

bei Frau Nolte
Schillerstr. 49
Göttingen, Germany
25th Mar. 1923

To
Professor N. Bohr
Theoretical Physics Dept.
University of Copenhagen
Denmark

Dear Sir

You may remember that I was working in the Cavendish Laboratory when you came to Cambridge about a year ago. At that time I was counting β -rays excited by γ -rays by means of Geiger's counter, and had the honour of speaking to you in the laboratory.

I left Cambridge last September and came here for the purpose of learning the German language.

As I spoke to you in Cambridge, I have the great desire of studying in Copenhagen under your guidance, and I should be gratefully obliged to you if you could accept me.

As my Institute in Tokio does not allow me to stay in Europe longer than two more terms, I do not know whether it is wise to set up new work. My chief wish is to study your theory of spectra and atomic constitution in details. But if any one wants assistance in the experiment or the calculation, I should do it with pleasure.

I should esteem it a favour if you would give me the early information in the matter.

I beg to remain
Yours faithfully
Y. Nishina

P.s.

I belong to the Institute of Physical and Chemical Research in Tokio, to which Dr. Takamine also does as you know.

bei Frau Jaeger
Schloss-str. 17
Charlottenburg, Berlin
4th April, 1923

To
Professor N. Bohr
Universitetets Institut
for Teoretisk Fysik
Copenhagen

Dear Sir,

I thank you very much indeed for your kind letter which was forwarded to me yesterday.

It is my great pleasure to be able to study in your Institute, and I should like to express my sincere gratitude to you for your kind acceptance of me.

I have some business here in Berlin, which I have to finish before I come to Copenhagen. As soon as I finish it, I should like to start at once.

Thank you very much for your kindness re the passport visum, in obtaining which I do not think I shall have any trouble. One thing about which I am anxious is the lodging in Copenhagen. I should like to find a family in which German is spoken.

As soon as I decide my departure, I will write to you.
Once again assuring you of my gratitude,

Yours faithfully
Y. Nishina

København
13. 10. 24.

Dear Prof. Hevesy,

Thank you very much indeed for your pretty card of your native town. I am very happy to read in your lines that you are enjoying your holidays.

We have nothing startling here. But I made some experiment on the X-ray chemical analysis with the help of Schjønning. The result may interest you, although it is rather disappointing.

I made Sb, Sn analysis as Coster did. I made different compounds of these elements and took one of each at random and made X-ray analysis. In all cases Sn gives lines 6 times as strong as Sb. Next I mixed CaSO_4 in different percentage to the mixture of Sn and Sb. At small % of CaSO_4 , Sn is still stronger, but this difference decreases with the % of CaSO_4 , until the intensities are equal for Sn and Sb. Coster's experiment was in this stage of mixture, and it gave the satisfactory result. From this result, we know that we should be very careful in the X-ray analysis. For instance, in the case of Hf, Cp analysis we find the ratio of any two lines experimentally for certain amount of ZrO . This ratio may not be applicable for different percentage of ZrO . This is very awkward result in principle. Of course, practically it may not be so serious in the case of Hf, Cp analysis, because Hf, Zr, Cp have nearly the same chemical and physical properties, but we have to test this point. I am expecting Jantzen now and if he comes I shall tell him to make certain this point, before he makes any analysis. Otherwise it may give wrong result. Of course all the samples which he is going to analyse, may have nearly the same % of Hf, then he has no need of doing this.

There is one thing I should like to ask you. This may disturb your peaceful holidays, if so please excuse me. If you have an opportunity of seeing Auer during your holidays or you have any good chance at any time, would you mind asking him whether he could give one complete set of rare-earth group to Japan or rather to me. For if I go back to Japan, I cannot do any

work on rare-earth. This is not urgent. When you have any good opportunity please ask it for me.

I hope you will have the real rest during your holidays.

Yours,
Y. Nishina

København, 24.10.24

My dear Professor Hevesy,

Thank you very much indeed for your letter of the 18th inst. I am really very glad that you are recovering in your health. Some people think that a man's mental faculty is quite independent of his bodily conditions. Of course, genius is genius from his birth. But in my opinion the capacity and ability of mental power of a certain man - be it a genius or an ordinary man, are function of his materially bodily health. Therefore it is most essential for you to take advantage of this opportunity in recovering fully from your present condition of health. ---- I don't know how your present condition of health stands, because you look cheerful always, but I take, your health is not in full vigour as you wrote to me. To do this, it may cost time. This is my opinion and I think you know already this very well already and are doing your best in improving your health.

Thank you very much for your kindness that you will ask Baron Auer in some future opportunity to spare me a complete collection of rare-earth. I should be very much obliged to you and Baron Auer if I could get it.

I thank you again for your taking trouble in writing to Hönigschmidt. We will wait his answer. We have got the casting of the spectrograph already and Olsen is waiting just for the sketch. He cannot work unless we get the sketch.

Jantzen came back here last week and has set up the apparatus with a transformer and a rectifier. He will first test the effect of ZrO_2 (100%-80%)

on Hf/Cp ratio.

As regards the publication on chemical analysis with X-ray, I am not in position to do it now. It would be criticism of Dr. Coster's work. Therefore unless he publishes something I shall not publish anything. And even after he will have published about the applicability of the method, I do not know whether I publish the material I have got, in my name or not. You know my knowledge on X-ray spectrograph was given by Dr. Coster.

But the results we have got must be published as soon as possible, otherwise someone may find the same thing and criticize Dr. Coster. The question is how to publish it. Perhaps you and Dr. Coster will communicate about the matter and decide what to do. Meantime I can speak Prof. Bohr about the matter.

On the other hand the matter is not cleared up yet. To find the reason and to find out in what extent this method can be applicable for different elements, are a great work. This will certainly take long time. The results I have got, suggest the reason of the phenomena although it is very vague. If Kimura comes here and if he wants to work in this line I shall continue the work, but he will not perhaps come this year, because he has not written anything yet to me.

Professor Bohr has received Ørsted's medal lately. He is at Tisvilde now but will be back tomorrow.

I shall not trouble you any more. Hoping you enjoy your holidays.

With the kindest regards

truly yours
Y. Nishina

København 18.11.24

Dear Prof. Hevesy,

How are you ? I hope you are enjoying your holidays in your native country.

Thank you very much for your taking trouble in writing to Prof. Hönigschmidt for the sketch of the spectrograph. We received the sketch about two or three weeks ago and Olsen is now working according to it very well.

Dr. Coster wrote to me about three weeks ago asking for some data of absorption spectra. In my answer I added some remark on the X-ray quantitative analysis, giving some information about the results I got. I told him that you informed me of his intension of writing a note about the question, and I added that such a publication would be very desirable because somebody who would begin a little work on this line, would easily be able to find out the difficulty and would point out it before Dr. Coster says anything about it.

Dr. Coster's answer which I enclose herewith was that he prefers to wait somebody's definite proposal. What do you think of the matter, because I really do not know how to do with it. Please let me know your opinion about it.

Jantzen is working very well and I think he has written to you about his results, so I shall not go into this question. Only one thing I have to tell you is that the change of % of ZrO_2 has no appreciable effect on the relative intensity of Cp and Hf. Of course if you change in very wide range, there would be some effect, but within the limit which he is working with mineral analysis, we can neglect the effect of ZrO_2 content. This is what I have expected and is very favorable for our analysis.

I am working on Hf L_T again at present. Prof. Pirani wrote to me the other day in answer to my letter which you wrote for me, as follows:

In Beantwortung Ihres Schreibens vom 22. Aug. teilen wir Ihnen mit, dass wir keine Osmium Vorräte mehr besitzen. Wir haben seinerzeit alles verfügbare Os- material an die Firma Heraeus G.m.b.H. in Hanau gegeben.

Ihre Mitteilung, dass das übersandte Molybdän Wolfram enthalten hat, hat uns verwundert und es wäre uns interessant zu erfahren, welche Mengen Wolfram Sie gefunden haben.

Wir lassen Ihnen beifolgend nochmals einige Meter 0.2 m.m. dicken reinen Mo-Draht zugeben in der Hoffnung, dass er für Ihre Zwecke genügen wird.

I wrote to him thanking for his kindness in sending more pure Mo-wire and adding that I could not decide how much W the former Mo-wire contained.

I tested the new wire which Prof. Pirani sent to us and found that it contains a few percent of W and is of no use for me. Now I am using Wehnelt-cathode, which seems to me to solve the problem.

Hoping once again that you enjoy your holidays

Yours

Y. Nishina

p.s. Mrs. Obrutscheva asked me to send you her kindest regards.

København, 21.11.24

Dear Prof. Hevesy,

I just send you a line in order to call your attention to the paper of A.A. Russel of Oxford in the last number of the Nature. (p. 717, Nov. 15, 1924). What do you think of it? Does it favour our view on the existence of higher atomic number (94 or 96)?

I have not tested the Ur-mineral yet, because I have to finish my paper first and now the X-ray tube cannot stand so high tension, as I have used it for long time.

When I finish my present work, I shall change the X-ray tube and try the minerals. But I am afraid it will take fairly long time before I finish my

present work. If, however, you think it is very urgent, I shall try it at once.

Yours truly

Y. Nishina

København, 29.11.24

Dear Prof. Hevesy,

Thank you very much indeed for your letter of the 22nd inst. which I received this morning.

As regards the way of publication on the X-ray analysis, I quite agree with you. I spoke with Prof. Bohr this morning and he thinks too that your suggestion will be the only way to do. I am just going to write to Dr. Coster, sending a copy of your letter and asking whether he agrees or not. If he agrees I shall begin to write a paper and publish it as soon as possible. Of course, before I send it to the "Chemical News" I don't know whether it will be before or after you come back to Copenhagen.

Wehnelt cathode works very well and the all difficulties arising from the W-cathode are overcome now. I have sent my paper to the "Phil. Mag.", but there are a lot of corrections to be done in that table and I am extremely busy now. The paper mentioned above cannot be begun before I finish the present work, which will perhaps take one more week.

With regard to Russel's paper, there is nothing direct connection with our problem. He says that if we accept the atomic weight of Ra_{88} and calculate that of U_{92} according to the radioactive transformation, the calculated value comes out 0.14 smaller than the experimental values, and he emphasizes the necessity of redetermination of atomic weights of these elements. If now we take the experimental values of the atomic weight as true, then we can explain the discrepancy mentioned above by the presence of higher atomic number elements (94 or 96). This was the point which I wanted to tell you. But there are so many possibilities of explaining the above

discrepancy and it does not necessarily come to the conclusion which favours the presence of 94 or 96.

There is nothing startling for me. I work hard in the cellar as usual. The life is only hard and therefore it is interesting.

I hope you are enjoying your holidays.

Yours truly
Y. Nishina

København, 6.2.25

My dear Prof. Coster,

I enclose herewith the tables of energy levels. Of course, there are some uncertain points, but the values in the tables are perhaps the best ones we can get at present. But I am sure some values ought to be corrected in the future.

About the corrections in our paper on the chemical analysis which you suggested me, I spoke with Prof. Bohr, as regards the first suggestion about the correction due to the difference in critical tensions of Ta and Hf we quite agreed with you. Especially Prof. Bohr told me that paper seems to be too long for chemists and I tried to make it shorter, omitting the part you suggested. But afterwards I came to the idea that this paper ought to be written in as much detail as possible, because this paper deals with the real practice of the method. Therefore anyone - chemists or physicists who try to use this method ought to know the whole matter in every detail which we dealt with in our paper. Therefore we had better write the method in details to show chemists how it ought to be in practice.

I told this Prof. Bohr who agreed with me to do so. From this standpoint I also rewrote some part of the paper, and did not omit that part which deals with the corrections due to the diff. in critical tension. The second correction you proposed, that is the reason of the phenomena, I thought I omit it according to your suggestion. But meantime Prof. Glocker in Stuttgart wrote to Prof. Hevesy that he developed the quantitative chemical analysis by

means of absorption coeff. in the neighbourhood of absorption edge. He pointed out that the method of emission spectra may be unreliable due to the difference in the temp. of evap. of different components in the preparation. This may be the reason why his result and Hevesy's result do not agree.

Under these circumstances I thought we had better give the reason which was written in our paper. So I spoke to prof. Bohr and Prof. Hevesy this point, who agreed to let remain that part in our paper.

That paper is under press and I am expecting the proof.

Y. N.

København, 17. 7. 25

Dear Prof. Hevesy,

Thank you very much for your letter of the 14th inst. as well as a post-card which I received some time ago. I am very glad to hear that you and Mrs. Hevesy are both very well and enjoying your holidays.

I am quite all right and working as usual. With regards the analysis of Eu, several circumstances have prevented us from determining the accurate content of Sm and Gd. First of all, the cleaning of rooms took a few days and then the work has been interrupted by the work of new building. The water, gas and electrical connexions are to be made to the new building and therefore all these cannot be used for about a week and so on. So we cannot work at present. Another trouble was in the method itself. We have made a wrong estimation of Gd and Sm, they are not so much as I thought at first, and the method we used was not appropriate for these contents. But we could get the very rough estimation from what we have done, that is Gd 8-9%, Sm about 2%. Accuracy is very bad, perhaps 1% may be in both direction of the figures given. I wonder if such a rough idea is of any service to you, but I inform you as far as we have done. We can begin work again next Wednesday, then we hope to determine it more accurately and as soon as we get the results, I shall write to you the figures as well as the method used.

I wonder if Stefan Meyer has tested the effect of other elements on the relative determination of Gd. We have tried and perhaps in the neighbourhood of these elements, there seems to be not effect of one element on the relative intensity of other elements. But these points are not yet decided and we shall try it once more when we begin the work.

As regards the results of Goldschmidt, I suppose he used the different sample from the one you used. You know we have two bottles. The one you used for the atomic volume determination contains much more Gd than the other sample. I wonder if you sent the other sample to Goldschmidt. Then everything can be explained. I cannot say how much the other sample contain Gd. But it is decidedly less. I don't know which sample St. Meyer has used.

As soon as we finish this determination, we shall determine the Hf-content of Glocker's sample and Auer-Gesellschaft's one. Then I shall test Ur mineral for 94 and 96. Prof. Bohr told me that it is high time to test it because 43 and 75 are discovered.

We are all well. Dr. Takamine went to Utrecht about a fortnight ago and he is coming back here to-day or to-morrow. Mrs. Takamine and Dr. Kimura are quite all right and asked me to send you and Mrs. Hevesy kind regards. Werner, Ray and Kuhn are all working very well.

I hope you keep very well and make a good progress in writing the book.

With the kindest regards to Mrs. Hevesy and Yourself,

Yours Very Sincerely

Y. Nishina

p.s. Thank you very much for your invitation to Hungary but I don't know whether I can have holidays. We must finish the intensity business before Ray leaves here; if he leaves here this year at all, he must leave in September. Prof. Nagaoka is coming in August. I saw in "Naturwissenschaften" an interesting paper of Prof. Miethe on Hg→Au-business. His work is now quite on the same line as Prof. Nagaoka's and he has got the same results. So if one is right I think both are right. I cannot say whether it is right, but I had the impression that the possibility is not excluded.

København, 12.8.25.

Dear Prof. Hevesy,

Thank you very much for your kind letter of the 22nd ult., to which I ought to have written an answer a long time ago, but I was unable to do so owing to the delay of the Eu-analysis, which has just been finished. I expected it finished at the end of last month, but the building business took much longer time than we thought. The result of Eu-analysis is as follows:

Eu ₂ O ₃	89.9%
Gd ₂ O ₃	5.6±0.5%
Sm ₂ O ₃	4.5±0.4%

the sample being converted into oxides. The figures will be slightly different, if you calculate it as sulphates.

As you see from the above, the Gd-content is surprisingly small, much smaller than I thought at first. This wrong estimation was due partly to the wrong exposure of the plate, Gd being much stronger exposed than Eu, and partly to the saturation effect of the photographic plate--i.e. blackness is not proportional to the intensity of the lines. But one plate which I had taken just before you left Copenhagen and of which I telephoned to you, rather confirms the above result.

One circumstance which made our analysis a little uncertain was that Kimura by mistake mixed Gd to Eu-preparation. This is the reason why I reported 8% Gd and 2% Sm in my last letter. But now the above result agrees with some plates which we obtained before Kimura mixed Gd, so I think the above result is quite right. But if you want it to be absolutely certain, I should advise you to repeat the determination of the atomic vol. with the other sample (which you sent to Prof. Goldschmidt), which we have here and then we shall determine the Gd and Sm content in that sample, because we have no more of the old sample.

The above result agrees well with that of St. Meyer and this is also the support of the correctness of our results, because it is quite probable that Auer sent the same sample to St. Meyer and you. Anyhow I wonder if the above results disturb the curve of your paper, I hope not. I am very sorry that our

result came too late and it came out differently from the previous figure I gave you, but we could not help it, although we worked very hard.

We have used two methods, one of which was not very suitable to our purpose and the final result was obtained by the method of comparison of $Gd L_{\beta_1}$ with $Dy L_{\alpha_1}$ and $Sm L_{\beta_1}$ with $Nd L_{\alpha_1}$. We tested the effect of Eu on the above comparison ratios and found that there is no effect.

Now that Kimura has finished this analysis, he has begun the Hf-analysis, which I hope he will soon finish. As soon as he finishes he will write the results to you. After that he will proceed to the absorption problem. This business will give very interesting results but I am afraid it will take rather long time.

Thank you so much for drawing my attention to your "Kajak". I have quite forgotten it. But even if I did not forget, I could have not enjoyed it this summer because I have had no time. I hope, however, I shall enjoy it later this month.

Thank you so much also for your very, very kind invitation to your country which I should like to see. But I am afraid I cannot come this year. I have quite a lot and do now, especially with the intensity business. So I have to put my hope to the future.

Last month (about the 20th) we had Prof. Katayama here. He stayed 3 days. He was sorry that he could not see you and sent you the kindest regards.

Prof. Nagaoka will come here some time next week, I don't know what he will say about my stay here. Anyhow I have quite a lot to talk with him.

As regards the explanation why Eu is not non-magnetic, we can put forth a hypothesis, but we cannot say anything before we test it.

How are you getting on with your "Handbuch" business, I hope you have made a good progress and you are keeping very well and Mrs. Hevesy too.

Everyone here is all right and asked me to send Mrs. Hevesy and yourself

the kindest regards. Takamine, Werner, Ray, Kimura and myself are all who are in the Institute now. Prof. Bohr and his family will soon come back here, and Prof. Kramers are going to Oslo for the Physics meeting.

Please remember me to Mrs. Hevesy with the kindest regards

Yours very Sincerely
Y. Nishina

p.s. Please write to Auer-Gesellschaft in Berlin to be so kind that they send us Mo-plates of the following dimensions:

København, 17. 9. 25.

Dear Prof. Hevesy,

Very many thanks for your letter of the 19th Aug. and Mo-plates which you sent to Dr. Kimura.

As regards the Mo-plates I shall write to Schwarzkopf in Berlin, as you suggested. I am sure he has got it, because I remember he once supplied W-plates to me.

I am very sorry to inform you that Dr. Kimura has been suffering from lung-tuberculosis since the beginning of this month and is now in the Rigs-hospital. The disease is quite at the beginning and I hope he will be cured, but I suppose it will take rather long time. He will go before long to Veile Sanatorium. The doctor says that it is not necessary to stay in the hospital here, so better go to Veile where the arrangement is good and the air is fresh. He had just begun the Hf-analysis when he fell ill and he is very anxious to finish that analysis, but of course it is out of question to work now. I am really sorry for him, because he has parents, wife and a baby at home. He asked me to send you and Mrs. Hevesy his kindest regards. In the hospital Prof. Faber is looking after his condition. Next thing I have to inform you is that I have tested the all uranium minerals for 93-96. But I could not find any indication. I am very sorry for Mrs. Hevesy who has been

unable to get the "writing-table". Next step, if you want to take at all, will be as follows:-

- 1) Fractional crystallization of Uranium and test whether we get any heavier fraction which contains higher elements. This is under the supposition that percentage of the higher elements is very small, although they exist in Uranium.
 - 2) Under the supposition that they do not exist in Uranium, we might try Th, Bi and Tl minerals. This is to find out the mother substance of these elements. This mother substance, if it exists at all, might be also the beginning of the group in the blacket of Bohr's table.
- 1) means the laborious work, 2) means the small possibility. What do you think of it? Or have you any other line of search in view?

Prof. Nagaoka came here at the middle of last month. Au-business was the centre of our conversation. I asked him to get at least one percent Au, otherwise we are not sure whether it is impurity or real transmutation.

Chez Mme Fonterme
95 Bd. St. Michel
Paris V^e.
16th Aug. 1927.

My dear Professor Bohr,

After having spent about ten days in Germany, I arrived here yesterday evening and am staying provisionally in the above pension.

I must thank ever so much Mrs. Bohr and yourself that I have been able to spend most interesting and useful years in Copenhagen, especially an amusing week in Tisvilde just before I left Denmark. Those events which I experienced in connexion with the Institute will influence me throughout whole my life. They will remain as a whole a happy recollection.

As regards the paper of Aoyama, Kimura and myself, I left a typed copy on Dr. Klein's table. I found some mistakes in it and made a mark with a pencil. When the proof comes, please correct those points; or please send the proof to

me to the above address together with that typed copy; then I shall correct them and send it back to Berlin. Please arrange things as it is most convenient for you. As regards the number of separate copies, we should like to have 120 copies for our own account besides those which ought to be kept in the Institute. Please let them send the bill to me.

I met Pauli in Hamburg; he told me that he and Jordan had success in the quantum electrodynamics in putting space and time on the same footing so far as the free space is concerned.

I am now exclusively learning the French language which is quite new to me and is as difficult as any other European language. If I have a good progress in language this summer, I might come next winter to Hamburg to learn theoretical things from Pauli. It depends on how quick I can absorb French.

Please remember me to Mrs. Bohr and your family.

With best regards

Yours faithfully

Y. Nishina

Chez Mme Jenicot-Drapier
Nid Joyeuse, Berck-Plage
France (Pas-de-Calais)
1. Sept. 1927.

Dear Professor Bohr,

I thank you very much indeed for your very kind letter of the 27th Aug. together with a cheque for Kr. 2500 (Fracs 16891.90), which were forwarded here to me yesterday. Everybody has left Paris and in order to get a good teacher in French I came here a few days ago. It lies on the French coast of the English Channel and not far from Boulogne.

As regards the Rask-Ørsted Foundation, it is a quite unexpected matter to me. I thought I have already received all what was granted to me and I never thought of receiving more. I hope there is no mistake in the communication to

you on the part of the secretary of the Foundation. I feel as if I received a thing which is not due to me.

I know I continued to stay in Copenhagen long after the termination of the stipend, but I intended it on my own expense. I really do not know whether I should receive this sum.

I should be very much obliged to you if you would let me know your opinion about the matter --- whether I should receive it or it should be better spent in some other way in Copenhagen.

I suppose you are very busy just before you leave for Como and I am very sorry to give you this trouble but I am really at a loss what to do. Perhaps you will tell the matter to Kronig, who will write to me.

I thought to come to Como and have pleasure of seeing you there. I made inquiries about the meeting but I do not get any answer, and I understand the meeting is perhaps only for those who are invited, therefore I shall not come there.

I thank you very much for your kind words that I am always welcome in Copenhagen. I shall perhaps come to Hamburg in November. If so and if I can, I shall come to Copenhagen once again before I leave Europe.

Hoping you will have a nice journey to Como and an interesting meeting there.

With best regards to Mrs. Bohr and yourself,

Yours faithfully

Y. Nishina

p.s. I stay here until the 5th Sept. and after that the following address will find me somehow or other:

Chez Mme Saroïhandy
102 Avenue des Ternes
Paris (17).

Paris, 21. 10. 27.

Dear Professor and Mrs. Bohr,

A wanderer is going to move and these are the last few lines to you from this country.

Every country and every place has its own characteristic charm so is Denmark and so is Paris. On the first day of my arrival in a country as a stranger, what attract my attention are those aspects of things which are contrary to my habitual conducts and thoughts in the preceeding place. But after a while, I begin adapting myself to the new circumstances, and one day, to my surprise I discover a small beautiful spot in what previously seemed to me disgusting. The charm gradually predominates and consequently the disgust disappears. At last I feel at home amidst the things which were so annoying at first. This is perhaps the psychology of a wanderer. In such a manner I have spent last two months here and at the eve of daparture I even feel a sort of sorrow.

As regards the French language, I have only arrived at the conclusion that two months are not sufficient for me to digest this language which is of a different family from what I know.

I shall leave here on the 25th inst. and after visiting Hevesy, Fues and some other people on my way, I shall arrive at Hamburg on the 30th Oct. Thus I shall be a little nearer to you and this thought will console me, until I adjust myself to the new situation of a new place.

How is the weather in Copenhagen? Since the day on which the summer time was terminated, we have been having a summer weather in Paris ---- irony of the Nature, somebody might say.

With best regards and kindest remembrance to yourself and your family

Yours Sincerely
Y. Nishina

Hamburg 11. 11. 1927
Beneckestr. 22 II
bei Frau Zutermann

Dear Professor Bohr,

I arrived here nearly a fortnight ago, but have had so much to do that I have not been yet able to begin my work.

To-day I have met Aoyama who came here from Leiden for a day's stay. Through my talk with him I have found an irreparable fault which I committed in the last paper of Aoyama, Kimura and myself. You will see what it is from letters to Prof. Bøggild and Prof. Scheel, both of which I enclose herewith, as well as "Berichtigung". They are all copies and you need not send them back to me.

Prof. Bøggild has been always very kind to me in other occasions too and I am very sorry for what I did or rather what I did not do.

I write this letter to you only to inform you how much Prof. Bøggild helped our work and also to inform you what I have done for compensation of my fault.

Aoyama sends you and your family, best regards, he has a very bad conscience for not having written to you. He will stay in Leiden until the end of January and then will leave there for Japan.

I hope I shall be able to come to Copenhagen at Christmas time for about a fortnight. It depends on the work which I shall do here. As soon as I decide whether and when I come, I shall write to you. It will be my greatest pleasure again to see you, your family and my old friends in the Institute.

With best regards to your family and yourself

Yours Very Sincerely

Y. Nishina

bei Frau Zutermann
Beneckestr. 22 II
Hamburg, Germany, 11. 11. 27.

Dear Professor Bøggild,

I am writing this letter in order to apologize you for my irreparable fault. Aoyama, Kimura and myself, who worked together in Professor N. Bohr's Institute last winter, have recently published a paper in the "Zeitschrift für Physik" dealing with the "dependence of the X-ray absorption spectra on the chemical compounds", a separate copy of which I send you by a separate post. In that paper I am very sorry that we did not thank you for your kindness and generosity in supplying us several compounds which gave some very interesting results. The fault was committed by myself in the following way:

I remember that Aoyama and Kimura, who carried out chiefly the actual experimental part of that work, told me once that you were so kind to put several very valuable, beautiful crystals to our disposal; but I could not remember what crystals they were. Both of them left Copenhagen early last spring and consequently it was my lot alone to write the paper on this work last summer. Thus this paper was written by me in a certain absence of direct connexions between its authors, and at that time I did not realize exactly that the experimental results which we published, contained those on the compounds, which you put very kindly to our disposal. I left Copenhagen last August and now I am staying here in Hamburg. To-day I have happened to meet Aoyama, who has come here for a day's stay from Leiden, Holland, where he is staying. He told me the above matter in detail and regretted very much that we did not express our thanks to you in that paper for your such kindness and generosity. I was really sorry beyond words to hear this fact. But it is too late now and I must apologize you very much for this fault. I have at once asked the editor of the "Zeitschrift für Physik" to publish the correction which I enclose herewith.

Anyhow the work will, I hope, be continued in Japan and in the next publication we shall certainly express our hearty thanks to you.

Apologizing you once again on behalf of all of us three,

Yours Very Sincerely
Y. Nishina

Hamburg, 11. 11. 1927
Physikalisches Staatsinstitut
Jungiusstr. 9.

Sehr geehrter Herr Geheimrat!

Ich möchte Sie höflichst bitten, die beiliegende Berichtigung unserer Arbeit bei der nächsten Gelegenheit in der "Zeitschrift für Physik" zu publizieren. Für die Publikation wären wir Ihnen sehr dankbar.

Mit vorzüglicher Hochachtung,
Ihr ergebener
Y. Nishina

Berichtigung
zu unserer Arbeit "Die Abhängigkeit der Röntgenabsorptionsspektren von chemischen Bindung", von S. Aoyama, K. Kimura und Y. Nishina in Kopenhagen, Bd.44 S.810. S.831 Zeile 9 v.u.

lies: legungen, Herrn Prof. O.B. Bøggild, Herrn Prof. G.v. Hevesy und Herrn Dr. J.A. Christiansen

statt: legungen, Herrn Prof. G.v. Hevesy und Herrn Dr. J.A. Christiansen

S.816 Formel (1)

lies: $K_{Cl+++} - K_{Cl} = J_{Ar+} + J_{Ar++} + J_{Ar+++} - (J_{Cl} + J_{Cl+} + J_{Cl++})$

statt: $K_{Cl+++} - K_{Cl} = J_{Cl} + J_{Cl+} + J_{Cl++} - (J_{Ar+} + J_{Ar++} + J_{Ar+++})$

Hamburg, 19. 2. 28.
Beneckestr. 22 II
bei Frau Zutermann

Dear Professor Bohr,

How are you after you have come home? As I told you in the last conversation which was very pleasant to me, I am coming to Copenhagen. I shall leave Hamburg on about the 1st March, and after visiting Rostock, I shall arrive in Copenhagen on about the 4th.

I hope to learn different things and am looking very much forward to seeing you.

Dirac's last paper was a great excitement to us here. Gordon has worked out the case of Hydrogen atom and obtained the complete Sommerfeld formula with a little different numeration of j . Dirac's letter to Gordon tells that Darwin has obtained the Sommerfeld formula, too. I suppose you have already heard of it.

This is just to tell you that I am coming on the above date.
Please remember me to Mrs. Bohr.
With best regards and expectation of seeing you again,

Yours Very Sincerely
Y. Nishina

Blegdamsvej 15
København, 8. 8. 28.

Dear Professor Bohr

Thank you very much for your kind message through Miss Schultz. I have been back here for about a week and been thinking of writing to you, but caught a cold and been lazy.

Our work has not come to a definite and we shall start again when Klein comes back here at the middle or the end of this month and hope to finish it in September so that I shall be able to leave here at the end of Sept. or at the beginning of Oct.

I received the other day a letter from Professor Nagaoka, who will arrive in Berlin in a few days. He is going to attend an international meeting of wireless matters, which will be held in Brussel in Sept. He wrote that he perhaps comes to Copenhagen but that will be after the meeting. I wrote to him to come here some time in Sept.

I received also a letter from Takamine, who sent you kind regards and asked me to send you a picture which he took some years ago.

With best regards to Mrs. Bohr, your family and yourself,

Yours Very Sincerely
Y. Nishina

Paris, 21st Oct. 28

Dear Professor and Mrs. Bohr,

It is just a fortnight ago since I left Copenhagen, from which my existence is getting at a greater and greater distance both in space and time. The further I stand from it, the better I see things in their proper proportion, and I feel a great thankfulness to you for letting me stay in your Institute for so many interesting years. Owing to my inability I have not accomplished anything valuable in physics during this long stay. The more I think of it, the more grateful I am to you for my stay which has only been possible through your kindness towards me.

Next I thank you very much that you have read through my note to Nature and made some corrections, about which Klein has written to me.

Lastly I thank you that you came to the station when I left Copenhagen. It was very nice for me to have travelled whole the way through together with Prof. Billmann.

Since I arrived here I have spent most of my time for learning French. One cannot, of course, learn much in such a short time, but it may be better than nothing.

By the time this letter reaches to you I shall be in England where I shall stay for about a week and then take a steamer for America on the 31st Oct. at Plymouth.

Now it is the time to say good-bye to Europe where I have spent fruitless seven and a half year, which is not a small part of a man's life.

I wish you a best luck and health and hope to see you in Japan.
With best thanks and kindest regards to your family and yourself,

Yours Very Sincerely
Y. Nishina

p.s. How is the baby? I hope he is getting better.

35 Boundary Road
London N.W. 8.
26. 10. 28.

Dear Professor and Mrs. Hevesy,

Now I am on my way back to Japan and have come here. I regret very much that I have had no time to see you once more before I leave Europe. I have left so many regrets in Europe and this is one of them.

I am leaving here on the 30th inst. and take a steamer on the 31st inst. at Le Havre, France. This will carry me to New York. After spending 4 weeks in America, I shall leave San Francisco on the 5th Dec. arriving at Yokohama on the 21st Dec.

This is the last letter I write to you while I am in Europe, where I spent 7 years, which is not a small part of a man's life. I am very thankful

to you for your kindness you extended to me during this long stay.

I hope you will keep yourself in the best of yourself and wish you good luck.

With best regards and remembrance,

Yours Very Sincerely
Y. Nishina

p.s. I shall give you my address in America, if it is of any use to you.

Consulate-General of Japan
165 Broadway New York City, N.Y.

which I shall call on, on about the 9th Nov.

Consulate-General of Japan
1533 Tribune Tower
435 North Michigan Ave.
Chicago, Ill. U.S.A.

which I probably call on, on the 20th Nov.

Consulate-General of Japan
22 Battery Street
San Francisco, Calif. U.S.A.

which I call on, on the 4th Dec.

After the 21st Dec.

The Institute of Physical and Chemical Research,
Hongo, Tokyo, Japan.

Le Havre, 31. Oct. 1928

Dear Professor Bohr,

I thank you very much indeed for your very kind letter together with a thorough testimony. I am sorry to see that my last letter induced you to write this long document which must have taken you much time, and so much the more I am indebted to you for it.

At present I do not think I have any opportunity of using this testimony in Japan, but there might be some cases in the future, where it is very valuable to me. Even if it has no practical use, it is really a testimony of your appreciation of my effort during those years past, which although has had little fruit in my opinion. I shall therefore keep it for myself and it will always remind me of the years I spent in your Institute and it will ever encourage me in time of depression.

In half an hour this steamer Rochambeau is going to leave this harbour and I shall leave Europe. I shall once more thank you from the bottom of my heart and send you my best wishes to you all in the Institute and your family.

With best remembrance and kindest regards,

Yours Very Sincerely
Y. Nishina

Y. Nishina's Letters to N. Bohr, G. Hevesy and Others

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Corrigenda

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"Nishina's Correspondence with N. Bohr and Copenhageners 1928-1949"

p.3, l. 17: F lledparken → Fælledparken

p.19, l. 17 from the bottom: Nord Jylland → Nord Sjælland

p.22, l. 8: I so often written → I have so often written

Publication No.17.

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p.24, l. 6: Cyklotron → Cyclotron

p.27 (cover), l. 11: (Post Card) → (Postscript)