

Clouds are most abundant in December, and least in July. September is clearer than August, and April, strange to say, is clearer than May.

Dr. Albert Leeds, in the last number of the *Philosophical Magazine*, calls attention to the subject of analysing water by a photographic method, to which we have already referred in these columns. His plan is to estimate organic matter in water by an operation similar to that of the photographer in "sunning" his silver bath. Dr. Leeds starts with establishing the fact that no precipitation of reduced silver occurs in a neutral solution of argentic nitrate, nor in one of ammonio-argentic oxide, nor ammonio-argentic chloride, nor ammonio-argentic hyposulphite, when organic matter is rigidly excluded, even after prolonged action of sunlight, and then proceeds to discover which of these five solutions it is best to use for identifying and removing organic impurities from water.

His choice is a simple solution of nitrate of silver. He prepares this of a standard strength, and adds it to the water to be tested contained in tall stoppered glass cylinders. The waters become turbid, and frequently coloured by the action of light; but after a moderate interval, the entire precipitate collects at the bottom of the cylinder. If sufficient silver solution has been used—an excess is recommended—the clearing of the water indicates the end of the experiment, and the black silver precipitate is then collected and accurately weighed. Dr. Leeds considers the amount of this precipitate fairly indicates the proportion of organic matter in the water, and if care is taken to have the silver solution neutral, the examination of waters by its means is generally trustworthy.

Had Pope lived in these days, when he asked the question, "Why has not man a microscopic eye?" he would probably have substituted the word "photographic" for "microscopic," since it has been demonstrated over and over again that the human eye is inferior in point of accuracy to the eye of the photographer's camera. The latest proof of this inferiority has been demonstrated by M. Roubin, a member of the Society of Anthropology, of Paris. M. Roubin has been making some experiments on binocular vision, and he has come to the conclusion that man is one of the animals which possess in the lowest degree the power of seeing things in relief, and that he acquires the habit of using one eye more than the other as a necessary condition of clear vision. How far defective drawing, which has been revealed by photography even in the works of our best artist, is due to defective vision, and how far to conventional treatment, would be difficult to decide. *A propos*, it is asserted that the instantaneous photographs of Mr. Muybridge which show that none of our artists can draw horses in motion correctly, had been found to coincide exactly with the pictures of horses drawn by Japanese draughtsman. Either the vision of the Japanese is better than ours, or they have gone direct to nature instead of copying somebody else's notion of what a horse's motion ought to look like.

In a recent play, the hero is described in the programme as "retired rich, but not off photography," the playwright evidently not believing in the possibility of rich photographers. Nor is this belief confined to dramatists. Dining some years ago at the Solar Club, the owner of a West End studio expressed to us the opinion that it would be impossible to point to any man who had made ten thousand pounds by photography; but, on our repeating this opinion to a third party, the latter at once replied that the first speaker had himself undoubtedly accumulated the sum in question. So we are led to the opinion, that photographers grumble like just other men, and that those who grumble most, have least cause for it.

Certainly, in our own experience, we can point to a dozen men who have made not less than ten thousand pounds by photography, while several of them have accumulated five or ten times as much. Only the other day we gave an instance of a Paris studio, a small one, albeit of the first-class, whose income was four thousand a year; while one of the London studios in 1863, the year of the Prince of Wales' marriage, netted no less than thirteen thousand pounds. The twelvemonth previously—the Exhibition year—a landscape photographer of our acquaintance, if he did not make ten thousand pounds, acquired a sum very little short of it; while others by speculation in photography have undoubtedly made little fortunes. The purchaser of the photographic copyright of "You Dirty Boy," to wit, realised the standard of "ten thousand," if not more, and this is the amount quoted as the profit of the Chicago photographer who published "Good Night" and "Good Morning." Finally, it is not three months ago that a London photographer assured us he could make ten thousand a year by portraiture and publishing, if he liked to work hard enough, a statement worthy of belief, in so far as he is earning half the income at this moment. So that "retired rich, but not off photography," is not such an impossibility, after all.

Patent Intelligence.

Patent Granted in Belgium.

61,740. L. H. PHILIPPI, of Hamburg, for "Applying photo-negatives for printing stuff and wall-paper."—Dated 19th June, 1883.

Patent Granted in Canada.

16,671. WILLIAM KURTZ, of New York, N.Y., U.S., for "A method of producing photographic images and apparatus therefor."—Five years.—Dated 13th April, 1883.

Patent Granted in America.

280,166. MATHIAS FLAMMANG, of Newark, N.J., for "A plate-holder for photographic cameras."—Application filed 27th May, 1882. No model.

LESSONS IN OPTICS FOR PHOTOGRAPHERS.

BY CAPTAIN W. DE W. ABNEY, R.E., F.R.S.

LESSON III.

Optical Centre of a Lens.—In every lens there is some point at which, if a pinhole in a card were placed, the same sized image would be formed on the focussing screen as is formed by the lens. This point is called the *optical*