Vol. 9, 6a. To Anton Libecky[1]

[Berlin,] 22 February 1919

[Not selected for translation.]

Vol. 7, 36a. An Exchange of Scientific Literature

[Berlin, between 24 March and 4 April 1920][1]

An aid campaign that would make it possible for scientific institutions of the Central Powers to receive foreign scientific literature ⟨particularly obtaining journals from other institutions [of] science abroad⟩ would be a laudable enterprise.[2] In my opinion, it would be especially welcome if it could be arranged ⟨through the participation of the Entente st[ates]⟩, by the efforts of neutral countries, that friends of research in the Entente countries could also participate in this endeavor.

⟨Now,⟩ as concerns the method, I would not consider any particular form of loan to be the right one, because it would be questionable for most institutions here to assume such a risk[3] ⟨which in their budgets would [be] a very⟩ One truly[4] effective service would be to organize a journal and book exchange, in which the journals offered from the Central Powers would be exchanged in accordance with their real value, irrespective of the valuta. American institutions have already accommodated institutions here along these lines in a truly liberal manner ⟨[the] most important and difficult aspect would be exchanges among publishers⟩[5] If such a campaign as you envision should really be ⟨set up⟩ attempted, it would probably be practical to contact the Prussian Academy of Scien[ces], which has ties to all scientific institutions of the Central Powers and is permanently trying to preserve this jeopardized scientific activity.

A. Einstein.

Vol. 13, 178a. To Edward H. Synge[1]

Leyden, 4 May 1922

Dear Mr. Synge,

In answer to your letter of 16. iv I am very sympathetic to the publication of Hamilton's works.[2] Hamilton is one of the greatest classics of nineteenth century physics.[3] Many, perhaps the greatest, ideas of Hamilton have been transferred into

the consciousness of all physicists and mathematicians, and the working out of their implications continues with unremitting force. But the genesis of these ideas is hard to grasp: they appear to have fallen from heaven. For this reason alone the publication of Hamilton's collected works would be of great importance. In addition it is certain that valuable stimulation would now arise from their publication: for it seems that their content has in no way been exhausted. Finally however it is an obvious and pleasant task of Mankind to treasure faithfully and completely the great and noble which has arisen in their midst and to rescue it from being forgotten.

I would like to add that the Hamiltonian method was found to be valuable in the formal framework of Relativity theory, and that therefore Hamilton's way of thinking is particularly close to me. I therefore wish from my heart that you will succeed in effectively contributing to this fine aim.[4]

I am, with very high regard, yours,

A. Einstein

Translation from John F. Donegan et al, eds., *Hutchie: The Life and Works of Edward Hutchinson Synge (1890–1957)*. Pollauberg: Living Edition, 1922.

Vol. 13, 382a. Calculations

[On board SS *Kitano Maru*. on or after 7 October 1922][1]

[Not selected for translation.]

Vol. 13, 386a. To Marcel Grossmann[1]

[Tokyo,] 23 November 1922

[Not selected for translation.]

Vol. 13, 414a. Inscription for Theresa Renner[1]

[Shanghai, 31 December 1922]

[Not selected for translation.]

Vol. 13,456a. From Eduard Einstein[1]

[Zurich, 28 March 1923][2]

[Not selected for translation.]

Vol. 13, 456b. From Hans Albert Einstein

[Zurich, 28 March 1923][1]

Dear Papa,

We have informed ourselves as much as possible about the tax question. What is definite, according to Messrs. Grossmann and Zürcher, is that a gift tax does not come into consideration because of the contract.[2]

Regarding the regular taxes we went to the secretary of the tax authorities (Mr. Zürcher sent us to see him), and he told us:

One must tax the money as capital, from the moment of taking possession of it, and the interest as income (as with any assets); there aren't any other taxes.

We are, I think, not going to declare absolutely everything here, but the situation is such that one can deposit money here, all right.

If this business goes just as smoothly in Germany, we're in the clear. Just one more thing: we must at least disclose a larger proportion here, because the contract is available to the authorities and we could then get into a very foolish situation. So it makes no sense to put the deed titles anywhere else; we can instead just have them here.

My friend and I went sailing a couple of times already. He has a dinghy like you do;[3] it's just a little longer, narrower, has more sails, is more unsteady, and runs like the devil. One can heel very well with it without danger until the mast is only about 30° above the water; but you do have to watch out! When we meet again, I'll be a skilled sailor!

I can perhaps also sail on somewhat larger vessels there, once I've gotten acquainted with the people here a bit.

We now have much more to do than during the 1st semester, because we're doing less drafting and more courses, but it's going quite well. After the summer vacation I have to take the first examination (intermed[iate] dip[loma]) and then I'll be pretty busy.[4]

For the present, many greetings from

Adn.

1. "Kaiser Wilhelm Institute of Physics"[1]

[*Einstein 1923i*]

PUBLISHED 1 April 1923

In: *Vossische Zeitung*, 1 April 1923, morning ed., 1st suppl., p. [1].

The Kaiser Wilhelm Institute of Physics merely constitutes a fund for the support of purely scientific research in the field of theoretical and experimental physics. As a consequence, the institute possesses no building complete with a laboratory and apparatus; thus the available income can be used entirely for the furtherance of scientific investigations.[2]

Before the war, the institute had at its disposal an annual budget of 75,000 marks;[3] in the elapsed year it came to 300,000 marks; therefore, in any case, at the then current exchange rate, far under 1,000 gold marks.[4] Through a stipend from abroad, the Kaiser Wilhelm Society for the Advancement of the Sciences is now in a position to place at the disposal of the K. W. Institute of Physics an amount of almost 22 million for this year, which at the current exchange rate corresponds to about 4,400 gold marks. Even with this amount, which is scarcely more than one twentieth of the sum available before the war, effective promotion of scientific research in Germany is not achievable.

Professor Dr. A. Einstein, Director of the Kaiser Wilhelm Institute of Physics.

2. Expert Opinion on the Legal Dispute between Inag and Optikon

[Berlin, 4 April 1923][1]

Even though the instruments to which the present legal dispute refers are complex,[2] it seems to me simplest to characterize the situation that the lawyers will consider as follows, according to the concurrent information provided by both parties:

Of prior knowledge were:[3]

1) The method of finding, through the photographic exposure of terrain, the location and orientation of the exposure apparatus when the true positions of three points on the photographic[4] terrain were known.

2) Methods and means of reconstructing the shapes of the object through central projection of the individual points of two[5] photographic images, whereby the plates are brought into the relative po[sitions] they had during exposure, irrespective of their distance.

With his patent, Gasser[6] was the first to create an apparatus [which] made possible *both methods by combination* and can be used to produce terrain relief maps from *two photographs taken from an airplane*.

He was furthermore the first to arrange both methods, combined for the first time, into a practically useful design and (with his supplemental patent) was the first to improve method (2) through optical installations that make simultaneous optical sighting of the pictures of corresponding terrain points feasible for *one* person.

In this sense, Gasser's patent is a pioneering patent, and, in my view, there is no doubt that the apparatus manufactured by the defendant falls within the range of protection of the plaintiff's patent.

In this situation, it seems superfluous to delve into the details.[7]

A. Einstein.

3. From Paul Ehrenfest[1]

Leyden, 4 April 1923

Dear Einstein,

About a week ago I sent you a postcard.[2] As I still don't have an answer at the moment and reckon with the *possibility* that it or your answer are lost, I would like to repeat the essentials of the content: I was very, very happy that you *spontaneously* spoke with my wife[3] about when you could perhaps come to visit us again. (She probably told you that I did not dare to ask you!)— Well, I write you: It would be best if you came right away. That means *around about* April 11— *Reasons*: Throughout all of May neither Lorentz nor De Sitter[4] are here—both in England.— In June I have to—for money-making reasons—supervise many examinations in Delft and this year also in Leyden. (One unexpressed reason: on April 11, I have my 250th colloquium in Leyden[5]—luckily nobody here knows this—but it certainly would be a fun thing to have you here on that evening.— Don't laugh at me!)[6]— I thought: if you came *now*, your Leyden stay would still roughly fall within the German Easter vacation.[7]— Whichever way—let me know what you decide; or better yet, let Ilse[8] answer me; then I'll know that there won't be any confusion!

Very warm regards to all of you from us—I wish your wife a speedy recovery!!—

Yours,

P. Ehrenfest

4. From Max Planck[1]

Berlin, 6 April 1923

Dear Colleague,

The separate reprints of your new Academy article already arrived here a few days ago.[2] That is why I presume that they have likewise already arrived for you.— The paper treating the same problem, about which I spoke to you, originates from Reichenbächer and can be found in *Zeitschrift für Physik*, vol. 13, p. 221.[3]

Cordially yours,

Planck.

5. From Max Born[1]

Göttingen, 7 April 1923

Dear Einstein,

They say that you are back again.[2] I wanted to write you a welcoming letter, but now I'm too late. The main thing is that we heartily congratulate you belatedly on the Nobel Prize. No one better than you and Bohr[3] could have been found; and we were really pleased beyond bounds. We also heartily thank you for the pretty card from Japan.[4] We never knew your address and could not reply. But now I would like to resume our exchange of ideas, insofar as I may take up your time. How much I would like to have you tell me about your experiences on the great voyage. Perhaps I shall come to Berlin at the end of the month for a few days to visit an American benefactor and friend who is helping me support my students through to the end.[5] I hope to see you then.— We have been living here in very quiet isolation. The only external event of importance was Lord Haldane's[6] visit. The inside of his mind looks quite confused; nonetheless, the general cultivation and European essence of the man made a great impression on us (i.e., Hilbert, Franck, Courant,[7] and me).— If you leaf through the journal issues of the past half year, you will see that I have been quite diligent and also kept quite a number of students busy.[8] But those are all minor problems I have been grappling with. Despite all my efforts, I am getting no nearer to the great quantum puzzles. We studied perturbation theory here (according to Poincaré),[9] in order to find out whether one gets the observed term values from Bohr's models through precise computation; but that is *most* definitely *not* the case, as has been demonstrated for helium, where we found all the possible multiperiodic orbits (to sufficient approximation).[10] I had Heisenberg here during winter (as Sommerfeld was in America); he is at least as talented as Pauli but is a nicer and more pleasant person.[11] He also plays the piano very well. Apart from the helium research, we examined some principal issues of Bohr's atomic theory together, particularly regarding phase relations in models of the atom (*Z. f. Phys.*).[12] Now I am finished, at last, with my great encycl. article on lattice theory; it has become about 250 pages long and is supposed to appear as the 2nd ed. of my old book.[13] I hope that it will be coming out in May. Thus, I consign this project to the files until the problem of homopolar atomic binding is cleared up from Bohr's point of view.[14] Unfortunately, every attempt at forming a clear concept fails. The only thing I see is that in reality it all must be very, very different from what one currently thinks. Qualitative results, however, can be drawn in abundance from Bohr's ideas; Franck is magnificent doing just that and keeps performing fine experiments. I am in trepidation about Franck getting the appointment to

Berlin.[15] It would be better for him, for physics, and also for Berlin if he stayed here. Not even to mention for me! At the moment he has left for Holland to see Hertz.[16] One hears that you have a new theory about the connection between the metric and electromagnetic fields, through which a relation between gravitation and the terrestrial field is supposed to emerge.[17] I am extremely curious about it. Any other relativistic papers that are being published mostly leave me cold; I find Mie's pulpy outpourings particularly dreadful.[18] Hilbert is registering all of this with half-hearted interest; for he is entirely enveloped in his new foundation of logic and mathematics. What I do know about it appears to me to be, indeed, the greatest advance imaginable in this area.[19] But, for the time being, mathematicians for the most part don't want to have anything to do with it.

It was reported in the newspaper that you turned your back on the League of Nations.[20] I wonder whether this is true. We cannot arrive at any reasonable opinion on political matters at all, you know, because the truth is systematically being distorted, just as during the war. The madness of the French makes me sad because it strengthens nationalism over here and weakens the republic. I think a lot about how I could arrange for my son[21] to be spared the fate of having to participate in a war of reprisal. But I am too old for America and, anyway, an even greater war madness than here has reigned over there. Recently I read a short essay by Coudenhove-Kalergi "Apologie der Technik," which made a great deal of sense to me.[22] If you don't know it, see that you get hold of it. In March we were in Berlin. I spoke with Planck and had great pleasure in his company.[23] At the G[erman] P[hysical] Soc[iety], though, where I delivered a talk,[24] it was quite dull; not a trace of participation and debate. Rubens,[25] who, despite his coldness and caution, really was full of interest and life in scientific respects, is sorely missing there.

My family is healthy and sends all of you affectionate greetings.

Yours,

Max Born.

6. To Hermann Anschütz-Kaempfe[1]

[Berlin,] 8 April 1923

Dear Mr. Anschütz,

I was very pleased about your kind letter and am very curious about the sweet hideaway and about the gyroscope compass.[2] I cannot leave here again right away because that would be very badly perceived. But I could be there around the 20th. Please write me immediately whether you will be in Kiel then for a couple of days

more. From there I have to go to Leyden for two weeks.[3] I am very glad that the trials with the compass came out so satisfactorily. I shall write to the boys about Lautrach.[4] It will be grand.

With cordial regards to both of you, yours,

A. Einstein.

P. S. Don't trouble yourself about the cottage interior. You know that I am an incorrigible gypsy, and untidy to boot.

7. To Unknown

Berlin, 9 April 1923

You will find my first paper, in which the equivalence of inertial mass and energy is demonstrated, in the *Annalen der Physik*, volume 17, 1905, under the title: "Does the Inertia of a Body Depend upon Its Energy Content?"[1] The notion that it would have been possible to base this result on chemical considerations is mistaken. If a material system releases energy externally during a reaction, then one would surely have to say, sloppily formulated, that the energy "originated from the system's mass of materials"; however, from the chemical standpoint one has no argument whatsoever that supports the claim that through such a process the system's total inertial or gravitational mass experiences a diminution…

8. From Hermann Anschütz-Kaempfe

Kiel, 10 April 1923

Dear esteemed Professor Einstein,

It's superb that you want to come around the 20th of this month.[1] The finished apartment is awaiting you, and I have a whole list of interesting things to ask: converter, artificial horizon, i.e., pilot's horizon, a new alternating current relay, etc. I think you are coming just in time for the launch of the new, or I should say, the latest gyrocompass; re. the damping, we aren't quite in the clear yet; I think the mercury's surface tension is detrimental.[2]

I gather from your letter of today that you obviously did not receive my letter with the apartment floor plan, which I sent to the university in Tokyo; but now I won't write to you about that anymore; now it will just have to suit you, no matter

what. But I do think that you will like it all right, and the main thing is, that tranquility [*eine Ruh'*], as they say in Bavaria, is at home there.

My wife[3] is especially looking forward to Lautrach; she feels a little superfluous over here, but she is enormously looking forward to being able to mother you and your boys[4] in Lautrach; I think she's especially looking forward to your boys.

So please write, but this time, if possible, with the exact time that you are arriving so that I can pick you up in radiant joy.

Cordial greetings from household to household, your at all times loyal

Anschütz.

9. From Pierre Comert[1]

Geneva, 10 April 1923

Dear Professor Einstein,

Upon my return to Geneva after quite a long absence, I found your letter of 21 March, the receipt of which one of my colleagues at the Secretariat had already acknowledged to you.[2]

Because the Zurich newspapers were informed about your letter of resignation and published it before it had even reached the Secretariat in Geneva, it only remains for an accomplished fact to be officially recorded.[3] Your letter will be officially communicated to the members of the Committee on Intellectual Cooperation, who will transmit it to the Council of the League of Nations; the latter will take action on it and will eventually advise about the choice of a successor.

It is, I think, because of our relations in Berlin that you addressed your letter of resignation to me. It is thus permissible for me perhaps to express, in a private capacity, certain personal reflections.

Your decision was a blow for me, as painful as it was unexpected; nothing in the relations that you entertained up to that day with the Secretariat of the League of Nations could have allowed one to foresee such a step on your part.

It was last year, in the month of May, that the Council of the League of Nations invited you kindly to take part in the Committee on Intellectual Cooperation.[4] In accepting this nomination in your letter of 30 May,[5] you declared that you felt obliged to respond to this appeal, considering that in our epoch, you said, no one should refuse to collaborate on an endeavor that has as a goal the materialization of international cooperation.

Nevertheless, some weeks later, at the beginning of July, you let the secretary general know that, following circumstances that had become clear to you since

your letter of 30 May, you felt unfortunately compelled to decline this honor; you affirmed besides that your full sympathy with the efforts pursued by the League of Nations toward improving international relations remained intact.

This letter, so inexplicit, greatly concerned us in Geneva. Because mutual friends of ours had given me occasion to make your acquaintance, the secretary general[6] approved that I travel to Berlin to visit you there. In that city we had, on 27 and 28 July, two discussions, the recollection of which has remained unforgettable to me.

I informed you then that your sudden and unmotivated resignation could cause serious prejudice against the Committee on Intellectual Cooperation because the public might misinterpret your sudden decision to withdraw your collaboration with us.

With great sincerity and in every confidence you let me know at that time the particularly grave reasons that led you to contemplate your resignation.

I was very shaken by them. We were completely unaware of these circumstances. I declared to you that the problems of your personal situation in Germany appeared so considerable that the Council members of the League of Nations would, in my opinion, certainly not have dared to nominate you, if they could have suspected that this designation could make your situation in Berlin even more perilous.

At that moment, we examined together, in complete good faith, whether under these conditions—new to me—it would be proper to uphold your resignation. Although I wanted to assure your collaboration on the Committee on Intellectual Cooperation, I believe I did not excessively insist then at all to urge you to return to us. I understood too well that the Committee could not assume lightly the responsibility of disrupting the work of a man like you, by causing him serious personal hardships.

All the same, before my departure from Berlin and with a vigor that I sincerely admired, you announced to me that you would abandon all plans to resign. The work of the League of Nations, you then told me, was too close to your heart, that you were ready to accept certain risks for it rather than to compromise the Committee's mission by an unexplained resignation. At a certain moment of our interview, I recall that in this regard you made allusion to the eventuality of a change of your place of residence, upon your return from Japan, to assure your peace and security at work.

Following these conversations, you wrote, once again, on 29 July to the secretary general.[7] Your preparations for departure to Japan were impeding you from attending the first meeting of the Committee for Intellectual Cooperation. You declared that upon your return your collaboration would be all the more zealous than

would have been called for, in order to recoup in a manner the loss of time occasioned by this absence. It was with this friendly letter that you took leave of us at your departure for the Far East.

Our amity accompanied you during your long voyage. We awaited with impatience your return and the moment that you would come and take your place on the Committee.

Then, abruptly, on 21 March, from Zurich, when we did not even know that you had arrived, you sent us your resignation, without any prior notice.

Your letter not only announces your withdrawal from the Committee on Intellectual Cooperation. It is an irrevocable condemnation of the League of Nations, which, you say, does not possess either the necessary force nor good will to accomplish its mission and which you refuse to have anything to do with, in your capacity as a convinced pacifist.

This judgment, dear Professor Einstein, you made without having followed the work of your Committee, without having attended a single one of its meetings, having come back from a voyage during which it would perhaps not have been easy to follow European affairs.

Before that letter could reach Geneva, it was reprinted in the Zurich newspapers, published, and thus communicated to the whole world.

This sudden and resounding about-face will have most assuredly painfully shocked those who, like us, are aiming at a modest, realizable, humane ideal, who are arduously, obstinately pursuing the work of international peace which the League of Nations symbolizes for them. They had hoped that your collaboration would make help guide the Committee on Intellectual Cooperation's work in the most useful direction. Knowing that the mission of the League of Nations would not have been executed without the support of all men of good will, they had been particularly pleased about securing the collaboration of an authority as eminent as you. Their hope is disappointed today. But their faith in this grand task had been hardened enough by the daily struggle to take this shock without being shattered. They will, dear Professor Einstein, therefore continue the effort started in sincere hope; and I dare state the conviction that the road which distances you from them today will one day lead you back toward them.

Sincere and cordial regards,

Pierre Comert.