

of 84 cents a page. In addition he is a subscriber to the Journal at \$6.50 a year.

In contrast we see that the "popular" magazines flourish as never before and publish beautiful color illustrations galore. We are told that scientific periodicals can not have these things because *they* don't pay." We wonder, Does not science pay to-day as well as in 1917? Will it "pay" to let the scientific world send to Leipzig for its periodicals, rather than to Baltimore?

If scientific publications are to survive and if this country is to support scientific work as it supports other things, there must be some form of endowment for that purpose. Corporations and individuals whose business is even remotely connected with the results of scientific work will find it a good investment in years to come.

The scientists are willing, and do, bear more than their share of the expense of their publications, but outside help is necessary. These periodicals can not expect to pay dividends to the publisher because they are unattractive to advertisers as a class. The technical and scientific periodicals need endowments sufficient to allow them to present adequately the results of research and to enable them to circulate at a subscription price low enough to enable all workers and libraries to buy them.

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#### ROAD REFLECTIONS

TO THE EDITOR OF SCIENCE: Referring again to the subject of road reflections, Mr. Freeman F. Burr in SCIENCE for September 24 notes having observed reflections occurring at considerable heights above the surface of the road. I have made thousands of careful observations of this phenomenon and have found that the reflecting surface always coincides with the road surface as closely as the eye can determine.

Since the true surface disappears when a reflection takes place there is often an appearance of shifting which careful observation

shows to be illusory. Thus a reflecting surface on the top of a hill sometimes seems at a casual glance to be several inches from the road and seems to hide objects beyond. In every such case the hill itself is what cuts off the vision.

I have observed the reflections many times under circumstances that preclude entirely the ascribing of them to warm layers of air. I have seen them on cloudy days, on shaded stretches of road and in one place where a white sign-board furnishes a convenient background a very striking reflection may be seen long after sunset.

To be sure they are much more in evidence on bright days than on dull days, but since they appear even more brilliantly on a very cold bright winter day with snow on the ground than on a warm summer day the conclusion to be drawn is that the contrast of bright colors throws the reflections into more prominent relief on sunny days.

The same phenomenon may be observed by holding any smooth normally non-reflecting surface, such as that of tarnished metal or of a smooth whetstone, at a small angle to the line of vision. Objects beyond appear brilliantly reflected as if in a mirror.

It may be that in some instances a thin air layer immediately adjacent the surface aids by bending some incident rays so that they strike within the critical reflection angle. But the air layer certainly is never primarily responsible for reflections of this kind.

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#### THE INFLUENCE OF FRESH FOOD IN LACTATION

THE suggestion of Hart, Steenbock and Hoppert, in the October 1 number of this journal, that a vitamine in fresh grass favorably influences calcium metabolism is a step in a direction in which, I am convinced, important progress is to be made.

Through extensive investigations on the mineral metabolism of farm animals I had reached a hypothesis identical with the provisional conclusion of Hart and associates,