

of the building, good ventilation may be had with very little if any additional cost; and even in most existing buildings the consequences of neglect upon this vital point may be remedied, partially at least, with but a small outlay. But be the cost what

it may, pure air is a necessity of health, both mental and physical, and no Board of School Directors in the State should be allowed to neglect it with impunity."—*From Report of H. L. Slack, Esq., M.A., Inspector, Lanark.*

TEACHERS' DESK.

Contributors to the 'Desk' will oblige by observing the following rules:

1. To send answers with their questions and solutions with their problems.
2. To send questions for insertion on separate sheets from those containing answers to questions already proposed.
3. To write on one side of the paper.
4. To write their names on every sheet.

ANSWERS TO PROBLEMS.

55. "No correspondent managed the latter part of the problem," neither did the Editor. How he obtained the truly wonderful solution he proposed, he can now neither remember nor rediscover, nor does it matter. He can have led no one wrong, as a glance at the formula for S reveals it is false since it violates the law that for resistance varying as the velocity the space varies as the velocity lost.

Principia BK. II, Prop. 1. The correct formulæ are

$$r^2f = (rt + e^{-rt} - 1)g \text{ and } r_s = (1 - e^{-rt}) \cdot v.$$

From these $(gt - rf) v = g_s$.

Approximately from the first $2f (3 + rt) = 3gt^2$.

Eliminating t between the last two

$\{ \sqrt{(r^2f^2 + r^2g^2)} - 2rf \} v = 3g_s$, whence velocity was 48.95 miles per hour.

As these formulæ can really be deduced by Algebra, we hope to be able to give an analysis of the problem at some future time.

57. See either Webster's or Worcester's Unabridged Dictionary. *Quip* and *Whip* seem to be merely variations in orthography now marking a difference in meaning. In Levins' *Manipulus Vocabulorum* (1570), we find "*Quip*," (to whip,) and "*Quippe*" a whip). In fact it is a North Country practice to *se qu* for *wh*. The Scotch use both *qu* and *hqu*. *falkin* in early English seems to have meant *mply a clout*, and then a person (especially a woman), dressed in clouts and rags. Levins gives *Malkin panniculus*," and the *Promptorium Par-*

vulorum (1440), "*Malkyne, mappyl or oven swepare.*"

59. On the stock, but they will not (nor can they) buy odd dollars and even cents worth of stock as is often required in the Text-book problems and solutions. A boy who realized the questions would say they are impossible and cannot be worked as proposed. Teaching that does not realize all such questions, is apt to be shallow and in point of reasoning dangerous. He who is not trained to realize his arithmetical operations has this to *learn after he leaves school* ere his teaching is of any practical benefit to him. Let any teacher who reads this set earnestly to work to discover why children find word problems so difficult, although arithmetically they may be and generally are extremely easy.

62. "God give you good morning," "God give you." We find in *Hamlet* i. i. 16, "Give you good night," in *Romeo and Juliet* i. 2. 59, "God gi" god-den" (God give you good even,) in *Love's Labor Lost*, iv. 2. 84, "God give you good morrow, master parson," and in Beaumont and Fletcher's *Knight of the Burning Pestle*, "God give you good night."

PROBLEMS AND QUERIES.

63. The wages of sin is death." Criticise the syntax.

D. R.

64. The sum of the angles at the five corners of the American Star is equal to two right angles.

A. V. LEE, Brantford.

65. Parse the Italicized words in the following sentences:—

I weep *the more* because I weep *in vain*.

Give truth the same aims which you give falsehood, and the *former* will soon prevail.

Little did I dream, &c.

Tell me *what* the person said.

It is an ill wind blows nobody *good*.

Full many a flower is born to blush *unseen*.

A. MCINTOSH, Pinkerton.