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By the 1890s, the seeds of change in women’s dress had been planted. Inevitably, they came from outside the world of fashion. The dress reformers who elected to wear the “rational dress” at the Chicago Columbian Exposition in 1893 argued that the sight of many women attired in the revolutionary costumes would go far towards convincing a frankly skeptical nation that simplified clothing was preferable to the fashionwear of the day.¹ They readily admitted that the reform dress on single individuals would be “almost sure to be condemned as ugly at first sight,” just as the original bloomers were, even as they argued that it wasn’t any “intrinsic ugliness” that caused their downfall. Instead, they explained, it was “their oddity.”² It is interesting to note that the Chicago fair and the introduction of women’s basketball occurred in the same year. While dress reform as daily attire failed, the gym suit was just getting started. No doubt its success was the result of its specific application for wear in the gymnasium, for playing a game. There was no ambiguity about its usage: so it is to that usage we turn to see how clothing for sports achieved what decades of earnest reformers had failed to do.

The turn of the century must have been a heady time for young college women. Here they were, breaking from tradition, few in numbers but already the focus of the popular press as they sought higher education, already held up for comment, both positive and negative. Even those from
modest backgrounds stepped into the spotlight by virtue of their enrollment in one of the colleges and universities mushrooming throughout the country. Because the women who chose to be educated were extraordinary for their day, and were, almost by definition, outside the mainstream, it is not surprising that they, above all others, rapidly adopted the new clothing for exercise. Indeed, they carried that clothing into the wider world.

A wonderful example of how that was accomplished may be found among the pioneering women biologists who did their fieldwork at the Marine Biological Laboratory at Woods Hole, Massachusetts. Their experiences demonstrate the struggles that women faced in achieving success as scientists, hampered not only by society’s expectations about their behavior but also by the physical constraints of something as basic as their clothing in a discipline that took them wading in the water. Through them, we see how the new gym suits and bathing suits of the day began to fill the needs of women whose lives were changing, who required more comfortable and sensible clothing to do their work, and to do that work in public.

Gaining “marine experience” was a popular pastime of the Victorians. Young ladies especially enjoyed observing the flora and fauna of the seashore and recording what they found in their art. One such young lady was Mrs. Alfred Gatty, who collected “and mounted seaweeds and sold them to make a living.” She published one or more books that she illustrated in color, using seaweed to create the images. The marine biologist R. F. Scagel noted that women played a large role in British marine biology, “and it is my understanding,” he said, “that the science grew out of the art. Some of these ladies making pretty pictures with seaweeds wanted to know more about them and began studying them.” Mrs. Gatty was one of the few women—indeed, as far as I know, the only woman—to record her thoughts about her clothing while on her collecting expeditions. So unusual and compelling was her observation that Scagel included it as a preface to his treatise on marine algae in British Columbia and northern Washington. Gatty remarked in 1872:

> About this shore-hunting... many difficulties are apt to arise; among the foremost of which must be mentioned the risk of cold and destruction of clothes. The best pair of boots will not stand salt water
many days—and the sea-weed collector who has to pick her way to save her boots will never be a loving disciple as long as she lives. It is both wasteful, uncomfortable, and dangerous to attempt sea-weed hunting in delicate boots. As for the hardier hunters who have learned to walk boldly into a pool if they suspect there is anything worth having in the middle of it, they will oil their boots. Next to boots comes the question of petticoats; and if anything could excuse a woman for imitating the costume of a man, it would be what she suffers as a sea-weed collector from those necessary draperies! But to make the most of a bad matter, let woollen be in the ascendant as much as possible; and let the petticoats never come below the ankle.  

Mrs. Gatty was an amateur, gathering specimens for her art. As such, even though her work had given her much knowledge and experience in the field of seashore collecting, she had no standing in the scientific community of her time. This situation was the norm. As we have seen, however, the last third of the nineteenth century was a period of new beginnings. So it was for women in science, and to tell their story in America, we turn once again to Mount Holyoke College (still Seminary then), to Cornelia Clapp. She arrived to teach at Mount Holyoke in 1872 and retired as head of zoology in 1916, having shaped the development of the discipline there and encouraged young women to study science throughout her long tenure. In 1874, barely a year after her arrival, she spent the summer at Louis Agassiz’s Anderson School of Natural History at Penikese Island off Cape Cod. Agassiz, one of the greatest scientists of his day, a teacher at Harvard and a founding father of American science, believed in the dictum “Study nature, not books.” That summer, Clapp learned to collect marine organisms and study them from life. She and other colleagues who studied at Penikese brought that philosophy back to Mount Holyoke, where her department became well known into the late 1960s for its emphasis on the study of living (or recently living) animals.

It was this same Cornelia Clapp who also taught gymnastics at Mount Holyoke throughout the 1870s and 1880s. Accordingly, it is not surprising to learn that her students, as one wrote to her parents in 1877, were sent out to collect “bugs and things” from the woods, streams, and fields surround-
ing the campus. Nor is it a surprise to learn what they were wearing for that activity, so unusual for girls of the day. The clothes were identical in style to the crew uniforms at Wellesley, made according to Clapp’s guidelines, but they were worn both for outdoor exercise and collecting at Mount Holyoke. A photograph taken sometime in the 1880s, shows a group of students crouched beside Stoney Brook, the stream that flows through the campus. At first one might think they were picnicking, but a closer look reveals that the girl on the far left holds a net, and there are containers on the bank that could hold specimens. Rather than enjoying leisure time, these students were working, collecting organisms that lived in the water. The clothes—clearly matching, clearly uniforms—allowed them to do that with ease. They are all wearing the same baggy bloused tops and gathered skirts, even the same style of shade-giving hats that the Wellesley crews wore. A pair of rubbers sits on the rock beside them—the kind that the 1886 Bloomingdale’s catalogue called “Ladies’ Croquets,” situating them firmly in the world of sports and outdoor games. They sold for forty-five cents a pair. Here they were meant to protect delicate feet from the wet bank of the stream if a girl pushed out too far with her dipping net. More
than anything else in the photograph, these rubbers, laid out ready for use, clinch the argument that we are looking at a collecting expedition. It seems clear, then, that Clapp the biologist recognized the benefit of the comfortable, sensible clothing that she recommended as a gymnastics teacher, and had the imagination to extend its use beyond the confines of exercise.

Cornelia Clapp, an enthusiastic field biologist, studied with the greats of her time who were establishing the field. Interestingly, and following the pattern set by Mrs. Gatty and her ilk, much of the early aquatic scientific work in the Northeast was both done by and supported by women—as donors (such as the Women’s Education Association of Boston), as students, and as investigators. Several unsuccessful attempts to establish marine teaching laboratories finally led, in 1888, to the founding of the Marine Biological Laboratory (MBL) at Woods Hole on Cape Cod, today an internationally known center for marine biology. Clapp was there every summer from the start. Indeed, when her work there inspired her to get her Ph.D., she took a leave of absence from Mount Holyoke to study at the newly founded (1890) University of Chicago. She completed her degree in 1896 at the age of forty-seven. Her own experience led her to encourage her colleagues at Mount Holyoke to complete doctorates as well, thus beginning the tradition of highly educated and trained women scientists that Mount Holyoke has been known for ever since.

She continued her affiliation with the MBL, returning every summer to Woods Hole to work first in the lab, then the library, and finally as a trustee until her death in 1934. But she wasn’t the only woman there. Photographs reveal that there were many others. They also reveal the onerous conditions under which women had to work—conditions they perhaps never seriously questioned.

An 1895 photograph from the MBL archives tells the story. Of the twenty or so people in the picture, fourteen are women. Everybody is involved in digging, inspecting, collecting with nets, and all are working in and out of the water. A look at their clothing is edifying. The men wear hip boots, roll their pants above their knees and wade barefoot; at least one wears knickerbockers with soft shoes. This is the clothing of sport. Another kneels in the water, protected by his hip boots. They wear sweaters and shirts, some with their sleeves rolled up. But the women! Doing exactly the same work, they uniformly wear long skirts that have been shortened to
Collecting party at Cuttyhunk Island, 1895. Note that all the men wear practical clothing; the women do not. Courtesy of Marine Biological Laboratory Archives, photo by Baldwin Coolidge.
just above their ankles in an era when fashionable skirts invariably covered the foot. Deep, bunchy—and probably home-sewn—hems raise the skirts on the two women wearing lighter-colored skirts (probably wool, as Mrs. Gatty suggested). At least one of the others, very daring, has hiked her skirt up between her legs rather like a diaper and secured it through a ring device on the front, making it look as if she were wearing trousers. She is not. In a different but infinitely more customary convention, the woman using the dip net in the foreground bends her knees, keeping her straight back rigid, clear evidence of the inevitable corset. Of the fourteen women, only two are bare-headed.

From our vantage point, these women seem almost unbelievably constrained by their clothing. It is startling, then, to realize that all of them are wearing some version of what amounts to new and even reformed dress—the shirtmaker and skirt of the New Woman. The “New Woman,” the social phenomenon of the 1890s, referred to women such as these: women seeking reform, women who worked, women who sought an education, women who needed sensible clothing that was relatively inexpensive and more easily laundered. Although menswear was being machine manufactured by this time, only select items of women's clothing were mass-produced: outerwear, underwear, and shirtwaist blouses. This last, combined with a flaring skirt, became the “uniform” of the period, much as jeans and T-shirts are in our own time. Many of the shirtwaists in this photograph are worn with men’s-style ties in the fashion of the time. All of them have the full puffed sleeves of the 1890s. Not one woman has rolled her sleeves up, even though their hands must have been constantly in and out of the water. By contrast, none of the men wears a tie. Indeed, at least four men wear jerseys or sweaters, also relatively new inventions of the period, taken from the world of sports.

So the conventions of fashion bound women at this time, even though men showed them a different model. The only thing these women are wearing that bows to their practical needs (unlike the earlier Mrs. Gatty) is a good pair of boots, tight-fitting, mid-calf, and likely made of rubber. Rubber galoshes had been developed in the United States as early as the 1830s, but rubber boots (or wellingtons) weren’t developed until 1885, after Mrs. Gatty’s time. However, something called “Arctic overshoes,” another American invention, had been in production as early as 1872, and incorporated a
rubber galosh with a felt top. By the mid-1890s, then, these women could choose from a variety of footwear suitable for wading in the water, and in this photograph they clearly seem to be wearing them.\(^6\)

Like people in every age and society, all these women were wearing clothing dictated by the social mores of their day. To do their work, they made slight adjustments, but not enough to unsettle the conventions of the period. Other photographs from the same time show women working in the lab at Woods Hole or relaxing after the day is over. All wear very conventional clothing; after all, they were working and socializing in mixed company. Thus the Mount Holyoke girls could wear their gym suits while gathering samples within the secluded confines of the campus, but even twenty years later, these same college-educated women did not have that freedom when they were interacting with their male colleagues on Cape Cod. Indeed, it would take another fifteen years before the clothing for sport could be adapted for work by the women biologists at Woods Hole.

A rare photograph of Ellen Swallow Richards, taken at Jamaica Pond outside Boston in 1901, bears this out.\(^7\) Perhaps best known today as the founder of home economics, Richards was the state water analyst for Massachusetts and the first woman faculty member at MIT, in sanitary chemistry. Interested in the public health implications of water quality, she is shown here, accompanied by a man, gathering algae with what appears to be a small kitchen pot and a shallow kitchen ladle—suitable, one must agree, for the founder of home economics. To do this, she is wearing a dark, sober outfit, long skirt tucked around her feet, and a matching straw hat—all in the fashion of the day. As one of the leading women scientists of her time, she could have set a new standard of dress for the job if anyone could. But by the time this photograph was taken, she was an older woman, most likely firmly captured by her generation’s conventions. Besides that, she was in a suburban setting with a man accompanying her, both conditions that would stifle any thought of adopting clothing more suitable for her work.

To judge by the photographs in the MBL archives, it wasn’t for another decade, until 1909 or 1910, that women working with men finally wore innovative dress, the clothing for sport and exercise, as their dress of choice when collecting samples in the field. By that time, the phenomenon of girls playing team sports in college and wearing gym suits with bloomers had been folded into popular acceptance. The gym outfit, by now a combination
of heavy black bloomers and the new hip-length white middy blouse with its black tie, was a great improvement. It was washable cotton, its long sleeves could be rolled to the elbow or it even could be short-sleeved, a real innovation. It was lighter in weight, perfect for warm weather and physical activity, and it was a huge success from the beginning. Based on the midshipman’s uniform, long, waistless, and worn loose over the bloomers or skirt beneath, it became the uniform of the American schoolgirl, heralding a new silhouette that would remain the rage of fashion for the next fifteen years or more.

So what part did it play at the MBL? A photo from the summer of 1910 shows the women in middies, but still upholding the “skirt convention” as they tramp with male companions over the boulders of the rocky coast. That same year the women wore their bathing suits, cut on similar nautical lines, to collect. The next year, the women broke the skirt convention and wore either their bathing suits or their gym suits for collecting in the water. A few wear their middies with bloomers, while others wear a variety of bathing dresses, all covering the body in appropriately modest fashion. Of course, they still wore the long black stockings that never entirely went

Ellen Swallow Richards collecting samples at Jamaica Pond, 1901. Courtesy of Sophia Smith Collection, Smith College.
Women in middy blouses and “short” skirts tramp companionably over the rocky shore at Woods Hole, 1910. Courtesy of Marine Biological Laboratory Archives.
Collecting at Kettle Cove, about 1911. More practical wear—both gym suits and bathing suits—appear at this time. Courtesy of Marine Biological Laboratory Archives, photo by Gideon S. Dodds.
away until the mid-1920s, in contrast to the man striding through the water with his pant legs rolled up above his knees. One woman, however, seems oblivious to her long skirt dragging in the water—obviously a holdover from the earlier, more conventional times. So, finally, some fifteen years after the earliest photograph of researchers collecting, the women are free to bend, stretch, get wet, and enjoy a modicum of comfort because they have adopted the clothing they normally wore only for sport. The revolutionary middies were so welcome by this time that they were adopted for general summer wear. Two pictures from 1911 show two versions, one the standard white, the other dark. Both are worn by women on board collecting ships from the MBL. The short skirt and the white tennis shoes are both still worn a hundred years later—a testimony to the practicality of sporting clothes as they evolved in the early twentieth century.

A major factor here is that all these women were probably students or faculty from colleges and universities around the country. They were therefore used to seeing and wearing this unconventional type of dress, especially when away from the reach of urban proprieties. Once again, though, a picture of a social gathering at the MBL reminds us that sporting dress was limited strictly to non-social events. The clothing for both men and women is very different here: feminine dresses for the women and tailored suits for the men, even in the Cape Cod summer setting of the MBL. Although the transition to functional clothing was well under way for the aquatic biologists of the Northeast then, the conventions of polite society still held sway. Nevertheless, the clothing these women were used to for athletics and exercise in their universities had begun to transform their work, to facilitate the ease of collecting.

Those biologists were ahead of their time. In the 1920s and 1930s, trousers for women finally came into their own, first as knickers, then as slacks. As yet not fully accepted in all situations, both were worn only for leisure, away from the city. In 1924 Cornelia Clapp noted the effects of the new, relaxed fashions on South Hadley. “The old ladies on Park Street,” she observed (she herself was seventy-five at the time), “have been scandalized by the appearance of bare legs—Girls and boys going to swim in the Upper Lake. They have not had the advantages of Woods Hole!”

By the late 1950s the transformation was complete. In informal situations, neither bare legs nor trousers for women were cause for comment any
A woman aboard an MBL collecting ship wearing a standard version of the middy, about 1910. Courtesy of Marine Biological Laboratory Archives, photo by Gideon S. Dodds.

“Frantic’ takes a drink,” about 1910, wearing a dark version of the middy with a matching skirt—clothes for sport. Courtesy of Marine Biological Laboratory Archives, photo by Gideon S. Dodds.
Ann Haven Morgan collecting in menswear, her customary choice, 1945. Courtesy of Mount Holyoke College Special Collections and Archive.
longer, especially on college campuses. Indeed, we see photographs of aquatic biology students at Mount Holyoke collecting in a stream, wearing hip boots, rolled chinos, denims, or bare legs, all in the casual American style based on the cut of men’s clothing. The female instructor shown here, who had taken Clapp’s place after her retirement in 1916, adopted male dress for her own personal style in the 1920s and never gave it up. Did she influence her students in their dress? Since no evidence exists, we can only guess. That adoption of male dress among a certain segment of women in the 1920s may have played a very significant role—one that hasn’t been explored yet—in the acceptance of trousers for women. But this was a time when many new influences were changing the face of the nation, and indeed the world. The date of this picture is 1938, immediately prior to World War II. The clothing of the women aquatic biologists reflected the new role of sportswear in all walks of American life. Finally, women were dressed as casually, as personally, and as functionally as any man had been in the 1890s, forty years before.