

periences, and makes the members modes of itself. But while the child *learns* its members most animals appear to be instinctively aware of their somatic self in its parts and so to use them from the hour of birth. But only through the piecemeal learning of the somatic self does there come a full and strong sense of self. The man's hand is more really and fully his than is the crab's claw its claw. Self-conscious self-consciousness and all the high egoism comes of learning. However, the child learns itself in hand, foot, etc., by instinctive impulse, just as it learns to walk instinctively; but the learning, of course, implies attention, will, reason and feeling.

HIRAM M. STANLEY.

LAKE FOREST, ILL., June 16, 1898.

#### COLOR VISION.

IN regard to the points concerning which Professor Titchener considers that I have not correctly represented what he had to say on color theories in his letter in *SCIENCE* of June 17th it is so easy for the reader of *SCIENCE* to form his own opinion, if he is sufficiently interested in the subject to compare that letter with my reply to it, that there is no occasion, fortunately, to prolong the discussion. Since Professor Titchener has given so much attention to optics during the past year as he says he has done, he must plainly be much more familiar with the subject than most of the psychologists have time to be, and I have certainly hit it off very badly in accusing him of ignorance.

C. LADD FRANKLIN.

#### SCIENTIFIC LITERATURE.

*Organographie der Pflanzen, in besondere der Archegoniaten und Samenpflanzen, I. Teil.*  
K. GOEBEL. Jena, G. Fischer. 1898.

This first part of Dr. Goebel's *Plant Organography* has been awaited with impatience by many botanists who knew that such a work was in process of construction. Now, that the first half of the treatise is off the press, it can already be understood what an important and timely contribution to botanical literature is this latest work by certainly the foremost German plant morphologist, if not absolutely the foremost in the world. In reading through the

attractive pages one is impressed, first of all, by the charming lucidity of the literary style, then by the freshness of the illustrative material, then by the perfect mastery of a wealth of detail and accessory or incidental matter, and finally by the philosophical and unpolemical tone of the whole. Professor Goebel has succeeded in bringing together from his own voluminous researches, and from the byways as well as the highways of botanical literature, a most interesting and suggestive volume. His general point of view is not at all new, for the foundation of organ-evolution is sought in adaptation rather than in the spirit of the recent *Entwickelungsmechanik*. Strong antagonism is manifested to the archaic 'ideal-philosophy' or 'nature philosophy' of Goethe and Herder, which one would think, from the somewhat unnecessary space given to its annihilation, must exist somewhere in the vicinity of Munich. The Goethean concept of the leaf, the stem, the flower, as in some mysterious sense types, or ideal plans, is generally so extinct that there seems scarcely justification for seriously girding at it. Goebel points out, truly enough, that there is no such thing as a *leaf* rudiment, but only bud-scale rudiments, sporophyll rudiments, cataphyll rudiments, foliage-leaf rudiments, etc. The leaf and the leaf rudiment are pure abstractions. But this does not seem to the reviewer so strong a position upon which to found a theory of metamorphosis as at first it did. It is true, Goebel's doctrine of pure metamorphosis is based upon just this conception of rudiments, and hence the position is important if one wishes to understand his work.

It would seem that one has quite as much right to insist that there are no bud-scale rudiments, but only willow bud-scale rudiments, poplar bud-scale rudiments, walnut bud-scale rudiments, cherry bud-scale rudiments, etc. Thus the bud-scale rudiment becomes, by the same process of reasoning, quite as vague an abstraction as does the leaf rudiment. As a practical proposition, Dr. Goebel's willingness to substitute analogy for homology in the foundations of botanical terminology cannot have much weight, for everywhere it is the phylogenetic test that is regarded as final, and analogies are rightly regarded as of secondary importance in