

## THE HISTORY OF AMERICAN HEALTH, HYGIENE AND FITNESS

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American beliefs and practices regarding health, fitness, exercise and physical training in the years between 1820 and 1939 have been the research focus of an increasing number of historians over the past decade. The most prominent topics of these studies have been health reform, educational views of fitness and health, medical influence on health issues, and organized efforts to instill an ethos of health and fitness in American culture.

In the four decades preceding the Civil War, the evolving practice of medicine and reform movements were the key components of health, fitness and exercise in American life. Without the widespread availability of physicians in the first third of the nineteenth century, many Americans depended on self-help books and articles for information on how to treat recurrent illnesses such as dyspepsia, consumption and tuberculosis. In addition to the limited number of physicians, there was a far reaching distrust of the "regular"/heroic physicians whose painful treatments included blood-letting and violent purgatives. In contrast, the "irregulars", including botanics, Thomsonians and homeopaths, fit nicely with the Jacksonian era belief in every man's ability to be his own physician.

In 1824 Thomas Ewell wrote the *American Family Physician* as a guide for mothers to treat illnesses within their own family. Margaret Moore's *Advice to Young Mothers on the Physical Education of Children*, first published in 1833, reminded mothers to call a physician if the treatment seemed ineffective. The continuing influence of graduates from poorly equipped proprietary medical schools and the inability of the American Medical Association, founded in 1847, to control the training and licensing of physicians sent many Americans to alternative sources for medical treatment. William A. Alcott, Sylvester Graham, Russell Trall, Catharine Beecher and others published numerous works on health, dietary and exercise reforms. Some reformers, including Trall and Beecher, opened institutions in order to further their program of reform. Alcott, the editor of the journal *Annals of Education* wrote hundreds of self-help guides including "*The House I Live In*" and "*The Young Mother.*" Sylvester Graham, temperance advocate and vegetarian also gave lectures and published works including "*Lectures on the Science of Human Life.*"

Beecher, in her writings and through her Hartford Female Seminary, advocated health, exercise and dress reform for women and children. *Physiology and Calisthenics for Schools and Families*, published in 1856, described scientifically based lessons on physiology and an exercise system that could be used in schools, the home, and hospitals. The following year Russell Trall, physician, hydropathist and temperance advocate published *The Illustrated Family Gymnasium*. In this work, Trall endeavored to present families with the latest

information on gymnastics, calisthenics and vocal exercises. In addition, Trall opened his own college to instruct others in the use of water-cures, gymnastics and other exercise regimens.

Physical training advocate Dioclesian Lewis contended that "lung-diseases," such as colds, bronchitis and consumption could be improved by exercise. Sanitariums were opened including Ellen White's Battle Creek Sanitarium. Increasingly these sanitariums led to a greater reconciliation between "regular" and "irregular" physicians.

The last two decades of the nineteenth century saw an increase in immigration from Southern and Eastern European countries to the United States. The new immigrants usually moved to urban areas, and the public schools which their children attended became an Americanizing force. By the 1890s the schools also became the location of medical inspections of students. The science of bacteriology began to contribute to war on diseases and pathologists began to link specific diseases with their causes. However, infant mortality remained high and infectious diseases such as diphtheria, scarlet fever and typhoid continued to affect the populace.

Interest in health and hygiene were of increasing interest in the first two decades of the twentieth century. School health and physical education become more closely linked when in 1909 Thomas Storey claimed that the objectives of school hygiene and physical education are "identical." In addition, the theme of the 1910 American Physical Education Association Convention was "School Hygiene and Physical Education."

Concerns about tuberculosis and the realization of its contagious nature led to an open-air school movement. World War I and the vast number of draft rejections made the public more aware of the need for health and fitness training for American youth. The Physical Education Service, a part of the Playground Association of America, was formed to promote efforts for legislation for mandatory physical education.

## THE HISTORY OF AMERICAN PHYSICAL EDUCATION

Attempts to establish a profession of physical education were evident even before the initial meeting of the Association for the Advancement of Physical Education in 1885. Within the organizational milieu of nineteenth century America, professions emerged and defined themselves as unique compared to the earlier amateur groups in the United States.

Physical education emerged from a variety of other professional sources in the mid to late nineteenth century. Within the field of education, physical education became a part of many public school and college programs following the Civil War. There was a growing need for teachers, who were trained in both normal

schools and universities. In the normal schools, the students were mostly women and the training they received based mainly on methodology classes. Within the universities, men and women received a more specialized, academic training.

The emergence of the National Education Association, and the inclusion of articles on health and physical training in journals such as the *Journal of American Education* and the *New England Journal of Education* illustrated in part the desire of educators to improve the health of children who, in increasing numbers, were entering the public schools in the decades following the Civil War. The medical profession was also interested in issues of health and physical training in the latter half of the nineteenth century. Local and state medical journals, including the *Boston Medical and Surgical Journal* and the *New York Medical Journal*, included articles on physical training in the 1870s and 1880s. The influence of the medical profession on physical education was evidenced in part by the fact that many of the initial leaders of physical education were MDs. Indeed, these physician/physical educators were interested starting with the early meetings of the AAPE in establishing some type of certification requirements for teachers of physical education.

Gymnastics were introduced into the schools in the years just prior to and following the Civil War. Various systems--including Dio Lewis's, the Delsartean, the German, and the Swedish--most notably the latter two--increasingly found their way into schools and colleges. Amherst College, in 1861, appointed Edward Hitchcock to what is generally recognized as the first professorship in Hygiene and Physical Education in the United States.

Programs for the preparation of "professional" physical educators emerged during these years as well. Following the opening of Dioclesian Lewis's Normal Institute of Physical Education in 1861, many other private and public normal schools opened for the training of both male and female instructors. Teacher-training programs also emerged at public and private colleges and universities at the end of the nineteenth century. Many of these early programs were led by MDs. Wilbur P. Bowen's course of study at Michigan State University included both theory and practical courses. Delphine Hanna organized the co-educational program at Oberlin College in 1892. It too included courses in scientific theory as well as practical course work.

At its initial meeting in November of 1885, the Association for the Advancement of Physical Education included discussions, speeches, demonstrations and basic organizational matters. Attendees at the first meeting included physicians, both male and female, school principals and headmasters, social scientist, and a college president, Harvard's Charles W. Eliot. By its second meeting, the word American had been added to the group's name.

Anthropometry and hygiene, along with systems of gymnastics, were among the early topics of discussion at meetings of the Association. By 1896 the Council of AAPE proceeded with the publication of its first professional journal, the American Physical Education Review (APER). The *APER* sought to provide a forum for the discussion of topics of interest to both the professional and the researcher.

In 1897 the Society of Directors of Physical Education in college was organized. One of the goals of the society was to promote a professional spirit among its members. The Association of Directors of Physical Education for Women was formed in 1910. The Athletic Research Society was founded in 1907 and by 1928 became the Research Section of the American Physical Education Association (APEA). The scientific and research aspects of the profession were given renewed attention with the publication of a series of articles on physiology, hygiene, kinesiology, physical examinations and history in the *APER* in 1907.

The APEA and its predecessors also attempted to control the training of physical educators. Recommendations were made in 1901 on the qualifications which should be required for admission to normal school programs. There was no way, however, for the Association to control or require any of their recommendations. They could only act in an advisory capacity.

As the United States prepared to enter the First World War, physical educators contributed in a number of ways. Draft examinations had resulted in an enormous number of deferrals because of various health problems including: dental carries, flat feet and venereal disease. To aid the country in its preparation for war, physical educators, such as Dudley Allen Sargent, proposed that physical education be required in the schools. Many physical educators, both male and female were drawn into the war effort.

Following the War, a program of natural activities in physical education came to the fore. This "New" physical education was based on biological, psychological, sociological and educational foundations and supported by leaders such as T.D. Wood, Rosalind Cassidy, Jesse F. Williams, Clark Hetherington and others. Clark Hetherington and others believed that it would best serve the profession to have the state department of education certify teachers of physical education.

In 1927, a pamphlet entitled *The Objectives of American Physical Education Association, 1885-1927* appeared. This pamphlet set forth the framework/curriculum that leaders of the APEA saw as a necessary guide for the increasing number of undergraduate and graduate level programs in physical education. According to the pamphlet, the fundamental problems of physical education could best be investigated with a proper understanding of "biology, chemistry, anatomy, physics, physiology, psychology and administrative problems."

The profession also recognized a growing interest in research in physical education when, in 1930, the *Research Quarterly* was introduced as the professional research journal of the profession. Henceforth, the new Journal of Physical Education would carry articles of a practical nature. The *Research Quarterly* would publish research by physical educators, and others, interested in hygiene and physical education.

The stock market crash and the depression years impacted the profession of physical education as courses outside of the "3 R's" (originally in the UK "reading, riting, and rithmetic" and in the US "Relating, Representing and Reasoning") were curtailed in many districts. Recreation grew in importance in many communities and physical educators, such as Jay B. Nash, took advantage of this new interest in recreation and introduced recreational and leisure games into their programs. The Association became a department of the National Education Association in 1937 and changed its name to the American Association for Health and Physical Education. Health became a more important aspect of the association as a full-time assistant in health education was appointed.

With the coming of the Second World War, sport and recreation activities in physical education programs were phased out as the demand for physical fitness activities grew. Once again nearly half of the draft registrants were rejected for service. Although most of the rejections were not something physical education could cure, public awareness for greater attention towards physical training resulted.

The profession moved towards the certification of physical educators following the 1948 conference on professional preparation at Jackson's Mill. Through the work of Carl Nordly and others, accreditation of physical education programs through the National Council for Accreditation of Teacher Education began in 1954. The identification of a body of knowledge relating to physical education, which included six areas of knowledge, was the focus during the first half of the 1960s.

## THE HISTORY OF A SCIENCE OF PHYSICAL EDUCATION

According to W.R. Johnson there have been as many different motivations for researching exercise and sport as there have been fields of specialization of the investigators. In the preface to his seminal volume *Science and Medicine of Exercise and Sports*, Johnson listed a few of the reasons why people looked at exercise. Some have sought to extend the limits of human performance, both inside and outside the athletic world. Other researchers have been interested in the effect of manifold experimental circumstances on human performance, with little interest in the practical outcome. Still other investigators have looked at the measurable outcomes of different types of exercise and sport.

## **Anthropometry**

Edward Hitchcock is the starting point for the scientific basis of physical education. His research on anthropometry, which began at Amherst in 1861, was a part of the emergence of statistical thinking in medicine in the nineteenth century. Early texts in physical education emphasized this important history of anthropometry. Jay Seaver's *Anthropometry and Physical Examination*, published in 1896, described the measurements which Edward Hitchcock had performed at Amherst, the 1877 study of American school children by Henry P. Bowditch, Dr. George W. Peckham's study of the growth of school children in Milwaukee from 1880-1883 and William T. Porter's 1892-93 study of the children in the public schools of St. Louis. Dudley Allen Sargent, who was appointed the director of the Hemenway Gymnasium at Harvard in 1880, gave physical examinations to all incoming freshmen which included anthropometric measures. With the more than 50,000 measurements which he collected during his career, Sargent was considered an expert in anthropometry.

## **Metabolism**

Austin Flint's research, published in part in his 1874 text *The Physiology of Man*, used pedestrians, the nineteenth century term for a long distance walker, as an experimental model. In one experiment Flint measured both the food which pedestrian Edward P. Weston took in and collected his excrement in order to establish what the most important fuels in exercise were.

Research into the diets of athletes and possible links to performance continued in W.O. Atwater and A.P. Bryant's 1900 study "Dietary Studies of University Boat Crews." Atwater's research was funded by the U.S. Department of Agriculture. The Carnegie Institute of Washington's Nutrition Laboratory in Boston published numerous studies on diet and exercise in the first two decades of the twentieth century. F.G. Benedict developed numerous instruments to aid in measurement, including a respiration chamber and a treadmill. The research of R.H. Chittenden, at Yale's Sheffield Scientific School, endeavored to find the exact amounts of food, water and "nitrogen" needed for the "smooth running of the human body." Chittenden developed the calorimeter, a heat measuring device, to give his research a stronger scientific basis.

The 1930s were the decade which saw the establishment of the Harvard Fatigue Laboratory by L.J. Henderson. By the 1920s Harvard had four departments bound together in a loose organization as the "Laboratories of Physiology." These included the department of physiology, comparative physiology, applied physiology and physical chemistry. The latter was under the direction of L.J. Henderson. This structure provided an excellent environment for the Fatigue Lab.

## **Cardiovascular**

In the first decade of the twentieth century, the American Physical Education Review published a series of articles to provide physical educators with a brief analysis of some of the major research on science and exercise. C. Ward Crampton provided a series on the vascular effects of exercise.

Concerns about the effect of strenuous exercise on the heart were raised increasingly in the nineteenth century. In 1877, Dr. E.H. Bradford reported that former Harvard rowers lived longer than the typical American man, even with the possibility of a damaged heart. Marathon runners were the subject of a number of studies in the first decades of the twentieth century. Despite the on-going belief that marathoning damaged the heart, researchers claimed that hypertrophy of the heart following the marathon was not pathological. At the Boston Marathon in 1924, a team of researchers showed that the x-rays of the hearts of participants before and after the race showed no measurable change.

## **Kinesiology**

The term kinesiology was first applied to the study of muscles and movements in the first decade of the twentieth century by Baron Nils Posse and William Skarstrom. Wilbur Bowen's text *The Action of the Muscles in Bodily Movement and Posture*, first published in 1912, went through several editions, revisions and authors and by 1978 was entitled *Kinesiology and Applied Anatomy--The Science of Human Movement*.

In the 1930s physical educators, including Ruth Glassow, T.K. Cureton and C.H. McCloy, presented research on human movement. W.O. Fenn, a future president of the American Physiological Association, continued work begun by A.V. Hill on the mechanical analysis sprinters. During the 1940s, graduate programs in the area of kinesiology expanded. By the 1950s, biomechanics became increasingly important to physical educators who sought to analyze the performance of sports skills. Electromyography, measuring the electrical activity of the muscle, was initiated in this decade.

With the founding in 1954 of the American College of Sports Medicine (ACSM), many of these basic and applied sciences came together in one organization. This organization, as did the American Association of Physical Education at its inception over a century ago, had among its membership physicians, physical educators and others interested in the study of the exercising human body.