Women's Intellectual Contributions to the Study of Mind and Society

Students, as part of an advanced seminar, examined and wrote about the lives of these women, their intellectual contributions, and the unique impact and special problems that being female had on their careers.

CHRISTINE LADD-FRANKLIN

by Samantha Ragsdale

(1847-1930)

Christine Ladd-Franklin was a psychologist, a logician, a mathematician, and at times an aspiring physicist and astronomer. She is known for her bold expression of her ideas and theories, in an academic environment that was often less than welcoming. Despite the forces working against her, she managed to accomplish remarkable feats. Laurel Furumoto (1992) (1994), who has extensively researched her life and work, observes that:

> "There were many enabling influences in Ladd-Franklin's life that served to counter the larger societal forces working against her entry into a scientific career. These included a mother and a maternal aunt who were women's rights advocates; a concerned and supportive father; an undergraduate professor who provided a role model ... and marriage to a fellow academic who encouraged and supported her work" (Furumoto, 1992, p. 176).

In no way should those factors minimize her accomplishments; Ladd-Franklin was undeniably an extremely intelligent and determined woman. Consideration of these influences does, however, provide a framework for understanding her life in terms of the cultural climate of this time in history.

Christine Ladd-Franklin, sometimes known as Kitty, was born on December 1, 1847, in Windsor Connecticut. She was the oldest of three children to Eliphalet and Augusta (Niles) Ladd, who were both from colonial New England. Her brother was Henry Ladd and her sister, Jane Augusta Ladd McCordia. She also had two half-siblings from her father's second marriage, Katherine and George Ladd. Her father was a successful merchant in New York City, where her family lived until Christine was six years old, when they moved to Windsor, Connecticut.

Her mother, Augusta, and her aunt Juliet Niles were "both staunch supporters of women's

rights" (Furumoto, 1992, p. 176). Even as a toddler, Christine was attending women's rights lectures with her mother, such as one given by Elizabeth Oakes Smith. In a letter to her sister, Riar, Augusta once wrote of Elizabeth Oakes Smith's lecture, saying "women belonged not only in the pulpit, a place for which they were 'peculiarly' suited, but also 'every place where a man should be' " (Furumoto, 1992, p. 176). Christine's mother, Augusta, died of pneumonia when Christine was only twelve years old, at which time she moved to Portsmouth, New Hampshire where she spent her adolescent years with her father's mother. Christine spent two years at the Wesleyan Academy in Wilbraham, Massachusetts, where she followed the same track of courses as the boys who were being prepared for Harvard. She proceeded to graduate in 1865 as valedictorian of her class (Hurvich, 1971) (Furumoto, 1992) (Grinstein & Campbell, 1987).

Although her family, and as a result Christine herself, at first questioned the wisdom of her pursuing her education further at Vassar College, she eventually convinced her family that she should attend. Her diary entries reveal her joy at the decision, "Vassar! Land of my longing! Mine at last," but her concerns as well, "Is it really for the best? I confess I have misgivings - everyone is so opposed to it" (Scarborough & Furumoto, 1987, p. 121). She finally convinced her grandmother that it was best that she get an education and take care of herself, because of her slim chances at marriage. She argued that the overabundance of women in New England and her commonplace looks rendered her unlikely to marry. At this her grandmother agreed.

Her aunt on her mother's side, Juliet Niles, agreed to financially support her Vassar education. In 1866, Christine entered the second class of Vassar College. She was there for one year, when she took a year off to teach in Utica, New York and study independently - presumably because of financial difficulties. During her year away from Vassar she is said to have, "practiced piano, read in three or four languages, worked problems in trigonometry, and collected 150 botanical specimens" (Grinstein & Campbell, 1987). As the many areas she pursued in her career and personal time indicate, her interests and talents were vast. With additional assistance from her aunt, she then returned to Vassar for a second year, and in 1869 received her A.B. degree (Hurvich, 1971).

Vassar proved to be a great influence in her developing interest in science, as well as her passionate involvement in women's rights activism. A female astronomy professor, Maria Mitchell, was a role model and inspiration to Christine while at Vassar. She encouraged her, as a woman, to pursue her interests in mathematics and science. Christine regularly attended women's rights lectures and activities at Vassar. The year she graduated, she wrote two letters to her Aunt discussing women's rights awareness at Vassar. She wrote: "We are not so secluded as not to hear some discussion of Women's Rights here" and "I am delighted to find that Hartford is so far waking up to the state of the times as to admit a Women's Rights Convention within its sacred precincts" (Furumoto, 1992, p. 176; Furumoto, 1994; Scarborough & Furumoto, 1987).

In addition to the encouragement of her mother and aunt, the financial support of her aunt and her exposure to the women's suffrage movement, Christine benefited from her father's on-going support of her academic endeavors and intellectual growth. Despite his initial reservations about her attending Vassar, his letters to her, which continued into her mid twenties, "conveyed intense interest and concern for her welfare and the progress of her education ... infused with warmth, humor, and tenderness" (Furumoto, 1992, p. 176). Although even her enlightened father revealed the "commonly held notion that excessive mental activity could jeopardize a young female's physical health and well-being," his support was undoubtedly remarkable (Furumoto, 1992, p. 176). He wrote, "You must do all you can to improve yourself now, but I do not wish you to study at the expense of your health, good health first, and then study" (Furumoto, 1992, p. 176). During her first year at the co-educational Wesleyan Academy in Wilbraham, Massachusetts, he wrote, "All you want is a little more courage you can do as well as anyone I have no doubt, so do not be afraid but go ahead and do your best. And my

word for it you will have as good an essay as anyone in the school" (Furumoto, 1992, p. 176). While she was at Vassar he wrote, "I was pleased to see that you passed so good an examination in all your different studies and I trust you will stand No. 1 in your classes though I suppose that you will have abler contestants that at Wilbraham but then you must fight the harder" (Furumoto, 1992, p. 176).

During the year that Christine left Vassar to work, her father wrote to her praising her initiative and growing independence, "We all miss you very much and wish you was at home but it is for your advantage and good to have some occupation and to be of some use in the world and acquire habits of independence, and self-reliance and know that if you have health you can take care of yourself" (Furumoto, 1992, p. 176).

At this time Christine was most interested in physics, but because she was not allowed access to the laboratories, she pursued mathematics, an area that a woman could engage in more independently. Years later she reflected on this period of her life, saying that "had it not been for the impossibility, in those days, in the case of women, of obtaining access to laboratory facilities" she would have eagerly pursued physics. Instead she pursued what she called "the next best subject, mathematics, which could be carried on without any apparatus" (Furumoto, 1994, p. 98). For the next nine years after graduating from Vassar, she was an instructor of science and mathematics in secondary schools in Pennsylvania, Massachusetts, and New York and published multiple articles on mathematics in Educational Times in Great Britain. Her diary entries indicate her growing distaste for teaching. She wrote, "Sunday evening is the most miserable time of all the week. The burdens of the morrow look impossible to be born. Teaching I hate with a perfect hatred...I shall not be able to endure it another year" (Scarborough & Furumoto, 1987, p. 122).

Presumably in an effort to escape this vocation, she applied to Johns Hopkins University as a graduate student, a university not traditionally open to women. A fellow contributor to the publication, Educational Times, who was familiar with her work, James J. Sylvester, noticed her name on a list of applicants and urged the university to admit her. In 1878, she was accepted on the terms that she would only attend his lectures. One year later, with growing acknowledgment of her work, she was admitted into other lectures and given the stipend of a fellow, which she would hold from 1879-1882. Though she received the stipend, the formal title of "fellow" was withheld. She was not granted regular admission either; rather than being on the lists of students, her name was recorded by a special note.

During her studies at Johns Hopkins she published several papers in the American Journal of Mathematics, but it was while she was there that the work of Charles S. Peirce, ~~peeked~~ piqued her interest in symbolic logic. In fact, she completed a dissertation on the subject of logic that was published in 1883 (Grinstein & Campbell, 1987). Despite fulfilling the requirements for a Ph.D. she was not granted it until 1926. In her late seventies, Ladd-Franklin attended Johns Hopkins Anniversary Ceremony to receive her degree, forty-four years late. Vassar eventually granted her an honorary LL.D. in 1887 as well. When she had completed her fellowship, on Aug. 24, 1882 and now in her mid-thirties, she married Fabian Franklin (1853-1939), a younger member of the John Hopkins math department faculty. Within two years, they had two children, a daughter Margaret Ladd and another who died in infancy (Hurvich, 1971; Furumoto, 1992, 1994; Scarborough & Furumoto, 1987).

Ladd-Franklin is probably most known for her theory of color vision, aka colour vision, and work with vision in general. "Her interest in this area began with a study (1886) of the horpoter, which is the locus of points in external space whose images are so formed on the retinas of the two eyes that they are seen singly in binocular vision" (Hurvich, 1971, p. 355). This area of research has drawn both psychologists and mathematicians and may be understood as the link between her early interest in mathematics and later focus on visual processes in psychology. The paper resulting from this study appeared in the American Journal of Psychology's first volume in 1887. When her husband, Fabian Franklin, took a sabbatical in

the academic year 1891-92, she accompanied him to Europe where she was able to continue her vision research in Professor G.E. Muller's laboratory in Gottingen. At this time, women were not allowed to enroll in German Universities. However, upon her persistent requests for admission, Muller accepted her into his laboratory and even repeated for her individually his lectures that she was not allowed to attend.

Next she went to Berlin, while her husband cared for their daughter back in Gottingen. Here she was admitted into the laboratory of Hermann von Helmholtz and the lectures of Professor Arthur König. It has been suggested that she was more readily admitted to academic circles abroad because of a sense that "foreign women were far less of a threat, since they would return home and not expect to teach in Germany" (Rossiter, 1982, p. 43). Having worked closely with these three men, she rejected both the three-color theory of color vision, expounded by Helmholtz and Konig and the three opponent-color pairs theory supported by Muller. She instead formulated her own theory of color vision, one that she insisted integrated the correct or useful aspects of each of their theories (Hurvich, 1971). Thirty years later, recalling her experiences in the German laboratories of these psychologists she said: "in the scientific world at large, opinion was divided between these two utterly diverse explanations of the phenomena of color-vision, each of which took account of one-half of the facts of color and wholly ignored the other half" (Furumoto, 1994, p. 91).

In 1892 in London, to the International Congress of Psychology, Christine introduced her theory. Apparently she had written excitedly to G.F. Stout, who was editor of a publication, Mind, about her new theory in hopes of having it published. He proceeded to contact officials of the upcoming congress of psychology and was instrumental in securing her a place in the program. Her theory of color vision involves a photochemical model of the visual system and proposes three levels of molecular differentiation, which she assumed to correspond to stages of evolutionary development. Asserting the evolutionary component of her theory, she said the "course of development of the color sense...(was) ignored by the adherents of both the rival theories (Furumoto, 1994, p. 92). According to her, black-white differentiations occurred in the first stage, white became differentiated into blue-yellow hues in the second, and finally yellow differentiated into red-green in the third. Although current research challenges some aspects of her theory, it was considerably well received at the time and the evolutionary aspect remains a viable theory today. She would spend "the remainder of her life - nearly four decades - promoting her theory" (Furumoto, 1994, p. 93). Her papers were published in American and foreign journals, including Science, Mind, Nature, and the Psychological Review.

After completing the equivalent of her Ph.D., she requested a position lecturing at Johns Hopkins in 1893. When Ladd-Franklin was denied this position, she continued independent work and persisted in her efforts to secure a position at Johns Hopkins. From 1901 to 1905, she also held the position of associate editor for logic and philosophy in Baldwin's Dictionary of Philosophy and Psychology. Finally in 1904, she was allowed to lecture one course per year at Johns Hopkins. Although this continued for 5 years, until 1909, this status had to be renewed on a year-to-year basis. In 1895, her husband, Fabian, had left his career in mathematics to pursue journalism and in 1910 when he attained the position of associate editor of the New York Evening Post, she and her husband left for New York. Christine continued to pursue her research interests and continued to lecture part-time, now at Columbia University from 1912-1913. Finally in 1913, she lectured at Clark University and Harvard University, and in 1914 at the University of Chicago. Although she was only teaching one or two courses, most of these positions were a struggle to obtain and she often lectured without pay. She saw her volunteer lecturing as the only way for her to attain some degree of academic affiliation. Laurel Furumoto notes that "her inability to secure a regular academic position was a predictable consequence, in that time period, of her decision to marry" (Furumoto, 1994, p. 97). In light of the fact that "she never held a regular academic appointment" and therefore never secured solid academic affiliation, her active academic career was remarkable (Furumoto, 1994, p. 93).

In 1929, a year before she died, she published Colour and Colour Theories, which featured articles and papers she had published throughout the past four decades. In addition, she was asked to contribute an appendix to the English translation of Helmholtz's Handbook of Physiological Optics in 1924. She was also active presenting papers at meetings of the American Psychological Association, the American Philosophical Association and at several international congresses (Hurvich, 1971; Zusne, 1924; Furumoto, 1994).

When in her mid-sixties and twenty years his senior, Ladd-Franklin began writing to E.B. Titchener concerning his insistence on banning women from the meetings of the Experimentalists. Her response was, of course, outrage at his exclusion of women. She wrote in 1912, "I am particularly anxious to bring my views up, once in a while, for hand-to-hand discussion before experts, and just now I have especially a paper that I should like very much to read before your meeting of experimental psychologists. I hope you will not say nay!" In response to his argument that women could not tolerate such masculine activities as smoking, she wrote, "Have your smokers separated if you like (tho I for one always smoke when I am in fashionable society), but a scientific meeting is a public affair, and it is not open to you to leave out a class of fellow workers without extreme discourtesy" (Scarborough & Furumoto, 1987, p. 125).

Ladd-Franklin unfortunately never succeeded in gaining membership to Titchener's Experimentalist group. This "collegial exclusion" has been cited as one of the many forces working against Christine and women like her at the time. Membership in this group afforded young faculty and graduate students the connections and social contacts necessary to succeed in the academic arena. In Titchener's own words, "the select group of newcomers to the field" were the "men who (had) arrived" (Furumoto, 1994, p. 97).

Laurel Furumoto (1994) suggests that her publication of journal articles and papers into a single volume book, Colour and Colour Theories, was an attempt "to secure herself a place in science" (p. 94). The changes Christine made to the works were primarily additions of long footnotes correcting who had contributed what to the psychology of vision, reclaiming credit for discoveries and theories she felt had unjustly been given to others. "In a footnote almost a page long," she made it clear that Hermann Ebbinghaus had claimed credit for the "Purkinje phenomenon," though he was well aware that she had previously observed it "in the very same laboratory as he" (p. 98). She also took issue with König for his claims on the account of "normal night blindness of the fovea," which she too had earlier observed (p. 98).

Hurvich (1971) notes that "her 'belligerent scientific career,' as it has been described, marked by a vigorous and persistent adherence to her theories, continued into an advanced age. "A well-known paper on the 'blue arcs,' a visual phenomenon whose origin is still not clearly understood, appeared in the Proceedings of the National Academy of Sciences in 1926, when she was in her late seventies" (p. 355). As an advocate for women's suffrage and access to higher education, Ladd-Franklin also helped to established the Sarah Berliner and other research fellowships for women. At eight-two years old, Christine Ladd-Franklin died at her Riverside Drive home in New York City on March 5, 1930 (Hurvich, 1971).

Christine Ladd-Franklin's remarkable achievements - against the odds of her social position, opposition from universities and individual psychologists - have been well remembered by historians of women psychologists. Too often however, her deserved place in history of psychology textbooks, is forgotten.

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ENDOWED PROFESSORSHIPS FOR WOMEN

Christine Ladd Franklin (1904)

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I have given the title "Endowed Professorships for Women" to the subject which I wish to bring before you today for the sake of simplicity, but I must premise that what I have in mind is not so much the regular full professorship in one of our larger colleges, but rather what the Germans have a good name for, a docentship -- a modest position, suitable for the beginner in college work, but one which offers the compensation that instead of being all work and no research, it gives to its holder a large amount of time in which to carry on the studies which he is himself interested in. It is these minor professorships which, as the next stage in the advancement of women, I wish to show the necessity for and the possibility of obtaining, not exceptionally, as is now the case, but in numbers proportional to the number of young women who are already fitted to hold them.

It is a comparatively new thing for women to have either the possibility or the desire to carry their studies so far as to meet the present requirements for the college professor. It is hard for us to realize -- so familiar a feature of modern life has the college girl become -- that it is only about forty years since it has been possible for women to obtain a college education, in anything like the proper sense of the term; and it is a still shorter time since such a *rara avis* as the doctor of philosophy first came into existence among women. But the world is moving rapidly in these days, as regards the affairs of the more modest sex, and it is now no inconsiderable number of women who have absolved the requirements of the highest rank of scholarship. At the same time there has been a great change in the demands of the colleges as regards the preparation required of their young professors. For many years, in the history of education in this country, nothing more than a diploma from some reputable college was essential to the obtaining of the position of assistant or instructor in an institution of corresponding rank, but that state of thing is now very nearly superseded, and the young person who wishes to enter upon the professorial career must have had something far more brilliant than this in the way of preparation. He must either have taken the degree of doctor of [p. 54] philosophy, or, if he has not actually obtained the degree, he must have carried out a course of study somewhat equivalent to what is required for that; to be a plain college graduate is no longer a sufficient foundation for the honors of the professor's life. Thus the existence of women who have secured for themselves the highest possible degree of training, coincides with the advent of greater stringency in the requirements for college appointments.

It is true that the same thing holds for men: where doctors of philosophy were once the exception, they are now the rule, and he who wishes to become a college professor is quite prepared to give three years to study after he has obtained his college diploma. But here the resemblance ends: the exacting positions are filled to too large an extent by the highly trained of one sex only; the women have not as yet been given a representation in proportion to their attainments. It is this discrepancy that we are anxious to see removed. It does not exist, I believe, to the same extent among the simple college graduates; they are more likely to be able to get positions as good as they are qualified for than are their more learned sisters. There is not so great a pressure for these positions on the part of young men, for men have other openings which are more lucrative, and women are as yet content, poor things, with very modest salaries. For instance, statistics of Barnard College, just issued, show that of the students graduated during its eleven years of existence, ten per cent of those who are teaching at all are teaching in colleges. This is a very satisfactory showing, as far as it goes, and it is doubtless representative of other colleges, but such college positions as this are for the most part those which involve a large amount of drudgery, and which afford very little time for the work of the investigator. It is the more highly trained who are most deserving of our sympathy. It is for them that we wish to secure -- by hothouse methods if necessary -- not the position of the overworked teacher in the smaller colleges but rather the minor professorships in the major universities, those which offer leisure at first, and, later, opportunity for advancement.

How great is the number of women who are fitted to hold professorships of this kind -- how large is the class in behalf of which I wish to arouse your sympathy? As far as it consists of young women who have studied in Europe, no statistics (as I am informed [p. 55] by officers of your Association) have as yet been collected, but it must be, I am convinced, no inconsiderable number. It is now some fifteen years since the Association of Collegiate Alumnae took up the task of sending young women to Europe to study at some great university, and it was not very much later that the Woman's Education Association of Boston joined them in this good work. You are all familiar with the statistics of what has been accomplished by these two organizations; our devoted chairman of the Fellowship Committee gives you each year a report on this subject which is of absorbing interest. I do not need to remind you at this time of its details. Our means have been painfully limited, and our results have not been anything startling as regards the number of women doctors of philosophy that we have produced, but ours has been the work of the pioneer, and it is a beginning that has been largely followed. There are already many colleges at which European fellowships are obtainable by clever girls. And in addition to the endowed study at foreign universities, there are now, of course, many young women who have the courage to use their own fortunes, or such sums as they can extract from parents who are no longer so obdurate as they were twenty years ago, in going to Europe for the three years' work necessary to the attaining of the doctorate.

But it is no longer necessary to cross the ocean in order to become a scholar of distinction -- a great change has taken place in the character of the training that can be obtained in this country. It is now a good many years ago that the Johns Hopkins University was very proud of the fact that a brilliant young student of physics, drawn by the fame of Professor Rowland, returned to Baltimore from the University of Berlin because he found that better advantages for his particular work were to be had at the American university. Since that time, half a dozen other universities have added vastly to their equipment for doing admirable work in the way of instruction in learning and in research, and there has been, correspondingly, a large addition to the number of students, both young men and young women, who are content to take their doctorate in this country. The actual number of young women who have had conferred upon them the degree of doctor of philosophy at institutions in this country, from 1894 to and including 1902, is 224. [p. 56] Prior to 1894 the statistics collected by the Bureau of Education do not give the number of such degrees conferred upon men and women separately, but the Commissioner of Education, Mr. Harris, has very courteously had examined for me the catalogues of the leading institutions from 1880 to 1894, and it appears that during that time the degree was conferred on not less than thirty-one women. This gives 255 as the entire number of women who hold a doctorate from an

American institution -- a number which I am sure you will find to be surprisingly large. It is evident that it is high time for us to consider seriously what steps can be taken to start these doctors of philosophy on the career which they long for and which is indeed their due.

For at present these clever women find no proper field for the exercise of their powers. A certain number of them, of course, end by marrying. I should not say that they *end* by marrying, for their marriage is very frequently of such a kind as to bring them into university circles, and to give them admirable opportunities for carrying on their studies. And where it is not of this kind, we may be well content that they are handing on their *good* qualities in the way of intellectual endowment to a new generation of still more admirably developed human beings. But not all of them marry and for those who do not, the natural sequel to their long years of hard labor should be to enter at once upon the assistant professorships in the colleges and universities. But here their troubles begin; it is only a very small number of the college positions that are open to them. For the young man who returns from Europe with his doctor's degree, and with the abstruse thesis which every one, clever or stupid, who studies at a German university is supposed to be able to turn out, the case is very different. Occasionally, it is true, by ill luck, he fails to find at once the opening that he is adapted to fitting into, but for the most part the colleges stand ready to seize upon these gifted beings the moment that they become full fledged (provided only they are of the right sex) and to put them into the first stage of that career which is to end, in course of time, in the full professorship. But for the women, the teaching positions that are at all worthy of their powers are few in number. The proportion of those who, after their brilliant preparation for the highest work, find that there is nothing in the world for them to do [p. 57] save the drudgery of teaching in the public schools is large, and is constantly becoming larger. Some, of course, find openings in the women's colleges, but the women's colleges are few in number, and it is not even desirable that all of the teachers in them should be women. For most, as far as consequences are concerned, the certificate of their doctorate is but an empty honor. It is related in my family that, when I was two years old, I was allowed one day to go to school. I had heard it said that school was a place to which one went in order to get one's education, and when the teacher gave me a little printed "reward of merit," such as the good children were in the habit of receiving in those days, I brought it home, and I said with the utmost satisfaction, "I went to school to get my education, *and I got it*." That is the case with our clever girls -- they go to Germany and get the parchments, beautifully signed and sealed, that proclaim them to be doctors of philosophy, but no further consequences follow. They have nothing but the empty satisfaction of exhibiting their "tickets"; the pleasurable work and the adequate emoluments that ought to follow are not forthcoming. That they are not, is not due to any fundamental principle of nature which makes women incapable of filling such positions. The battle or, this point has already been fought out in most branches of activity, and settled on the side of fairness and of justice. The editors of reviews and the publishers of books do not ask, with reference to a given manuscript, "Is the author of it a woman?" but simply, "Is what she has to offer a thing of value?" All we ask is that the college positions (at least in the co-educational colleges) should be filled in this same dispassionate way, by doctors of philosophy *without regard to their sex*, or with very little regard to their sex -- with the understanding, say, that whenever the woman applicant for a position is distinctly *superior* to the man, she shall have the position. That this is not already the case is a residuum of prejudice on the part of the unfair sex which is certainly not destined to survive much longer. Can there be any doubt that if women were freely appointed to the docentships in the great universities, they would be successful in the function for which the docentship exists -- the carrying out of original investigations? Women do just as well as men in the work which leads to the doctor's thesis. It is a woman, Mrs. Lewis, who, in the face of great [p. 58] difficulty, discovered and photographed the earliest copy of a Gospel, what is now known as the Lewis palimpsest, and who has been given the degree of doctor of philosophy by the University of Halle in recognition of her achievement. No American man has ever done such important and profound work in mathematics as has the Russian woman, Kovalewsky. And certainly at this moment, when the whole world of science has been stirred to its depths by a woman, Madame Sklodowska-Curie, it is not the time to doubt that women can make discoveries! The discovery of radium is not only changing our

views of nature, but, if it is given its full significance, it should deal a final blow to the belief that women can not do great things in science; from this one case it might be inferred, with far better logic than has been traditionally employed against our sex, that women are quite as likely as men to make great discoveries -- indeed, that they are vastly more likely; for, out of the small number of women who have physical laboratories of their own, that one should make the great discovery of the time shows a far greater proportion of genius to opportunity than has ever been exhibited by men. It can never be predicted where the fire of genius will strike next. Just now it is a Spaniard, Ramon y Cajal, at whose feet the physiologists of the world are sitting. In the case of radium, the splendid laboratories of Germany and England and America have been passed by, and it is a Polish woman, and next to her, a Canadian man, to whom we must go to find out new things -- Madame Curie in France and Professor Rutherford in Montreal. Who knows when an American woman will be the one on whom the sacred fire alights? It is at least our duty to create for her the opportunity without which she will have been endowed with genius in vain.

It is evident that there is already a considerable number of women who are quite capable of filling the minor college professorships; that it would be greatly to the advantage of the world in general if they were doing the work for which they are fully fitted; and that for women themselves there would be an immense gain in the respect in which they are held, in the salaries which they can command, and the original work which they are in a position to produce, if it should become an understood thing that there is nothing strange or unusual in a woman's holding a college professorship. [p. 58]

That this is a part of the general course of development of the status of women, and that it is the step that is destined to be taken next, there can be no question. Is there not some means by which we can hasten its advent? We can not hope to get money enough to create professorships for women on any large scale, but measures need not be brilliant in order to be efficient. It is the first step which *counts*, as well as costs. A great deal is accomplished by very slender means when a given weight is used as a starting-load for overcoming friction; and by the simple opening of a single door, one can often, as in the case of Clerk-Maxwell's hypothetical demons, remove the obstacle which prevents the beginning of a new strong movement for which the time is ripe. It is just such a little push as this on the part of some beneficent intelligence -- in this instance not by demons but by our Association (or by one formed expressly for the purpose) -- that I wish to see exerted in behalf of the highly trained college woman. If we should simply found a few professorships, of such a nature as to attract attention on account of a special degree of distinction attached to them, it would *go* far to remove the prejudice which now exists against the idea of college professorships held by women. The plan that I have in mind is this: Instead of waiting for the colleges to offer professorships to our young doctors of philosophy, I would suggest that we offer our young doctors of philosophy as professors to the colleges -- and not in the way of founding fixed professorships in any given college, but rather of establishing what may be called peripatetic professorships, to be held, in any particular case, *by* our most available young woman and *at* the college or the university which shall best fulfil certain requirements of ours which I shall state in a moment. In the first place, the holder of this professorship would be, of course, the most brilliant young woman that we can find (among those doctors of philosophy who are not already satisfactorily provided for); we have already had much experience in the mechanism of finding a brilliant young woman, through the awarding of our European fellowship, and we know that the only difficulty is to make a proper choice among too many deserving applicants. In this case, the successful candidate should be one who has taken the doctor's degree with great distinction, and who has already given evidence of capacity for doing original work; she [p. 60] will be one who is eager for the opportunity to undertake further research, and who is fitted, by health, energy, experience and natural endowment, to carry it out. Her salary will be furnished by the association -- a modest one, but comparable with the salaries received in colleges by young men when entering upon the professor's career -- say a thousand dollars a year, until we are in a position to do something better. The appointment would be for one year, to be renewed at the discretion of the Association. But the important feature of the plan lies in the manner of selecting the

college at which this brilliant young woman is to hold her professorship. The choice is to lie in her own hands, subject to the approval of the association which makes the award. The college chosen must be, of course, one in which she shall be allowed to give, each year, at least one brief course of lectures - it may be a longer or a shorter course, as circumstances shall decide; if it is a long one, she will constitute an efficient member of the college staff; if it is a short one, she will have all the more time for her own investigations. This condition being satisfied, our young woman is to select the university where she can best pursue her chosen line of research -- the university, that is to say, which has the most distinguished and the most inspiring professors, and which also offers her the best laboratory (or other) facilities for the carrying on of her work.

Simple as this plan is, it will be found, I believe, to have several very important advantages. The secret of the brilliant work which it is the regular thing for the German professor to produce, throughout a long life, is the docentship with which his active life begins. Before he is tied down to the duties of the full professor, he is given once more a preliminary period of growth and development. For five *to* ten years, frequently, he gives only a very small number of lectures, and he lives in the midst of all the enthusiasms of a great university with almost unbroken leisure for carrying on his own studies and researches. It is this leisure, and opportunity, and freedom from care, that we wish to secure for the fortunate holder of our docentship. The university which she should select would appreciate the distinction which would lie in its being chosen as the best place in the country for carrying on the subject of chemistry, or physics, or physiology, or Greek, or whatever her special [p. 61] topic might be; and this would constitute a temptation to it to allow her to give her modest little course of lectures. Moreover, the university would at the same time be adding an assistant professor to its staff of instructors without being obliged to contribute anything toward his salary. There are not many universities in the country which are so highly endowed as to be insensible to this consideration. To select the chosen young women of the country, even though it be at first only a very few of them, and to tide them over the years that must elapse between their becoming mature enough and distinguished enough to be full professors; to prevent them from sinking into plain school teachers, and losing, in the treadmill of ceaseless duties, all their fresh interest in their work -- this is to do them an inestimable benefit. But, by far the most important of all, to create a few first-class women college professors who would not otherwise exist would be to make a distinct contribution toward the furthering of the rights and privileges of the sex in general.

CHRISTINE LADD FRANKLIN