

Letter from Newton to Francis Aston, dated 18 May 1669

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Trinity College Cambridge
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Francis:

Since in your letter you give mee so much liberty of spending my Judgment about what may bee to your advantage in travelling, I shall doe it more freely then perhaps would otherwise have beene decent. First therefore I will lay down some generall rules most of which I beleve you have considered already; but if any of them bee new to you they may excuse the rest, if none at all yet tis my punisment more in writing them then yours in reading them.

When you come into any fresh company, 1, observe their humours; 2 suit your own carriage thereto, by which insinuation you will make their converse more free & open: 3 let your discours bee more in Quærys & doubtings than peremptory assertions or disputings, it being the designe of Travellers to learne not teach; besides it will persuade your acquaintance that you have the greater esteem of them & soe make them more ready to communicate what they know to you; whereas nothing sooner occasions disrespect & quarrells then peremptorinesse. You will find little or noe advantage in seeming wiser or much more ignorant than your company. 4, seldome discommend any thing though never so bad, or doe it but moderately, least you bee unexpectedly forced to an unhansom retraction. Tis safer to commend any thing more then it deserves then to discommend a thing so much as it deserves: For commendations meet not soe often with oppositions or at least are not usually so ill resented by men that think otherwise as discommendations. And you will insinuate into mens favour by nothing sooner then seeming to approve & commend what they like; but beware of doing it by a comparison. 5 If you bee affronted, tis better in a forrain Country to passe it by in silence or with a jest though with some dishonour then to endeavour revenge; For in the first case your credit's ne're the wors when you return into England or come into other company that have not heard of the quarrell, but in the second case you may beare the marks of the quarrell while you live, if you out live it att all. But if you find your self unavoydably engaged tis best, I think, if you can command your passion & language, to keep them pretty evenly at some certain moderate pitch, not much heightning them to exasperate the adversary or provoke his freinds nor letting them grow overmuch dejected to make him insult. In a word if you can keep reason above passion, that & watchfulnesse will bee your best defendants. To which purpose you may consider that though such excuses as this [He provok't mee so much I could not forbear] may passe amongst freinds yet amongst strangers they are insignificant & only argue a Travellers weaknesse.

To these I may ad some generall heads for inquirys or observations such as at present I can think on. As 1 to observe the policys wealth & State affaires of nations so far as a solitary Traveller may conveniently doe. 2 Their impositions upon all sorts of People Trades or commoditys that are remarkeable. 3 Their Laws & Customes how far they differ from ours. 4 Their Trades & Arts wherin they excell or come short of us in England. 5 Such fortifications as you shall meet with, their fashion strength & advantages for defence; & other such military affaires as are considerable. 6 The power & respect belonging to their degrees of nobility

or Magistracy. 7 It will not bee time mispent to make a Catalogue of the names & excellencys of those men that are most wise learned or esteemed in any nation. 8 Observe the Mechanisme & manner of guiding ships. 9 Observe the products of nature in severall places especially in mines with the circumstances of mining & of extracting metall or mineralls out of their oare and refining them and if you meet with any transmutations out of one species into another (as out of Iron into Copper, out of any metall into quicksilver, out of one salt into another or into an insipid body &c) those above all <4v> others will bee worth your noting being the most luciferous & many times lucriferous experiments too in Philosophy. 10 The prizes of diet & other things. 11 And the staple commoditys of Places.

These Generalls (such as at present I could think of) if they will serve for nothing else yet they may assist you in drawing up a Modell to regulate your Travels by

As for particulars these that follow are all that I can now think of, viz: Whither at Schemnitium in Hungary (where there are Mines of Gold, copper, Iron, vitrioll, Antimony, &c) they change Iron into Copper by dissolving it in a Vitriolate water which they find in cavitys of rocks in the mines & then melting the slymy solution in a strong fire which in the cooling proves copper. The like is said to bee done in other places which I cannot now remember. Perhaps too it may bee done in Italy; For about 20 or 30 years agone there was a certain Vitriol came from thence (called Roman Vitrioll, but of a nobler vertue than that which is now called by that name) which Vitrioll is not now to bee gotten becaus perhaps they make a greater gain by some such trick as turning Iron into Copper with it then by selling it. 2 Whither in Hungary, Sclavonia, Bohemia neare the town Eila, or at the Mountains of Bohemia neare Si{l}es{ia} there be rivers whose waters are impregnated with gold; perhaps the Gold being dissolved by som corrosive waters like Aqua Regis & the solution carried along with the streame that runs through the mines. And whither the practise of laying mercury in the rivers till it be tinged with gold & then straining the mercury through leather that the gold may stay behind, bee a secret yet or openly practised. 3 There is newly contrived in Holland a mill to grind glasses plane with all & I think polishing them too, perhaps it will bee worth the while to see it. 4 There is in Holland one — Bory, who some yeares since was imprisoned by the Pope to have extorted from him some secrets (as I am told) of great worth both as to medicine & profit, but hee escaped into Holland where they have granted him a guard. I think he usually goes clothed in green pray enquire what you can of him, & whither his ingenuity bee any profit to the Dutch. 5 You may inform your selfe whither the Dutch have any tricks to keep their ships from being all worm eaten in their voyages to the Indys. Whither Pendulum clocks doe any service in finding out the longitude &c. I am very {we}ary & shall not stay to part with a long complement only I wish you a Good Journey & God bee with you

Is Newton.

< insertion from lower down the page >

Pray let us heare from you in
your Travells.
I have given your 2 books to
D^r Arrowsmith.

< text from f 4v resumes >
