

COLOUR PHOTOGRAPHY.

SCIENTIFIC London is now deeply interested over the latest discovery in colour photography, by Professor Gabriel Lippmann, member of the Institut de France and professor of natural sciences at the Sorbonne. Professor Lippmann recently explained his discovery at the Royal Institution, before a most distinguished scientific audience, which included among others, Lord Kelvin, Sir G. Stokes, Sir Frederick Abel, Sir James Clerk Maxwell, Sir Benjamin Baker, Professor Dewar, Dr. Frankland, and many others. A number of coloured photographs, embracing figures, flowers and landscapes were exhibited by aid of the magic lanterns and created such a sensation that loud applause followed as the brilliant colours were thrown on the screen, a most unusual feature in a lecture at the Royal Institution.

I called on the Professor and subjoin the following information from his own lips, which has not yet been made public.

As a practical man the Professor evidently realized that seeing is believing, and therefore began operations by showing me the very plates he had used for illustrations at his recent lecture. There, sure enough, when viewed at the proper angle, I beheld the dream of photographers for the last fifty years realized—photos. coloured by natural process. A strange sensation this—the first glimpse of a fresh secret wrung from the unknown recesses of nature—a sensation, indeed, fraught with reverence.

You will observe that the colours shown on the plate are not due to coloured substances, not to pigments. They are of the same nature as those of the soap bubble, so called interference colours. Note how they change when you hold them up to the light, and the picture before me, as I held it up, underwent all the changes of the rainbow.

The Professor proceeded to explain that in order to obtain coloured photographs by his method it was first necessary to have a transparent, grainless photographic film, capable of giving a colourless fixed image by the usual means. The preparation of such a film had been the most difficult part of his work, for, once this attained, the second necessary condition once hit upon was easily carried out, namely the employment of a metallic mirror placed in immediate contact with the film during the time of exposure.

This mirror was formed by means of mercury, the plate being first enclosed in a camera slide, with the film side, contrary to the method usually employed, turned against the back wall of the camera—thus not in direct contact with the object.

Mercury was allowed to flow in behind it from a small reservoir connected with the slide by India rubber tubing, thus forming a layer of mercury right over the surface of the plate. After exposure the mercury flows back into the reservoir, which is lowered for the purpose. The plate is developed in the usual way, and, when dry, the colours are seen by reflection.

The scientific process Professor Lippmann further explained thus:—During exposure in the camera, the light from the lens is reflected back on the film by the mercury mirror. In consequence of this, the luminous vibrations from stationary waves, which imprint their forms (i.e. colours) upon the sensitive film. The particular colour of rays of light is known to depend upon the particular form or length of the light waves. Without the mirror these waves, travelling through the camera at the rate of 186,000 English miles per second, would leave no record on the plate as to their wave length.

That is to say, they would leave no record of the colour which they might produce to the human eye.

And here Mr. Lippmann remarked that there is some analogy between his invention and that of the phonograph. In the phonograph the sound vibrations are imprinted in the wax of a cylinder and are reproduced afterward. In his invention the vibrations are made to imprint their form in the body of the photographic film, and this film, when viewed by aid of white light, reflects precisely the colours which it has received on its surface. The exposure necessary to produce this effect is one to two minutes in sunlight and ten to fifteen minutes in the shade.

The colours are as minutely reproduced as the monochrome effects of photography, the Professor assured me. This is evident when they are projected on a screen—as minute and distinct as a Holbein picture.

I ventured to ask whether he has yet succeeded in reproducing or in multiplying on paper the coloured photographs he had shown me.

"Not yet," he replied. "That is the problem I am now occupied with. I have not yet reached the paper printing stage. At present I have attained what I would venture to call the stage of the daguerrotype in colour. For, as you know, at first Daguerre was not able to multiply his photos. But I now feel certain that the transference of coloured photographs is theoretically possible, whether I may be the first to succeed or somebody else."

"But surely, monsieur," I put in, "there is an enormous fortune for the one who first carries this beautiful idea into practice. It seems almost a pity for you to come over here and tell all you know, perhaps for the benefit of others."

"Well, you see, Lord Kelvin asked me to come to London. Besides, being a professor at the Sorbonne, I am not supposed to work for anything else but the advancement of science. Money making is not part of our programme. I came upon this idea in my laboratory at the Sorbonne, after the subject had been in my mind over fifteen years. Those transparent films have given me a lot of trouble."

SALVATION ARMY IN THE YEAR 1403.

THE Salvation Army, which, through its far reaching practical work for the benefit of humanity, has gained support throughout Christendom, and the later volunteers are not without their prototype in pre-Reformation days. Though this fact is not generally known, it has been preserved by John H. Blunt in his history of the sects. The ancient Salvation Army, which existed five hundred years ago, had its lot cast in far less tolerant times than now, and met its destruction by the hands of persecution.

It was during the latter years of the Fourteenth Century that little bands of religious men and women began to gather in Italy under a leader whose name has not been preserved, though the tradition is that he was a Scotchman. These enthusiasts adopted a uniform, not of blue, but of white, a garb typical of their purity. They were known as the 'White Brothers,' and called themselves 'Penitents.'

From village to village and from city to city they marched, playing on musical instruments, singing, praying and exciting the people to turn from sin to righteousness. The noises they made were loud, and they were complained against as disturbers of the peace. Their methods were not approved of, yet they continued the work among the poor, the helpless, the

outcast, in the alms and prisons. They drew the high as well as the lowly, and many in the church joined their increasing ranks.

As the little bands marched about with song, dance, prayer and preaching, they gathered arms for their support and added greatly to their numbers until they became a real salvation army. Then, in companies of thousands, they continued their work, and so rapidly did they increase that the Pope at Rome began to fear they might intend to usurp his throne. In 1403 he sent his troops against the largest corps, that numbered more than 10,000. The troops met the army of religious enthusiasts at Viterbo, scattered it with great slaughter and captured the leader, who was burned as a heretic. This persecution destroyed the first salvation army.

A STORY OF DICKENS' NERVOUSNESS.

M. JULES CLARETTE, the manager of the Comédie Française, a man of wide and kindly sympathies, and a keen observer, is fond of England, which he understands extremely well, and where he has enjoyed hospitality. Above all, he likes to visit London and its galleries. He is just back in Paris from such a journey, and in the *Figaro* he relates, in the course of an article on London past and present, the following anecdote about one of the English writers of stories—I speak only of the dead—who is the best-known in France, Charles Dickens:—

"I have thus seen disappear Charles Dickens, who now lies in Westminster Abbey like Lord Tennyson. My last recollection of the latter was receiving his plays, in one of those little editions which charm the book-lover's heart, with his handsome signature on the first page. I never saw him, but Dickens, whom I have always profoundly admired, I had met, not in London, but in Paris. I still see him, as on a certain summer evening he sat at one of the tables in front of the café, which, in the Place de la Bourse, was then hard by the Vaudeville Theatre, now, alas! demolished. The Vaudeville of the Place de la Bourse was giving on this particular evening a piece by Charles Dickens which he had had played in his own house with a few friends among whom was Wilkie Collins, the author of 'The Woman in White.' In Paris the piece was called 'L'Abime.' Charles Dickens had taken the trip from England to Paris for the express purpose of being present at the representation of his work before the French public. There he sat in front of his table taking a glass of wine while the *tout Paris* of the first night was entering the theatre, and passing by this man in a grey hat, with a bushy head, the long hair, and the little twisted tuft of a beard, little imagining that there was in Paris that summer evening one of the master novelists, the most original of writers, one of the geniuses of the Nineteenth Century. As for him, he looked at the people as they entered, but did not go in himself.

"Speaking to a friend Dickens said:—'I am waiting for the first act to be played. Besides, it is so pleasant in Paris in the evening. How can one shut oneself up in a theatre?' The truth is he was afraid of the result of the evening. He dreaded the Parisian public. It seemed to him that he had become the little unfortunate reporter of former days, the little Boz, but now intimated. He was seeking a pretext for not facing a French house. This man who was afraid of nothing, who managed to finish a piece while talking to the workmen, smeared with coal dust, about pity, about duty, about resignation, about the smiles of babies, and about the consolations of the stars, as in 'Hard Times'—shillings who braved the mob and whose utterances were a charm, trembled before a dozen Parisian critics and a public of Parisian ladies.

"'Come, let us go to Mabilly,' said he to his friend, 'I will come back to know the result when the fate of *L'Abime* is sealed.' So there he was finally at Mabilly. But in the presence of the *dansesuses*, then famous, he thought of nothing else but *L'Abime*, his actors, and the Vaudeville. The time drew near when the play must have either triumphed or gone down. Charles Dickens takes a carriage and flings an address at the driver: 'Théâtre du Vaudeville, Place de la Bourse;' but between the Champs Elysees and the Place de la Bourse the peculiar fear which agitates the author of 'David Copperfield,' that fear of the Parisian which is all to the credit of his modesty increases, and suddenly he exclaims, after having looked at his watch: 'No, I shall not drive to the Northern Railway Station, we have still time to catch the

Boulogne train.' And he took it after having urged his friend to send him a telegram immediately announcing the result of the representation of *L'Abime*. It was from Boulogne-sur-Mer that Charles Dickens thanked the successful actors of his piece, players whom he did not know in a French play that he never saw."

ECONOMY IN CIGARETTE SMOKING.

I OBSERVE (says a correspondent) the Chancellor of the Exchequer stated in his Budget speech that about a million pounds were lost annually to this country owing to the ends of cigars and cigarettes being thrown away. This need not be the case as far as cigarettes are concerned, because the ends of the smoked-out ones can easily be fastened by means of an inch or so of postage stamp paper on to the ends of fresh ones, and the whole afterwards smoked as if it were one cigarette.

This method of smoking cigarettes has also the great advantage of keeping the tips of one's fingers from being stained with the juices of the tobacco, as the cigarettes need not be smoked so close to the end when they are to be fastened to fresh ones with postage stamp paper. Smokers should ever keep in view the fact that by throwing away the ends of their cigarettes they are really throwing away one cigarette out of every three they smoke.

The Chancellor of the Exchequer also pointed out that the consumption of tobacco in the form of cigarettes was increasing enormously in this country. That being so, it seems to me that cigarette smokers are standing in their own 'light' if they do not use up their ends, especially seeing it can be done with so little trouble, and at no expense whatever, the Government, in fact, bearing the expense by giving the postage stamp paper gratis.

A WARM BATH WITH CUTICURA SOAP



And a single application of CUTICURA, the great skin cure, will afford instant relief, permit rest and sleep, and point to a speedy, economical, and permanent cure of the most distressing of itching, burning, bleeding, scaly, and crusted skin and scalp diseases, after physicians, hospitals, and all else fail.

Sold throughout the world. British depot: Newnham, 1, King Edward St., London. Wholesale Depot: CHAS. & CO., Sole Props., Boston, U.S.A.

OPENING OF PARLIAMENT.

A NOTABLE OMISSION FROM THE GOVERNORS' SPEECH.

EVERY true colonist must have felt a glow of pride when reading in the Governor's Speech that the rating power of the people had been increased, but the Speech omitted to give the reason why there had been a saving last year of over £20,000 in the cost of tea consumed in New Zealand.

The reasons are obvious to every housewife who considers her tea expenditure—

1st—It is because Suratura tea has come into such general use in consequence of its strength, flavour, economy, and purity.

2nd—That it goes so much farther than ordinary brands.

These characteristics are so generally acknowledged that it is remarkable that in the Governor's Speech there was no indication of a Bill to authorise the purchase by the State of the whole growth of Suratura Tea, with the object of supplying the inhabitants of New Zealand, and thereby decreasing the burden upon the necessaries of life.

The characteristics of SURATURA TEA are PURITY, FRAGRANCE, STRENGTH, ECONOMY, and it is NOT blended with Indian or China teas.

COLDS, COUGHS, INFLUENZA, SORE THROAT

Ayer's Cherry Pectoral



Will relieve the most distressing cough, soothe the inflamed membrane, loosen the phlegm, and induce refreshing sleep. For the cure of Croup, Whooping Cough, and all the pulmonary troubles to which the young are so liable, there is no other remedy so effective as

AYER'S Cherry Pectoral

Made by Dr. J.C. Ayer & Co., Lowell, Mass., U.S.A.

In Half-size Bottles, And also in large 4/6 size.

Gold Medals at the World's Chief Expositions.

The name, Ayer's Cherry Pectoral, is prominent on the wrapper, and is blown in the glass of each bottle. Take no cheap imitation.

ROWLANDS' ODONTO

The Best and Purest Dentifrice one can use; it whitens the teeth, prevents decay, strengthens the gums and sweetens the breath.

ROWLANDS' KALYDOR

A soothing, healing and emollient milk for beautifying the skin; removes freckles, tan, sunburn, redness, roughness, etc., and is warranted harmless.

ROWLANDS' ESSENCE OF TYRE

Dyes the hair a natural and permanent Brown or Black. Ask Druggists and Store for Rowlands' articles of 10, Hatton Garden, London, England, and avoid cheap poisonous imitations.

MONTERRAT SAUCE. A deliciously pure and healthy sauce. Only the famous Montserrat used in its preparation. Agents: Chrystal & Co., Christchurch.