

COURSE IN PHOTOGRAPHY FOR AMATEURS

THE OREGONIAN'S HOME STUDY CIRCLE DIRECTED BY PROF. SEYMOUR EATON

PHOTOGRAPHY FOR AMATEURS

II. THE PHOTOGRAPHIC LENS.

Every one is more or less familiar with the action of a lens, yet an air of mystery always seems to surround this most essential part of the photographer's outfit.

The fundamental principles on which lenses are constructed and which govern their use are not at all difficult to understand. The action of a lens in forming a picture depends upon the fact that light travels in straight lines until it meets with an obstruction, and if the obstruction is one through which light can pass, it is transparent—the rays will be bent but its course will be passing through the substance and again diverted when it enters into the air.

constitutes refraction, and is easily demonstrated by the familiar experiment of placing a pencil in a glass of water and viewing it from above and from the side. In either case the straight rod appears to be bent. In reality, of course, only the rays of light reflected by the pencil have been bent by the water.

the shortest possible focus, and at the same time be able to produce a perfectly sharp image over the whole plate. The difficulties of the optical begin when he attempts to combine these desirable features.

To return to our simple convex lens, a portion of its indistinctness can be done away with by placing an opaque stop, with a small circular opening in it, in front of the lens.

If a ray of light be allowed to pass through a prism it will be found to have been refracted by the prism in such a manner that it is bent toward the thick end.

edges together, as the case may be. If the lenses are placed together rays of light passing through each prism would cross at some point, while in the other case the rays would continually diverge.

So if the surfaces of the prisms were curved through they would not be altered. We therefore have in these examples the

balls of the two principal kinds of lenses, the convex converging lens and the concave diverging lens.

The simplest form of photographic lens is a simple convex lens. A convex lens will cause the rays of light coming from an object or group of objects to converge until at a fixed distance they form a sharp, clear image.

1. No. The registration law applies only to persons voting at a general election.

2. If a woman's vote is challenged, she

must show that she is a taxpayer, and the readiest way of doing this is by producing her tax receipt.

3. If her property has never been assessed, she is not a taxpayer, and therefore is not entitled to vote.

CLEVERLY PRESENTED.

A Pleasing Performance of "Won Back," by the Manzanita Club.

A very large audience crowded the Marquand Grand last night for the play "Won Back," presented by the Manzanita Dramatic Club for the benefit of Ruth Aspinwall.

Mrs. Susan May Richards had the heavy work of the evening, and acquitted herself brilliantly as the young Maryland Carolan.

FROM THE CHILD'S MOTHER

Mrs. Nelson Makes a Statement Concerning Her Daughter's Death.

PORTLAND, Feb. 22.—I desire to state a few facts in regard to the recent illness and death of my daughter, Margaret Nelson.

MANY GOOD SPEECHES.

Lively Meeting of Young Men's Republican Club.

The regular meeting of the Young Men's Republican Club, at 407 Worcester block, last evening, was well attended, and considerable enthusiasm was manifested.

Warning From the Humane Society to Thoughtless Boys.

Reports of the wanton killing and wounding of song and other birds by thoughtless persons, principally boys, having reached the Humane Society, it becomes necessary again to admonish, as we have many times before, the perpetrators of these crimes, which are not only cruel, criminal and are punishable by fine or imprisonment.

1. It is necessary for a woman to register before voting at a school meeting.

UNUSUAL HIGH SCORES

MULTNOMAH NEARLY SMASHES A RECORD.

Many Northwest Bowlers in a Tournament—More Games to Be Played Tonight.

The final series of games of the interstate championship contest opened in Portland last night, with the Union Club of Tacoma at Arlington, Seattle Athletic Club at Commercial and Seattle Bowling Club at Multnomah.

The Arlington won the second and fourth games from Tacoma. It was impossible to get the scores of the Tacoma team last night. The Arlington scored as follows:

Table with columns: Player, First, Second, Third, Fourth, Total. Includes Seattle Bowling Club and Multnomah players.

At Commercial, the home team was out by the timely high score of C. A. Burkhardt. The score follows:

Table with columns: Player, First, Second, Third, Fourth, Total. Includes Arlington and Multnomah players.

ON THE LINKS.

Several Notable Events on Washington's Birthday.

There was a large attendance at the State fair yesterday, and the day turned out very favorably. The various contests resulted as follows:

Table with columns: Men's singles, Ladies' singles, Mixed foursomes, etc. Lists winners and scores.

Assessment of Notes.

TOTALING, ON, Feb. 14.—(To the Editor.)—You are speaking of the mortgage law in your editorial in The Weekly Oregonian of February 8, and mentioning the New York bill about to impose a tax on mortgages.

AGAINST KILLING BIRDS.

Warning From the Humane Society to Thoughtless Boys.

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park, lane or alley or other public place in said city, they shall be guilty of a misdemeanor, and upon conviction thereof shall be fined not less than \$10 nor more than \$50.

The foregoing ordinance is comprehensive and will cover the sale and use of air-guns, which are dangerous weapons in the hands of small boys and are especially dangerous when used against the numerous birds which inhabit our city and contribute so generously to their welcome songs.

Interesting Incident of Last Year's Blizzard in Montana.

A. M. Holter, of Helena, Mont., who is largely interested in the cattle and sheep industry in that state, is at the Portland, accompanied by his wife. The winter has thus far been a very easy one on stock in his country, he says, and very little loss from cold exposure has resulted.

PREPARING FOR A RALLY.

U. S. Grant Club Will Open its Campaign Next Friday.

Senator George C. Brownell, of Oregon City, yesterday gave the acceptance of an invitation to open the campaign for the U. S. Grant Republican Club, of the Eighth Ward, by an address on the political issues of the day.

East Side Notes.

The cheese factory at Gresham is using 500 pounds of milk daily, and is in every way prosperous.

Dr. Wise is at room 614 Dekum.

Assessment of Notes.

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NO PAIN! NO GAS!

No charge for painless extraction when teeth are extracted by our graduated dentists.

NO PLATES REQUIRED.

cent. This course, the lender will add to the borrower's interest. In view of these facts, notes are not assessed at least, very few of them are—and there is a sort of a general understanding that they are not taxable. The inherent weakness of the system is the futile attempt to tax credits and evidences of debt.

"RULER OF THE GLOBE."

One Who Thinks England Will Realize Napoleon's Prediction.

PORTLAND, Feb. 21.—(To the Editor.)—A clever managing of affairs has raised England to a great power. Now it tries to gain more power, and it never will stop to increase such until it has the whole globe under control.

Soap not only for toilet and bath but for shaving. Pears was the inventor of shaving stick soap.

AMERICA SAYS SO

The Entire Country Is on the Move.

Cascarets Candy Cathartic Did It and Record a Phenomenal Victory—Five Million Boxes Sold Last Year.

From every part of America comes the news that sufferers from constipation have found relief in Cascarets Candy Cathartic, the wonderful modern scientific laxative and innocuous tonic.

CCC

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New York Dental Parlors

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THE PALATIAL OREGONIAN BUILDING

Not a dark office in the building absolutely fireproof; electric lights and artificial water; perfect ventilation and thorough ventilation. Elevators run day and night.

ANDERSON, GIBBY, Attorney-at-Law, 912 BANKERS' LIFE ASSOCIATION, of Des Moines, Ia.; C. A. McCarty, State Agent, 303 BROADWAY, N. Y. City, N. Y.

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