

Dec 24, 1875.

(Friday.)

My dear Father,

I wish to begin to discuss what it will be best for me to do during next summer, as I now have about all the information I am likely to be able to obtain in regard to ways of employing the time if I stay over here.

First of all, I find that our spring examinations commence on the 13th of April & continue till the 20th of May. During this time we are not required to be present at the School except on the days of examination; and the results are known almost immediately after each examination so that I may consider myself free after the 20th May.

As we have five clear months of holidays from then till the 1st November, I feel that they ought not to be left entirely unoccupied. Also I feel that if I do not do any practical work in the two summers that I have between the three years of the course here, I will have to begin at very elementary work after I finish my studies, besides losing a considerable part of the advantage of the courses here. In fact I will be somewhat in the position of the Cambridge wrangler who had studied Quaternions, but could not count his change when he went to market, & found himself fooled by the apple-women.

~~It~~ I find it rather difficult to get satisfactory information about the "missions" as very few of the former élèves externes have gone upon them, and the Ingenieurs are not treated in the same way as we are. As I do know of them, I have

gathered from the Gleives externe
of the 1st class who are in our
Salle d'etude, and although not
very complete is, I think, reliable
so far as it goes. The Ingenieurs
it would seem, then, are sent
on these "Missions" without having
a choice in the matter, & being
required to remain in the same
locality during the summer, &
make up a report in the form
of a diary of the work they have
been doing. We are much freer
in the matter. We are furnished
with letters of introduction of an
official nature, to ^{some} different sup-
erintendent Engineer of works in
progress and can by means of
them obtain all facilities in seeing
what is going on, and can also
obtain employment if we wish.
Also, we are free to leave when
we please. I believe, however, that
we are expected to remain in
connection with the "mission"
which we choose for a reasonable
time, & give a reason for leaving

for another locality if we wish to do so. Also we get a certificate which enables us to travel at half-price on the railways.

There is another thing which is very much recommended to me by one of the Ex-ternes of the 1st Class who is a very sensible fellow. He says that a person can make a very good use of their time by going to Switzerland where according to him it is quite easy to get employment on some railway, there being the additional advantage of a small remuneration about F 150 per month. In this case I dare say he is quite correct, as I know of some railways which are now being constructed there. If I were wishing to do this I could get a general recommendation (I suppose) from the School authorities, or at least a certificate of my being a student of the School. He recommends the following plan. To choose a mission in the east of France and go there for a time while arranging with the Swiss Co.

and then to give notice of my intention to leave the mission. (This latter would merely be a letter to the Inspector of the School written for the sake of politeness) In this way there would also be the advantage of getting the half-fare to the frontier.

In regard to the question in general, it would depend to a great extent on the actual enterprises which will then be in progress; but still I would not need to be too particular as almost anything would be very good practice for me at the present level of my capabilities in that direction.

To come then to the actual question in hand, there are several ways in which my time ^{during} for next summer might be arranged, but in any case I think it would be extremely desirable that a part of it at least should be occupied in practical work.

Perhaps I should consider it decided that I am to come home

in the first place whenever the course here is over. For this too there are special reasons, especially in view of Anna's wedding being about that time; & of course it is what I would far rather do than anything else. But then as I am sacrificing so much in that direction for the sake of getting a good education, it seems inconsistent to give up a large part of the very thing I am making the sacrifice for, in order to save a part of the sacrifice involved. It is a question of maxima & minima that could almost be put into the form of an equation, the answer being the determination of the best division of my time in order to gain the greatest amount of absolute advantage.

If I am to speak on this assumption, it of course alters to a great extent the whole aspect of the case. For then, if I come home I would be able to discuss the question to much greater advantage

than can be done in writing. The time of my coming home would depend on the time of Anna's wedding, & I understand it is to be in the spring so far so it has been at all decided on. In this case there remains the bulk of the summer & the autumn, during which I could either return here to avail myself of some of the advantages which are to be had here, or I could get something to do on our side of the water.

This perhaps would be the best thing to do as I could get work over here the following summer, & besides it might be difficult to commence over here at a later date in the season.

It is principally in regard to this latter alternative that I now write. If you think it would be better for me to come over in the spring, & also to stay over during the summer, you might be able to arrange for some employment for me. I wonder if it would be

possible to get on to the U. S. Coast
Survey? This is the most accurate
work I know of & would give me
an idea of the kind of instruments
they use which would be very
useful. But as I have said
almost any kind of work would
be about equally useful to me, & a
railway has the advantage of com-
bining several descriptions.

I would be very glad to hear
from you what you think it
would be best for me to do,
among all these different ideas
of mine, and alternatives that
I have suggested.

Believe me your affectionate
son,
(Monday) William.

P.S. I have received your welcome
letter of the 9th inst. & acting on
your suggestion I bought myself
a new felt hat (with my initials
in the crown in felt letters) for
thirteen francs; which I wear as a
present from you.