

Don't forget that the handling of gelatine prints can be made much easier and much of the stickiness avoided by soaking them for a minute or two in an alum bath, 2 drs. to the pint of water. This retards the toning slightly, makes the fixing a little longer. Ten minutes longer fixing is sufficient.

Don't hurry the washing of your negatives. If you have running water, ten minutes under the faucet, with the film side of the negative upwards, is better than one hour's soaking in several changes of water and trouble is avoided. Place the negative about four or six inches from the faucet, so that the water will strike the centre with moderate force. In ten years' experience I have not had a negative spoil from incomplete washing after ten minutes of this treatment.

Don't let the tray containing a plate and developer lay still, not even for a moment.

Keep it Rocking.—This insures even development and prevents pin-holes, the latter being caused by particles of dust becoming imbedded in the film, thus preventing the developer coming in contact with the surface.

Don't forget when trimming your prints that a figure can be made to look larger or smaller than it really is by having it come near the upper or lower margin of the picture, according to which effect is desired.

Don't waste your time and materials by trying to make portraits of the baby indoors. Unless you have an unusually good light and an unusually good baby, the result is generally a failure. The best place to do the work is out doors, the shady side of the house preferred. Here there is an abundance of light that illuminates both sides of the baby's face very evenly.

Don't try to develop a plate with a small portion of developer. Have a fair amount ready for use. An ounce and a half does nicely for a 4 x 5 plate in a tray of the same size. There should be enough to flood the plate readily.

**CASCARA PILLS.**—Dieterich proposes the following method of preparation: 10 Gm. of dry alcoholic extract of Rhamnus Purshiana are made into a mass with a few drops of mucilage of acacia and a sufficient quantity of powdered licorice root and formed into 100 pills, which are dried first at 20°, later at 50° C. and may then be silvered or sugar-coated.—(*Ztsch. f. Ph.*)

## Optical Department

In charge of W. E. HAMILL, M.D., Principal of the Optical Institute of Canada.



Correspondents should note that for an intelligent answer to be given to their inquiries it is necessary in every case to give the following information relative to their patient: (1) Sex, (2) age, (3) occupation, (4) near point of distinct vision for small type with each eye alone, (5) how their eyes trouble them, *i.e.*, their asthenopic symptoms, (6) vision of each eye at twenty feet alone without glasses, (7) best vision obtainable with glasses, naming correction.

*Example.*—J.S., male; age, 18; book-keeper; can read small type to within five inches of each eye; complains of much headache through the day and evening; eyes feel sore and water a good deal, look red and inflamed, etc., etc.

R.E.V.  $\frac{23}{100}$  with +1.50 =  $\frac{25}{100}$   
Z.E.V.  $\frac{23}{100}$  with +1.50 =  $\frac{25}{100}$

The above example is taken to illustrate about how we desire inquiries to be made.

**B.F.S.**—I am uncertain as to the simplest method of ascertaining the amount of accommodation of an eye and would thank you for the method you usually adopt.

*Answer.*—Many different ways are used to determine the accommodation present, an explanation of which can be found in any good text book on the refraction of the eye. The method I adopt is a very old and common one, which is sufficiently accurate and scientific for all practical purposes, and is as follows: First ascertain the state of the refraction by Snellen's distant test type, and we will suppose we have an emmetrope aged 20 for examination— $V = \frac{20}{20}$  which a + glass blurs. I now try how close he can read the smallest type on the hand card—testing each eye separately with my metre measure or Prince's refraction rule. I now measure from the eye to the very closest place which he can read the smallest type plainly—not the best place—but the closest—which in this case I find is 10 cm. (4 inches). At once I know he must have 10.00 D. of Acc. in order so to do, because 10 cm. and the yellow

spot of the retina are the conjugate foci for an emmetropic eye under atropine with a +10.00 D. glass before it. Without the +10.00 D. glass and atropine, therefore I must obtain the 10.00 D. of Acc. from the crystalline lens.

Had my customer been able to have read the distant type as well with a +2.00 glass as with the naked eye and yet been able to read the smallest type on the hand card at 10 cm. I would have added this 2.00 to the amount of acc. needed by an emmetrope to read at 10 cm. which would make 12.00 D. of Acc. in the second instance for the following reason, *viz.*, if it requires 10.00 D. of Acc. for an emmetrope to carry his eye from infinity to 10 cm., then anyone requiring to use +2.00 for clear vision at infinity must have 10.00 D. of Acc. in reserve to read at 10 cm.; hence 12.00 D. would be the total. In another person they might require A. -2.00 D. glass to make  $V = \frac{20}{10}$ , and yet if they could read the hand card as before at 10 cm. without glasses it would show they only had 8.00 D. of Acc., because they would without Acc. require rays of light for clear vision at infinity to be as divergent as if they came from 50 cm. Therefore, at 50 cm. this eye could see clearly without any Acc.; hence to carry the eye from 50 cm. to 10 cm. requires only 8.00 D. of Acc. To simplify by rule all the above simply measure the nearest distance an eye can read the smallest type on the hand card and divide this distance if measured in centimetres into 100—(if you measure in inches divide into 40)—the quotient will give you the Acc. in the emmetrope to which you add the distant correction to find the Acc. in ametropia.

### Optical Graduates.

The following students attended the August class at the Optical Institute of Canada: Emile A. Pequenat, Stratford; Walter E. K. Hogg, Thornbury; Charles A. Weaver, Berlin; Clarence R. Denike, Trenton; W. H. Priest, Stanbridge, Que. This makes nearly three hundred students which have received their optical education from Dr. Hamill, and there are numerous places yet without an optician, where a harvest awaits someone. The next class commences on Sept. 12th.