No doubt all of us can recall many instances of having seen and heard of cases of illness clearly contagious or infectious on crowded trains, in such conditions and locations that they must communicate the specific diseases. It is a matter of the commonest experience for persons suffering from pulmonary tuberculosis to travel long distances on railway coaches. Sleeping-cars are especially apt to be selected for these ailing persons. Efficient disinfection of coaches, especially sleeping-cars, is rarely practiced. It is astounding when one reflects on the subject that sanitarians have been so dilatory and slow to appreciate the great danger to the traveling public from the contaminations and infections of railway cars, and that no laws nor rules have been passed to meet this crying need of modern times. The various states have passed stringent laws requiring the careful embalming, disinfection and hermetic enclosure of all corpses of persons dying of contagious diseases, during their transportation on railroads. Individuals while still alive may travel without let or hindrance, suffering from any one of the contagious or infectious diseases on any railroad in the United States, and as a rule are placed in the very cars which are most sure to be frequented and most difficult to disinfect.

Understanding as we do the usual methods of transmission and the specific cause of pulmonary tuberculosis, it is amazing that no restriction has yet been placed on the transportation of persons who are in advanced stages of this disease. It would be a barbarous prohibition to prevent tubercular persons from using railroad cars in order to go whether their one chance of recovery might demand they should be. It seems to me the only proper, safe, comfortable and sanitary solution of this problem of contagious and infectious disease-spreading custom is for railroads to furnish properly-equipped hospital-cars which may be used to transport any doubtful case of disease to its destination, and so separate it entirely from the other travelers on the train. In order to make this system efficient, the co-operation of physicians generally must be obtained, and the various states should pass laws requiring the use of isolating or hospital-cars for sick persons. When such cars are known to be in use on a railroad line, a physician whose patient was about to make a journey for any reason would simply notify the proper railroad authority, and he would have the hospital-car prepared and attached to a given train. The patient and his attendants would have seclusion, more comfort, and efficient treatment might continue, without any danger to other people on the train.

These cars should be so constructed as to be inconspicuous on the outside, and have the simplest fittings inside commensurate with comfort and efficiency, and everything inside should be so arranged and constructed that thorough disinfection after, and proper sanitation during, the use of the car might be obtained. Two or three cars of this kind would be all that were necessary on a line of a thousand miles of main track. If they were properly stationed, they might also prove very efficient in cases of serious catastrophes along the line.

I wish it clearly understood that in recommending hospital-cars for express trains I do not advocate the abrogation of the usual ordinary laws of isolation which nearly every community has in vogue for the purpose of preventing the spread of contagious and infectious diseases, nor do I recommend common and frequent transportation of these cases, but as they so often travel surreptitiously, it would be far better to have proper provision for this transportation, and, under stress of

circumstances or necessity, they might safely thus be carried. When, furthermore, it was known that proper provision was made for their comfort and care, the sanitary authorities might permit removals which would be of great benefit not only to the sufferer but to communities. The value of these cars for transporting tubercular persons, those having typhoid fever, and those having some forms of specific enteritis can not be questioned, both for the infected person and for the traveling public as well.

A RULE FOR COMBINING CROSSED CYLINDERS.

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One of the stumbling-blocks of the students of optics lies in the proper transposition of different combinations of spheres and cylinders. It always requires long practice at the test-case and no little figuring to become familiar with and able to make the proper combinations. Dr. James Thorington, of Philadelphia, in his excellent work on "Refraction," recently published, has greatly simplified these problems for the student by formulating set rules for transposing combinations of spheres, cylinders and of a sphere and a cylinder. In working out mathematical problems of this character in optics the easiest and quickest way to master them is by rule, depending upon experience to sink the rules in the background.

As a student, I could find no rules in the literature for the transposition of plus and minus cylinders with opposite axes into a spherocylinder, and worked out the following formula, which has been of great assistance to me and which was published this year in "Retinoscopy," by Dr. Thorington.

Formula.—To transpose crossed cylinders into a spherocylinder: "The cylinder is the sum of the two cylinders with the sign and axis of one of the cylinders. The sphere is the strength of the other cylinder with its sign."

Example:

$$\begin{aligned} & -1 \text{ c. axis } 180^\circ \text{ } \ominus + 2 \text{ c. axis } 90^\circ = \\ & -1 \text{ s. } \ominus + 3 \text{ c. axis } 90^\circ, \text{ or} \\ & + 2 \text{ s. } \ominus - 3 \text{ c. axis } 180^\circ. \end{aligned}$$

The use of the lighter and thinner lens is always to be aimed at and will usually give the best result; occasionally, however, the heavier lens will be more satisfactory, and rarely there are cases where only the crossed cylinders will be accepted.

It is in retinoscopy especially that the student will find rules of this character of great value, for there are always two meridians to be reduced to a sphere or a spherocylinder. The experienced refractionist will not need them.

Viavi Remedies.—These secret nostrums have undergone an airing in connection with a recent inquest in Liscard, England. The public analyst to the County of Chester reports that the liquid furnished him contained 30 per cent. of sugar, together with tincture of hydrastis and morphin. The pills were made of sugar, aloes and probably some colocynth. It appears that these preparations are as much exploited in Great Britain as they are in this country, it being the custom there as here to employ the wives of clergymen, and other socially respectable individuals to act as local agents for their sale. The *British Medical Journal* remarks that since it is shown that these preparations contain morphin, they come under the provision of the pharmaceutical act regulating the sale of poisons, and their agents and venders may find their business conducive to serious consequences to themselves.