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MARIA SKŁODOWSKA-CURIE – A SKETCH TO THE PORTRAIT

by Edward Olszewski

FAMILY TRADITION AND POWER OF PATRIOTISM

Biographers of Maria Skłodowska-Curie, characterizing her features of personality, underline her pragmatism, consequence in action and logical mind. Her studies in the fields of mathematics, physics and chemistry developed these features of personality and, at the same time, paved her way to achievements on the world's scale. A lot of these features she brought from her family home. Her grandfather, Józef Skłodowski, was a teacher of physics and chemistry, founder and headmaster of a gymnasium in Lublin. Her father, Władysław Skłodowski, was a teacher of physics and mathematics in schools in Warsaw. Her mother, Bronisława was a teacher, too. Also in her family exact and natural sciences prevailed, much attention was attached to history of Poland and Polish literature. Patriotism and national ideas in a positivist sense demanded "labor for homeland" mainly through teaching, gaining knowledge and education of a young generation. When she had time, especially in "Polish" period of education, Maria was interested in literature, sociology, contemporary social thought, first of all, of August Comte, Carl Darwin and Herbert Spencer.

Maria Skłodowska's childhood and youth was also formed by Polish and family independence tradition. She was born three years after the fall of 1863 January Uprising; the time of repressions and intensive Russification in the Russian rule, the time of bewailing the dead and those sent to Siberia to penal servitude. Józef Skłodowski, her grandfather, fought in an artillery unit in November uprising in 1830; her uncle, Zdzisław Skłodowski, fought in partisan unit of Marcin Borelowski-Lelewel in the Uprising. Tradition and family education formed in Maria a deep patriotism, duty for serving her homeland and building its prosperity on the basis of organic work. She wants to help her enslaved Poland by building intellectual capital and developing teaching. This tie with a country of her ancestors, with her homeland, accompanied her throughout the whole period of her education in France and successes which resulted in two Noble Prizes. To honor Poland, then divided into Prussia, Russia and Austria, that was erased from maps and called, under Russian rule (since Vienna Congress), the Vistula Country with Russian Tsar as "Polish king," she called a new metal isolated from uranium tar, "polon."¹ Faithful to her ideals of work at the grass roots and to her ideals of rebuilding Poland in minds of young generation, Maria opened the doors of her laboratory to Polish students and young scientists at Sorbonne and Radium Institute. The list of scientists, who took part in research at Paris Radium Institute included, among others, Jadwiga Szmidt and Alicja Dorabialska a specialist in physical chemistry, a professor at Lviv Polytechnic University since 1943 and a professor at Łódź Polytechnic since 1945. Four Noble Prize winners came from Radium Institute which was opened on Maria Curie-Skłodowska's initiative in 1914. In 1935, her daughter Irene Joliot-Curie and Frederic Joliot-Curie received the Noble Prize.² One of Maria's partners in Radium institute was Mirosław Kernbaum, son of Warsaw industrialist,

¹ In a report for French Academy of Sciences, Peter and Maria Curie wrote: *If the existence of this metal is confirmed, we suggest the name „polon” – from the name of the homeland of one of us.* Ewa Curie, *Maria Curie*, trans. H. Szyllerowa, Warszawa 1969, p. 182.

² Irene and Frederic were awarded the honorary doctorate: in 1950 by the Maria Curie-Skłodowska University in Lublin and in 1951 by the Jagiellonian University in Cracow.

who died in 1911. Since she could not run the first Polish radiological laboratory in 1911, she sent to Warsaw Jan Kazimierz Danysz and Ludwik Wertenstein, her two most talented assistants.³ However, in November 1913, she arrived to Warsaw and took part in the opening of the M. Kernbaum Radiological Laboratory.⁴

Her peculiar “political neutrality” disappeared when it concerned Polish matters. This aspect of Maria Skłodowska-Curie’s activity, which has often been omitted, was brought out by Wiesław Śladkowski and Małgorzata Willaume who wrote: *Being keenly interested in Polish matters, she established contacts with – active in the territory of France – Komitet Wolnej Polski (Committee of Free Poland) which sympathized with armed action undertaken in Poland by Piłsudski’s Legions and which propagated in France the idea of the independence of Poland. She was a member Grupa Polskich Demokratów (Group of Polish Democrats) that was under the influence of KWP. When in 1917 Rada Obywatelska Kolonii Polskiej (Citizen Council of Polish Colony) was formed, she became a member of its audit committee. The Council, which clearly supported Józef Piłsudski’s political line, opposed, on French ground, Komitet Narodowy Polski (Polish National Committee) headed by Roman Dmowski. Maria Skłodowska-Curie was among those who met on January 4, 1919 at Lyon’s station, the official delegation of the Governor of State and which was headed by her brother-in-law Kazimierz*

³ On May 6, 1912 a delegation from Warsaw Scientific Society came to Paris to persuade Maria to come back to Poland, where a laboratory was built for her. Professor Józef Boguski and Henryk Sienkiewicz were the members of the delegation. The latter said to Maria: *would you, Honorable Madame, transfer your scientific activity to us: to our homeland, to the capital. You know the reasons why the level of our education and culture has lowered during the last few years. We are losing faith in our creative abilities, in the opinion of our enemies we are descending; we are losing hope for better future. [...] Our nation admires you but would like you to work in your native town. It’s an overwhelming desire of the whole society. With you in Warsaw, we will feel stronger and raise our heads burdened with disasters.* Maria did not decide to return to Poland because of family conditions and scientific environment in which she was brought up and was the fundamental pillar of it. E. Curie, op. cit., p. 316; D. Brian, *Rodzina Curie*, trans. J. Hensel, Warszawa 2006, pp. 146–146.

⁴ Maria Skłodowska-Curie, *Autobiografia*, 2nd ed., Warszawa 1960, p. 58; E. Curie, op. cit., p. 317.

Dłuski. With others, she tried to enable Piłsudski's emissaries to establish contacts with French press and government officials. Her political activity during the war (...) Maria Skłodowska-Curie subordinated to the main aim – the independence of Poland. She supported Józef Piłsudski's camp.⁵

We read in her autobiography: Although I didn't believe in it, I wanted to see the redress of all the injustice done to my homeland. [...] I dreamed about revival of Polish nation which deserved it. This dream, which seemed so difficult to accomplish and which, at the same time, was so dear to me, was fulfilled thanks to the storm which broke out over Europe.⁶ And when revived Poland, established after the war, was returning to normal life, she wrote in the letter from 31st January 1920 to her brother Józef Skłodowski: We «born in bondage, fixed at birth» watch the rebuilding of our country which we dreamed about, thinking that maybe only our children will see this moment.⁷

In 1918, immediately after Poland gained independence, Maria undertook initiative of forming Radium Institute in Poland. The main aim of her travel to the United States (despite being very ill) in October-November 1929 was to gain a gram of radium for the Polish Institute. On May 29, 1932, two years before her death, she visited Poland for the last time. She took part in the opening of the Maria Skłodowska-Curie Uranium Institute where patients with cancer were treated with radium brought from the United States. To great extent, it was the result of her efforts and her vision of educated and revived Poland. She believed and propagated – during the scientific congresses and the Congress of Writers and Artists in Madrid in 1933 – that people formed in the spirit of science will be the pioneers of progress. Science, as one of the most important factors of human existence, can lead to liberation of a human being and mankind in a global sense.

⁵ W. Śladkowski, M. Willaume, *Biały Orzeł i Tęcza Franków – Maria Skłodowska-Curie*, [in:] *Losy Polek żyjących na obczyźnie i ich wkład w kulturę i naukę świata. Historia i współczesność, Materiały IV Sympozjum Biografistyki Polonijnej*, Vienna 1999, September 1–2, eds. Agata and Zbigniew Judycki, Lublin 1999, pp. 302–303.

⁶ M. Skłodowska-Curie, *Autobiografia...*, p. 73.

⁷ E. Curie, op. cit., p. 341.

IN THE TREND OF MODERATE LIBERALISM

In Poland, but especially during her stay in France, Maria Skłodowska had an opportunity to join one of the numerous trends of political life: socialists, conservatives, liberals including nationalists and anarchists. Here in France, post uprising emigration (advocates of national independence and socialists of various orientations) conducted violent discussions. Her sister's house, where she was living for some time, was visited by Bolesław Metz – the editor of “Przegląd Socjalistyczny” (“Socialist Review”), a supporter of independent movement and a socialist Stanisław Wojciechowski – co-founder of Polska Partia Socjalistyczna (the Polish Socialist Party), the second President of the Second Republic of Poland,⁸ Ignacy Paderewski – who was close to Narodowa Demokracja (National Democracy), doctor Kazimierz Dłuski – the representative of socialist (independent) trend. In opinion of her daughter, Ewa, during the “Polish” period Maria fought for reconstruction of social relations [...] *she becomes a socialist in the purest meaning of this word. But she never joins the party. The feeling of inner spiritual independence tells her not to join any political parties and patriotism doesn't let her join Marxism and the International. First of all, Maria wants to serve her country. She doesn't sense that in the future she will have to choose between life for knowledge or life for Poland. She isn't aware that in the present flush of enthusiasm she combines into one her scientific interests with patriotism and humanistic ideas.*⁹ Maria Skłodowska, as a member of intellectual elite, had a liberal position, supporting democratic ideas, republican institutions¹⁰ and pacifistic ideas.

⁸ In 1925, during the ceremony of laying a foundation stone for building Radium Institute in Warsaw, Maria met Stanisław Wojciechowski, the then president of Poland, whom she had met 33 years before when he was in exile in Paris. Wojciechowski asked her if she remembered that she had lent him a small pillow. Maria smiled and said: *I even remember that you have forgotten to give it back.* E. Curie, op. cit., p. 384.

⁹ Ibidem, pp. 66–67.

¹⁰ At the beginning of the 1930s she watched the events in Spain and later wrote a letter (April 1931) to her daughter Irena saying: *For me, the most interesting are the talks with the Republicans and their enthusiasm for the renovation of their country. Let them do it.* G. Ziegler (ed.), *Maria Skłodowska-Curie, Korespondencja Marii Skłodowskiej-Curie z córką Ireną, 1905–1934.* Wybór, trans. K. Dolatowska, Warszawa 1978, p. 194.

She always remained faithful to the ideas of Positivism. She was an opponent of nationalism, dictatorship and revolutionary violence. Instead, she fought for free circulation of ideas, women's right to vote (but she condemned ostentatious methods of feminists' activities), equality of rights and duties. Ewa Curie wrote: *She can talk without anger about politics. How wonderful and encouraging her liberalism is. She mildly answers the Frenchmen, who praise dictatorship at her presence, « you don't know what a dictatorship is – I know, because I lived in this system based on oppression. So I understand better than you what true freedom is».* Supporters of a revolutionary violence find the same resistance from her side: *«I will be never convinced by anybody that Lavoisier's guillotining¹¹ was a good thing...».*¹² Maria tried to avoid connections with politics as this field of life is by nature based on conflicts. She felt this very painfully in the years 1910–1911 when she tried to enter the French Academy of Sciences and some of the scientists and press “brought politics” into the atmosphere of presenting candidates and elections. On principle, till the First World War, she refused to take a public post. It was noted that she signed only one petition in 1927 in favor of pardoning Sacco Nicoli and Bartolomeo Venzatti – anarchists.¹³ She did it not for her sympathy with anarchism but for her strictly humanitarian beliefs. She fought with prejudices of her times; she was a woman and she wanted to be a scientist, free from religious pressures. Science was a mission for her. She cared for development of mass medical care and mass education. According to Irena Joliot-Curie, she shared the opinion of her father-in-law, Eugeniusz Curie, who was a progressive man, freethinker and anticleric.

¹¹ Antoine Laurent Lavoisier (1743–1894) was a French chemist, lawyer; he was the father of modern chemistry, member of the French Academy of Sciences. He was accused of extortion of taxes (when he was a general tax collector) and sentenced to death by the Revolutionary Tribunal and guillotined.

¹² E. Curie, op. cit., p. 401.

¹³ They were Italia immigrants living in the USA. They were arrested in 1919 under the accusation of two murders. In 1921 they were sentenced to death. The sentence was questioned by the American and world public opinion as biased and passed for their political beliefs. A wide campaign for their release did not bring any results and in 1927 the sentence was executed.

PER ASPERA AD ASTRA

In the second half of the 19th century a vocational education for women started in Europe. Mostly it concerned running the household, taking care of sick people and nursing.

Italy played an important role in women's education. Their universities were open for young women, who in time took the professor's positions. Rights of students, male and female, were the same. After 1891 high schools for girls were opened.

In the 1880s in England first special schools for girls appeared: trade courses, technical drawing, photography, lithography, needlecraft etc. Similar process was developed in Sweden in the years 1859–1861; there appeared higher courses, trade schools and teacher's seminars for girls. The first school in England, Medical School for Women, was opened in 1874. Since 1879 female students have been accepted at London University; Oxford and Cambridge started accepting women after the First World War.

The University in Zurich, Switzerland, was opened for female students but majority of them were foreigners: Russians and Poles. Russians represented a major proportion of women studying in France.

Under the intelligentsia pressure, Tsar's government was forced to open higher schools for girls; in 1878 in Petersburg and later in other province towns. But only in the 19th century were women allowed to study medicine in Moscow and Kiev.

In Germany, in years 1800–1825, many vocational schools for girls, financed by the state, local governments or private donors were built. First female students were accepted at the university in Berlin in 1895/1896, other universities accepted them after 1908.

In the United States, Emma Willard founded the first teacher's seminar for girls in 1821. It was the foundation stone for girls' education in America. At first, they were schools of elementary education, then high schools (the first one in Oberlin, Ohio) but when its graduates tried to study at Harvard University in 1835, they were not allowed. One of them, Elizabeth Blackwell, was finally accepted at the medical university but in Geneva. Her sister studied in Cleveland. In 1869 a "Vassar-college" for

women was founded, where, in senior classes, a university curriculum was taught. In this college, Marya Mitchel, as a first woman, was appointed to a chair of mathematics and astronomy institute. In 1874, in Boston, special medical courses for women were conducted. Soon academies (except a few) opened their doors for women. Thanks to a persistent fight of American feminists, universities were opened for women, first in Michigan then in other states. In 1900 there were 484 schools in the United States: 345 of them accepted female students, there were four universities for women and 160 high schools for girls. But Harvard, Jon Hopkins, Yale and Columbia Universities were the last to accept women.

In Poland, under Russian rule, there were only 45 primary schools for girls but they could attend 984 coeducational schools. In secondary schools (high schools) that belonged to the government, there were about 1400 schoolgirls. Private education was under constant control of Tsar's administration and had very difficult material situation. Families and secret teaching opposed the process of depravation of national identity. So called Flying University was organized in Warsaw in 1886 by Jadwiga Szczawińska-Dawidowa (a wife of an eminent teacher Jan Władysław Dawid). Among the best teachers of the University were: Władysław Smoleński, Ludwik Krzywicki, Tadeusz Korzon and J.W. Dawid. It did not give any formal rights but it developed knowledge and Polish national values on the top level. It existed almost 20 years (till the revolution of the 1905). The courses and lectures were organized in different districts and in private houses in Warsaw.¹⁴ Here, in the 1870s, the process of opening vocational schools for women was in progress. It was organized mainly by town authorities and craftsmen councils.

¹⁴ Maria Skłodowska-Curie wrote 40 years later: *I remember very vividly those meetings. I remember their atmosphere of friendship and intellectual cooperation. Our financial means were very modest so the results couldn't be great, but I think that ideas which directed us were the only ones on which we could build social progress. You can't hope to direct the world to better if you don't direct an individual to better. To achieve this, everybody should work to perfect him/herself and at the same time everybody should realize their own personal responsibility for entirety that is going on in the world and everybody should realize that his/her direct duty is to help those who we can be the most useful.* E. Curie, op. cit., pp. 65–66; M. Skłodowska-Curie, *Autobiografia...*, p. 20.

Polish women obtained the right to study at universities in Cracow and Lviv (Austria's rule) in 1897. Under Russian rule, women could not study at the University in Warsaw (Russian Tsar's University) – it became Russified.¹⁵ Maria and her family had higher ambitions. The elder daughter, Stanisława, started medical studies in Paris, her son, Józef, studied medicine in Warsaw, and Maria wanted to follow in her grandfather's and father's footsteps and study physics and mathematics.

At the end of the 19th century, the exact sciences which could be studied on very high level were in Paris, England and Berlin. Maria, as a patriot, did not take Berlin into consideration because it belonged to one of the three powers that took part in the partition of Poland. England, at that time, was not particularly interested in newcomers from Central and East Europe. In France, there was a multi generational Polish community abroad; her sister and brother-in-law (the Dłuscy) lived in Paris and this country was famous for its tolerance and democratic freedom. Many young people from regions under the Russian rule and from Russia itself came to France and Switzerland and finally the fame of Sorbonne attracted many of them. Université de Paris, La Sorbonne was founded in the 12th century on the basis of famous schools – cathedral school of Notre Dame and monasteries schools of St. Victor and St. Genoveva. After the University of Bologna, it was the oldest university.

Education for young females started in France at the beginning of the 19th century. Napoleon Bonaparte was the protector of a reform of education for young females in France, although he was a fierce opponent of emancipation. He looked after scientific institutions in St. Germain and Ecomen. First schools for girls came into being in Italy from his initiative. He also appointed, in 1820, Ms de Genlis for the post of inspector of higher schools for girls. The Minister of Education, Duruy, organized education for women on the state cost in 1866. Under the pressure of women's movement, young women were allowed to attend lectures at College de France in 1850. In 1866 university lectures and specialist courses for women were organized. After 1870 women were allowed to take examinations and they

¹⁵ K. Mrozowska, *Sto lat działalności kobiet polskich w oświacie i nauce*, Kraków 1971.

could receive university degrees (especially in medicine). But it was not easy for girls to enter the university. In 1868, empress Eugenia had to personally intervene to let the first French woman Madelaine Bres, study at the Faculty of Medicine. For women, two pedagogical higher schools, including Sevres, have been reserved since 1881.

Although the Third Republic abolished many institutional obstacles concerning women's education, tradition and superstitions of women's role in society were overcome very slowly and very often fierce fights with traditionalists were fought. Still, in the world of idea, dispute of nature of woman revived. Its roots were seen in ancient Athens, V B.C. (*Querelle des Femmes – Dispute of Women about Women*).¹⁶ In each epoch, as E. Gössmann shows – [...] *throughout history the same views concerning mental and practical abilities of women had to be eliminated [...] This is as if each generation had to do the same work for itself from the beginning.*¹⁷ This dispute about women-scientists painfully concerned Maria.

Maria Skłodowska started her studies at the Faculty of Mathematics and Natural Sciences of Sorbonne on November 3, 1891. She was one of the 23 women among 1825 students. Proportionally, there were 100 male students for one female student. At that time, only 210 female students studied at Sorbonne (9000 students attended lectures). Many of the female students were foreigners who could not study in their countries. Only few French families encouraged their daughters to study at universities. Maria's biographers do not say that this disproportion was too annoying for the young student who studied hard, perfected her French and had to overcome living problems. She was taught by Sorbonne's elite such as Gabriel Lippmann and Edmond Bouty from physics institute, Paul Appel and Henri Poincare from mathematics institute.

On July 28, 1893, she received her Bachelor's degree in physics with the best result. It should be added that only two women reached this level. In July 1894 she received her Bachelor's degree in mathematics (second place) at the same Faculty (a year after her first degree). On August 15, 1897,

¹⁶ *Kobiety w nauce*, http://wikipedia.org/wiki/Kobiety_w_nauce.

¹⁷ E. Gössman, *Das Wohlgelehrte Frauenzimmer*, *Archiv für Philosophie und Theologiegeschichte*, vol. I, München 1984, p. 138.

already being married to Peter Curie, she passed her teacher's (professor's) examination that allowed her to teach in higher schools for girls. She was the first woman who started working in teacher's college for women in Sevres at the suburbs of Paris. The school was located in buildings of former porcelain factory of Madam Pompadour.¹⁸ In the years 1900–1906 she worked as a lecturer of physics at **École normale supérieure** in Sevre. From that time on, Maria Skłodowska-Curie would appear as “first” woman in scientific life.

After her discovery of polonium and radium in 1898, on June 25, 1903, at age of 36, she defended her PhD dissertation from physics at the Faculty of Exact Sciences of University of Paris on the subject: *Study of Radioactive Substances*. Her dissertation supervisor was Professor Gabriel Lippmann (Nobel laureate of 1908). Many scientists, students and a group of students from Sevres came to her examination. D. Brian writes: *The atmosphere of lecture hall resembled the premiere of a popular play [...] additional chairs were needed.*¹⁹ The examination itself was in a form of a friendly talk. Besides her dissertation supervisor, prof. Henri Moissa (Noble laureate in 1906) and prof. Edmond Bouty took part in the discussion. G. Lippmann said the traditional formula: *University of Paris confers you the title of a Doctor of Philosophy in Physics* – with a note “*très honorable*” the equivalent of the expression *summa cum laude* [with the highest commendation].” David Wilson wrote: *Many congratulated her on conquering*

¹⁸ Denis Brian writes: *Maria's first lectures were a failure. 20 year old students didn't like her because she lectured mathematics on a too high level and she spoke too quickly or stuttered which probably was a result of stress. Although she spoke French very well, they laughed at her slightly Polish accent. One of her students, Marthe Baillaud, recalls a song, which they sang, the best conveyed the general reaction of girls. The last stanza was:*

Instead of sitting at home/ And cuddle her husband/ She still witters, not alienated/ And you can die of boredom. D. Brian, op. cit., p. 72.

Susan Quinn thought that such reactions were caused by the fact that they met, for the first time, a woman in not typical role and they felt uncomfortable. But students of the next year treated Maria quite differently. They waited impatiently for her. One of the students recalls: *She endeared us with her straightforwardness, her willingness to help us and with the fact that she sensed both our lack of knowledge and our inner abilities.* Susan Quinn, *Życie Marii Curie*, trans. A. Soszyńska, Warszawa 1997, p. 308.

¹⁹ D. Brian, op. cit., p. 78.

the men's bastion."²⁰ On January 20, 1904 she received her diploma of PhD in Physics.

Male scientists were getting used to the thought that women could be successful in sciences and inventiveness, including exact sciences. From previous eras we can give examples of such women as: Egyptian Merit Ptah (2700 B.C.) who was described as "chief physician", Agnodike a famous physician in Athens (4th century B.C.),²¹ Hypatia from Alexandria (about 370–415) – a philosopher and the author of works from geometry and algebra who probably invented aerometer and astrolabe,²² Maria Jew from Alexandria-legendary alchemist.²³ In Medieval Europe some women had an access to university education. Since its foundation in 1088, the University of Bologna has allowed women to attend lectures and in the 16th century a department of medicine was headed by Dorotea Bucca. An Italian doctor, Trotula di Ruggiero was the head of the department in Schola Medica Salernitana.²⁴

The period of Scientific Revolution of the 16th–17th centuries was characterized by the fact that many women took part in all fields of science but they were excluded from universities and forced to private and individual learning. Very often, they, unofficially, took part in researches of their fathers and brothers, sometimes as assistants. Although they had great successes in astronomy, philosophy (e.g. Margaret Cavendish, Maria Winkelman) none of them, until the 20th century, was accepted to the Royal Society of England or the French Academy of Sciences. But many scientists used scientific discoveries to justify the view that women were worse from their nature and should be subordinate to men.²⁵

Such situation improved a little in the Age of Enlightenment. Laura Maria Caterina Bassi (1711–1778)²⁶ – a physicist and philosopher, the

²⁰ Ibidem.

²¹ *Kobiety w nauce*, http://wikipedia.org/wiki/Kobiety_w_nauce.

²² *Hypatia z Aleksandrii*, http://wikipedia.org/wiki/Hypatia_z_Aleksandrii.

²³ Ibidem, *Maria z Aleksandrii*, http://wikipedia.org/wiki/Maria_%C5%BByd%C3%B3wka.

²⁴ *Kobiety w nauce*, http://wikipedia.org/wiki/Kobiety_w_nauce.

²⁵ Ibidem.

²⁶ *Laura Bassi*, http://wikipedia.org/wiki/Laura_Bassi.

author of scientific works concerning mechanics and hydrodynamics – was employed as a lecturer at the University of Bologna, as a first woman, at the age of 28. Her successor was Maria Gaetana Agnesi (1718–1799)²⁷ – Italian philosopher, linguist, mathematician, the author of works concerning integral calculus and differential calculus; she was an honorary member of the Faculty at the University of Bologna. Caroline Herschel (1750–1848, the discoverer of more than 500 stars)²⁸ and Mary Fairfax Sommerville (1780–1872, Scottish physicist)²⁹ were the first women who became the members of the Royal Astronomical Society. At that time it was a great success that their works were published by the Royal Society. One of the most eminent women-scientists of the 18th century was Emilie du Chatelet (her real name was: Gabriele Emilie Le Breuil, marquise du Chatelet) – born on December 17, 1706 in Paris – a mathematician, physicist and writer.

In the 19th century Maria Mitchell (1818–1889),³⁰ a discoverer of a comet in 1847 was the first woman to be accepted to the American Academy of Arts and Sciences in 1848 and to the American Association for the Advancement of Science in 1850. At the end of the 19th century there appeared more possibilities for women to take part in education, especially in medical sciences.³¹ Elizabeth Garret Anderson was the first woman who got the medical qualifications. At that time, we can note many eminent women in other disciplines of exact sciences. They were: in Great Britain: Herta Marks Ayrton (mathematician and engineer), Margaret Huggins (astronomer), Beatrix Potter (microbiologist), Augusta Ada King, Countess of Lovelace (described mechanical computer of Charles Babbage – so called Analytical Engine); in France: Dorothea Klumpke-

²⁷ *Maria Gaetana Agnesi*, http://wikipedia.org/wiki/Maria_Gaetana_Agnesi.

²⁸ *Caroline Herschel*, http://wikipedia.org/wiki/Caroline_Herschel.

²⁹ *Mary Somerville*, http://wikipedia.org/wiki/Mary_Somerville.

³⁰ *Maria Mitchell*, http://wikipedia.org/wiki/Maria_Mitchell.

³¹ We can enumerate here few schools for girls in Great Britain: North London Collegiate School (1850), Cheltenham Ladies' College (1853), Girls' Public Day School Trust (1872), Sommerville College, Oxford (1879), New York Infirmary for Women and Children (1857) and the Woman's Medical College of the New York (1868) opened by sisters Elizabeth and Emily Blackwell together with Maria Zakrzewska.

Roberts (astronomer); in Germany: Amalie Dietrich (natural history expert, biologist) and Agnes Pockels (physicist); in Russia: Sofia Kowalewska (mathematician). At the turn of the 19th and the 20th centuries there were some more eminent female scientists: Lise Meitner (Austrian atomic physicist) – second woman in the history of the University of Vienna to receive PhD in Physics, and she tried, but in vain, to work with Maria Curie-Skłodowska in Paris; Emmy Noether (German mathematician) famous for her achievements in ring theory (a certain class of rings was given the name Neother ring;³² Ida Tacke Naddack (discoverer of rhenium); Marguerite Catherine Perey (French chemist and physicist, discoverer of francium). She was a personal assistant to Maria Skłodowska-Curie till 1934.³³

Maria Skłodowska – Curie was the first, and, up till now, the only woman, who was awarded the Noble Prize twice (in 1903 in physics, together with her husband Peter and Professor A.H. Becquerel, and in 1911 in chemistry). In this article we want to show what obstacles she had to overcome in her way to enter the male “clan” of scientific associations and institutions.

In 1903, Peter and Maria Curie were on the list of candidates for Noble Prize (they were already nominated by French pathologist Charles Boucard in 1901). Hearing this, four members of the French Academy of Sciences wrote a letter to a committee in which they underlined achievements of Peter Curie and diminished Maria’s contribution. They opted for distinguishing Peter and Henrie Becquerel as co-discoverers. The letter was signed by Jean-Gaston Darboux, Eleuthere Mascart, Henri Poincare and Gabriel Lippmann. It was a paradox because G. Lippmann was Maria’s PhD thesis supervisor and H. Poincare knew very well that Maria was at least an equal partner in the working team. Articles, her PhD dissertation and laboratory journal written by both of them proved it. So why did they write such lies? Dennis Brian suggests: *Maybe the French couldn’t stand the thought that with so many male candidates, the Prize could go to*

³² A characteristic feature of those times was the fact that her article on this subject was read, at the meeting of scientific organization in Göttingen, by Felix Klein because E. Noether could not make a speech at the scientific meeting of this organization.

³³ *Kobiety w nauce*, http://wikipedia.org/wiki/Kobiety_w_nauce.

a young woman from a foreign country?³⁴ Finally the commission divided the prize between the Curies and Becquerel.

Tired of work, Peter and Maria Curie did not go to Stockholm (it was first such a case); the Ambassador of France in Stockholm collected the prize on their behalf on December 10, 1903. The president of the Royal Swedish Academy of Sciences, H.R. Törnebladh said: *The great success of Mr. and Mrs. Curie is the best illustration of an ancient proverb coniuncta valent* [there's strength in unity].³⁵ *This great success of Professor and Madam Curie [...] makes us see the Word of God in different light: «It is not good for the man to be alone. I will make a helper suitable for him»» (Genesis 2, 18). This helper suitable for him can be interpreted in a literal meaning and not as partnership. Barbara Goldsmith shows that this reference to Biblical Eva, men's temptress, showed well the attitude towards Maria. Although she was a professor, just like her husband, she was addressed, both in the past and in contemporary times, madam Curie.*³⁶

During the evening reception Torneblath three times in his speech underlined Becquerel's achievements in the field of radiation.

But the Nobel Prize gave an international fame: the government formed a new Department of Physics at Sorbonne where Maria was the head of laboratory and she had two assistants. But not everyone was able to accept Maria's success. D. Brian writes: *In a few newspapers Maria was given an equal partner status in research but the majority of journalists couldn't or didn't want to believe that she really deserved the Prize. According to them, she didn't even deserve to be mentioned and they described her as Peter's assistant «dedicated partner in her husband's research who associated her name with his discoveries, a partner and her husband's muse».* *She was also a woman who «kindled a saint fire every time she noticed that it died down».* *Some of them worried whether she neglected her duties as wife and mother,*

³⁴ D. Brian, op. cit., p. 83.

³⁵ It should be added that the „unity of strength” was formed by the representatives of two nations: French and Polish.

³⁶ B. Goldsmith, *Geniusz i obsesja. Wewnętrzny świat Marii Curie*, trans. J. Szmolda, Wrocław 2006, p. 102; D. Brian, op. cit., p. 84.

*but at least one reporter wrote that Irene (her daughter) wasn't neglected and called her a charming child.*³⁷

After Peter's tragic death on April 19, 1906, Sorbonne's authorities asked Maria to continue her husband's research. On May 13, 1906 she became the head (!) of research of the Department of Science of the University of Paris. For Sorbonne's authorities it was too daring plan to propose her – the world's famous scientist and Noble Prize laureate – a chair in this Department. However, her knowledge and the profile of research exceeded prejudices and conservatism. At the end of 1906 she accepted the proposition of conducting a lecture, after her husband, Peter, at Sorbonne. Maria, as the first woman at Sorbonne, was the head of the Department of General Physics.³⁸ About 200 people came to her inaugural lecture on general physics at the Faculty of Mathematics and Natural Biology on November 5, 1906. Among them there were: deans, scientists, students from Sevres, students from Sorbonne, journalists, photographers, ladies and gentlemen from upper classes. D. Brian wrote: *Particular situation of a widow taking a place of a professor of physics at a prestigious University of Paris attracted a large crowd as to a sensational murder trial or an attraction of a season.*³⁹ Maria's success and promotion – the first woman lecturing at Sorbonne – was described by "Le Journal" as *the great triumph of feminism* that allowed to question the so called superiority of men and made granting women equal rights easier. Another journal pointed out that the University the lecture took place at, had a normal hall with only 120 seats. *Wouldn't it better if, in such an extraordinary circumstances in Sorbonne's history, madam Curie could conduct her lecture in a great amphitheater, only for this lecture?*⁴⁰ In 1908 Maria was appointed full professor in the University. The question arises: has the example of the University of Bologna – which in the 18th century let Laura M.C. Bassi, Maria G. Agnesi, and other women, conduct lectures – had any influence on letting Maria conduct her lectures at Sorbonne or was it necessary to continue the research and teaching of the subject, or maybe it was a sign of the recognition of Maria Skłodowska-

³⁷ D. Brian, op. cit., p. 86.

³⁸ E. Curie, op. cit., p. 285.

³⁹ D. Brian, op. cit., p. 108.

⁴⁰ E. Curie, op. cit., p. 290.

-Curie's knowledge? There is no doubt that some scientists did not accept a woman-professor who did not wear gown as a sign of independence. The gown was seen, very quickly, during her visit to the United States in 1921 when she received her *honorary doctorate*.

The opportunity to attack Maria appeared in 1910. In France, there were two ways of honoring eminent people while they were still alive: the Legion of Honor and a chair in the French Academy of Sciences. Maria was awarded an Officer's Cross in the Legion of Honor in 1910 but, just like Peter, she did not accept it. In December 1910 she tried to be accepted to the Academy of Sciences. She was supported by some of its members and very influential newspaper "Le Figaro." Eduard Branly and Marcel Brillouin were her rivals to this post. All members of the Institut de France (a supreme organization of the five academies) arrived at the voting on whether a woman could be allowed to candidate to such a post. There were 163 of them although the Academy of Sciences consisted of only 68 members. In voting they opted for allowing women to candidate. A storm broke out. Brian wrote: *A loose, but very strong coalition of conservatives, catholic, chauvinists, women haters and anti-Semites charged in a furious attack. The most rabid anti-Semite [...] stated that Maria's candidature was a result of a conspiracy hatched up by a clique of Jews and Protestants in order to deprive the two Catholics of the honor of entering the Academy. A right-wing tabloid suggested that with such a surname as Skłodowska, Maria had to be a Jew herself – or at least, she must have been a freethinker and as such, she shouldn't defeat devout Catholics. Others stated that Peter had been the only genius in the family and that Marie didn't deserve the Noble Prize.*⁴¹

The reporter from "L'Intransigeant" ridiculed her lectures at Sorbonne, a right-wing "Excelsior" published a photograph of Maria's face – that looked like from police files – on the first page.⁴² Some magazines scorn-

⁴¹ D. Brian, op. cit., pp. 123–124.

⁴² Other newspapers followed the campaign against Maria: *Maria is Peter's partner* ("Le Figaro" January 17, 1911); *Maria is an intelligent and very devoted wife* ("La Croix", January 23, 1911); *Madam Curie has never written any work by herself, she was only a humble partner of her husband and there aren't any sufficient reasons for her candidature* ("L'Action Française", January 5, 1911).

fully discussed models of tailcoats worn by female academy members: should they be tailored according to one pattern or should they be tailored individually? Paris "Femina" carried out a survey devoted to this "very important" matter and published the project of a collective robe and individual projects.⁴³

Ewa Curie wrote: *A fight – very fierce and without scruples – between "Courists" and "Brandlists" broke out; between the party of free thinkers and clericalists, between supporters and opponents of such a sensational "revolution" as allowing women to become members of the Academy. Maria looked with dismay at those polemics she hasn't foreseen and towards which she was helpless. The greatest names in her "camp" fought for her: Henry Poincaré, dr Roux, Emil Picard, professors: Lippmann, Bouty, Darboux. But the other camp defended itself fiercely. [...] Catholics insidiously whispered that Maria is a Jew and freethinkers are reminded that she is a Catholic.*⁴⁴

Information concerning this ruthless fight reached Poland. "Tygodnik Ilustrowany Świt" wrote in its correspondence from Paris that future female candidates for the Academy are the most interesting ones and Maria Skłodowska-Curie is for them *a ram thanks to which its perfection is to break the gates of inaccessible fortress for women*. The magazine speculated that Maria was to set a precedent for the future [...] *there are many women just behind her that are ready to wear academic gowns*.⁴⁵ Among those women were: Gererd d'Houville, countess De Noailles, Colette Willy, Marcelle Tinayre, Jeane Catulle Mendes and many others.

The voting took place on January 23, 1911, during which the chairman ordered the janitors to let everybody in, except women.⁴⁶ Before the voting, only male candidates represented their reports. Branly received 29 votes, Maria Curie – 28, Brillounin – 1. In spite of press smear campaign, slanders and trampling the dignity of a woman and scientist, Maria lost only by one vote. Since the difference between her and the winner was small, the voting was repeated. Branly got the second, decisive vote and became the

⁴³ „Z”, *Will madam Curie-Skłodowska join the Academy of Sciences?*, "Tygodnik Ilustrowany ŚWIAT" January 21, 1911.

⁴⁴ E. Curie, op. cit., p. 311.

⁴⁵ „Z”, *Will madam Curie-Skłodowska join ...*, op.cit.

⁴⁶ E. Curie, op. cit., p. 311.

member of the Academy. In the next voting the members decided not to let such a situation happen again (92 votes were for, 52 abstained from voting). It was not until 1979, 68 years after this embarrassing decision, that the first woman was accepted to the Academy of Sciences. Maria accepted this verdict with calmness and never ran for the membership again. Her friends were disappointed at the results but at the same time very proud of her. "Le Radical" (January 24, 1911) wrote that *it was a bad luck that politics meddled into this affair and that Maria's candidature was interpreted as a provocation to Catholicism*. The opponents triumphed – "La Patrie" published the article (January 25, 1911), written by Henri Rochefort, entitled "Jews' Defeat."⁴⁷

After more than 11 years, on February 7, 1922, Maria was chosen a member of Medical Academy in Paris, breaking a 224-year old tradition of not allowing women to enter the membership. Her candidature was recommended by 35 members of the Academy, and 65 members of other academies supported her candidature. It should be mentioned that all other candidates for this position renounced their candidatures for Maria Skłodowska-Curie. On July 4, 1926 Lubelskie Towarzystwo Lekarskie [The Medical Lublin Society] chose Maria for its honorary member and the President of the Society informed her about it in a letter from July 6.

It was not the end of the attacks. In 1910 some people connected with the University accused Mary of romance with 38 year old, married man, Paul Langevin, former student of Peter Curie and his successor at the School of Physics and Chemistry. Langevin never confirmed this fact but

⁴⁷ In 1911 ruthless smear campaign against Maria started; it even reached America. After 10 years, before her arrival to the United States her niece, Helena Dłuska had to explain Maria's biography in response to the article that was published in „New York Times” under the title Radium Gift Awaits Mme. Curie Here (February 23, 1921). She wrote: *Mme. Curie-Skłodowska was born in Warsaw 52 years ago. Her father, as „New York Times” states, was a professor of physics. He was a Pole not a Jew, as you have written, a descendant of an old, Polish family so he didn't «convert to Catholicism just before his daughter was born» because his family had already been Catholic for ages. Her mother wasn't Swedish, her maiden name was Bogucka and she came from an old Polish family [...]. I'm sending you these few remarks because I know that Mme. Curie-Skłodowska is very proud of the fact that she is Polish and although she married a Frenchman, she was always Polish patriot.* "New York Times", February 23, 1921, p. 12.

the press exposed it not only in France. Maria was slandered very brutally in autumn 1911 during her second nomination to the Noble Prize. She was accused of breaking the good marriage and the press demanded to dismiss her from the Department at Sorbonne; some advised Maria to leave France. Only a small group of her friends defended her, among them was Charles-Edouard Guilleme, who on November 11, 1911 wrote to Maria: *We are with you in sorrow and joy. We were with you during those painful days that you have just passed: we are still with you. There are some people who can't forgive you your greatness: they proved this during elections to the Academy. The same primitive envy made them revive again [...] The campaign of the last few days proved that these people haven't given up yet.*⁴⁸ To defend her honor many duels with swords were fought: Henri Chervet (editor of "Gil Blas") with her persecutor Leon Daudet (editor of "L'Action Francaise"), Gustave Tery with Pierre Mortimer (chief editor of "Gil Blas"). One should have a great fortitude and an iron personality to survive those difficult years of 1910–1911 and at the same time work on the research and take care of the family. On December 18, 1911 Maria was awarded the Noble Prize in Chemistry, *in recognition of her services to the advancement of chemistry by the discovery of the elements radium and polonium, by the isolation of radium and the study of the nature and compounds of this remarkable element.*⁴⁹ This time she collected the prize in person in Stockholm. Laurent Lemiere writes: *Maria Curie notices that awarding the second Noble Prize didn't proceed in a dignified atmosphere. Although «Langevine's affair» was classified to the category of human stupidity, it left a deep wound in heart of a woman who again became a lady in black.*⁵⁰

MARIA SKŁODOWSKA-CURIE AND THE FEMINISTS

Maria Skłodowska-Curie enjoyed a great support, even fascination from women's emancipation movements. For suffragists, feminists and other

⁴⁸ D. Brian, op. cit., p. 133.

⁴⁹ http://en.wikipedia.org/wiki/Marie_Curie.

⁵⁰ L. Lemire, *Maria Skłodowska-Curie*, trans. G. and J. Schirmer, Warszawa 2003, p. 97.

women's movements, she was a vivid example of the equality of the sexes at the top of human knowledge and abilities. She was a symbol of a woman able to combine traditional roles of a wife and mother "guiding the spirit of a family" with the achievements in the field of sciences, academic and social activities. She was an example of ideological and religious tolerance and moderate liberalism.

In France the feminist's discourse started at the turn of the 14th and the 15th centuries. Christine de Pisan (or Pizan – 1364– c.1430) – the first professional woman writer – was regarded as first feminist who opposed men's domination in the world.⁵¹ In 1836 Portret de Manchenps was the leader of the women's movement in France. A magazine "La gazette des femmes" became the means for the fight and a mirror of achievements in women's matters; their demands included: to open universities and let women work in all professions.

Inspired by the ideals of French Revolution, English woman writer and philosopher, Mary Wollstonecraft (1759–1797)⁵² published a small book entitled *A vindication of the rights of women* in which she demanded equal rights for women; it was generally treated as a first manifesto of feminism. Then, in England, there developed a strong movement of suffragists (Latin: suffrage – the right to vote) who demanded the right to vote. In 1848 in Seneca Falls women formulated *The Declaration of Sentiments* (from the initiative of Elizabeth Cady Stanton) in which they demanded equal rights for women and men, and in this way forming women's equal right movement. In 1897 the National Union of Women's Suffrage Societies (NUWSS) was founded in Great Britain but in 1903 it suffered a split of the Women's Social and Political Union (WSPU). In May 1890 an organization called the National American Woman Suffrage Association (NAWSA) was formed. It composed of two unified organizations: the National Woman Suffrage Association (NWSA) and the American Woman Suffrage Association (AWSA). Women's organizations were founded almost in all European countries. At the end of the 19th century the emancipation movement achieved many successes, including women's suffrage. In the

⁵¹ Christine de Pisan, http://pl.wikipedia.org/wiki/Christine_d_Pisan.

⁵² Mary Wollstonecraft, http://pl.wikipedia.org/wiki/Mary_Wollstonecraft.

USA, the Territory of Wyoming⁵³ granted women the right to vote in 1869 (it was supported in 1890 when it became a State). In the 1890s the States of Colorado, Idaho and Utah did the same and on August 26, 1919 the State of Tennessee joined this group; in New Zealand (under formal British control at those times) women obtained an active suffrage in 1893 and passive – in 1919; in 1902 equal suffrage was introduced in Australia. In Europe women could vote for the first time on June 1, 1906 in the Grand Duchy of Finland.⁵⁴ Of course suffrage did not solve the problem of emancipation but it was an important stage in this process enabling women to organize themselves, undertake the fight for equal rights in the fields of education and science and in politics.⁵⁵

Maria Skłodowska-Curie was engaged in the activity concerning women's suffrage but she had very loose and indirect connections with women's movements although she, herself, fought for the recognition of her scientific achievements and her social position. She supported rather morally the feminists' liberal movement than directly backed its actions. She served the movement through her scientific and professional achievements.

When in 1903 Maria and Peter came to London – on Professor William Ayrton's invitation – she met and made friends with his wife, Hertha, a daughter of Polish Jew, who was also a physicist. It appeared that Hertha was politically engaged in suffragists' movement. In spring 1912, she asked Maria to sign a petition calling for releasing three British suffragists who joined hunger strike. Maria wrote to her: *I was very moved by what you had written to me about the fight of these three English women for their rights. I admire them for their strength and wish them all the best. [...] You can use my name in this petition because I trust in your judgment and I am sure that your favor must be justified.*⁵⁶

⁵³ http://en.wikipedia.org/wiki/Wyoming_Territory.

⁵⁴ In most European countries equal women's suffrage was introduced in the mid-war period (1918–1939), in a few of them, after the Second World War: France (1944), Italy (1946) Switzerland (1971), Portugal (1974), Lichtenstein (1984).

⁵⁵ See: K. Ślęczka, *Feminizm, Ideologie i koncepcje społeczne współczesnego feminizmu*, Katowice 1999.

⁵⁶ D. Brian, op. cit., p.149.

After the First World War broke out in 1914, Maria gave the hospitals X-ray machines and from September 1914 she organized, as the Head of Radiological Service of French Red Cross, mobile X-ray stations along the French-German front. Finally she equipped 20 X-ray vehicles called “small Curies.” Over one million wounded soldiers were X-rayed and many thousand lives were saved thanks to them. It was symptomatic that the funds for the first ambulance were collected by French Women Association (it was Renault with the inscription Service Radiologique, two other were presented by marchioness de Ganay and Princess Murat. After years, in one of her work (*La Radiologie el la guerre*, Felix Alcan, Paris 1921) Maria wrote: *It is nice to remember that one of the radiological vehicles was given by French Women Association and was equipped on its cost.*

The greatest enthusiasm accompanied Maria Skłodowska-Curie during her stay in the United States from May 4 till June 28, 1921. This journey was inspired and organized by Maria Mattingly Meloney (called Missy), an eminent journalist, previously the editor-in-chief of “Denver Post” and a popular women’s magazine “The Delineator,” a feminists’ movement activist. It was her, who made an attempt to collect funds (\$ 100,000) to buy 1 gram of radium for Maria’s laboratory in Paris and made Maria a star (*radium woman*), Joan d’Arc of radium in the United States. Missy formed an Advisory Committee (among others, wives of D. Rockefeller, Calvin Coolidge, Robert Mead) which under her management was to collect those funds. At first, she asked 10 richest women in the United States for donations of \$ 10,000 but none of them answered. Then she addressed the readers of “Delineator” for donations of \$ 1 or \$ 5 dollars. In all states there appeared Committees for Maria Curie’s Radium Fund. “Delineator” published Maria’s portraits.⁵⁷ Women from Female Colleges answered the appeal, and as Brian wrote, *they organized collection of money on campuses and children who heard about it from their mothers sent small sums from their pocket money.*⁵⁸ Within one year American women collected more that \$ 100 000.⁵⁹

⁵⁷ B. Goldsmith, op. cit., p. 180–184; E. Curie, op. cit., p. 361–376; F. Giroud, *Maria Skłodowska-Curie*, trans. J. Pałęcka, Warszawa 1987, pp. 222–236.

⁵⁸ D. Brian, op. cit., p. 174.

⁵⁹ Large sums were given by a widow of a poet and playwright W.V. Mood and the president Herbert Hoover.

First days of Maria's six week stay in the United States were filled with visits in colleges for girls. 3500 members of the Association of University Women, French Ambassador, Ignacy Paderewski with his wife and American scientists were present at her meeting in New York on May 15, 1921. Maria received a honorary citizenship of New York, honorary doctorate of the University of Columbia and many diplomas. Her stay in Chicago was a celebration for generations of Polish immigrants. Ewa Curie wrote: *she will receive an honorary membership of the university; she will be given a few medals. She will take part in three receptions in her honor. At the first one, only a ribbon separates her and her daughters from a marching crowd. At the second, a heap of flowers almost covers her. But the third reception was the best. It took place in Polish quarter of Chicago and only Poles take part in it. Here she is a symbol not only of a scientist but their homeland as well. Men and women cry, kiss her hands and touch the hem of a dress [...]*.⁶⁰

Limited framework of this article has not allowed to show the active role of Maria Curie-Skłodowska in the works of the International Committee on Intellectual Cooperation at the League of Nations and her work on forming international system of scientific information and research scholarships. Those who are interested in this little known but important field of her activity I refer to an excellent book by Jan Piskurewicz.⁶¹

NON OMNIS MORIAR

On July 4, 1934 Maria Skłodowska-Curie died in Sancellemoz at the age of 67. In an official announcement dr. Tobe stated: *Maria Curie died [...] from aplastic anemia of a violent course. Bone marrow didn't react probably due to changes caused by a long-standing exposure to X-rays.* "New York Times" from July 5, 1934, wrote on the first page: *Mme Curie is Dead: Martyr to Science* and in the next lines: *Mme Maria Curie, whose work, done alone and together with her husband, over radium and radiology is one of*

⁶⁰ E. Curie, op. cit., p. 373.

⁶¹ J. Piskurewicz, *Między nauką a polityką. Maria Skłodowska-Curie w laboratorium i w Lidze Narodów*, Lublin 2007, p. 248.

the most praiseworthy achievements in the world, died at 6 A.M. (local time). Her death was caused by a form of pernicious anemia and as the doctors said it was hastened by «long term exposure to radiation which influenced her bone system and prevented the normal reaction of her organism to the illness» [...] Her daughters Ewa – a playwright and a pianist – and Mme Joliot (Irena) who with her husband continue family tradition at Radium institute headed, up till now, by her mother, were present at her death.

On July 6, 1934 Maria was buried at the cemetery in Sceaux. She was buried near her husband Peter. In 1935 a posthumous publication of Maria's book entitled *Radioactivity* was published. Ewa Curie wrote her mother's biography entitled *Maria Curie*. This biography became an international bestseller. The book was published in over 60 countries. Metro Goldwyn Meyer made a film, entitled *Madam Curie*, based on the book. Hollywood film was distributed in 1943 and received seven nominations for the Oscars. In the next years, a few more biographical film and television versions were made.

On April 20, 1995 Maria and Peter's ashes were moved to Paris Pantheon and laid among other persons of merit for France. Maria is the first person, not born in France, and the first woman, honored in this way for her scientific achievements. Francois Mitterand – president of France in the years 1981–1995, president of Poland Lech Wałęsa, her daughter Ewa, children of Irena and her husband Frederic Joliot-Curie, eminent scientists and Paris citizens accompanied the ashes of Peter and Madam Curie on their way to the Pantheon. F. Mitterand took the ashes to the Pantheon and then dedicated them his farewell speech: *The moving of Peter and Maria's ashes to this the most sacred place is not only the act of remembrance, but also an act by which France shows and underlines its respect for those who we consecrate here, for their greatness and their life. Today's ceremony is also to greet the first woman in the history of Pantheon. This is another symbol that rivets the attention of our society – a fight of a woman who decided to share her skills with society and it was the society in which all skills, scientific researches and public duties were reserved exclusively for men.*⁶²

⁶² B. Goldsmith, op. cit., p. 6.

In 1994 the Curie Museum in Paris changed its name into the Peter and Maria Curie and Frederic and Irena Joliot-Curie Museum and Archives of the Radium Institute in Paris. In April 2005, viewers of Channel 2 of French TV voted *for the greatest French of all time*. The first was Charles de Gaulle, the second Ludwig Pasteur, on the fourth place – as first woman – Maria Curie.

Scientific traditions of the Skłodowska's family did not stop with Maria's death. They were continued by Frederic and Irena Joliot-Curie, the Noble laureates from 1935 in chemistry for the synthesis of new radioactive elements. It should be mentioned that Irena, for a short time, was undersecretary in a government of Leon Blum, a socialist and the first Jewish Prime Minister of France. For her, he formed a Department for Scientific Research. It was the first case in France, that a woman was appointed to such a high post. Frederic and Irene's daughter – Helene belong to top specialists in nuclear physics of low energies. Since 1957 she has been working at the Institute for Nuclear Physics in Orsay (in fact, it was created by her parents). Their son – Pierre – is also a scientist, biophysicist, an authority in the field of photosynthesis, professor at the Collège de France and the dean of the Faculty of the Cell Biology. He is also a member of the French Academy of Sciences and the United States National Academy of Sciences. Helene's son, Yves, is an astrophysicist; his main interests are mainly planetology and asteroids.

Ewa Curie-Laboisie was famous as a biographer of her great mother. She was an activist in peace missions and an opponent of communism. In 1944 she did not want to name the University, that was being erected on the decree of pro – soviet Polish Committee of National Liberation, after her great grandmother Maria Curie-Skłodowska (Irena and Frederic agreed). She wrote musical reviews and translated American musicals to French. Sometimes she, herself, gave concerts. In the USA she received National Book Award in non-fiction. During the war she joined the de Gaulle's army. After the war she was the head of Department for Women in the Ministry of Information. She was an advisor to NATO's Secretary General, H.L. Ismay. At the age of 50 she met Henry Laboisie, the ambassador of the United States in Paris and married him in 1954. Laboisie, as general director of UNICEF, collected the Peace Noble Prize awarded

to this organization. Ewa visited 109 countries with children's aid missions. In 1938 the President of the Second Republic of Poland, Ignacy Mościcki, decorated her with the Officer's Cross of the Order of Polonia Restituta. In February 2005, the President of the Third Republic of Poland, Aleksander Kwaśniewski, honored her with Commander's Cross of the Order of Merit of the Republic of Poland (it was given by the late President Lech Kaczyński).