Science, Medicine, Exercise, and Sport, 1870-1910: The Body as Object and Icon

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In the nineteenth century, the *body* was the focus of a great deal of interest, concern, discussion, and debate. Much of this was related to developments in the "life" sciences (especially physiology and evolutionary biology) and medicine, but a considerable amount centered in and around metters pertaining to athletics, exercise, and physical training. In addition to the enormous number of books, journals, periodicals, albums, guides, handbooks, and other publications that enthused over male athletes and athletics, medical journals in Britain, America, France, Germany, and elsewhere engaged in active discussions of issues involving exercise, athletics, and physical training. As early as 1865, Austin Flint, Professor of Physiology and Microspy in the Bellevue Hospital Medical College and Fellow of the New York Academy of Medicine, had contrasted the older dispositions of speculative Natural Science with the carefully designed, regulated, and repeated studies that had come to characterize the newer experimental methods of physiology. Six years later, Flint had published the results of his own investigations of urea produced during severe endurance feats by the noted pedestrian E.P. Weston.

Dr. John Morgan's longitudinal study of the health and longevity of men who had rowed on Oxford and Cambridge crews between 1829 and 1869 was influential in stimulating a more scientific interest in the feats of athletes. In 1877, Boston's E. H. Bradford, M.D. published the results of his own study of Harvard crews between 1852 and 1870, concluding (as had Morgan) that their exertions had had no negative effects upon the vast number of young men who had been varsity oarsmen. (These findings were contrary to a widely-held, but not universal, belief that intense athletic effort was inimical to health.) Substantially the same conclusions were reported by Dr. George Meylan of Columbia University in 1904.

As various competing "theories" regarding training for athletics-none scientifically determined- existed, there was interest in attempting to discover whether structural and/or physiological changes occurred during the training period or under the intensity of competition. The Harvard Athletic Committee invited Eugene A. Darling to investigate physiological changes among members of the varsity crew, especially with regarding to shedding light on the much-debated question of "over-training." In 1899, Darling examined heart and kidney function, and the weight and temperature changes of rowers. A similar investigation of the Harvard football team was made to following autumn. In 1898, W.O. Atwater and F.G. Benedict had studied the food intake and energy production of the Harvard varsity crew; and in 1900, they repeated the same type of study on the four-man crew.

Medical men and scientists in Britain, France and Germany were also interested in such topics. In 1892, the German physician George Kolb dedicated the English translation of his *Physiology* of *Sport:* Contributions *Toward the Physiology of a Maximum Muscular* Exertion, *Especially Modern Sports* to Benjamin Ward Richardson. Phillippe Tissie concluded that the body needed greater quantities of hydrocarbons as muscular work was prolonged after studying a 400-mile endurance performance of the French bicycle champion Stephane. While it would still

be decades before “sports medicine” and a truly scientific approach to athletics emerged, the bases for such developments had been established by 1900.