

*The Source of Muscular Power, Arguments and Conclusions, &c.* By AUSTIN FLINT, JR., M.D., Professor of Physiology, &c., Bellevue Hospital Medical College. 12 mo., pp. 103. New York: D. APPLETON & COMPANY, 549 & 551, Broadway, 1878. Montreal: DAWSON BROS., St. James Street.

This little book is a reprint from an article which, was first published in the October (1877) number of the *Journal of Anatomy and Physiology*. By some ill-luck, the author did not receive the proof sheets before publication, and he remarks in his preface that, as the paper originally appeared "the typographical errors, both in the figures and in the text, were quite important," hence, he was in a measure obliged to issue this book from the press so as to present an accurate statement of his own observations, and what seemed to him to be "the logical conclusions to be drawn from these as well as from experiments made by others upon the human subject under the conditions of rest and of muscular exercise. From the publication of the experiments of Fisk and Wislicenus in 1866, and of others of more recent date, a theory had been propounded that the muscular system of man and other animals is simply a perfected mechanical apparatus, which performs work not at the expense of its own substance, the material consumed, being restored by the assimilation of food, but by the consumption of food itself, and that the force value of the food so ingested, can be calculated much in the same way as can be estimated the value of the fuel consumed by a steam engine.

This certainly would be an important addition to positive knowledge if the theory could be substantiated, but it appears, although plausible, to be contrary to known facts. Take for instance any muscle or group of muscles, and exercise them continuously, the work will not only be done, force will not only be evolved, but the muscle itself will increase in size and development, and an increased number of muscular bundles will be produced. No amount of fuel to the steam-engine will add to its store of iron, or increase its power of resistance, so that the two processes although of the same genus are separate and