

which he finds himself able to direct somewhat in their future combinations, as the chemist handles radicles and proximate principles; but President Schurman has long since pointed out that there is a 'fundamental contrast between the initial variations and the subsequent means of their preservation'; for example, between modifying organisms and originating idiosomes and 'that where science stops, philosophy begins.'

It is to this lothfulness to directly admit that Czolbe was right in saying: "The power of organisms cannot be explained by the planless and formless physical and chemical activities;" that Schurman refers in saying: "This jugglery with causality, as though in time everything could be got out of almost nothing, is the besetting sin of Darwinists."

CHARLES S. DOLLEY.

PHILADELPHIA.

Aero-therapeutics or the Treatment of Lung Diseases by Climate. By CHARLES THEODORE WILLIAMS. London and New York, Macmillan & Co. 1894. 8°, pp. 187.

This is a good book by a competent authority, being the Lumleian lectures for 1893, by Dr. Williams, who is the senior physician to the hospital for consumptives at Brompton, and the late President of the Royal Meteorological Society. It includes a discussion of those factors and elements of climate which bear directly upon human health, and is especially full upon the subject of atmospheric pressure and its variations, and on the effects of high altitudes upon cases of consumption.

The effects of such altitudes as are usually resorted to for curative purposes depend in part upon the rarefaction and increased diathermancy of the atmosphere, and in part upon the change in habits, exercise and food which is made when becoming a resident of such a resort. One of the most definite effects produced by diminished atmospheric pressure upon the healthy animal

organism is an increase in the number of the red corpuscles of the blood, which has been shown by Viault and Eggar to occur in man to the amount of 16 per cent. in the course of three or four weeks. Mountain races usually have large chests, comparatively great activity of the respiratory organs, and great power of endurance for walking. They are usually remarkably free from scrofula and consumption, which is probably due to absence of overcrowding and to their comparatively great amount of out-door life, which greatly lessen the chances of their becoming infected with the tubercle bacillus. The sending of consumptives to high altitudes is a method of treatment which has come into vogue within the last thirty years, Davos and St. Moritz being the first of this class of health resorts to attract special attention. Dr. Williams concludes that this mode of treatment is most effective in recent cases of consumption, that at least six months', and in many cases two years', stay is desirable, and that it produces great improvement in about 75 per cent. of the cases, and a cure in about 40 per cent. One chapter of the book is devoted to the high altitudes of Colorado and their climates, and is based on the author's personal observations. The greater part of the surface of this State is over 5000 feet above the sea level, and some of the most beautiful parks are above 7000 feet in altitude, the atmosphere is dry and clear, and there is sunshine the year round, all of which are important factors in the treatment of consumption. Physicians will find Dr. Williams' comments upon the importance of these great mountain plateaus and parks, as a location for consumptive patients in the first stages of their disease, to be interesting and valuable.

PHYSICS.

On the Voluntary Formation of Hollow Bubbles, Foam and Myelin Forms by the Alkaline