

ON THE QUEST FOR INFORMATION
ABOUT MYRON MATHISSON*

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The purpose of the article is to indicate details connected with the search for any information on the life and work of Myron Mathisson (1897–1940), a not so widely known Polish theoretical physicist who made outstanding contributions to the problem of motion in general relativity and to the theory of the wave equation. The search started in about 1978. Since Tilman Sauer and Andrzej Trautman in their article published in the current issue of *Acta Physica Polonica B* have acknowledged some of the results of the search, one may regard the present article as a sort of an appendix to that by these authors.

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In the autumn 1977 Peter Havas wrote me a letter in which he asked whether it would be possible to find any information about the letters Albert Einstein had written to Myron Mathisson in the thirties of the 20th century. The impressions the letter of Havas made upon me were twofold.

Firstly, it was a surprise. Even though I knew since my student days the significance of Mathisson's paper for the problem of motion in general relativity, I would not expect at that time that a not so widely known physicist from a small country like ours would have been able to maintain a long lasting correspondence with somebody like Einstein. This just has strengthened my motivation to obtain some more competent information about him.

Secondly, having witnessed around me the overall damages caused by war, it seemed to me to be very doubtful that there has been left anything from the manuscripts of Einstein. However, miracles might have happened, and there could have been a chance that was worth the effort of trying to trace after any hints of them.

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I went thus to the main university archives and found files concerning Mathisson's studies at the Warsaw University. The documents gathered there are of two kinds: those attached to his application for the university admittance (dated 29 April 1920) and those recording the progress of his studies there, which he started on the first of October, 1920. It is perhaps interesting to note that when Mathisson was writing his application he was still serving the Polish Army from which he obtained on 10 November 1920 a leave enabling him to continue the studies.

Among the documents of the first kind, the most interesting one is the certificate of the high-school finals he passed in 1915. The finals encompassed eleven subjects, among which were five languages: Russian (which was the teaching language), Greek, Latin, French, and German. Mathisson passed all his partial exams included in the finals with an A. Nothing else is unusual as far the other attachments to his applications were concerned, and there are no traces of "the severe reprimand" he received from the Senate of the Warsaw Polytechnic in 1917, *cf.* [1], p. 9, though there is his 'First Diploma' certificate from there. The rather broad spectrum of courses in his curriculum, which was reaching far beyond the syllabus the students of physics had at that time been obliged to follow, is that what can first of all be seen from the second group of documents in the Mathisson file.

In the main university library, I browsed through the material of different kind, which dealt with the history of the Warsaw University confined to the period 1921–1939 and made copies of few items in which I could find the name of M. Mathison (that spelling was used there). These excerpts are now the main source of our knowledge about Mathisson's academic activity at the Faculty of Mathematics and Natural Sciences in the years 1932–1936. To this activity, already described in [1], the fact may be added that in the academic year 1933/34 Mathisson was a member of the Faculty Council, where he represented all the docents who were active at the faculty.

The next step was to find people who had occasion to meet Mathisson in person. One whom I have already in 1959 asked about Myron Mathisson was Professor Jan Weyssenhoff (1889–1972) a well-known Polish theoretical physicist, one of the co-authors of one of the publications of Mathisson, see the list of Mathisson's publications given in [1]. His answer, however, was very enigmatic. He just told me only that in 1935 when he had left his university chair in Wilno to assume the chair in Cracow, Mathisson was one of the three docents of theoretical physics in Poland who applied for the title of Professor and the chair in Wilno, made vacant by Weyssenhoff's move to Cracow. The authorities granted then the title and the chair to Szczepan Szczeniowski from Lwów.

Szczepan Szczeniowski (1898–1979) was first a specialist in elementary particles and later on in solid-state physics. His Ph.D. thesis was based on experiments on diffraction of electrons in crystals and he accomplished it under Stefan Pieńkowski (1883–1953) at the Warsaw University in August 1928, only eight months after the famous paper of C. Davidson and L.H. Germer, and the length of the electron wave measured by Szczeniowski [2] was definitely closer to its theoretical value than that of Davidson and Germer [3]. The experiment was performed not so long after Poland had regained its independence. This is why it was not only one of the highlights of Szczeniowski's life, but it was also a sign of the height of the contemporary scientific as well as technological standards of the Warsaw Experimental Physics Research Lab., and, first of all, it was one of several successes of the founder of the laboratory, Stefan Pieńkowski, who had suggested this subject of research to one of his students. After the war Szczeniowski was continuing the research in a few fields of physics, being professor at the University in Poznań and since 1958 at the Warsaw Polytechnic, from where he retired in 1969. At the beginning of 1978, at the time when I wanted to contact him, he had almost completely retreated from the public scientific life.

A colleague of mine, Bronisław Kuchowicz (1932–1978), whom I used to meet occasionally at the seminars on theoretical physics, finished his undergraduate studies in Poznań, and he knew Szczeniowski very well. So I had asked him how I could contact Szczeniowski, and Kuchowicz arranged a visit at Szczeniowski's home for the two of us. Szczeniowski, who turned out to be a very cheerful man, evidently enjoyed our visit. As I had turned to the subject and had asked him whether he could tell us of how he remembered Mathisson, he answered that “Mathisson, Sir, was like the cat that used to follow his own paths. He, for instance, was a very ambitious man and was following Gauss' principle *pauca sed matura*, publish little but maturely”. He told us of how he remembered Mathisson in the student times of the latter. He also told us of Mathisson's fascination for the theory of relativity and of his correspondence with Einstein that made a great impression on Szczeniowski. Their acquaintance was broken after Szczeniowski had to move to Lwów around 1933, and next to Wilno.

The next alumnus of the Pieńkowski's school with whom I talked about Mathisson was Ludwik Natanson (1905–1992). He more or less repeated the information I knew from Szczeniowski, and additionally he shed some light on Mathisson's trip to Kazan. He told me that, much to my astonishment, in the thirties an official cultural exchange programme between Poland and the Soviet Union had started, and only a few scholars were interested in taking part in it. He also added with a smile (we have to remember that this conversation was held during the communistic times when people used not to speak openly one to another) that after a year Mathisson suddenly

reappeared in Warsaw and shortly afterwards he went to Cracow, and then to the British Isles. He informed me too that Mathisson, while in London, had seen in a newspaper a list of the victims of an execution in Warsaw by the Nazis, and being misled by one of the names on the list, he published in *Nature* an obituary of Professor Czesław Białobrzewski who at the time was still alive in Warsaw.

Kuchowicz was excited very much by the stories we had heard from Szczeniowski. On the next day he told his office roommate, Bruno Lang at the Institute of Radiochemistry, all that what he had learnt the day before. It fortunately happened that Lang was in the past a good friend of Marcin Kuśnierz, an alumnus of the University of Science and Technology in Cracow, who in the thirties had married Adela Jungermann, the sister of Mathisson's wife. So, Lang, being on a scientific visit to Cracow, met Kuśnierz and asked him about any information concerning Mathisson. Kuśnierz answered that he used to meet Mathisson frequently while the latter stayed in Cracow. He remembered him as a walking encyclopedia, as an energetic, friendly and open-minded man of polyglot abilities. They really must have been on friendly terms because once Mathisson allegedly had admitted that the only passions of his were theoretical physics and mathematical analysis. Kuśnierz also recalled that Mathisson regularly attended not only seminars on physics in Cracow, but also some seminars on mathematics, especially the seminar on differential equations led at that time by Tadeusz Ważewski (1896–1972). At one of the seminars Ważewski introduced to Mathisson Miss Irena Jungermann, one of his students finishing at that time her M. Sc. thesis. Shortly afterwards Mathisson married her. Lang got in Cracow the contemporary address of Mrs Irena Gill, who remarried after the war. Before long, he received from Kuśnierz a letter with the photo of Mathisson that is included in [1]. Lang wrote first a letter to Irena with who he was once on friendly terms too, and then, after receiving her reply, he handed a copy of her letter together with her address, at Salisbury in Rhodesia, and Mathisson's picture to me.

I read Mrs Gill's letter with some surprise because her characteristic of Mathisson seemed to be very different from the news that Lang received from Kuśnierz. Because now the old copy is barely readable, I will quote here without any changes a part of it. After a personal introduction, with a slight note of irony, she excuses herself for answering Lang in English, which was much easier for her at the time of writing the letter. So, the fragments concerning Mathisson read as follows:

(...)To start with scientific papers *etc.*, Miron's work was divided between two main interests: theoretical physics, and his collaboration with Hadamard, *i.e.* general analysis, differential equations — it is all so long ago that I can hardly remember. I met Hadamard in Cambridge and gave him all I could find that had any connection with him. I suppose Hadamard must have died long ago; (...)

As far as Einstein is concerned, I remember one single letter, acknowledging a paper, and saying 'you must be my natural son, we must meet and talk about this'. This incidentally went back to pre-Nazi days, when Einstein was still in Berlin. Then Einstein went to the States, Miron went to Russia some time later, I don't remember when. He came back to Poland, took an honorary position as 'Private-Docent' at the Kraków University, and got an unpaid leave to go to France, England, the States, Sweden and back to Poland, unless he managed to find a job somewhere on the way. The outbreak of war put paid to the travels; as you know we were stuck in England, with Polish passports, and nobody was interested. As far as I know, Miron did not try to contact Einstein again, but he was most self-contained person, and it was not easy to reach him, if he did not want to be reached. My recollection is that he just gave up. On top of it he had TB, which sapped energies: when at last he sought medical advice, it was too late. Incidentally, Infeld's 'inspired' guess that he died of hunger is a nonsense.

I regret today that I have no 'memorabilia' concerning Miron. I am not a sentimentally person, and mementos mean little to me. As I moved around the world, I pruned and culled my possessions to make each successive move just a little bit easier. I cannot remember throwing Einstein letter away, but I did make search for it and could not find it. I am sure it went the way of all that on some time or another.

I am sorry to be of little help. Frankly I don't even know when or where he was born. The family came from Riga, and that is all I can tell you. Perhaps I could answer specific questions, but on this rather general request my mind seems to have gone blank. Sorry again! (...)

In August 1978, I left for USA as a visiting Professor to the Temple University in Philadelphia. Sometime after I returned to Warsaw in October 1979, Lang called me up. He was telling me that the editorial board of *Nukleonika* made one of its issues available for publications memorizing Kuchowicz who died in June 1978, and he was asking me to submit a scientific article of mine to the edition. He was telling me also that about a year ago, while I was away, he had found a professor in Kazan who was in a scientific contact with the group to which Lang was affiliated. Lang wrote him a letter asking for finding any traces of Mathisson's stay in the Soviet Union and received an interesting reply. Subsequently, Lang brought the original of the reply, leaving it to my disposal. Lang was a very energetic

person and he supplied me with essential information that otherwise would not be accessible to me. Between the beginning of 1978 and the middle of 1980, we met each other in person three times only, in addition he called me up a few times. Unfortunately, afterwards I lost him out of my sight, and recently, though I hardly tried to collect information on his later fate, I failed to find out anything.

The letter of Professor B.L. Laptev, sometime member of the now Chebotarev Research Institute of Mathematics and Mechanics at Kazan State University, provided us with new information that the author was at the time able to find in the university archives. Unfortunately, its style bore all the faults fairly characteristic of the Soviet era. In the time, writing letters from that country abroad was a risky affair, and only very important persons were beyond any suspicion when they were doing it, but even their correspondence came under secret censure. The writer of the letter was evidently conscious of it. His style was stiff, and full of newspeech.

Nevertheless, the contents of the letter were interesting. First, the letter stated that Mathisson delivered a few courses for students at the faculty of Physics and Mathematics (note the order!) of Kazan University; the titles of the courses however were not preserved. Next, it revealed that Mathisson arrived there on May 1, 1936, and that on November 16 he was nominated real member of the Research Institute of Mathematics and Mechanics, which was equivalent to a permanent position of a leader of a research section. In his case, it was the section of theoretical physics. (By the way, the institute had been founded only in 1934, and its first director and real initiator was the famous mathematician Nikolay Grigorevich Chebotarev. It is perhaps as well interesting to notice that later, also A.Z. Petrov, the well-known relativist, became member of the same institute.) The introductory part of the letter ends with saying that in the summer 1937 Mathisson went abroad and never returned. As a result of this he was dismissed on 1 October 1937. Evidently, earlier his ‘going abroad’ had been treated like going on vacation. (Mathisson also informed Einstein that he left behind in Kazan all his belongings and books, *cf.* [1] p. 18; this may be regarded as a confirmation of the truth of such a hypothesis . . .)

In accordance with the letter, in the institute research project it was written that the subject of Mathisson’s research would be ‘the diffusion of waves in Riemannian spaces’ and that the subjects of his in collaboration with I.A. Shcherbakov would be ‘cosmology’, ‘the gravitational skeleton’, and ‘the theory of quanta and spin in a relativistic approach’.

The letter ends with an exact quotation, which occupies more than one typed page, of the excerpt that was taken from the institute report for the period from 1 October 1935 to 15 April 1937 and that was dealing with the results obtained by the section of theoretical physics.

The excerpt started on reporting that Mathisson while in Kazan solved the Hadamard problem which ‘during many years did not yield even to the efforts of Hadamard himself’. Further, the author described in a rather professional way the essence of the problem and the significance of its solution. In the next fragment of text, however, he praised highly Shcherbakov for helping Mathisson by carrying out tedious computations which were indispensable to reaching the end solution at all. In my opinion, the latter might be an overstatement made for some red tape reasons. There is a passage devoted to Mathisson’s problem of motion of spinning bodies in general relativity; here however the author confined himself only to generalities, in a way that indicated his misunderstanding of the issue. The excerpt ends in saying that Mathisson was also instructing his collaborators and graduate students how to carry out research in his specialty.

As I came to the Temple University, I gave an account to Peter Havas of all that we had found out about Mathisson in Warsaw. In effect, we both concluded that somehow the scientific legacy of Mathisson ought to be made more popular. Since I brought Peter a booklet from the editorial series *Polish Men of Science* devoted to Leopold Infeld, published in Warsaw shortly before my departure, we agreed that a similar booklet on Mathisson would serve our purpose. We postponed writing our contributions and the editorial work to an our future meeting, because first I had to return to Warsaw to ensure the sponsorship of the Polish Academy of Sciences to the project, which I thought to be in our country still possible. Therefore, each of us wrote a letter to Mrs Gill, asking her specific questions and inviting her to write a short article about her late husband, which we proposed to publish in the projected monograph. She replied with a single letter addressed to both of us, saying that though she is perfectly happy because of our initiative, she would be useless at writing anything for us as the result of all that had happened to her after the death of her first husband.

Relatively shortly after my return to Warsaw, the economic situation in Poland was quickly deteriorating. In the next decade the political situation of our country was, to put it mildly, very unstable. In effect of this, Peter seemed to be rather scared to come to Poland because of his bitter experience of living in Europe just after the war. He arrived here first at the beginning of the last decade of the 20th century. Then, however, despite of the freedom gained here, because of a very bad economic situation of the country, nobody would even dare to ask for funds in support of a publication the main part of which would be a collection of reprints of twelve articles that had been already published somewhere else a long time ago. This was the end of the project.

Peter had been the initiator of the search described above. My role in it was only to collect tiny pieces of more or less relevant information. On my way, very often quite by lucky accident, I came across people who made some scraps of information concerning Mathisson available to me. I did not make any selection or evaluation of relevance of the information received. In this way, another of possible sources of knowledge about the life and work of Mathisson had evolved. I am very glad that the source has already been of some help to Bronisław Średniawa and Andrzej Trautman when they prepared some of their papers.

Now in the era of internet, the idea of printing collected works of scientists of even some importance more and more is turning to be obsolete. The idea of organizing conferences devoted to a particular scholar serves certainly better the purpose to make his achievements popular. It also motivates some of the now living scientists to develop the old thoughts in accord with contemporary standards as well as it enlarges the possibility of finding new sources of historic information on the life and work of the scholar, information that still may be hidden all over the world. That is why all of us own our gratitude to Andrzej Trautman and Krzysztof Pachucki for initiating and organizing the conference devoted to Myron Mathisson.

Beside the persons mentioned above, also Peter Havas and John Stachel made substantial contribution to the search described in the article. I would like to thank John for admitting me in the part of Einstein archives that was once located at Princeton, for showing to me some of the items concerning Mathisson which he and Peter had previously found in the archives, and for supplying me with a collection of copies of Mathisson's letters to Einstein. Unfortunately, the others who had given their help to the search are no longer among the living. Therefore, what I can do now is only to humbly bow down in their memory.

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