

COUNT RUMFORD AND HIS RESEARCHES ON HEAT.—The highest law in physical science which our faculties permit us to perceive, is, to quote the words of Faraday, "the Conservation of Force." The generalizations which serve to illustrate this great principle of the conservation of force in all its varied applications, are generally referred to as the law of the Correlation of Forces, and have been set forth by various writers within the last twenty years. Prof. Youmans, who is already favorably known for his new Class-book of Chemistry,—a work which deserves, by its lucid method, scientific accuracy, and felicity of illustration, to supersede all others as an elementary manual,—has just rendered an important service to the scientific student by bringing together in a single volume a series of expositions of this doctrine of the correlation and conservation of force,* by Grove, Helmholtz, Mayer, Faraday, Liebig, and Carpenter. With the exception of the first named, a treatise of considerable extent, and of great merit, which has gone through at least two editions, and the wonderful essay of Mayer on Celestial Dynamics, the productions here collected are scattered through scientific journals not always accessible to the general reader. Besides bringing them together with notes, explanatory remarks, and a good index, Dr. Youmans has, in a modest introduction of forty pages, given a review of the subject, and has called attention to the labor of that most remarkable thinker of our day, Herbert Spencer, who, to use our author's words, "has the honor of crowning this sublime inquiry by showing that the law of conservation, or, as he prefers to call it, of the Persistence of Force, as it is the underlying principle of all being, is also the fundamental truth of all philosophy."

It would have added to the value of this excellent compilation if our author had included in it the essay of Dr. Joseph Henry, on the Conservation of Force, published in the Agricultural Report of the United States Patent Office for 1857, and in Silliman's Journal [2], xxx, 32; and Dr. Joseph Leconte's exposition of the Correlation of Physical, Chemical, and Vital Forces, and of the Conservation of Forces in Vital Phenomena, which appeared in the same Journal [2], xxviii, 305. A valuable, and in many respects,

* The Correlation and Conservation of Forces : a series of expositions by Prof. Grove, Prof. Helmholtz, Dr. Mayer, Dr. Faraday, Prof. Liebig, and Dr. Carpenter. With an introduction and brief biographical notices of the chief promoters of the new views : by Edward L. Youmans, M.D. New York : D. Appleton & Co. Montreal : Dawson Brothers.