

MODERN WOMAN GETTING NEARER THE PERFECT FIGURE

Dr. Dudley A. Sargent of Harvard Denies that She Is Getting Masculine, But She Is Getting More Sensible.

Annette Kellermann Who, According to Dr. Sargent, Is Nearest to a Perfectly Proportioned Woman of the 10,000 Examined.

Rose Pitonoff, Champion Long Distance Swimmer, Whose Remarkable Physical Characteristics Were Specially Studied by Dr. Sargent.

The average waist girth was 25 inches. "On the second day, when the runners were corsetted, we found that the average waist girth was 24 inches. The same distance was run each time by all the contestants, and immediately afterward the average heart impulse was found to be 168 beats per minute. By which it was shown that the corsetting had increased the heart action by 16 beats a minute. "One can form some idea of the wear and tear on the heart and the physiological loss entailed upon the system by the disadvantage that the tight corset imposes. "In order to ascertain the effect of tight clothing upon respiration, the spirometer was tried. The average natural girth of the chest over the ninth rib was 28 inches, and with corsets 26 inches.



Dr. Dudley Allen Sargent, Director, Harvard Gymnasium.

Miss Eleanor Sears, One of the Best Known Athletic Women.

Champion Strong Woman of Smith College, Putting the Shot.

WOMEN to-day have larger feet, narrower hips, and more ample waists than they had twenty years ago, declares Dr. Dudley A. Sargent, Director of the Harvard Gymnasium at Harvard University. These conclusions he has reached after a study of the physical proportions of 10,000 women students.

Are women therefore more mannish? Dr. Sargent, who was found at the barn-like gymnasium at Cambridge which has had a greater influence over American manhood and womanhood than any other institution devoted to physical development, was asked this question. He was in his private office, which was hung with physiological charts, and where a composite statue of a woman, made from the actual measurements of more than 6,000 women students, stood on a block behind his chair. Before speaking he eyed his visitor quizzically.

"Well, are they?" he challenged. Answering his own question, he continued: "It is true that in the last twenty years the proportions of women have changed in these three respects. It is a change for the better, I believe, very firmly. The American woman of to-day is becoming more like the Greek ideal of the beautiful. She substitutes harmonious curves and symmetry for exaggerated and the distinctly feminine characteristics.

"But I do not say that she is becoming more mannish. She is coming to her normal development. Neither do I say that because some proportions of men are smaller than they were a half century ago that men are becoming womanish.

"What are all our Christian Associations and colleges for except to refine man in a man's way, and to refine woman in a woman's way. To produce a nobler race we must seek to preserve the peculiarities of each sex." Dr. Sargent believes that women are just beginning to come to their birthright. Said he: "Because women are developing along new lines, it does not mean that they are deteriorating as a sex. Because a woman is three or four inches larger around the waist than her grandmother was at her age does not indicate that she is less womanly, does it? The professional woman who works with her mind like a man does not feel that she is unsexing herself in doing it.

"No one will deny that the exaggerated proportions of the woman of half a century ago were unideal. They were so because they were caused artificially. In the savage state the male and female greatly resemble each other. Go among the Indians, some of them, and you can hardly tell man and woman apart. In woman of primitive ages there probably was no waist line as we know it to-day, and since the hips of the woman were so much wider than those of the man, the waists also were proportionally greater.

"In the early history of the race women lived only by grace of the men they were able to please. Through centuries of personal contact with merciless savages, and bold, unscrupulous and egotistic men, women have acquired certain mental traits, such as ability to please and love

of approbation, which have helped them survive in the struggle for existence.

"At the time of the worship of the beautiful by the Greeks, women quickly discerned the harmonious curves and symmetrical lines that received the approval of the men of that age, and fashioned themselves accordingly.

"Then, as soon as the moral fibre of the Greeks grew lax, the courtesans set the fashion. In order to make the hips more prominent the graceful curve of the pelvis was gradually increased by constricting the waist with a many-layered girdle. This custom was carried to such an extent that Hippocrates vigorously reproached the ladies of Cos for too tightly compressing their ribs and thus interfering with their breathing powers.

"For three thousand years the art of corsetting has flourished. Women have laced their children, and men, even soldiers, have worn corsets to enhance the elegance of their figures. Hence in this way women have become overwomanized. Their femininity has been exaggerated. It is not the true womanliness that has been nurtured so tenderly for all these years, but it has been the grosser attributes."

Several years ago Dr. Sargent made some experiments upon a dozen young women to ascertain what influence tight clothing had upon them.

"They were to run 540 yards in their loose gymnasium garments," he says in describing these experiments, "and then run the same distance with their corsets on. In order that there should be no unusual excitement of the heart, or depression after the first test, the second trial was made on the following day. The running time was 2 minutes and 30 seconds for each person at each trial.

"Before the test of the first day we found that the average heart impulse was 64 beats to the minute; after running the heart impulse was 152 beats to the minute.

When corsets were worn the average lung capacity was 134 cubic inches; when the corsets were removed the test showed an average lung capacity of 167 cubic inches—a gain of 33 cubic inches. Who can estimate the value of this difference to the entire system? The tightly corseted woman throws away 20 per cent. of the fresh air that she breathes.

"Now is there any doubt," continued Dr. Sargent emphatically, "that the larger waist is not an improvement. True beauty consists of symmetrical and proportionate development of parts with adipose enough to cover the angles and hollows. The skater, the fencer, or the premiere danseuse will have this style of development, if she exercises wisely. It may be attained by such exercises as running, walking, rowing, swimming, tennis, or gymnastics where the lower limbs and body are actively used and the circulation and respiration are not impeded by tight clothing.

"The hipless women of the fashion plates," he continued, "with the larger waist, indicates that woman is progressing. The styles to-day are far more sensible than they were twenty years ago. What is exaggerated and less refined in a woman's figure is now considered unfashionable. And this is due to woman's aroused determination for a normal physical development.

"Besides improper corsetting there has been another bugbear—the way of her advancement. This is none less than the 'proprieties.' At Wellesley College, several years ago, the Physical Director, Miss Lucille Eaton Hill, had the greatest difficulty in getting members of the college crew to wear bloomers and use the sliding seats that the men use. It was considered 'unladylike.' Previously the students, I am told, rowed while they were wearing stiff corsets, and exhibitions found them gowned in silks and muslins and wearing sashes. Prejudices like this still persist, though to not such great extent."

"Should girls and boys engage in the same exercises?" Dr. Sargent was asked. "Yes," he said. "Up to ten years of age any exercise that will benefit a boy will be just as valuable to a girl. Between ten and fourteen years of age girls should take lighter exercise, and they should also take frequent periods of rest. After

that age it is a question of time and amount and degree, rather than quality. As a general rule girls need more exercise than they get, not because they should have greater muscular strength, but because of the good influence that well-developed muscles have upon the brain, nerve centres, and other parts of the system.

"Is there danger of making the future woman masculine, Dr. Sargent?" "I cannot say. When a woman does a man's work, she becomes mannish. For instance, take the women cab drivers in Paris. Coarsening influences surround them. They are subjected to all the inconveniences that the men are subjected to. They are exposed to all the bitter weather. And more than that, their occupation calls for the exercise of the heavier, coarser muscles.

"Many of them look like men. And it is no wonder that they become unsexed. There is a physician in England who has made an exhaustive study of the effects of overexercise among women. In this country, though, I cannot think of any parallel to the case of the woman cab driver.

"The great question is not, Shall woman do man's work? That is answered, She shall not. What we are worrying over just now is, What is woman's work? How much of the work now done by man is not as rightfully hers as his? You know the civilized world women already outnumber men. Why should she not have an equal chance to perfect herself physically, mentally, and morally?"

"Each sex in its higher development should preserve its own peculiarities. No greater calamity could befall a race than assimilation of the sexes. Any tendency for the woman to approximate a man's physique would be a bad thing. "Anthropometrists have shown that women are smaller than men, and that they grow more slowly after the age of fourteen. They also complete their growth two years earlier. According to biology, this earlier arrest of individual development is necessitated by the reserve of vital power to meet the cost of reproduction.

"Preparations for maternity have required certain differences in the woman from the man. The woman is relatively broader in the hips. I have stated that

women are narrower in the hips than they were twenty years ago, but I wish to make myself clear that this is due only to the loss of adipose tissues. The bone formation of the pelvis has suffered no change. It is natural that woman should be broader at this part of the body for the proper fulfillment of her functions.

"Another sex peculiarity that must be preserved is the bust. There are many men and women living to-day who have suffered all their lives because they were ill nourished as children. When the mother is so poorly developed that the child must be fed artificially, the race suffers. Many physicians are now laying greater emphasis upon breast feeding." Dr. Sargent, who is the foremost authority upon the physical development of women, has collected measurements of over 10,000 women students. From Wellesley, Radcliffe, Smith, and Vassar have come many hundreds of business-like measurement cards, which he has utilized in reaching his conclusions.

Several years ago he directed the modeling of two nude figures, which represented the typical male and female, as found among college students. The ages selected were between eighteen and twenty-five years. H. H. Kitson of Boston he chose to model the male figure, and Miss Theo Alice Ruggles, who is now Mrs. Kitson, he chose to model the female figure.

Never has Dr. Sargent found either the ideal male figure or the ideal female figure, he says. Among the many thousands who have been examined at the gymnasium, not one has fulfilled every requirement. Annette Kellermann, the professional swimmer, whom he examined not long ago, is near the ideal type, he says.

Dr. Sargent's measurements of Miss Kellermann are as follows: Weight, 137 pounds; height, standing, 64.5 inches; height sitting, 54.6 inches; height to knee, 16.3 inches.

Girth measurements: Head, 21.3 inches; neck, 12.6 inches; chest, 33.1 inches; chest, full, 35.2; ninth rib, 32.7; ninth rib, full, 35; waist, 26.2; hips, 37.8; thigh, 22.2; knee, 14; calf, 13; ankle, 7.7; instep, 8.7; upper arm, 12; forearm, 9.4; wrist, 6.9; shoulder, 36.6.

Depth measurements: Chest, 7.9 inches; abdomen, 6.9; head, 7.0.

Breadth measurements: Head, 5.9 inches; neck, 3.7; shoulder, 15.4; waist, 8.7; hips, 18.9; length of arm, 16.5; shoulder to elbow, 14; elbow to tip, 16.7; stretch of arms, 65.

In some instances the girth measurements from right limbs are slightly larger than those of left, as is often the case. Miss Kellermann's foot is 9 inches long and she wears a number 8 shoe. The well-trained young woman is superior to the well-trained boy in swimming, Dr. Sargent states. At the age of fifteen, he says, she will surpass him every time. Of the physical characteristics of little fifteen-year-old Rose Pitonoff, who has won the championship in long distance swimming not only from adult men but from Annette Kellermann, he has made a special study.

A week after her famous swim from Charlestown Bridge to Boston Light, a distance of twelve and one-half miles, Dr. Sargent measured her. He only regrets that no observations as to body weight, temperature, condition of heart, &c., were obtained the day she made her record.

Her measurements are as follows: Age, 15 years 4 months; weight, 114 pounds; height, 4 feet 10 inches; height sitting, 31; girth of head, 21½; girth of neck, 12½; girth of chest, 32½; girth of chest, full, 38½; girth at ninth rib, 30; girth at ninth rib, full, 31½; waist, 26½; hips, 38½; thigh, right, 21½; thigh, left, 21½; calf, right, 14; calf, left, 14; upper arm, right, 11; upper arm, left, 11; forearm, right, 9.4½; forearm, left, 9.3-9.5; stretch of arms, 59.3-6; capacity of lungs, 140 cubic inches.

"Some of the factors which have enabled Miss Pitonoff to accomplish this remarkable athletic performance," says Dr. Sargent, "are the following: The quick metabolism of youth, less body surface for radiation in proportion to weight than most girls of her age; muscles covered with a layer of fat; favorable anatomical structure; slow returning circulation; peculiar stroke; prolonged practice in swimming; unemotional nature; good habits of living, supplemented by high moral courage and steadfastness of purpose, and a determination to accomplish the object in view."

But Dr. Sargent refuses to say women as a class are superior to men as long distance swimmers. The crux of the matter, he believes, is the question of withstanding cold. The adult female, he says, weight for weight with the adult male, probably dissipates less heat than the male because of her relative abundance of subcutaneous fat. Should the athletic man recover from his contempt for fat, he says, he would prove the equal, if not the superior, of women in swimming.

Is woman's new athletic development beautiful? Dr. Sargent declares that it is normal, and he asseverates that it is not mannish. How does the new type look from the aesthetic point of view?

Probably no one is better qualified to answer that question than the sculptor of the feminine type represented in Dr.

Sargent's composite measurements. Mrs. Kitson said "yes" immediately, when asked if women were becoming more graceful. "The proportions of the Greek statues are still taken as standards of beauty," she began, "and I am sure the women of to-day are becoming more like them. Venus de Milo would be much less conspicuous now, were she to adopt the present fashions and walk down Fifth Avenue, than she would have been twenty years ago.

"Women twenty years ago were distorted by their dress. They wore bustles, they laced their stays tightly. They did everything to conform to an ideal which in itself was hideous. Women have developed in so many ways, mentally as well as physically.

"No, I should not say that the three changes that Dr. Sargent speaks of—the larger feet, the more ample waist, and the narrower hips—tend to make woman mannish. True womanliness lies far deeper than mere physical proportions. It is in her manner, in her thought, and in her relation toward other people. A woman may have as much strength, relatively of course, as a man. Whether she is womanly or not depends upon the way in which she uses it.

"I think the suffragettes in England could use their physical strength to better advantage than in their militant actions. Please don't think that I am criticizing the whole movement, for I am not. I think any woman has the right to develop enough physical strength to break windows, but I think that whether she is womanly or not depends upon the way in which she uses that strength. If she chooses to break windows of public buildings she is mannish. If she chooses to use it in her home, and there is an opportunity for all the strength and physical endurance that a woman has in her own sphere, she is showing womanhood."

"Do you see the changes that Dr. Sargent mentions in your own models?" Mrs. Kitson was asked. She paused thoughtfully before answering. "In a measure, yes, though models are in a separate class. It is their profession to preserve characteristics which will make them of service to the sculptor in realizing his ideal. If I were to walk down the street, however, and select a woman from the crowd whom I believed most representative of the women of today, I am sure that she would have the larger waist that Dr. Sargent speaks of.

"Was the typical woman that I modeled for him beautiful?" Mrs. Kitson shook her head. "I cannot say that she was. She was the average woman. She was not the woman who had made a specialty of physical beauty. The measurements were taken from college students, and some of the many individual models were what they call grinds. No, she was not ideal in any way. Though I suppose that you would grant that she was a rather good-looking young woman. I should say that the model which Dr. Sargent found to be typical fifteen years ago was undeveloped."