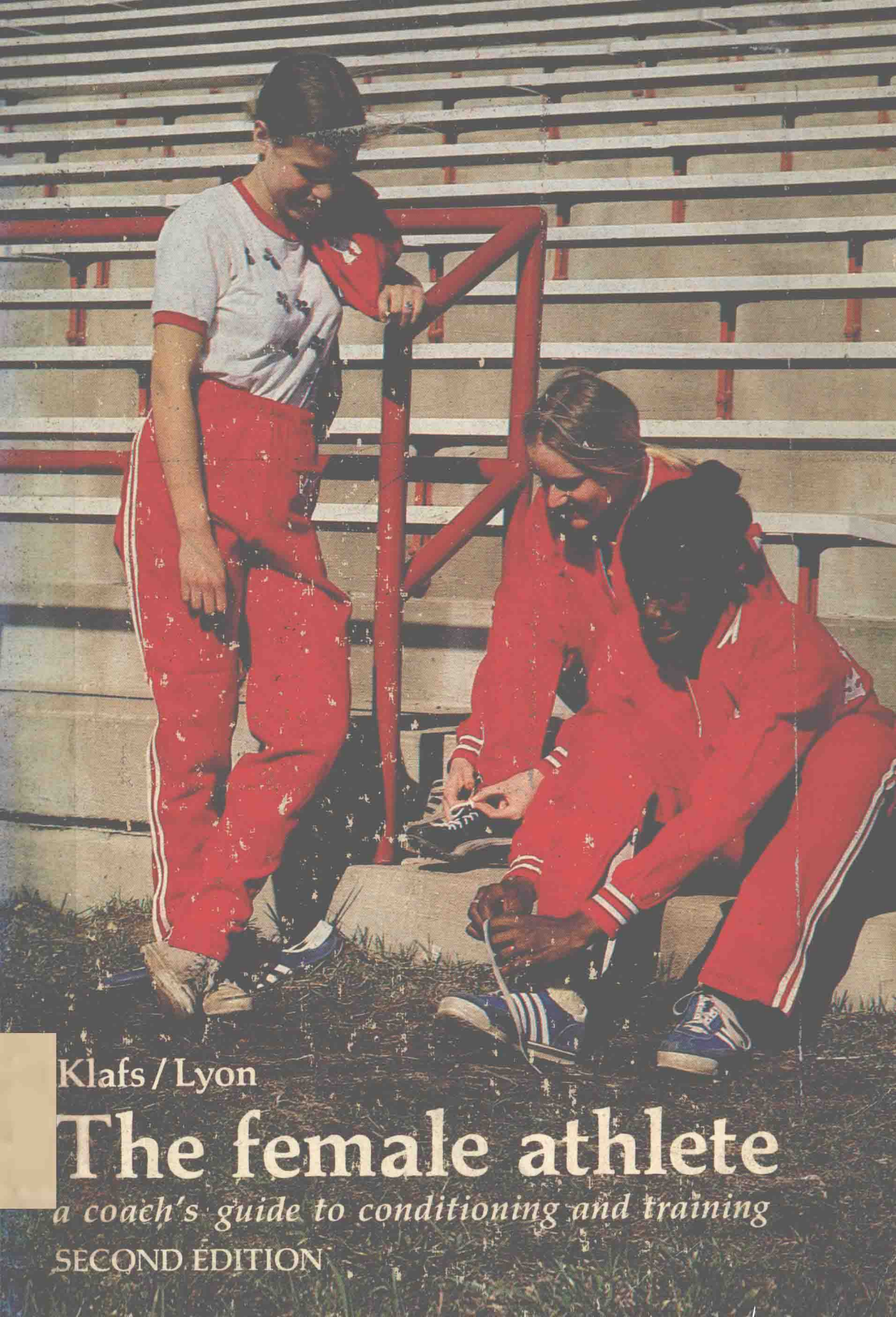

Klafs / Lyon

The female athlete

a coach's guide to conditioning and training

SECOND EDITION

THE FEMALE ATHLETE *a coach's guide to conditioning and training*

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THE FEMALE ATHLETE

a coach's guide to conditioning and training

To the young female athletes of today,
who through their pursuit of excellence in sports,
will become the women champions
of tomorrow.

C. E. K.
M. J. L.

Preface

With the emergence of girls and women into full-fledged sports participation, a new set of values has been established. No longer is it necessary to "justify" performance in certain sports nor are restraints or barriers imposed because common opinion holds an activity as being unsuitable for females. Girls and women today compete in almost all of the sports in which males participate and in many instances with or against them in a variety of situations. With the fund of new knowledge regarding the female and her response to stressful sports performance, the focus of this book is toward assisting the sportswoman and the coach in applying sound fundamental principles in devising and carrying out a program of preparation that will allow the athlete to work toward achieving her maximum potential.

The presentation is geared to students whose scientific background may be somewhat limited, and to this end technical terms and expressions are clarified within the body of the text. A glossary further enhances the student's understanding of the material presented. Suggested reading materials and technical reference sources are found at the conclusion of each chapter.

The emphasis of the book is on conditioning as a means of injury prevention as well as performance improvement. A number of chapters deal with injury prevention, sequelae, treatment, and physical restoration. Although this text is in no way to be considered an athletic injury book, nonetheless, we believe that a knowledge of basic sports medicine should be within the purview of every athlete and coach. To this end, an introduction to the causes, care, and treatment of the more common injuries is presented.

An unusual feature of this book is the chapter "The Conditioning Program in Action," which presents the achievements and the personal conditioning programs of a number of national and world-class women champions and coaches in a wide variety of sports.

We wish to express appreciation and gratitude to Barbara Cummings and Helene Arnheim for their very fine artwork, to Wendy Soon, Women's Athletic Trainer, California State University at Long Beach, for her suggestions, and to the many photographers who contributed so graciously, especially Bill Stuart. Special thanks are in order to the athletes and coaches who gave so willingly and enthusiastically of their time and information.

Carl E. Klafs
M. Joan Lyon

Contents

PART ONE

Historical background

1 □ History and current trends

Members of the human race have engaged in competitive sports since the dawn of time. Competition is a natural, healthy concomitant of man's life. Unfortunately history indicates that until contemporary times such competition was almost without exception the sole prerogative of the male, ostensibly growing out of his need to ready himself for war while permitting him to release the pent-up energy of his competitive nature in activities that provided an opportunity not only to match his prowess with that of his contemporaries but also created situations wherein he could earn the esteem and approbation of the opposite sex—a phenomenon observed in most higher animals.

For thousands of years feats of athletic prowess have been commemorated by inscriptions upon monuments dedicated to the physical abilities of the male; such reminders, however, have been virtually nonexistent for the female. Woman's lot throughout history has been that of childbearing, housekeeping, and toil. Until relatively recent times the exhibition of physical prowess was considered the sole domain of the male. Only since 1900 has woman been viewed as capable of holding her own in physical competition. Participation in sports by the female has been largely governed by the times. In the higher civilizations of the past, prejudicial societal patterns of culture, ethics, and morals decreed that woman was not only physically incapable of strenuous activity but that woman's participation in such activities was sinful and degrading.

There are only scattered references in ancient history to organized athletic activities for women prior to the advent of the Spartan state. As ancient Egypt progressed from a relatively primitive state to an advanced civilization, provision was made for the inclusion of physical activities within the structure of formal education, particularly for the young. These activities included gymnastics, exercises, wrestling, lifting and swinging weights, swimming, ball games, and dancing for both sexes of various ages. It is interesting to note that the Egyptians also engaged in ball-and-racket type of games. The participation of girls and women in these activities was a common occurrence. In most of the ancient cultures—China, Babylon, Sumer, and Assyria—the physical activities of women were limited principally to dancing, particularly in religious festivals, although there was a considerable amount of folk dancing. In Persia, however, physical activities and dancing in particular were forbidden to women by religious edict.

Ancient Greece

In ancient Greece, especially during the Aegean period, the physical activities of girls and women were restricted principally to dancing, which played an important role in the cultural and social life of that era. During the Homeric period, however, both girls and boys participated in a number of games and sports activities, many of which resembled those of modern times. As boys grew older, however, they continued to participate in these activities, while

the girls were relegated to household tasks. Plato, in developing his concept of the ideal state, postulated that all men *and* women should engage in similar gymnastic training.[8]

The lot of Spartan girls and women was indeed a quite different one. They were not secluded as they became older and held an important place in the societal structure. They were urged to participate in vigorous activities. The girls were given physical training similar to the boys, but under the direction and supervision of women trainers. Girls exercised in the nude publicly in such activities as running, jumping, throwing the javelin and weights, and wrestling. The aim was to train the body so that a strong, healthy, vigorous, mature woman would evolve, capable of bearing healthy children who would be a credit and of service to the state. Training of girls began at the age of about 7 years and continued until the age of 20 years (unless there was an early marriage). The girls were not removed from their homes as were the boys (who were taken by the state at the age of 6 years). Instead, girls were permitted to remain at home to learn household arts.

In Athenian society the picture was very different. Boys began their formal education at an early age, but girls remained at home and participated in little or no physical sports with the exception of some dancing. Athenian women recognized and acknowledged the superiority of the Spartan women in beauty, strength, and social position.[2]

The Grecian games. In all probability, organized sporting events have been held since the year 1000 B.C. References to such events appear in numerous historical documents dealing with that period. It is conceivable that they may have been held prior to that time as well. However, organized sports, or athletics as we usually identify them, appear to have come into a structured existence with the advent of the Olympic Games in 776 B.C. They were held uninterruptedly at 4-year intervals, wars notwithstanding, for a thousand years.[3] A careful perusal of the descriptions of these religious games shows that, with a few noticeable exceptions, the games were strictly all-male affairs. On occasion limited participation of women in special events was permitted. Harris,[3] who has probably done the most exhaustive research on the history of Greek athletics of that era, states that even though the information on men's athletics is scanty, information on womens' participation in athletic events is even more scarce.

The sum of knowledge of such participation is based solely upon three substantiating pieces of epigraphic information. One, from Delphi, is a base or pedestal upon which at one time stood three statues raised in honor of the three daughters of Hermesianax, citizens of Caesarea Tralles, who distinguished themselves at various games. The first daughter won the stade (200-yard foot race) at both the Pythian and at the Isthmian Games, the first girl ever to achieve such a feat; the second won the war chariot race at the Isthmian Games and the stade at both the Nemean and Sicyon Games; and the third daughter achieved fame by winning the stade at Asclepeia and another event (event and festival not discernible). This inscription dates from the middle of the first century A.D. From this inscription, Harris says that it has been determined that early in the Christian era there were well-established contests for women athletes at the same locales as those for the men—Olympia, Sicyon, Epidaurus, Nemea, Isthmia, and Delphi.

These games appear to have been of considerable size and reputation since girls from Asia Minor crossed to the Greek mainland to participate. Another such inscription commemorating the victory in a girls' race has been recorded from Patrae on the Gulf of Corinth.[4]

Men's athletics were exceedingly diversified, although in terms of importance wrestling came first and then running. The term "gymnastic" meant literally to perform exercises while naked; only the Spartan women performed in this fashion. The women did not participate in the more brutal events such as boxing and the pankration, an event in which there was a mixture of boxing and wrestling. Spartan women, however, did engage in wrestling. Running and chariot driving appear to have been the main types of competition in which the women took part. Plato in *The Republic* proposed athletic training for women and favored fencing and running, suggesting a program of races for girls ranging from the stade, or stadium (approximately 200 yards), up to a race of approximately 1/2 mile (dolichos).[4] It would appear from the very limited evidence at hand that for some centuries Greek girls, lightly clothed, engaged in races at local meetings and school contests and then, in the period marking the beginning of the Christian era, were able to compete in organized games that were held at the various sites for men's athletics.

The Middle Ages

During the Dark Ages, which followed the fall of the Roman empire, and during the early part of the Renaissance, asceticism and later scholasticism virtually eliminated the participation of women, and to a considerable degree that of men, in sports. Asceticism branded anything pleasurable as "sinful," while scholasticism established the feudal concept of chivalry, which permitted little or nothing of a physical nature to be done by women of the higher social classes. During the Renaissance, women began to participate in games again, although such games as tennis, as it was played in that period, were a far cry from the vigorous activity that marks tennis games today. In the seventeenth and eighteenth centuries a number of sports were introduced—tennis, club ball, archery, and handball—all finding immediate favor with the distaff side.

The nineteenth century

With the rise of the turnverein movement in Germany in 1810 and the subsequent development of Swedish gymnastics, provision was made for female participation. Since that time, both in this country and abroad, there has been a steady increase in women's sports activities, with some periods evidencing a sharp increase and others some recession. During the first half of the nineteenth century, athletic activities involving women occurred principally in Germany and the countries immediately adjacent to it. The Revolution of 1849 in Germany caused an exodus of many intellectuals to the United States, where a number of them were engaged as teachers and educators. Their enlightened views concerning the emancipation of women were soon widely disseminated and began to make an impact upon the cultural mores of the day, with the result that sports activities for women began to appear shortly after the Civil War, albeit in a somewhat scattered pattern.

The United States

Women's sports and athletics in the United States, exclusive of gymnastics and gymnastic drills (which were conducted in the American turnvereins instituted in 1859), trace their beginning to the acceptance of tennis as a sport at Mount Holyoke Female Seminary in 1875. Five years later Wellesley instituted crew rowing for women and in the following decade a number of other sports were established (Fig. 1-1). In 1894 Smith began to schedule a modified type of basketball for girls; such was its popularity that by the following year it had spread to the West Coast, remaining strictly a girls' game until 1910.[6]

During the first decade of the twentieth century, women's sports caught on. Many women's colleges had sports programs involving bicycling, tennis, boating, hiking, and basketball; they also participated in intercollegiate competition. Mount Holyoke Female Seminary, upon being presented with an ice rink, not only instituted skating but formed a hockey club as well![4] In 1905 a team of United States women golfers won the English women's tournament in Scotland. In the year 1910 interscholastic basketball was introduced, a sport which virtually swept the Midwest and the South and persisted in popularity for many years. In the 10 years preceding World War I, basketball became the prime sport, involving competition between colleges, high schools, and independent clubs. According to Rice et al.,[6] 22% of the colleges in 1920 had some form of intercollegiate sports for women.

During the 1920s there was a gradual rising tide of opposition to interscholastic competitive sports and athletics. The trend moved toward intramural and playday type of competition. This kind of competition persisted until quite recently and is still practiced in some areas as being preferable to interscholastic competition. During the 1920s, governing associations grew extensively and formulated rules and regulations that severely limited any form of extramural com-

Fig. 1-1. The sports clothing of the 1890s hampered physical performance.

petition. In some parts of the country the philosophy arose that not only was extramural competition unladylike but also that indulging in strenuous activities and competition was physically and mentally harmful to girls and young women. By 1930 the percentage of higher institutions participating in some form of intercollegiate women's competition had dropped to 12%.

This particular philosophy continued well into the 1950s, when in the aftermath of World War II, greater emancipation for women and a changing social pattern, coupled with ever-increasing scientific knowledge, reversed the trend almost entirely. During the last decade there has been a strong movement toward interscholastic and intercollegiate competition for women. The tremendous influence of the Olympic Games has brought to the public an awareness of the values of such competition so that today it has become the "in" thing to be associated with athletics rather than to consider such activity as an anathema.

Olympic competition

The first Olympic competition for women took place in 1900 when they were permitted to compete in swimming and tennis. In 1920 and again in 1924 women competed in these sports and also in fencing in the latter games. Two years later a special Olympic committee was formed to deal with regulation of the sports for women. Although an attempt was made to offer track and field for women in the next games, the response was anything but overwhelming. As a result, during the Olympic Congress of 1930, President Baillet-Latour of the International Olympic Committee attempted to limit women's competition solely to gymnastics, swimming, tennis, and skating. Fortunately the proposal was defeated by a majority vote.[1] Since that day the gates to Olympic competition for women have opened wide. Not only has the program of competition been greatly expanded to include most of the same activities in which the men participate but the total number of female competitors now compares favorably with that of the opposite sex.

Changing attitudes toward female sports participation

Athletics for men developed entirely outside the pale of educational institutions, with the result that for many years the control of such activities at both high school and college levels was totally without administrative sanction, being vested in the hands of former graduates and outside athletic organizations. These organizations operated to control sports completely outside the jurisdiction of the various educational institutions. Professionalism began to make inroads upon amateur sports. A philosophy geared to winning at all costs was among the undesirable concomitants of these organizations.

With the formulation of women's sports programs under the aegis of the various women's physical education departments (or physical training departments as they were then known), an attempt was made to avoid the same pitfall as the men. But the result was that the interim from the mid-1920s until the mid-1950s was characterized by a trend away from strenuous all-out interscholastic and intercollegiate competition in an attempt to keep such activities "feminine" and well within what were then considered safe psychological and physiological limits for women. This was particularly true with regard to competition during the

menstrual cycle, when women were supposed to be completely shielded from any kind of emotional or physical trauma. To compound the situation, numerous "scientific" articles sought to verify woman's biological inferiority to man and her supposed inability to engage in active sports competition.[8] Rousseau, writing in 1762 about the desirable attributes of his future wife "Sophie," stated that "woman is especially designed for pleasing men." Diem quotes the famous German gynecologist H. Martius as stating in 1960:

> It contradicts the dignity of women when they try to establish records with contorted faces and limbs, and when they try to imitate the records of men in the decimal fractions of meters and minutes. For this kind of competition, women should be too proud. This kind of competition reminds us of the official gazette of the German swimming sports in 1895: "We have not lost our nerves in such a manner that we take the bait and we absolutely do not want to know anything of female natation!"*

Coubertin, often called the Father of modern Olympics, was no friend of women's sports where the Olympic Games were concerned. Writing in his *Revue Olympique* in 1912, he stated that the Olympic Games should be the sole purview of men. "Women," he stated, "have but one task, that of the role of crowning the winner with garlands, as was their role in ancient Greece."[1] When one reads statements like this, it appears that there are still those who believe woman's place on the field of competition should not be that of an active participant but rather that of an accessory after the fact.

Over the years most objections to women's sports participation have been subjective in nature, often predicated upon the sentimental thesis that woman is fragile in nature and dainty in appearance. From an esthetic standpoint the appearance of a woman exhibiting physical prowess or indulging in activity to the point of active perspiration was revolting to those who had an idealistic concept of womanhood. Oddly enough, little thought or consideration was given to the plight of the common women who since the beginning of time have toiled in the fields and performed hard physical labor comparable to that performed by their male counterparts. Not too many years ago a well-known female educator was heard to correct a male observer who, with some temerity, had ventured to suggest while observing a class of young women who were engaging in moderately strenuous physical exercise that it appeared to him, upon seeing evidence of perspiration upon their brows (probably because of the high temperature), that it was good for them to sweat. With some asperity the teacher corrected him, stating, "Young man, young ladies never sweat, nor do they perspire. They merely glow!" Today sweating is no longer an unmentionable word but is regarded rather as a natural, healthy biological function, certainly one that the male has no exclusive claim on.

In the mid-1920s an ever-increasing amount of scientific evidence regarding women's sports participation was accumulated using carefully controlled research procedures, but it was not until the mid-1960s that the women educators who controlled the female sports picture began to accept such evidence. The result has been a diametric change in the philosophy governing girls' and womens' athletics and a consequent change in the field of physical education and athletics,

*Quoted by Diem, L.: Rev. Anal. Educ. Phys. Sport **8:**2, 1966. Although this statement has suffered somewhat by translation, its meaning is clear.

a change that is still going on, as evidenced by new programs reflecting a more liberal approach. Today we see unlimited participation of women in practically all sports, especially on the intercollegiate level, and an ever-growing tide of such competition at the secondary school level (Fig. 1-2).

Increased knowledge of the effects of strenuous activity upon the female, coupled with the emancipation of woman from the roles of homemaker and mother, have done much to dispel previous doubts. Live coverage by television of the Olympic Games and other national and international competitive events has permitted the public to see not only that woman is capable of such activity but also that she is undoubtedly benefited by it as well; this has certainly helped in establishing a more positive attitude. Such portrayals have done much to engender enthusiasm in younger girls for participation in athletics. The young woman of today is a far cry from her predecessor of some generations ago. No longer is she the pampered, often self-indulgent young woman given to the "vapors" of mid-Victorian literature and prone to swoon upon any pretext. She is a self-reliant individual, strong and capable of performing activities that call for the highest degree of skill and physical prowess. What is more, she enjoys doing them.

Current trends

Many of the reasons advanced in the past for keeping girls and women from all-out sports participation have been "legitimatized," so-called medical reasons

Fig. 1-2. Modern gymnast Shari Smith, nationally ranked gymnast and member of the 1977 United States Gymnastic Team, demonstrates that clothing styles and performance techniques have undergone radical changes.