

they bore what seemed to me and my associates to be incontrovertible evidence of the immediate effect of cross-pollination. I had never before been convinced that such immediate effect in flavor and other varietal characteristics can occur in the apple, but I am now satisfied that it may occur; but, like heredity of mutilations, it is certainly rare and therefore apparently exceptional.

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SCIENTIFIC LITERATURE.

The Florentine Painters of the Renaissance with an Index to their Works. BERNHARD BERENSON. New York, G. P. Putnam's Sons. 1896. Pp. 141.

This little handbook, by an accomplished student of art history, deserves notice in these pages because it is the first attempt we have seen to apply elementary psychological categories to the interpretation of higher works of art. A painting, says the author, is of only two dimensions and yet must suggest the third dimension to the spectator's mind. The artist to do this, must give *tactile values* to retinal impressions. "It follows that the essential in the art of painting * * * is somehow to stimulate our consciousness of tactile values, so that the picture shall have at least as much power as the object represented, to appeal to our tactile imagination." From Giotto onwards, the Florentine painters preeminently did this, so that the phrase 'tactile value,' instead of the more familiar word 'form,' appears on every page of Mr. Berenson's account of their characteristics. The high pleasure derived from tactile values artfully portrayed would seem to be due to the rapidity and intensity with which they are suggested. The tactile aspect of reality is actually 'heightened' by the picture, and thereupon ensues the secondary enjoyment of our own capacity for the enhanced experience. The rendering of movement is a step farther in the same direction; we feel the motor life of the figure in ourselves and a heightened sense of our own capacity results. To say that pictures have a 'life-communicating value' is thus to sum up the explanation of their effect on us from this point of view.

The essay is charmingly written, and will be useful to all art-students. Whether we get much deeper into the secrets of art-magic, or account for the sense of preciousness that some paintings diffuse, much better on Mr. Berenson's terms than on more familiar ones, may be left an open question. Mr. Berenson himself has to add 'spiritual significance' to his other terms of 'life-enhancing value.' But until we can define just what the superior 'significances' are, in the better of two good pictures—and surely we hardly ever can—the explanation of all merit by significance remains somewhat unsatisfying. The better picture remains simply the better picture, and its ultimate superiority might, in the end, be a matter of immediate optical feeling and not a matter of extraneous suggestion or significance at all.

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Atlas of Nerve-cells. By M. ALLEN STARR, with the cooperation of OLIVER S. STRONG and EDWARD LEAMING. LIII. Plates, 13 diagrams, pp. 79, 4to. Macmillan & Co., 66 Fifth Avenue, New York. 1896. Price, \$10.

This latest volume from the University press of Columbia University contains much more than the preface indicates.

A short preface serves to explain the nomenclature employed. The nerve cell is designated as a neuron. It has protoplasmic branches as dendrites and the pin-head enlargements along the surface of the dendrites as gemmules. The axis cylinder process is termed the neuraxon; its branches, collaterals; and the terminations of these branches, end brushes. Immediately following the preface is a valuable description of the silver method of impregnation by Dr. Strong, recounting the manner of preparing the sections here employed for the plates, and explaining the modifications in technique which he has introduced with such good results. Upon the photographic methods employed, Dr. Leaming adds a chapter which will materially assist those who propose to work along similar lines.

The body of the book follows and contains LIII. plates, which are reproductions of photomicrographs, and thirteen diagrams, together with the corresponding text. The sections have