

Euler to Wettstein
Berlin, 22 May 1756
Letter 291 (2792)

[...] What you have told me concerning your health and of the weakness in your eyesight have caused me much distress, and I hope very strongly that you will be perfectly recovered from one and the other at this time. I have safely received the Virginian mulberry bush seeds, as well as Mr. Leland's third volume for which I am very grateful. This last work truly deserves to be translated into all languages, however due to the fact that few people here are capable of undertaking such an enterprise, our booksellers should be careful that if they were to undertake such a work, before arriving at the end that there would not appear a translation of the same book. However they are not entrepreneurial spirits except for trifles. Mr. Splittgerber has also provided me with the almanacs accounting of which I noticed that you have not reduced the payments for the mulberry seeds, which is what you can do to the maps that we have just sent off, however since they will not be sufficient, we have included 6 copies of a small atlas which was engraved here and despite some poor maps there are some which have been done with great care. The Academy wishes for you to accept one of these copies as a gift and I have added the 9th volume of our Memoirs for your illustrious Society and a work of my own composition which has just appeared at your disposal. The contents of which are such that I will wait until you have read it. I still cannot understand why Mr. Dolland has any objections towards me under the pretext that the substance of the question had been changed. There was never question of whether the shape of the lenses were spherical or parabolic, but only of the law that rays of different colors refract when passing through one

transparent medium to another. He lightly dispensed with the law which I used as though it were false and contrary to what the late Mr. Newton had ascertained and I still hope that when he condones to bring my thoughts to his attention that he will side with me. But perhaps he is seeking some way out by changing the nature of the question, and to return to the effect of composed object glasses that I have proposed some time ago. However I mentioned that these glasses could not be used successfully. since they do not provide for hardly any opening, and actually none at all since my calculations were wrong. However, I also remarked that if it were possible to give these glasses a parabolic shape rather than a circular face then they would be susceptible to a greater opening, which may have provided Mr. Dolland the reason to make his objection which you have mentioned. However, this that is the case then it is Mr. Dolland that is changing the substance of the question and not me, and there is also the point that I have only fleetingly mentioned this point in my memoir. If he supports that these objectives have no practical value, then I can easily agree with him, however if he says that the theory that lead me there is false, I formally deny it. However I am assured that even if we gave them a parabolic shape, one would only have the advantage of having constructed them in such a fashion, which I had the honor of mentioning to you recently, where I said that only if the glasses were spherical, which however they must be constructed very precisely. An essay that I wrote here convinced me of the solidness of the construction and the Academy of Paris has made a pair of object glasses that I am very satisfied with, even though they indicated that one might have desired better craftsmanship and I hope that Mr. Short will do even better. The overwhelming advantage consists in the objective, which is composed of two or three lenses and insofar as it is well made it is immaterial whether there is one or two eyepieces and without any mention from me one should seek out the best way by experience. Even though I only mention in this design that the shape should be either circular or spherical, the manufacturing process is no less subject to great difficulties, since it is absolutely necessary to maintain

the indicated sphericities very closely. If one would be able to provide the lenses a spherical figure prescribed in such a way that one would not separate by one hundredth part of an inch within the ray, then these glasses would be able to be brought to a higher degree of perfection and then I would not despair to manufacture a pair of glasses two feet in length which would magnify and represent distinctly objects for glasses of 130 feet in length. The same degree of perfection is obtainable for microscopes and this with an equal degree of success. I have had one made with 5 lenses which surpass by a great degree all the ordinary microscopes, even though it was not very-well made.

I have remitted to Mr. Formey the enclosed of Mr. Collinson which has been told to the applause of the Academy, he has asked me to make his humble compliments as well as our President would is most aware of the important services that you have rendered to our Academy. Our own Mr. Gleditsch has collected 40 different types of yellow carnations which he has sent to Mr. Collinson and as long as he has referred him to a responsible person in Holland who receives them will take care of them. One no longer says anything about the perennial *Uranography*, it appears that the subscribers were cheated out of their money, I do not find myself among the number nor did I solicit anyone to subscribe. Mr. Dietrich has returned to Basel with the hope of have a position soon, his uncle is very embarrassed due to his magnetized needles, because as soon as he shows them in England, the craftsmen of that country will not miss the opportunity to make them better, and then he would risk not having anything for his invention. Mr. Achard who gives you his finest compliments, tells me that Mr. Benjamin Achard is still alive that he is well and is the captain of a squad of hussars. Mr. Huber is still thinks a great deal of your memories The King has awarded grants to all those who wish to settle here and has even affranchised them of all liabilities should they wish to leave the country of which you mention is a huge insult. A foreigner would not find a spot to be at ease except here. I had the good fortune to win the prize of the Paris Academy this year which had been doubled to 5000 pounds. Baron de Gorgier told me about the

letter that you wrote him, he was particularly grateful and has asked you to accept his gracious regards until such time that he should write to you himself, which he promises to do immediately; afterwards we dined at Margrave Henry's where he toasted you with a large glass of Champagne to your health. My needs are such that I must once again ask you to send me a dozen pounds of tobacco. I am ashamed to bother you with these requests and I ask your forgiveness. Please accept the most affectionate regards from my entire household to you and your wife [...]

P.S. The maps and the books which you asked for have been sent by way of Rotterdam to Mr. Vaillant who currently has no news and I suggest that you contact him and tell him whatever is appropriate. I cannot remember if I told you that my eldest son has received a pension of 200 ecus from the King for being an academician.

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