Colour Photography.

READERS of the daily newspapers are familiar with the paragraph which periodically appears, informing them that the problem of how to duplicate the colours of nature by photography has at last been solved. The few, however, who have studied the subject, and know its difficulties, do not easily accept such bare statements, and it may truly be said that the public see little or nothing of its results from such proposed methods. An opportunity of seeing something tangible was, however, recently afforded to visitors to the photographic exhibition lately held under the auspices of the Victorian Amateur Photographic Society. In a lecturette Mr. J. Patterson (of Messrs. Patterson, Shugg & Co.) described a process of photography in natural colours, and demonstrated the success of the method by about a score of examples, which were projected upon the lantern screen by means of the ordinary limelight apparatus. The process by which these slides (which contain in themselves all the colours of the originals), were produced, is based on the well-known three-colour theory, which shows that white light is really equivalent to a mixture of three colours only, combined together—viz., red, green, and violet rays—and that all colours whatsoever can be compounded from these three in various proportions. Three negatives are made on colour sensitive plates. The first is taken through a red glass or filter, which allows only the red rays to act; the second through a green, and the third through a violet filter. By this means is obtained the value or amount of the fundamental colours reflected from the original. Three positives from these are made on gelatine films, which on development are caused to absorb respectively the three complimentary or pigment primary colours—blue, pink, and yellow. The superposition of these three films shows by transmitted light all the colours of the original. The examples shown include a number of natural flower studies, in which the brilliancy and fidelity of colouring were remarkable. Three slides of views in the Botanic Gardens were also wonderfully realistic in their representation of the natural colours. The process amply demonstrates the possibility of duplicating the colours of nature by purely photographic means.

Machinery and Appliances.

A new type of helmet experimented with by the Fire Brigade authorities of Manchester, England, is decidedly interesting. The equipment includes incandescent electric lamps, while an air current is directed upon the eyes and nostrils to protect them from smoke. A telephone apparatus is also provided, so that a fireman, when he enters a building, can always maintain communication with the force outside, and, if necessary, summon assistance. The helmet is specially designed to facilitate the penetration of dense masses of smoke.

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OWING to the rapid destruction of the world's great forests, the preservation of timber from insects and decay is becoming a question of vital importance. Many efforts have been made to perfect a process for this purpose. One of the most successful is adopted by the Ayer & Lord Tie Co., of Chicago. The timber is placed in airtight cylinders, where it is first subjected to steam under pressure to remove all air from the pores of the wood, after which the air and steam are exhausted by a Deane wet vacuum pump. When all the vapours and gases have been removed, creosote is admitted into the tank, and forced into the wood by a pressure pump of the Deane duplex type. A Clayton air compressor is next used to force air into the tank, displacing the creosote, and returning it to an elevated storage reservoir.

Automatic Weighing.

THE average housekeeper when making her weekly purchases of tea, starch, and sugar is rarely troubled as to how these and similar articles are weighed into packages. This, however, is a problem of considerable importance to the merchant, and when tea and other household commodities in bulk can be automatically weighed into separate packages of definite quantities at the rate of 7200 and upwards per day, it is scarcely surprising that machinery is favoured in place of manual labour. An electric weight repeater, not only accomplishes this achievement, but also does the work without waste, leak, or stoppage. The material is directed into a bag or package, and the machine, once set, requires no special knowledge to work efficiently. An instantaneous electric cut-off to feed is provided, which is stated to be more certain than the slower means hitherto employed. Another advantage is that it can be used as a meter (with electrical portable register) either to or from mill rolls, bins or ship's hold, and thus used deal with 4000 bushels per hour. It can also discharge quantities of 4¼ bushels direct into bags at the rate of at least 900 per hour.

IN May, 1903, five crates of coal, each holding two tons, were sunk in Portsmouth Harbour, and a similar quantity was placed at a coaling point in small heaps, covered with tarpaulins. Six months ago some of the submerged coal was raised and burnt, in conjunction with the same amount of that which had been kept on land. The results showed that the submerged coal had the greater calorific qualities. Further experiments on these lines are now being conducted.

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Great care is taken in admitting to the columns of PROGRESS none but reliable and clean advertisements of legitimate advertisers, who do just what they advertise; and we believe that there are no advertisers represented in our columns to-day that our readers need have any hesitancy in patronising. We carefully investigate the standing and reliability of advertisers before accepting their business, but the most careful publisher will at times be imposed upon by unscrupulous persons. Should any of our readers at any time be deceived by an advertisement appearing in our columns, we shall deem it a very great favour if they will notify us promptly, and thereby enable us to make a full and careful investigation, and thus protect our readers from fraudulent advertisements stealing into our columns. We would advise our readers when writing advertisers to mention PROGRESS as it will ensure good service and prompt attention.

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