Optical Department

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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; bookkeeper; 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. $\frac{20}{50}$ with $+1.50 = \frac{20}{20}$
Z.E.V. $\frac{20}{50}$ with $+1.50 = \frac{20}{20}$

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

L.A.C.—I have an old gentleman aged 70, a cabinetmaker, who wants glasses to work with so that he can see his work plainly at from 20 to 30 inches—V each eye = $\frac{20}{50}$ with + 2.00 = $\frac{20}{30}$ +. I gave him a pair that was just the thing for 30 inches, but they were misty at 20 inches. Then I gave him a pair for 20 inches, and they were misty at 30 inches. Then I tried a pair that made everything plain at 25 inches, but they were not satisfactory. I would be glad for any suggestion which would enable me to fit the old gentleman so that he might continue his avocation, for otherwise he is hale and hearty, and appears able to earn a good day's pay for many a year yet.

Answer.—It appears to us that a bifocal for working in would solve the problem. The upper segment for 30 inches and the lower segment for 20 inches. Between these two points he would have sufficiently good vision to enable him to do his work.

He would, of course, require another pair for reading with a shorter focal distance, as 20 inches would be too great a distance for reading ordinarily. At 70 a person has lost all their accommodation, and for clear vision of any object at a finite distance it is evident the glass would have to do all the work, as it could receive no aid from the acc. For the reading pair we would suggest the + glass, which gave him most distinct V. at the distance he prefers to read, which will likely be about 12 inches or 13 inches. In fact in an old presbyope without any acc. it is necessary that he should have as many pairs of glasses as there are places which he desires to see clearly at. When an optician is confronted with one of these cases, he must rake up his knowledge of the acc. of the eye, and remember how much acc. is present at any given age, and how much, if any, is present that he can use with benefit. There is no class of cases which calls for so much exercise of common sense, based on optical knowledge, as these, and shows once more that presbyopia is really the most difficult yet apparently the easiest to fit. I have found inestimable value and help from Princes Rule, made by Hardy & Co., of Chicago, and sold by the Montreal Optical Co., in overcoming the difficulties in fitting presbyopes, and I advise every optician to invest $1.50 in the same, which, if they do, they will thank me for the suggestion. It is easily understood by anyone, but, like any other instrument, requies sufficient examination to become familiar with its use, and to get from it its best aid. I have repeatedly in these columns written at length on presbyopia, because, if there is one subject which an optician is weak on, it is the correction of "old sight," and yet the merest novice in optics thinks that he is an expert in fitting presbyopes because he can so easily satisfy the customer at the time of sale, but after a day or two of use of the glasses how often does your presbyopic customer return with some complaint, and you try another pair, and so on, until perhaps you strike the lucky number.

This should not be, and to avoid it the first essential for any optician is to thoroughly understand the acc. and apply this knowledge in every case, for no two cases are alike.

Iodol Collodion.—A solution of one part iodol in nine parts collodion is suggested for erysipelas and other complaints.

Examination in Optics.

At the first examination held by *The Spectacle Makers' Company*, of England, for diplomas held recently, the following were the questions set at the written examination:

1. How would you determine the focal length of a simple biconvex lens with faces of equal curvature? Give all the practical methods you know of.

2. In what way is the position of the principal focus of a lens dependent upon the choice of the curvatures? Illustrate your answer by reference to the positions of the front and back foci of plano-convex lens of + 20 D. Does it matter which surface you turn towards the source of light as regards definition?

3. Are two lenses, say for example, a + 3 D S and a + 5 D S (placed together behind one another in a trial frame), exactly equivalent to a single lens (in this case a + 8 D S) whose power is numerically equal to the sum of their separate powers? If not, why not?

4. What proofs are there that the human eye is not achromatic? What kind of combination of lenses would be required to correct its chromatic aberration?

5. A person requires, for the R eye only,—6 DS for distance and −3 DS for reading, but only wants one pair of spectacles. State the various ways in which this can be managed. Which method do you prefer?

6. A prescription is given you as follows. —3 DC axis horizontal ○ + 1.5 DC axis vertical R and L. State the different methods of working such a lens and give reason for your choice of curves.

7. What are pebble lenses? State the relative advantages of pebbles over glass, or *vice versa*. How can you distinguish between them?

8. An emmetrope, aged 60, has had his lens removed for cataract. What glass would you give for reading, and what for distant vision? Could he see clearly with either glass at a metre?

9. A boy aged 12 has vision = $\frac{6}{9}$, but with a concave lens of 1.25 he has vision = $\frac{6}{6}$. What tests would you employ to ascertain the nature of his defect?

10. An oculist has prescribed for a man aged 60, for distant sight,

$$R \frac{-1.5 \text{ DS}}{-2 \text{ DC axis horizontal}}$$