

concave surface N. 80° W., and the second moving on the plane keeping directly under the first. How far will each have moved when the first arrives at the pole?

6. I observed a vine had taken hold of a tree at the base, and once in 5 feet had regularly wound around it in a spiral manner to the top. The tree was a perfect cone, its perpendicular height 100 feet, and the diameter at the base 4 feet; while the diameter of the vine at the base of the tree was 2 inches, running evenly to a point at the top. Required the length of the centre of the vine.

7. How many routes are there between two diagonally opposite corners of a cube, that consists of 1000 small cubes, each an inch square, the routes being supposed to be exactly 80 inches long, all different in some respects, and all running along the edges of the cubes?

8. A farmer has an elliptical pasture whose major axis is 20 rods and minor axis 15 rods, surrounded by a wall. What length of rope affixed to the outside of the wall directly against the extremity of the major axis, that will allow a horse just liberty to graze over one acre outside the ellipse?

9. A rectangular field, 40 rods in length and 80 in breadth, is enclosed by a wall, the longest way of the field running east and west. From the south-west corner of the field a dog starts to catch a rabbit that is feeding in the south-east corner, while the rabbit starts at the same instant and runs close to the wall to the north-east corner, thence close to the wall to the north-west corner, where she is caught by the dog just as she is going through a hole in the corner of the wall. Required the distance run by the dog, he having directed his course all the while directly towards the rabbit.

10. A man walks 5 miles an hour in the direction of his shadow on a level plane, from noon to sunset, in lat. 48° 30' N., the sun's dec. being 22° N. What curve does he describe, and in what direction, and at what distance from his starting point will he be at sunset, the earth being considered a perfect globe 8000 miles in diameter?

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(Complete solutions with numerical results of the preceding nine are asked for.)

TO CORRESPONDENTS.

G. A. P., Lucknow. In 8, of October number, you find what you call the mean area by taking the square root of the sum of the areas of the ends, and proceed to find volume by multiplying the mean of these areas by 5,—a very incorrect way of finding the volume. In 2, you have lettered your figure improperly, and so found the length of the wrong lines. You must try again, though your efforts are creditable to one so young.

O. P., Antigonish, N.S. In your demonstration you say, "Because in the triangles MNF , NFG , MF is equal to NG and MN to FG (the parallelogram is $MFGN$) and the angles NMF , NGF equal, therefore MG is equal to NF ,"—a very improper conclusion; the reasoning shews that any parallelogram has its two diagonals equal. In your accompanying note you say "some of the solutions were objectionable, and some unsatisfactory by reason of the unscientific nature of the argument." Your statements would be more likely to receive attention if you pointed out in what respect the solutions were objectionable and unsatisfactory, and in what the want of scientific method consisted.

Practical Department.

CORPORAL PUNISHMENT.

BY JAMES L. HUGHES.

The School Board of Boston recently became alarmed at the extent to which corporal punishment was practised in the schools of

that city. They appointed a committee to take into consideration "the whole subject of corporal punishment in our schools." This committee consisted of three members, who gave the subject a careful investigation without agreeing. Two reports were presented, two members reporting in favor of abolishing corporal punishment altogether, and one against so extreme a measure. The writer of the minority report was Mr. Hyde, who is described by the *New England Journal of Education* as one of the most eminent of the Boston teachers until his recent resignation. Mr. Hyde gives thirty-two reasons in support of his views, which will be found below.

A great deal of consideration is given to this question, and many resolutions concerning it are passed. There is, perhaps, no question with regard to which young teachers need more direction. It is a matter for congratulation that popular sentiment no longer tolerates the brutality of a Squeers, and that those teachers who are too lazy or too incompetent to resort to more reasonable methods of discipline than flogging for ordinary offences, are being driven from a profession they too long disgraced. It would be a pity, however, to allow indignation caused by the abuse of the rod to prohibit its proper use. "It is not the use of the rod that is objectionable, but the abuse." No thoughtful teacher of experience would recommend that whipping should follow every breach of rule, but most teachers know that there are cases in which it is a most humane and kindly act to administer a severe punishment. If the rod be used too frequently it loses its power for good, and retains all its evil effects in an intensified degree.

It is desirable to avoid going to extremes in regard to this question. The London (Eng.) School Board had an "awakening" a year and a half ago in regard to the "brutality" of whipping, and decided against it. It is already clear that a mistake was made, as more objectionable modes of punishment have been resorted to, and with poorer results. School Boards should not prohibit the use of corporal punishment, but they should take such steps as will secure its proper administration. This may be done as follows:

1. The instrument of punishment should be prescribed.

2. Teachers should be compelled to record their punishments in a book furnished for the purpose, giving the names of pupils punished, the extent of the punishment, the dates, and the offences which led to the punishment.

3. Teachers who cannot manage a class without too great a use of the cane, should be dismissed as incompetent. A clause allowing such action by giving a month's notice, should be inserted in the agreement with the teacher.

The instrument should be such as will produce immediate pain, without marking or permanently injuring the child. A piece of rubber belting, fifteen inches long, and one and a half broad, is probably the best that can be procured. This will produce results severe enough to be a "terror to evil doers," without injuring the child, or exposing the teacher to indictment in court. If punishment be given with a cane, it leaves ugly marks for some time, even though the punishment may have been light.

The record of corporal punishment will be valuable both to trustees and teachers, especially to the latter. It will be a protection to them against exaggerated stories concerning their whippings, and it may serve as a monitor to remind them of a tendency to resort too frequently to the rod as a means of discipline. Many well-meaning teachers would be astounded by a faithful record of the flogging done by themselves. Having to record the punishments will lead to a thoughtful consideration of offences, and this will usually reduce the whippings by at least one-half.

The following rules are suggested to teachers in regard to corporal punishment: