

some doubt as to whether the case described by Mr. Lennox can be considered an immediate effect of cross pollination, I think everyone critically examining it will admit. If due to reversion, graft hybridization or cross pollination, the same characters will probably appear on the tree again next year, so that further studies may be made. It is to be hoped that Mr. Lennox will be able to test the validity of his conclusions experimentally.

Horticultural literature has become so filled with descriptions of supposed cases of the immediate action of pollen where insufficient evidence is given to enable one to judge the merits of the case, that it behooves observers to be exceptionally careful in regard to all conditions if any final conclusions are to be reached.

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THE DEFINITION OF CIVIL ENGINEERING.

THERE is an error in my paper on the Artistic Element in Engineering which I should like to correct. Following the lead of other writers, I have ascribed the classic definition of civil engineering to Telford instead of to Tredgold, whom I have recently learned was its author. See *R. R. Gazette* of December 28, 1894, page 883, or of August 28, 1896, page 602.

I am indebted to Mr. H. G. Prout, of the *Gazette*, for calling my attention to the matter.

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SCIENTIFIC LITERATURE.

Studies of Childhood. JAMES SULLY. New York, D. Appleton & Co. 1896.

This book is a series of topical or classified studies of certain phases of the psychology of child life, covering, upon the whole, the period of life from two to six years of age, with quite a marked preference for those phenomena which dawn or are at their height in the second and third years. The topics covered are: The imagination of childhood; its reasonings, including a study both of the process and the more marked and characteristic processes; the beginnings of language; the emotion of fear; some phenomena of morality, including a study

of children's egoism, altruism, lies, and an account of their reactions to the moral injunctions of their elders; and a study of the child's æsthetic nature as manifested in his instinctive expressions and in his primitive drawings. The book concludes with a detailed individual study (covering about 100 pages) of one of his own children; and a very interesting study of the childhood of George Sand, drawn from the latter's autobiography. In this connection it may be remarked that a distinct feature of the book is not only the author's own style, which is literary rather than 'scientific,' but his wide acquaintance with autobiographical allusions to childhood and his apt use of such reminiscences. Ruskin, Dickens, Quinet, Tolstoi, Stevenson and many others figure in these pages.

This topical character of the treatment practically makes any synopsis of the book, beyond such a bare scheduling of headings, out of the question. An immense number of relevant observations of childhood, gathered from practically all available sources, supplemented by Mr. Sully's own observations, and enlivened by judicious remarks upon the salient qualities of childhood, make the book what it is. The hypercritical will probably conceive that the running commentary is sometimes discursive, occasionally dangerously near the padding point, and frequently of no great importance. But I confess myself sufficiently grateful in finding a book to review which is interesting to read as well as technically instructive.

The impossibility of summarizing the material content of the book makes it advisable to direct attention to the method, both what Mr. Sully himself says about method and that which he actually employs. As to the former, Mr. Sully devotes considerable space in his introduction to the objects and difficulties of child study, and to an account of the equipment necessary for observation and interpretation. The interest in child-study he finds to be partly due to the general development of natural science and partly to specifically psychological needs. The infant is, so to speak, more obviously a natural phenomenon than the adult; and the evolutionist in particular finds in him obvious signs of close kinship with the animal world, both in the foetal and early post-foetal stages. The