Beneath is a tank to hold the waste water from the sink, and capable of containing three times the amount of water in the cistern. This



will find a well-ventilated chamber, containing a lead-lined sink, a large pane of ruby glass, with a bracket *outside the chamber* for a lamp, a cistern of water, and shelves for

THE PHOTOGRAM.

sounds like a fairy story, but it is quite true and the Davenport dark-room will no doubt prove a boon to many an amateur whose space is limited.

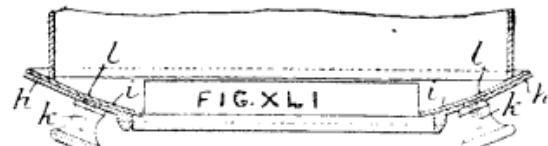
CATALOGUE.

C. P. GOERZ, Optical Works, Berlin-Schöneberg, Germany. The little catalogue of lenses made by this firm contains several useful tables of conjugate foci, reducing tables, etc., in addition to the price lists and descriptive matter. Besides this we have received a German catalogue of apparatus made by this firm, very fully illustrated, and giving several examples of the work done by their Anschütz hand-camera and other similar apparatus.



13,642. *Kinetoscope*. A. F. Parnaland, 42 Boulevard Bonne-Nouvelle, Paris. June 20th, 1896.

13,674. *Lens Mount*. A. Wrench, 50 Gray's Inn-road, London. June 20th, 1896. Relates to a method of mounting the lens on a camera or magic lantern so that the axis of the lens always remains radial to a centre in the focal plane when the lens is laterally displaced. The front (i. fig. XLI.)



of the camera lies on the surface of a sphere, whose centre lies in the focal plane. The flange (h) of the lens mount is correspondingly shaped to fit on the surface (i). Two parallel slots (l, l) are made in the flange (h), and through these are passed guiding and clamping screws (k, k). In modifications the flange (h) is clamped between two spherical surfaces.

13,701. *Shutter*. W. Thompson, The Royal Institution Laboratory of Manchester; and H. Smith, 33 Withington-road, Whalley Range, Manchester. June 22nd, 1896.

13,912. *Apparatus for Storing, exposing and developing plates without a dark-room.* J. Lansding, Brooklyn, U.S.A. June 23rd, 1896.

13,918. *Camera, with mechanism for setting the shutter and removing the exposed plate by the movement of a single handle.* A. J. Boult, 111 Hatton-garden, London. June 23rd, 1896.

14,068. *Shutter.* W. Griffiths, Highgate-square, Moseley-road, Birmingham. June 25th, 1896.

14,332. *Swivelling Coupling, for conveying the electric current to incandescent electric lamps.* A. G. Adamson, 88 Tabernacle-street, E.C.

14,455. *Kinetoscope.* G. Richards, Suffolk House, Laurence Pountney-hill, London. June 30th, 1896.

14,503. *Hand Camera, with plate-changing arrangement.* J. J. Clipsham, 25 Berry-street, Liverpool. June 30th, 1896.

### Principal American Patents.

591,346. *Sensitised Photographic Film.* William V. Esmond, New York, N.Y. November 25th, 1896.

591,347. *Shutter.* William V. Esmond, New York, N.Y. May 11th, 1897.

591,466. *Lens.* Louis Gathman, Chicago, Ill. June 11th, 1895.

591,877. *Camera Holder.* Isaac F. Pheils, Woodville, Ohio. March 26th, 1897.

591,899. *Regulating Rontgen Ray Tubes.* Elihu Thomson, Swampscott, Mass. August 4th, 1897.

592,148. *Photographic Plate Wrapper.* Clarence A. Lindsay, Washington, D.C. May 8th, 1897.

592,575. *Stereopticon.* William S. Scales, Everett, Mass. May 21st, 1895.

593,010. *Camera.* Albert H. Bromley, junior, Philadelphia, Pa. October 10th, 1896.

593,024. *Lens Cabinet.* Ernest U. Kingsey, New York, N.Y. December 21st, 1896.

593,036. *Mount.* Paul J. Stuparich, San Francisco, Cal. October 13th, 1896.

593,376. *Kinetographic Camera.* Horatio J. Heinze, London, England. November 17th, 1896.

594,036. *Rontgen Ray Tube.* Henry L. Sayen, Philadelphia, Pa. April 29th, 1897.

594,094. *Kinetoscope.* Nicolay Nelson, Wanegan, Ill. June 10th, 1897.

594,120. *Photographic Camera.* Daniel P. O'Leary and Samuel B. Kull, New York, N.Y. July 22nd, 1896.

594,143. *Regulating Rontgen Ray Tubes.* Martin P. Rice, Schenectady, N.Y. July 17th, 1897.

594,156. *Rontgen Ray Tube.* Irwin, W. Howell, Newark, N.J. August 26th, 1897.

days travel with cameras that there are probably many who have taken really valuable photos such as an ethnologist might require.—Believe me, yours faithfully,

7 Cowley-street,  
Westminster, S.W.

HENRY N. HUTCHINSON.

### To the Editors : THE PHOTOGRAm.

DEAR SIR AND MADAM.—May I draw attention to the memorial which it is proposed to institute in honor of Henry Fox Talbot? Everyone will be aware of the inestimable value of "Fox Talbot" researches. Indeed but for them modern photography would have no existence. Yet it is a fact, hardly creditable to the photographic community that no permanent mark of appreciation of his labor has been made. At Bry-sur-Marne stands a monument to Daguerre; Chalon can show one to Nicéphore Niépce; but Lacock in Wiltshire, the home of the Talbots, can display no sign of public gratitude. Surely, sir, we in England, who may justly claim to take the leading place in photographic science, art and manufacture, are not going to be behind our French neighbors in recognising the man to whom we owe the foundation of our craft. The memorial proposed is the restoration of the chancel of Lacock Church, where Fox Talbot's father and many of his ancestors as far back as the sixteenth century are buried. It is probable that a more distinctively memorial character will be given to some definite feature in the chancel, such as a window, but the whole chancel will be commemorative, the necessary plans have been prepared by the architect, Mr. Harold Breakspeare, whose perspective drawing of the exterior was exhibited at the exhibition of the Royal Academy. A pamphlet giving further particulars can be obtained from Mr. C. H. Talbot, Lacock Abbey, Chippenham, and subscriptions may be sent to the "Fox Talbot Memorial Fund," Capital and Counties' Bank, Chippenham. I feel sure, sir, that you will sympathise with the idea of a memorial and will allow your readers to express their views on the question.—Yours faithfully,

Swindon,  
Wilts.

G. E. BROWN.

[Whilst heartily sympathising with the desire to erect a memorial to Fox Talbot, to whom the present generation owes an immense debt, we must confess that we see no very direct connection between the discovery of photography and the repair of a chancel.—Eds.]



### National Photographic Record Association.

To the Editors : THE PHOTOGRAm.

DEAR SIR AND MADAM.—Having been asked to act as curator, *pro tem.*, of the above association, would you permit me to say that I shall be happy to receive photographs for the collection now being formed of objects of architectural, archaeological, historical, or ethnological interest previous to their being deposited in the British Museum. Only unmounted photographs, printed in carbon, platinum, or other permanent process will be received, the standard size being whole plate. Contributions may be forwarded to me either to the Royal Photographic Society, 12 Hanover-square, or to the address following.—I remain, yours etc.,

21 Avenue-road,  
Highgate, London.

GEO. SCAMELL,  
Hon. Sec.

To the Editors : THE PHOTOGRAm.

DEAR SIR AND MADAM.—I am collecting photos to illustrate a book on "The Human Race," and should be greatly obliged if you would be so kind as to insert a par in *The Photogram* to say that I am willing to buy good, clear photos of typical men and women of any and all races. They are to be reproduced (with full acknowledgement) by half-tone blocks, and the larger they are the better. Half-plates might in some cases be enlarged, or even quarter-plates, but they must be strong and clear. So many people now-a-

**The "Process Photogram"** records all the progress of, and gives all the news of interest to, the photo-mechanical craft, in addition to the whole of the matter and illustrations appearing in *The Photogram*. As the principal advances in photography are, at present, on photo-mechanical lines, *The Process Photogram* is a necessity to the amateur or professional who wishes to be thoroughly informed.

Price 6d.; post free, 8d. To order only, from Dealers and Newsagents.

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