

attractive appearance, and the ability to change the attitude of all towards you," etc.

There is much about the influence of the spiritual world that we do not understand, as, for instance, how the miracles recorded in the New Testament were done. The Writings say it was by the influx of spiritual things into natural. But this gives us only a general idea. May it be that by a study of the phenomena presented by Yogi we shall better understand this statement?

ON THE ORIGIN OF COLORS *

BY N. J. BERRIDGE, PH.D.

Since correspondence is a law of creation, a fuller understanding of natural things should make possible a fuller understanding of spiritual things.

The correspondence of spiritual things with natural things is the means by which the internal sense of the Word may be understood. Thus an adequate knowledge of correspondence enables us to recall spiritual knowledge when we ponder on objects of the external world. But this correspondence is not an arbitrary symbolism; it is also the law of creation; it relates natural things to their spiritual causes. Thus we may do even more. We may, by means of correspondences, interpret our knowledge of natural things into spiritual terms, whereby our understanding of spiritual things is strengthened. We must, however, proceed with great caution, because at first sight this appears like making spiritual knowledge *dependent on* natural knowledge; but this is not really so, for spiritual truth will always be in the first place and will select and use that natural truth by which it can enrich itself. There will be much other natural knowledge which cannot be so used. This will be either because the spiritual truth or understanding is lacking, or, probably more often, because the natural knowledge is incomplete or misinterpreted. This knowledge will have to be put on one side till our advancement is such that it becomes useful. In this way we shall attempt to apply the "principle that leads to all wisdom" (*A.C.* 2568, 2588).

The importance of this method of enriching our spiritual understanding lies in the fact that a tremendous increase has occurred in

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natural knowledge since the time of Swedenborg. Now if his revelations were of his own devising, it is extremely probable that his followers would be, like the whole Old Church, continually and defensively retreating step by step with each advancement of science. Here, as we hope to show, we have just the opposite. It is only *with* the advancement of science that many implications in the Writings can be understood. We are now in a position to understand and appreciate correspondences far more than were the first members of the New Church, perhaps in some ways more than Swedenborg himself, and we can anticipate that the future New Church will be in an even better position. What an astounding and glorious proof this is of the Divine origin of the Writings and the New Church!

This is not to say that we shall confine ourselves to facts discovered since the time of Swedenborg. Such a limitation is quite unnecessary. The advancement of science as a whole since then is too obvious to need comment.

Our first example of the application of modern science to the Writings is not as interesting nor as typical as some of the others, but we choose it now for its comparative simplicity.

When describing the correspondence of colors, Swedenborg stated that "they are from the variegation of light and shade in white and black" (*A.C.* 3993⁶, concerning Jacob's removal from the flock of Laban of "every small cattle that is speckled and spotted"). Earlier, where the meaning of the bow set in the cloud after the flood is explained we may read (*A.C.* 1042²), "As regards natural colors, the existence of color requires something both dark and light, or black and white. When rays of sunlight fall on this, according to the varied tempering of the dark and the light, or of the black and the white, from the modification of the inflowing rays of light, colors are produced, some of which partake more, and some less of the dark and black . . .," etc. Now whatever this may mean, it is not stated that colors may be produced by *mixing* black and white. Presumably it was as obvious to Swedenborg as it is to us that such a mixing would only produce a series of dreary greys. The speckled and spotted is nearer the mark, but here still even if the spots were very small we should still have a grey effect, though perhaps less dreary. On the contrary, the rest of *A.C.* 1042 and 1043 includes descriptions of the vividness and

splendor of the colors seen in the other life, and produced by modifications of the inflowing light by black and white. Speaking approximately, the black is man's proprium, evil and false, and the white truth and good which is from the Lord. Now it is clear why greys by mixing are not produced, for though evil and good exist in each man they are, of the Lord's mercy and providence prevented from mixing. Still we are, so far, at an impasse. However spiritual light may work, we have not explained the corresponding natural phenomenon of colors as modifications by black and white.

Let us turn now to modern science, simple physics. Indeed it is very simple. Those who have recently done matriculation physics have probably already guessed the answer and can safely skip this paragraph! Without getting involved in wave lengths, frequencies, or any of the more mysterious properties of radiant energy (of which, we hope, more later) it is sufficient to remind ourselves that ordinary light which we call white can be split up into colors by being passed through a suitable transparent prism. The rainbow itself is little more than such a phenomenon, the raindrops acting as a combination of prisms and mirrors. Therefore we say that white light is a mixture of all the colored lights. This can be confirmed by other experiments some of which are due to Newton, Swedenborg's contemporary; for no matter in what way we produce the colored lights, if we mix them again in the right proportions white light results. Perhaps the most recent example of this is the use of fluorescent lighting. The "paint" with which the inside of the tube is covered is a mixture of substances each of which gives its own particular range of colors under the excitation of the electric arc inside the tube. By properly blending these substances the colors "add up" to white. By having an excess of some substances "warm white" or "peach" may be produced at will.

If now we allow white light to shine on a substance that absorbs all the light none comes back into our eyes, we call the substance black. If next we shine the light on to a substance which absorbs all the light *except* the red, red light is reflected into our eyes by the substance and we call it red. We can do a further experiment. We can split the light into its colors by a prism as we have already mentioned. If now we place the red substance so that only the blue light shines on it, it cannot reflect any of the blue, and there

is no other light, so it looks black. The same applies to *all* the other colors of light *except* the red. Therefore as regards those other colors of light, the substance cannot reflect them; in them it looks black, as far as they are concerned, it *is* black. Similarly a blue substance is black to all colors of light except those which have some blue in them, and so on with all the other colors. (These colored substances are ideal substances of pure color. There are very few of them. Most substances are of mixed color just as most light is of mixed color.) Thus experiments like this need to be done in the laboratory with properly prepared substances and apparatus, but a rough approximation may be seen in the common experience of the ghastly sight a beautiful face may present under the mercury arc street lamps.

To summarize, a purely red pigment is red *because* it is black to all light *except* red light; a purely blue one is black to all light except blue light. A substance which is red tinged with a little yellow will be black to all light except red and yellow, and darker to yellow than it is to red.

This, then, it is suggested, is what is really meant by colors being produced "from the variegation of light and shade in black and white," and how else could it have been expressed at a time when the nature of light was only just beginning to be investigated?

This example of the application of science to New-Church teaching is not typical of what can be done because we have not used it to enrich our spiritual knowledge, but merely to remove or prevent an uneasy feeling that, as regards colors the *A.C.* was a little "off the mark." Nevertheless, the subject is far from exhausted and if we were to examine the significance of various colors, and to relate this with other knowledge, we could no doubt make further progress.

THE NATURAL POINT AND OTHER POINTS

BY CHARLES R. PENDLETON, M.A., PH.D.

(Continued) *

VI. THE MATHEMATICAL POINT:

52. It would seem the height of folly for any rational mind to think that the universe could be created from mathematical points.

* See *NEW PHILOSOPHY* for April 1951 for the beginning of this article.