

CHAPTER IV

LEHRJAHRE AND WANDERJAHRE

PART I. MEDICAL STUDIES AND THE FLIGHT TO CONSTANTINOPLE

BEFORE Francis Galton started work at Birmingham, a delightful trip for the sixteen year old boy was arranged in July, 1838. He travelled across Europe with two young medical men, Bowman and Russell, who were going on a tour combining pleasure of travel with inspection of continental hospital practice. The link with Bowman is pretty clear; he was the son of John Eddowes Bowman, a naturalist and banker of Wrexham. He had been a pupil of Joseph Hodgson and then house-surgeon to the General Hospital, Birmingham; in the previous year he had gone to London to study at King's College, and he was later well known to fame as Sir William Bowman, the ophthalmic surgeon. Of Russell the only knowledge I possess is that conveyed by Galton himself in his long letters to his own father.

Wednesday Night 25 of July, 1838

OLD HUMMUMS

MY DEAR GOVENOR [sic]

First of all the things that I send are those that are over and above what I want; there is much grumbling about the size of my carpet bag. Now to my history. I arrived at the Coventry Station house at about 9. Accordingly I looked about Coventry till it was $\frac{1}{2}$ past and returned and took my station on the steps; at 25 minutes to 10 the train came up—prominent out of one of the carriages was a pale jaundicy face, to which face was attached a most indescribable proboscis across which glittered a pair of spectacles. Before even the train stopt the mouth of the foresaid face was engaged at bawling out the name of "Galton" in such a tone that the passengers of the other carriages simultaneously popped their heads out of the windows expecting some awful calamity. I accordingly, most awfully ashamed for the police officer had taken up the hue and cry, and Galton was the burden of the song, elbowed my way to where the yellow face was bawling, introduced myself, Russel's¹ eyes glistened through

¹ The spelling varies of this name.



FRANCIS GALTON.

From a portrait by Oakley of 1840. (Galton Laboratory, University of London.)

his spectacles with joy having at last found me, and fairly out of breath reseated himself. We went on to Rugby, where we were turned out into coaches, which were very bad ones, and so got to Denbigh Hall, where we got into the train again and reached London. Cabbed to the Old Hummums—went to Bowman and arranged plans for the next day.

Next day there were passports¹ to be got and viséed. Francis went to Barclay's for his letter of credit. Then he went down to dine with Barclay at Leyton and to stay the night, there being sixteen persons to dinner, all Barclays or Gurneys but three. Among other details of his two days in London Galton reports :

"I was magnetised to-day; it had not so much effect on me as last time; the Baron² said that he was quite exhausted. We set off tomorrow. Bowman will press on to the top of the perch, I cannot displace him, Russel and I are fighting for the next place."

We can picture the three young men, Bowman 22 years old, Russell 20, and Galton much as we have him in his portrait, all ready and fit for their frolic; Galton somewhat shy, and probably more boy-like and sensitive to appearances than his comrades (see Plate XLVIII). He was still in the stage, when to be unusual, *e.g.* carry a parcel through the streets—or look singular—was really painful to him. This was a matter in which travel would aid him and did, for while no man was more careful of social convention than Galton, even in his later years, he did not allow it to become a tyrant and overrule comfort or convenience. I have heard him almost directly tell a caller to be gone, if he wanted to talk business, and the following anecdote communicated by his niece Mrs Lethbridge, witnesses how far in later years he had advanced from the boy of 16, who felt shy when his name was bawled through Coventry station :

"I have an amusing recollection of a little trip to Auvergne which he and I took together in the summer of 1904.....The heat was terrific, and I felt utterly exhausted, but seeing him perfectly brisk and full of energy in spite of his 82 years, dared not for very shame, confess to my miserable condition. I recollect one terrible train-journey, when, smothered with dust and panting with heat, I had to bear his reproachful looks for drawing a curtain forward to ward off a little of the blazing sun in which he was revelling. He drew out a small thermometer which registered 94°, observing, 'Yes,

¹ Galton's passport dated July 24, 1838, and viséed by police and consuls and burgomasters in almost every place he came to is now before me, a curious relic of this journey.

² Query : Was this "animal magnetism" and the "Baron," Baron von Reichenbach

only 94°. Are you aware that when the temperature of the air exceeds that of blood heat it is apt to be trying?' (I could quite believe it!) By and bye he asked me whether it would not be pleasant to wash our face and hands? I certainly thought so, but did not see how it was to be done. Then, with perfect simplicity and sublime disregard of appearances and of the astounded looks of the other occupants of our compartment, a very much 'got-up' Frenchman and two fashionably dressed Frenchwomen, he proceeded to twist his newspaper into the shape of a washhand basin, produced an infinitesimally small bit of soap, and poured some water out of a medicine-bottle, and we performed our ablutions. I fear I was too self-conscious to enjoy the proceedings, but it never seemed to occur to him that he was doing anything unusual!"

It needed African travel to enable Francis Galton to throw off a certain self-consciousness; I have heard acquaintances, who knew perhaps little of his true simplicity and his width of toleration when intellectual values were under consideration, speak of him as conventional. He belonged, indeed, to an old-fashioned school, which liked good manners, which preferred its women to be pretty and dress gracefully, and which appreciated without worshipping the conveniences of wealth. But these conventional things were for him but grease to the wheels of life, to be put aside, whenever they interfered with the greater aims of existence. He might not have found it as easy as W. Kingdon Clifford did, to call in at the butcher's and walk home with a leg of mutton under his arm, but assuredly if "Universe" were to be solved on the homeward walk, he would have kept Clifford company regardless of the joint. Francis Galton's conventionality in boyhood and youth was largely shyness and self-consciousness—in manhood it was a traditional courtliness not without its protective advantages, and wholly disappearing before the warmth of his affection, when acquaintance had ripened into intimate friendship.

Our youthful travellers voyaged down the Thames and across to Antwerp; thence to Brussels, Mechlin and Liège (see Plate XLIX). Many of the letters to his father Tertius tell us of the usual travellers' sights, the churches, the pictures and museums, but occasionally we pass to things more suggestive, as the ornithological and geological collections at Brussels, and then to the first pleasures of the Rhine, and of the strangeness of foreign life.

"I really am quite full of obligations to you for letting me take this trip. I have been as happy as possible. You must excuse my writing longer letters, as after being out all day, coming into the coffee-room tired, you are stupefied with baccy smoke puffed out of the mouths of some 60 people. Then writing a long journal, it is rather tiring."



Sketch by Francis Galton of the Bishop's Gateway at Liège. Visited 1833.

The "tags" to his sisters (see Plate L) follow as usual :

"DEAR EMMA, since I wrote the first part of this letter I have been sketching most tremendously—I took **33** drawings in the space of 4 hours or so in going from Bonn to Coblenz. I have taken also a great many others. I am so very tired, that good bye and believe me ever your affectionate F. Galton. DEAR BESS, I have duly kept your precepts in mind about the immeasurable superiority of Englishmen. I have not looked out yet for vellum for you, because of carrying it such a distance. DEAR DELLY, I am very glad I did not bother my head with Dutch lingo. Get 20 phrases in your head, and in a few weeks you will speak German like a house on fire. Give my love to Erasmus and Darwin. Good bye, FRANCIS GALTON."

In several towns the hospitals are visited. In Frankfort we read :

"They say that this is a very clean hospital, but I never fully appreciated the value of fresh air till I found myself without its wards."

Then followed Darmstadt :

"Looked up the Museum; the jawbone of the Dudotherium and all that sort of fossil nonsense (!)"

Then to Heidelberg and on to Stuttgart and Augsburg with the Danube and Vienna as goal. Francis writes very patriotically; he is thoroughly enjoying himself, but his mind is expanding :

"There is certainly nothing more useful than travelling. The more you see the more you are convinced of the superiority of England. However nothing can be so admirable as a German or Frenchman who loves his country; it must be a great and genuine patriotism to be able thus to prefer it.....I wish you were there to see all the beautiful scenery we have passed through. The views were by far the most splendid I have ever seen. The architecture is very curious there is a great deal of the old Roman style. I have never seen a perfect building of that style in England."

And again of Cologne Cathedral, "it is most splendid...I never saw anything like it in England." Francis had yet to learn that the existence of patriotism is not contingent on the possession of the best! In Heidelberg there was also experience of first class medical ability:

"Tiedermann a top-sawyer of the medical line and a whole quantity of others. There was also a Dr Cobalt to whom we had letters of introduction, a doctor who has made himself celebrated by transferring a wax candle (without the wick) from a candlestick into some holes in a skull i.e. as M.D.'s would call it, injecting the venous system of the bones with wax (I think that is the phrase)."

In a letter from Munich we see that Francis has now to excuse his coming conversion to Bessy.

"DEAR BESSY, I always keep your precepts in mind, but after all the Germans are not so bad. Remember that as you told me the Hanoverians are our cousins, and the other states are brothers to them, and so they are related to us. Also smoking is not

their nature—for had it gone by blood, it would have descended through the female line which is not the case....”

Then after attributing most of their faults to smoking, Francis continues :

“So evidently their nature is good but unfortunately much spoiled. And their Eilwagen—their jolting is awful. N.B. (Don't read this aloud) I have got one boil and two blisters in such awkward positions that when sitting back I rest upon all three; when bolt upright on two, and when like a heron, I balance myself on one side upon one!!! My feet are in a worse predicament having 3 blisters besides two agricultural crops. This is all from their Eilwagen or Diligences. Next time I go abroad, I shall most certainly get my mackintosh double behind and blow it up like an air cushion.... I am getting more contrite about not learning the lingo. I certainly shall next time.”

Then from Munich through the Tyrol, and the Bavarian light blue and white colours—“trop tendre” for national colours as a Frenchman observed to Francis—are replaced by the yellow and black, the “awful Austrian stripe.”

“But it was to be gone through, accordingly the coach stopped before the bar, when out popped an Austrian officer with mustachios like sweep's brushes looking thunder and lightning. ‘Kein Tabac’ growled or rather roared the officer in interrogation (Tobacco is an imperial monopoly). Three ‘Kein Tabacs’ followed each other uttered in a most submissive tone of voice from us, like the echoes of Oberwessel. The officer's eyes flared. He pointed to the luggage, down in the twinkling of an eye it came and was opened. He looked awful at my green bags with black strings, in which two or three dirty shirts were esconced, and terrible at the other luggage; he made signs that every thing must come out, when in the moment 3 Zwanzigers (a coin about 10*d.*) touched his hand—a galvanic shock seemed to thrill his whole system. The sour of his disposition, like the acid in Volta's pole seemed only to increase the change. The flare of his eye changed in an instant to a twinkle, the baggage was shut up and the officer fell into a ‘paroxysm of bows’ and away we drove. Got into Linz at 3 in the morning of the 26th and at 7 we were steaming down the Danube in one of the early voyages of steamers on this part.”

Again there is a fraternal “tag” to this first Vienna letter:

“DEAR BESSY, You will be glad to hear for the honour of our country that the steamers on the Danube like those on the Rhine are all worked by English Engineers, and the orders all given in English.”

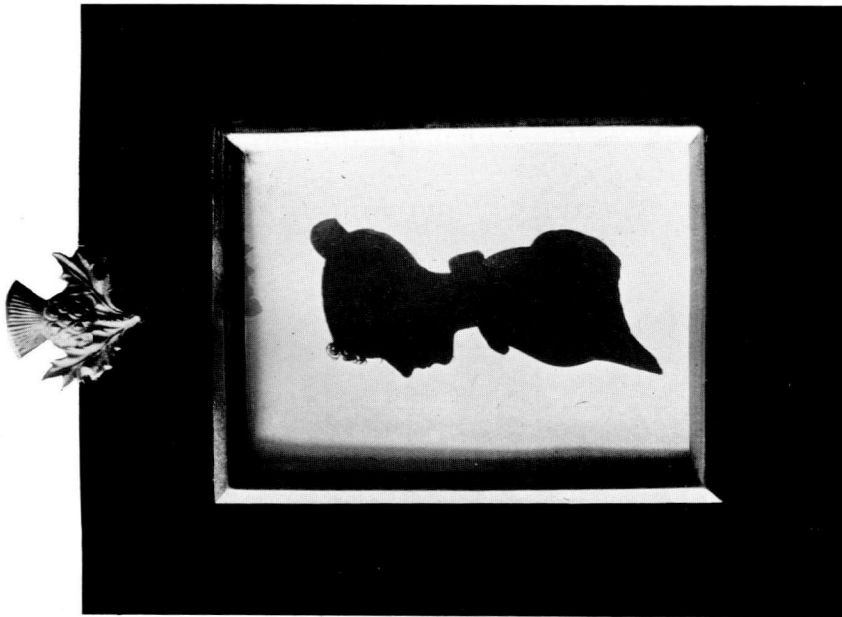
In Vienna Dr Seligmann took our travellers the round of the hospitals¹ and museums:

¹ In his letters from Vienna Francis does not mention the incident of the young and buxom female lunatic, who, on a visit to the asylum female ward, rushed forward and clasped him tightly to her bosom as her lost Fritz! (*Memories*, p. 25). He was probably too shy to record it then.

Plate L



ELIZABETH ANNE GALTON (1808—1906).
Mrs Edward Wheeler, "Sister Bessie." From a painting
in 1891 by Powles at Claverdon.



EMMA SOPHIA GALTON (1811—1904), "Penny."
From a silhouette of 1827, at Claverdon.



ELIZABETH ANNE GALTON (1808—1906), "Sister Bessy."
From a painting by Easton of 1844 in the possession of Mrs T. J. A. Studdy.

"He has shewn us everything. Tell Bessy that after all some of these Germans are not a bad sort of fellows."

The route now turned northwards to Prague, Dresden and Berlin. Saxon Switzerland was a disappointment as the Danube had been. From Berlin he gives Sister Bessy a quaint account of his medical comrades :

"DEAR BESSY, The boils have subsided without the salt water, but thanks for the receipt. However I must tell of some specimens of professionalism in my two companions. My foot has been unfortunately exactly like Erasmus' at Weymouth ; that is the nail of the large extremity thereof (which I will call *eot* for the same reason that you designated part of my fishing tackle *tug*) most perversely grew in the side causing inflammation. I happened to mention this to them ; a smile of conscious professional power illumined the face of one, a grin of delight that of the other. Both readily proffered their services, and as a backer Russell whipped out a bag containing 2 lancets, 1 spatula, a pot of ointment, a pair of surgical scissors, bandages enough and to spare for any compound fracture, 2 boxes of blue pills, lint, and a sewing up needle. He deposited these in succession on the table, adjusted his spectacles and smiled serenely. However as my foot pained me dreadfully, I made up my mind, and contrary to *Gil Blas*, accepted the Senior hand of Bowman. Russell disappointed retreated. Well, at last I found myself seated, the sick member was bared, Bowman, sleeve tucked up, advanced scissors in hand. The reflected light from the instrument looked awful. He made a most beautiful circular twist of the hand for what earthly reason I do not know, and brought the scissors to their former place. He then examined my *eot*, shook his head, ejaculated : 'Bad,—very. Russell, have you a pair of forceps?' 'No' was the response. The two heads were now brought together to discover a substitute for the instrument in question ; at last a bent pin was found to answer. Accordingly Russell had to hold the flesh back, and away went Bowman,—wrenching up the nail, then cutting it snip-snap all round, I writhing. However I could not help laughing at the operators. It was a splendid sight. And to do them justice all pain has gone away" [Sunday Sept xvi. 1838, Berlin].

Galton came home via Hamburg and Hull and his letter to his father from Kirk Ella where he paid a flying visit to the family friends, the Broadleys, may be cited at length :

Tuesday [Sept.] 25, 1838.

KIRK ELLA.

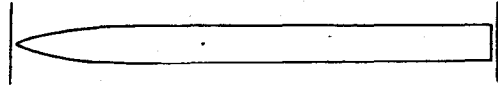
MY DEAR GOVERNOR,

I had not room in my last letter to tell you all the news so I will now commence. After leaving Hamburg where we saw old costumes, old canals, cathedrals etc., etc. we had the screws of the boiler get wrong, which caused a delay of about 3 hours. We were then just too late for the tide and stuck on a sandbank where we had to wait for the tide. We accordingly got the ship's boat and rowed to the Danish shore where we rambled about four hours. After that we were too late to be able to see our way at the mouth of the river, where we had to spend the night. Next day we

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passed Cuxhaven and Helgoland, and had a long passage to Hull. We also got stopped by the Humber fogs, and could not proceed for a long time, making on the whole $3\frac{1}{2}$ days and 4 nights. I was dreadfully seasick and although like a true Briton nobody (when on terra firma) can enter more fully into the spirit of "The Sea, the sea etc." or "On the glad waters of the dark blue sea," yet my enthusiasm dies within me, or rather like Bob Acres' courage "oozes out," but unfortunately not like his "out of the palms of his hands," but.....I arrived at Hull at 9 o'clock on Monday. The time of absence from England was determined at 60 days. I was absent 60 days all but a quarter of an hour. After custom house etc. at Hull I set off for Kirk Ella and took the Broadleys by surprise, who have been lionising me all about. Mrs Broadley unfortunately is not able to leave her room; Anne & Charlotte are the only ones at home. I shall escort Anne to Lucy so as to be at Moor Hall¹ at 5 on Saturday and at Birmingham about 6 or $\frac{1}{2}$ past. I shall then go to the Hospital, if I cannot get leave of absence. Please to tell all about what I am to do. Accounts etc. I will settle then. I am very sorry that I could not come to see you, but I wished particularly to call on the Broadleys, if possible and accordingly went round by Hull. They are most kind and good natured to me, and Anne sends her love etc. Kirk Ella is a most comfortable looking place, surrounded by a colony of Sykes, their houses looking like towers to the ramparts of their garden walls. The weather is rather foggy. However tell Bessy that Yorkshire is not such a very bad place after all. The Humber is muddy—awfully—but anything looks well after the Elbe. And as for the English Hedge Rows and Green Lanes you cannot appreciate them till after having been abroad. Tell Bessy that if possible I am three times as loyal as ever! The reason of this unreadable writing is the very uncomfortable length of my pen. I have marked the length below.



Good bye and believe me ever your affectionate son, FRANCIS GALTON.

There are a few lines from Anne Broadley herself to Sister Bessy telling of Francis' bright face :

"The surprise as well as joy were very nearly too much for my weak head, and I was in a bewilderment the whole day, and still I cannot help looking at him with a sort of feeling as if it were a dream, and it cannot be true that Francis Galton is actually seated opposite to me at home. Mama is nearly as happy as I am to have a Galton at last under her roof. He looks very well and is just the same charming boy as ever, not a bit spoilt, full of enthusiasm on all he has seen and giving a most agreeable account of his most agreeable tour. Mama thinks I have not said enough about him before..... I feel proud not a little of his coming to see me."

Francis escorted Miss Broadley to Moor Hall, a delightful cavalier, but if we read his letters from the early days at the Larches to the end of his Cambridge career, we feel impelled to point to this continental tour as the dividing line between boyhood and manhood. Francis is no longer a charming *boy*.

¹ The home of his sister Lucy, who had married James Moilliet in 1832.

Returned to Birmingham Francis Galton plunged at once into his medical studies. The dozen pages in Galton's *Memories* which deal with this first medical experience are perhaps the most fascinating in that book, not only for the picture they throw on hospital life in the first half of the 19th century, but also for the indication they give of the great advantage clinical experience was to Galton himself. I do not propose to reproduce what Galton has told so well, but merely to supplement his account from letters written to his father Tertius during this period.

A first letter of Oct. 10¹ deals with the supplementary studies Francis was planning.

Wednesday [Oct.] 10th, LEAMINGTON.

MY DEAR GOVERNOR,

I have just returned from Birmingham where I dined yesterday with Dr Booth and the day before with Hodgson. Hodgson advised me *now* to read some medicine and Dr Booth has lent me the book, but when I mentioned that I intended to go on with German whilst I was at Leamington, he said that I had certainly better not, but give up my time to Pharmacy. Accordingly I have not called upon the Pole, as I know that you wish me to knock under to Hodgson in everything of that sort. He and the Dr were both very good-natured to me. I was sorry to hear from Hodgson rather differently to what I had before understood. His words were "that I must expect every possible annoyance both in society and in continual interruptions; that I shall never have a minute that I can call my own," and he spoke very strongly on the subject.....By the bye Hodgson says that my masters must be German and Mathematics twice a week, and he will inquire about them. *Not* drawing; he says that I shall have quite sufficient to do with these.....

Ten days later Francis again writes of his mathematical and German studies:

"I will see if Mr Mason can give me lessons or not in mathematics.....Mr Jones is spoken of as the best German Tutor.....Would you be so kind as to send me my German Grammar and Elementary Book and Klopstock and a few Tracts. Adèle will do this. Also please ask Emma to put out from my knick-knack cupboard a little instrument for boiling water, it consists of a cylindrical copper vessel—a sort of boiler with a bent pipe running out of it, and a spirit lamp. [Picture.] There is a hospital seat at St Paul's which I attend. Tomorrow there will be an amputation of the leg, when I shall see how I can stand fire.....I am rather anxious to begin dressing myself, as it is a bore seeing some pretty little operation going on where you cannot be the performer. By the bye would you tell me if I am to dress for Mr Hodgson or not as I really do not know what you have fixed on in that way. All the 'higher powers' are very good-

¹ Sent to his father who was staying at Hadzor.

natured etc., but snobs. — the Dispenser is not at all a *blackguard*, but you do not become intimate with him, which I am glad to see as I shall be much under him.”

On Nov. 10 we have an amusing account of work in the Hospital :

“There is an immense deal of work here. It does not come in one long pull but in a series of *jerks* of labour between intervals of rest, like playing a pike with a click reel. I will give you a sort of diary of the evening of the day before yesterday. $\frac{1}{2}$ past 5 p.m. went round all the wards (No joke I assure you)—made up about 15 prescriptions. Awful headache etc. Entered in the Hospital Books records etc. of patients; writing in my case book etc., hard work till 9. Supper. Went round several of the wards again. Accident came in—broken leg, had to assist setting it. $\frac{1}{2}$ past 11, had to read medicine etc. 12, very sleepy indeed, lighted my candle to go to bed. A ring at the Accident Bell; found that it was a tremendous fracture. Was not finished till $\frac{1}{2}$ past 1. Went to bed and in the arms of Porpus. 3 a.m. in the morning: a tremendous knocking at the door; awful compound fracture, kept me up till 5. Went to Bed—up again at 7 o'clock.—Rather tiring work on the whole, but very entertaining. Attended a post mortem and dissection 2 days ago—Horror—Horror—Horror! I do not know when I shall get over the impression. It was a woman whose wounds I had assisted to dress. I made her medicine and prescribed once or twice for her. My first regular patient died also, yesterday morning. However as it was a burn, my mind is perfectly easy. Don't tell this it won't sound well. I shall set up a case of instruments soon. I can write prescriptions splendidly, and moreover begin to understand all the humbug of medicine, which is not a little. I am very sorry that you have got the gout, if I were at home I would prescribe for you with great pleasure. Tell Bessy that I have some valuable receipts—such as splendid Tooth-Powders—Glorious Perfumes—Beautiful Varnishes. Also Lucy's Biscuit Pie Crust answers very well.

I expect to cut Gil Blas quite out. I can hardly refrain from sending you a splendid receipt for cure of the Gibberish.

Good Bye and Believe me ever,

Your affectionate Son,

FRANCIS GALTON.

.....Please send my Delphin Horace, and Ainsworth's Dictionary, and Schrevelius' Lexicon.”

In November we find Galton busy with his German and Mathematical instructors; he is sending for Snowball's *Trigonometry*. He has had “what they call a grand field-day, six important operations.” “The M.D.s are really most good-natured to me. I am allowed to spend a Sunday every now and then out.” A letter of Dec. 5, 1838, deserves reproduction in its entirety—it is so characteristic of Galton's varied interests, of his fund of quiet humour and of his liability to overwork himself!

Dec. 5, 1838. BIRMINGHAM GENERAL HOSPITAL.

MY DEAR GOVERNOR,

I should have written before but I was waiting for my instruments, to see if my funds were sufficient. They have not yet come, so I write to you at once. Thank you for your letter. I am very glad to hear you are flourishing. Now for business. My Mathematical Master comes at 7 o'clock Tuesday Evening—my German at $\frac{1}{2}$ past 6 on Friday Evening. My time is distributed as follows: Up by 8. Breakfast &c. until $\frac{1}{2}$ to 9. I then go round the House with Mr Baker; afterwards at about 10 I “post-mortemify” should there be a subject, sometimes operations take place etc.; if not, I dispense should there be many out-patients: otherwise I read Medical Books, and go round with the Surgeons and sometimes Physicians (who by the bye are ABOMINABLY unpunctual). However it is impossible to regulate that part of my time, but my hands are full with the above occupations until 2. Not forgetting by the bye 5 minutes as the clock strikes 11 which are invariably employed by me in swallowing a *Digestive Pill*. Well, at 2 o'clock I dine etc. till $\frac{1}{2}$ to 3, I then read Medical Books etc. till $\frac{1}{4}$ past 5. Then take tea till $\frac{1}{2}$ to 6. Then Mathematics till $\frac{1}{4}$ to 8. After that I write in the registers I have to keep and [dispatch] a few other little hospital jobs; also go round a few of the wards etc., and read Horace and Homer on alternate days till $\frac{1}{4}$ past 9, when supper is ready. After supper (at $\frac{1}{2}$ past 9) I read German an hour or so according to the state of my headache. I walk out when I can—about 2 or 3 times a week, generally between 3 and 5. When I dine out I read Mathematics from 2 to 5 and return to the Hospital at $\frac{1}{2}$ past 8 (if with Dr Booth); only just show myself at supper, so I get $\frac{3}{4}$ of an hour of medical reading from $\frac{1}{4}$ to 8 to $\frac{1}{2}$ past 9 and then as before. I also always make this law: should an accident occur such as a fractured leg which takes sometimes 2 hours to set, such as finding splints, making pads etc., I do not continue my studies in my other branches as if nothing had happened, but divide my remaining time between all that I have not done that day. I like Mr Abbot my Mathem. Master very much; he advises me not to read the Calculus until I have read a little of other branches. I have read in the last fortnight the greater part of Analytical Trigonometry, I have got some way in Conic Sections, which I like very much. I expect to have finished them in about a month or 6 weeks, and then for the Calculus. Ask Bessy not to row me for this writing because I really do generally write better, but I cannot make my pen mark and I have no knife in my pocket. Good Bye and believe me ever your affectionate Son,

FRANCIS GALTON.

P.S. You ought to see me vaccinate I do so pitch the lancet into the children's arms. If I take wine I should be the only one that does so at table; accordingly I cannot do so.

But the rushlight was not merely burning at both ends, it was in the oven itself, and Francis Galton was soon to feel the effects of this overstrain. A letter of Dec. 22 postpones his Christmas home visit, a dresser was ill and he could get more experience by staying:

“Tell Bessy that I am fully aware how wrong it is to violate old customs etc., especially that of meeting on Christmas day, but it can't be helped. Really now that

I am turned 'Doctor' I find that I can decide on nothing beforehand; this is not my first disappointment. I do not know if I told you what a public character I have become. Four distinct times in walking in Bull Street and New Street have I been surrounded by various juvenile members of the Rag-Tag and Bobtail division of the inhabitants and addressed not with hurrahs, but with 'I say ould chap, gie us some medicine,' also 'There goes the Doctor' and other phrases pointing to my profession."

On January the 8th, 1839, Galton is still at his post, and his experience is increasing! He reports to his father his first experiment in dentistry:

"I tried my hand at toothdrawing the other day. A boy came in looking very deplorable, walked up to me and opened his mouth. I looked awfully wise and the boy sat down in perfect confidence. I did not manage the first proceedings well, for first I put in the key (that is the tooth instrument) the wrong way, then I could not catch hold of the right tooth with it. At last I got hold. I then took my breath to enable me to give a harder wrench; one-two-three, and away I went. A confused sort of murmur something like that of a bee in a foxglove proceeded from the boy's mouth, he kicked at me awfully. I wrenched the harder. When, hang the thing,—crash went the tooth. It really was dreadfully decayed—and out came my instrument. I seized hold of the broken bits—the boy's hands were of course over his mouth and eyes from the pain, so he could see nothing—and immediately threw them on the fire and most unconcernedly took another survey of the gentleman's jaws. The tooth was snapped right off. Well, I pacified him, told him that one half the tooth was out and I would take out the other (knowing full well that he would not let me touch it again) and that it was a *double* one. But, as I had expected, he would not let me proceed. Well there was another tooth which he wanted out and against which I took proceedings. I at last fixed the instrument splendidly and tugged away like a sailor at a handspike, when the boy, roaring this time like a lion with his head in a bag, broke away from me and the sawbone that was holding his head, bolted straight out, cursing all the Hospital Doctors right manfully. So much for my first tooth-drawing."

To his sister Adèle he writes under a fortnight later:

"I have been rather invalided and was sent off for a few days to Moor Hall to recruit. I shall look you up at Leamington some of these fine days, but not just yet. Hang it, it is now past ten in the evening and a car is just rolling up to the door, so I must finish, perhaps it may be a broken leg, so Good bye, etc."

The next day he adds a postscript:

"It was only a bad scald. This morning Hodgson gave me a letter from the Governor to him, and in reply, first of all my arm is all but well, it was an old sore which I had forgotten when dissecting, it broke out of course and then subsided; about a week or ten days after that it broke out again, and gave me some trouble. Then as to my general health my headaches are better than they were once—a great deal better, and I have of course a little hospital fever &c., but that is all. About my mind which Lucy attacks I shall not say much, except that it is werry uncomfortable, but I shall soon get over all hospital horrors, etc., etc. I am in a great hurry as I want to get a

walk out now, not having had one on account of the weather for the 3 last days. Of course I have nothing to tell you, as the medical world is quite a little world of its own and its proceedings I should imagine are not very interesting to the civilised one. Oh Donner und Blitz! here is another accident. I must look sharp for my walk, if not kept long by this double calamity both to me and patient. I am calling out—Coming—tar—tar—
FRAS. GALTON."

So the months went on—far too much work and too little play—none of the sports and pastimes of our own medical schools. At Easter there was again no holiday :

"Can't come—quite impossible. Patients increased—awful number. Cut a brace of fingers off yesterday and one the day before.—Happy to operate on any one at home—I am flourishing—wish I could say same of my Patients. Love to all. Bye-bye.

FRAS. GALTON."

But by July a change was really needful. Francis is planning a tour and mentions as possible companions his cousins Theodore Galton and Edward Darwin. His last letter from the Hospital to his father runs as follows :

July 10, 1839. GENERAL HOSPITAL.

MY DEAR GOVERNOR,

I have been waiting before I wrote to you, to see whether Mr Hodgson would have recommended anything for me, but as he has *not*, I will tell you what he has done. He called me aside and asked me if I felt unwell or not, I told him that I was,—gave symptoms etc. When Mr Hodgson asked what I had intended to do about this trip that you proposed,—I replied that I had but just heard of it, and that I did not think that I could spare my time. To which Mr Hodgson agreed, said it was a foolish plan &c., &c. (N.B. He was in a bad humour because an operation of his for cataract had not exactly succeeded), and after saying other things of the same import, toolled off. He did not prescribe for me. However I shall do very well. There is capital fun going on here—only think of Dr Booth. Amongst other performances of his when he led the police into the Bull Ring, the people swearing, throwing stones at him etc., etc. The Dr (it being dark) coolly rode to the nearest Lamp Post, put his hand in his pocket and pulled out his Barnacles, inserted it again and lugged out the Riot Act and read away most edifyingly! By the bye about Mr Abbot—I have had 30 lessons, a brace in November—do. in June and regularly in the intervening months¹. His banker is Taylor and Lloyds, and he wishes to have it directed for the Rev. J. Abbot, Free School. Our Matron has had a tremendous epileptic fit; she is in bed still and very unwell. Quite sorry to hear about your Asthma, but you must I suppose console yourself with the Aphorism of the Cook on the Eels—"Nothing when you are accustomed to it." By the bye I have been on the stage with Van Amburg—took up

¹ This proves that Galton had never taken a week's holiday since he started at the Hospital!

his whip and shook it (it is a common horse hair one, but very large, *not* heavy), and helped to draw the Lions' Cages off afterwards. I am rather badly off for soap. My Books cost a wee and there is my British Association fee £1 (I have kept regular Accounts!!) Amongst others of my entries is one: Various Charities 4*d.* I must look you up some of these fine days. I have got no news watsumever. So bye bye.

Your affectionate Son,

FRAS. GALTON.

P.S. Mr Thomas Knott the Editor of *Aris' Gazette* has died suddenly of apoplexy.

Of Samuel Tertius Galton it must be said that he knew what his son Francis could stand. The summer trip *did* come off and what is more Francis did not return in the autumn to the Birmingham General Hospital.

On September 2¹, Francis started with his father and Sister Bessy via Coventry to Liverpool and thence by packet to the Clyde and Dumbarton. The tour went through what is now very familiar country, Loch Lomond, Loch Long, Loch Katrine, Oban and then across to Aberdeen, and Ury, the home of the Barclays. Francis' diary of the tour is still extant, and it comes to an abrupt end on Sept. 10, apparently because he had already filled in the bulk of the remainder of the book with sketches. We know from these that the party were at Inverlochy Castle on Sept. 17th and at Ury on Sept. 21st. There are no less than six unfinished sketches of Ury, three of the outside of the house, one of the chapel and burial ground of the ancestral Barclays, one of the wall—a tremendous looking structure—over which Captain Barclay's grandfather is reputed to have thrown a bull, and lastly the inside of the gothic window above the porch—with the deep window recess showing the thickness of the walls—where Francis' grandmother, Lucy, had sat to work her sampler, according to the custom of the family. Ury must have been a fascinating spot to those whose ancestry had dwelt there, and thus Sister Bessy describes it:

“ We left Inverness at six o'clock in the morning passed Forres, where the witches met Macbeth, arrived at Aberdeen at 7 o'clock, drank tea at the Inn and then came on to Stonehaven where we slept. After breakfast we drove up to Ury which had belonged to the Barclays for some centuries. Margaret Barclay showed us over the curious old house (now blown up and a modern house built by the Bairds), she showed us the Meeting House of the Quakers, close to the house, which all Quakers when travelling in Scotland, came to see; a tiny closet, out of the large sitting room, is where my

¹ The British Association met in Birmingham this August; and there is evidence from Galton's accounts that he attended it—it was probably his first meeting.

great-great-great-grandfather Barclay wrote his famous 'Apology for the Quakers.' We went up a small hill at the back of the house to the chapel where all the Barclays are buried. Then into the garden, where my great-grandfather pushed a bull over the wall, 60 feet down. We went over the farm with my uncle Barclay, and walked through a wheatfield, the stalks higher than our heads'. In the sitting-room we saw a moveable panel, behind which was a secret chamber to hide in. Margaret Barclay showed me a lock of Prince Charles' hair and after much urgent entreaty, I got her to give me the one hair I have. She also showed me a miniature of Queen Anne set with diamonds, which Queen Anne gave to my ancestor. She gave presents to many of the Jacobite families, it was supposed with the hope that they would espouse her brother's claims to the throne after her death." (Mrs Wheler's *Reminiscences*, Sept. 1839.)

Francis went back with his father and sister to Leamington, and on Oct. 3rd the lengthy letters to his father start afresh. We find him at New Street, Spring Gardens, established in the house of Richard Partridge, Professor of Anatomy at King's College, London. Here Galton had two or three fellow pupils all attending the medical lectures at King's College. These were a distinct advance on the Birmingham system of education. There was preliminary training in anatomy (under Partridge with Bowman and Simon as directors in the dissecting room), in physiology (under Todd, a man whose encyclopaedic works can still be studied with occasional profit) and in chemistry (under Daniell, of battery fame). For the first time Galton came into a more or less modern scientific atmosphere, and a microscope became a necessity. Forensic medicine also was a subject of delight :

"It had a sort of Sherlock Holmes fascination for me, while the instances given as cautions, showing where the value of too confident medical assertions had been rudely upset by the shrewd cross-questioning of lawyers, confirmed what I was beginning vaguely to perceive, that doctors had the fault equally with parsons of being much too positive." (*Memories*, p. 42.)

In his first letter Francis expresses pleasure with his environment, his fellow pupils are "two scamps" and one seemingly very nice fellow. In his second letter he gives a more detailed account of his surroundings :

October 12, 1839.

17 NEW ST., SPRING GARDENS.

MY DEAR FATHER,

Thank you very much for your letter—uncommonly so for its contents, which I have got duly receipted. This is a very comfortable house and I certainly have many extra opportunities of reading. Our sitting room is quite respectable, well lighted,

¹ Captain Barclay was not only a famous pedestrian, he was also a great agricultural reformer, and did much for Scottish agriculture.

P. G.

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ditto carpetted; fire etc.; furnished with a most capital library, about 10 skeletons, etc., a loyal cast of St George and the Dragon, and a bust of Harvey, and I don't know what else. A view from the window of the Admiralty with a telegraph at the top continually working and attitudinizing like a skeleton learning gymnastics; the Horse Guards etc. My bedroom is small and a garret, but the most comfortable one possible not too large nor too small, with bookshelves and a reading desk where I stew away most comfortably.....

King's College is a very nice place. I am there from 9 till 4 attending lectures and dissecting. There is a sight there which a Frenchman would give his ears to see, viz. a most splendid collection of large green frogs all alive and kicking and croaking too, kept, however, for Dr Todd's Physiological Experiments. Thank you for the microscope it was just the thing; the shirts too were werry acceptable¹.

I was quite surprised to hear that you got home without such an amiable personal as myself. I am glad that the tartans were properly appreciated. Good bye etc. FRAS. GALTON.

DEAR PEMMY—I want you to be in the very best humour possibly and the reason is this: in my bedroom there is a yellow wall 12 ft. × 5; now this does not accord with my notions of beauty but—remember you are a capital Pemmy—if there were two water-colour pictures to relieve its monotony, it would be most reputable. Now there is not a single engraving that will do in all London, they are all either too large and too expensive or too small and good for nothing. Now if you would but paint me two pictures, each about the size of a novel and send them up by some parcel or other I could get them framed in black for 1 bob apiece. I should like something in a Prout style, *not* three Turks smoking their pipes in a triangle, with one blue hill in the distance and a white river between them, and something on the hill with two uprights and a cross bar like a gibbet only intended for the ruins of an old temple but some building or other well touched up with Indian Ink and reed pen. I shall take such care of them. Now remember the “aspect” of the room is this: pretty well-lighted, 1 window *not* opposite the wall, which is yellow. The frame will be black. You will now know what sort of things will suit. Tell Bessy that the paws are improving. Hair very bad. Nails middling but better and that “smutty” week is not quite passed. Good bye—You are, at least will be, a nice Pemmy. Love to all.....



Postscripts and other addenda refer to the presentation of his first cheque at Barclay's Bank. It is clear that Sister Pemmy provided for the artistic element, and Sister Bessy supervised Francis' neatness of attire and personal appearance. Although there are no letters bearing on Francis' transfer from Birmingham to London, it is clear from the next letter I shall quote that his career—a year in London followed by Cambridge—must have been practically settled before he left Birmingham.

¹ I have retained any intentional wrong spelling, the unintentional slips are somewhat numerous, they would comfort other sufferers, but I have thought it best to remove them. K. P.

Sunday Oct. 16th 1839.

17 NEW SPRING GARDENS,

LONDON.

MY DEAR FATHER,

Thanks for your letter. I have been thinking over about another year's Londonizing, and, having crammed up "Whewell's University Education," I certainly think that it would be better to give it and the Laboratory up altogether. As the Dissecting season is over about June (I forget exactly when) my hands will not be full for three months or so before going up to Cambridge, in which time I shall hope to get up my first part of Mathematics well, and a fair proportion of the Classics that Mr Blakesley has mentioned. I think it would be as well at that time not to touch either Mechanics or Conic Sections, but to exhaust Merridew's shop in scribbling paper for working equations etc. I am as well as possible, getting thorough exercising twice a week at Angelo's either at Carte and Tierce, or else in pitching into a huge Life Guardsman, six feet and a half high in his slippers, or rather in his pitching into me with single stick. I have no headaches or anything of the sort and dissecting increases the appetite wonderfully. I don't send any accounts as there is nothing particular to put down. As for those I sent last time, I only sent the General not being very fond of Double Entry, though I have the particulars safe in my account book. For instance I did not write 2 ounces of Epsom Salts—2*d.*, having included that in the Washing Bill, since it was most undoubtedly for a cleaning out that I bought them, and so for the rest¹.

Pemmy, you are a most dutiful sister. Pictures splendid, the framemaker nearly broke his windows when he started back in admiration; they are hung up with my little Ariadne between them. Are they real scenes? However, don't ask me whether I admired the *perspective*. And now in return I will show you what a deal of attention I bestow on them; I will just make a calculation. I am, on an average, 5 minutes dawdling in getting up, 10 minutes ditto in going to bed. During this time I must necessarily look at one side of the room or the other, and as the room is bare on the other side that can be no attraction in looking there. Therefore at least $\frac{2}{3}$ or 10 minutes will be daily spent in looking at your pictures, besides this I am always awake about $\frac{1}{4}$ of an hour before getting up, when I cannot help seeing them as they are just before my nose, that makes 25 minutes a day, or 12 hours nearly a month or 156 hours or 19 $\frac{1}{2}$ days of 8 hours each yearly!

Dear Bessy, I did not receive your missal; of course it was an accident. I didn't ask for it by letter, as I knew you would draw it intuitively; it will look so pretty, especially as it will be about the size of Emma's pictures, rather larger perhaps but same shape. Paws vastly improved, but horrors! about a week ago a huge crimson boil appeared a little to the left of my nose; it was as large as a fourpenny piece and seemed

¹ Samuel Tertius Galton was most particular as to his son's accounts, and we find specimen accounts with various methods of keeping them sent to his son Francis. He endeavoured to inculcate thorough business habits in his children, while at the same time he was most liberal in his remittances and preserved to his death the most intimate confidence and friendly familiarity of his son Francis.

to increase "wisibly afore my werry eyes." What could I do? Partridge said it was a carbuncle, but I knew better. For I had as soon as I had seen it, read 12 different authors on that point, and thus prepared, I was determined to fight vigorously. I pitched a lancet into it, poulticed it all night, swallowed a fearful dose of blue pill and colocynth, and an ounce and a half of salts next morning. They felt very aggravating in my stomach, but at 3 p.m. the boil was almost colourless and gone down wonderfully. Tuesday, fast improving, lancet cut healing. Wednesday, all but well, left off sticking-plaster. Thursday, cured. Extreme cases, require extreme measures. Please write and tell me when the Gurneys come. How often ought I to call on the Horners—ditto on Chas. Darwin, who left his card here the other day. I drink tea with Mr James Yates¹ tomorrow. Good Bye, love to Mammy, Delly etc.

Tell Darwin that I have lots of tales to tell him. Partridge [sends] complts.

In the next few letters we find the question of future education still prominent. Clearly Tertius Galton was emphasising the importance of laboratory work, especially in chemistry, and there appeared little chance of it at Cambridge. Francis' social side was having considerable claims made on it, and he was working and playing hard at the same time. Again, as at Birmingham, the rushlight was doubled up and burning at both ends.

Nov. 5, 1839.

MY DEAR FATHER

I was invited to tea by the Horners, very kind invite, but unfortunately signed Anne (I think) Horner. Now as I had not the slightest earthly idea whether there was such a person as Mrs Horner or not, I did not know whom Anne meant, and therefore I could not answer, so as soon as I had time I set off to call. But they had directed their note Bedford Street, Russell Square, and when I got to Russell Square, I could find no such place. I went to B. Street, Bedford Square, Upper B. Place and knocked at every No. 2 in the neighbourhood. At last I called a consultation of three policemen, who after some debating gave over my case as hopeless; what could I do? Their name was not down in the Court Guide. The next day I made an expedition to 2 other Bedford Streets, but no go. Then came the day I was to take tea with them, and it suddenly struck me that the numbers in Lower B. Place might be different from those in Upper B. Place. I tooled there and luckily it was right; the Lyells were there, and one of the Horners had just returned from Germany, St Petersburg etc.; they were very kind to me. Mr Horner was in the North. I shortly after called upon Charles Darwin², who was most good-natured etc., he has been unwell. I called upon Mr James

¹ The well-known Unitarian and Antiquary of Lauderdale House, Highgate, and founder of the Yates Chairs at University College, London.

² Charles Darwin had returned from his voyage in the "Beagle"; had been married in January of this year (1839) and was living in Upper Gower Street.

Yates. I am as well as possible. Cartwright charges awfully, viz. for 1 coat 1 waist-coat 2 pr trousers £9. 19. 6. I have moreover begun fencing at Angelo's Rooms. The charges are high but as for exercise etc., I think it was about the best thing I could do, 3 hours twice a week for the season, almost the whole year, at fencing, single stick or whatever I like, £11. These two have been my great expenses, but luckily they don't come again. The way I spend my time differs a good deal according to the dissection or not, 9—10 Anatomical Lecture, 10½—11½ dissection, 2—3 Chemical Lecture, 3—4 Physiological Lecture, 5—6 read or walk or fence or something of the sort; 6—7 dinner; doze ¾ of an hour, often a wee more, then tea till 8. Read and microscopize till 1 and amuse myself till 2 or 3½ according as I am lazy or not. Sleep till 8. So I eat 2 hours, sleep 7, attend lectures 3, read hard 3½, microscopize 1, dissect 3, amuse myself 3, dress etc. etc. 1½. This is something of the way I spend my time. Now for the way I spend my money; this is not exact to sixpences—though N.B. I keep accounts:

	£	s.	d.
Cartwright	10		
Fencing	11		
Dissecting Case etc. ...	2	10	
An upper Extremity of an abdomen			18
Boots & Shoes	2	14	
Stationery	1	10	
Luncheon (about 1 shilling per week)			5
Exceedingly diversified Chemical Apparatus ...			6
	28	17	6
Washing		10	
Postage		4	
	= £30 nearly.		

Tell Pem—that she is a nice Pem. Thank Delly for letter. Your microscope is very useful. Mr Partridge has let me have the use of his very splendid one, value £60. But I use your one commonly. Tell Mater that I thought of her and the Pig. I am afraid that the Pork Pie is not quite worth the carriage, although made out of a Claverdon Pig. Loves to all. Tell Bessy that paws are improving though I have got a cut on them.

FRAS. GALTON.

Daniell's Experiments are most beautiful. He froze some Carbonic Acid Gas the other day by first condensing it to a liquid and then letting it suddenly free, the abstraction of Heat for Latent froze it at a temperature of 130° Fahr. *below the Freezing Point*, it could be held up as the Carbonic Acid Gas being given off in every direction from it keeps it from actually touching the hand. I swallowed a piece, queer taste. Some mercury was frozen with it in no time.

The next letter is of special interest not only for the advice it contains from Charles Darwin, but for the picture of the young medical student, who trusts his sister's home recipes in preference to his own knowledge!

December 6, 1839.

MY DEAR GOVERNOR,

I hope that you won't consider me guilty of disrespect in sending you such a disreputable letter. But as I am at King's College¹, and have not any other by me, and moreover as in these happy days of $\frac{1}{2}$ ounce fourpennies anything in a decent envelope will do therefore—here goes.

I should have written before but I waited for Mr Hodgson, but as he won't come I wait no longer. I have spoken to Charles Darwin about Cambridge, who recommends next October and to read Mathematics like a house on fire; thinks I had better go as soon as possible for these reasons: that I cannot take my degree of B.M. until 5 years after matriculation, if not 6. A medical education takes 3 or 4 years, of which I shall have had 2, and after taking an M.A. degree I shall have 2 more before I can pass as Doctor. Now if I delay matriculation I shall defer the possibility of taking a physician's degree for a corresponding length of time which may be an inconvenience. Again he thinks it certain that when at Cambridge I shall forget all the theoretical part of Medicine, I mean $\frac{1}{2}$ of Physiology, $\frac{3}{4}$ ths of Surgery and $\frac{4}{5}$ ths of Medicine, to say nothing of Anatomy Lectures, on the two last of which I shall attend next year and will be time thrown away.

Now about reading Mathematics, he said very truly that the faculty of observation rather than that of abstract reasoning tends to constitute a good Physician. The higher parts of Mathematics which are exceedingly interwoven with Chemical and Medical Phenomena (Electricity, Light, Heat etc., etc.) all exist and exist only on experience and observation \therefore don't stop half-way. Make the most of the opportunity and read them.

I quite agreed with all he said. Again, if after Cambridge I return to K. College, I should necessarily feel much greater interest in chemicalizing than I do now, not being able at present to comprehend one half of the fundamental principles which are mathematical, Light especially. This would be a great convenience with regard to the Laboratory, for were I to enter there now, I should be able to go there and tool about when I do not dissect (which I am afraid will be very often as there are hardly any subjects), and work regularly after Cambridge, when I could finish my medical education at King's College. Bowman thinks ditto and he is a great man now, and he also says that every high mathematical M.D. that he knows has got on well. Dr Evans and Dr Blakiston of Birmingham, and Dr Watson of King's College, etc., etc. Please write and tell me what you think. Should I enter into the Laboratory, there is no time to lose. We shall have a week or ten days at Christmas, though, perhaps, it will scarcely be worth while to come down for so short a time. Good Bye etc. FRAS. GALTON.

DEAR BESSY. Thanks for your letter and missal forthcoming. But don't please [give] any advice in the middle (even though it's an ancestor's) for I am sure I have had enough, it's quite as eternal and does me no more good than Dr Sangrado's Warm Water.

O, Bessy, Bessy.....I have had another boil exactly by the side of the former which has partially reappeared. The new one is mountainous, but alas! *not* snow-capped like Ben Nevis, but more like Ben Lomond covered with scarlet heather. I shall have

¹ Throughout this letter and for two months previously Francis invariably spells this "colledge"!

a complete Snowdonia of them soon and my mouth is rather sore. Paws rather improved.

(1) When a note of invite is sent unpaid by the twopenny post, may I answer it by ditto or how¹?

(2) Ought I to call at St James Square² before these boils go away and take the chance of *more* not coming, or not? N.B. the 2nd is just the size of and exactly like those purple polypuses there were at Weymouth.

(3) When the Horners invite with a note beginning with "My dear Francis" how am I to answer it?

Give my love to all. Ask Emma what I can do for the boils.

Diet. Breakfast, 1 large cup of tea.

1 round dry toast.

Luncheon, not always, Bread and Cheese.

Dinner, 1 or 2 times of meat, vegetables, melted butter. 3 glasses wine.

Pudding or Tart. 1 glass of water.

Tea, several small cups, bread and butter.

This is my full diet. Please Emma tell me what sort of low diet will do. I have fearful indigestion, sleepiness, variable appetite etc., etc.

Good Bye, FRAS. GALTON.

Possibly the very Spartan diet had more to do with the boils than Francis imagined. But he was soon to be home for the Christmas vacation and he was preparing for it. To his father he writes on Dec. 15th:

"I have agreed with Erasmus to spend a week in looking him up at Loxton, the time of travelling inclusive. Erasmus came yesterday to London. I introduced him to the Dissecting Room, from which he seemed rather glad to bolt. Would you ask Mater to see that my gun is in perfect condition, and as clean as a peeled potato, 2ndly to see that my powder flask, which I think is in a Bank Box in my room, is gunpowder tight; if not to let the hole be soldered up. I want now to ask you about the state of my wardrobe."

Then follows a very complete account of Francis' wardrobe, the morning coat which will "do for the Strand, but not St James Square," the dress-coat "not exactly a perfect fit," the "two pair reputable trousers," etc., etc.

"What am I to do? Cartwright has no conscience, he has charged £15. 18. altogether.

Would you also send me word how many morning coats you and Darwin wear yearly. My consumption would be 3 per year about. Please write soon as I am going to a ball at Horners next week. Moreover I have no great coat which is rather unpleasant in a London Fog."

¹ On the introduction of general letter post, it was considered as rude to prepay a letter, as it is now to leave it unstamped.

² Great-aunt Mrs Hudson Gurney (Margaret Barclay, sister of Captain Barclay).

Francis is undoubtedly growing into a bit of a beau, although he makes fun of his needs throughout. The letter concludes with his accounts, the terrible tailor, "washing bill (not salts)," "medicine, a fearful quantity for indigestion, boils, carbuncle etc." 9s., "Luncheon and Dinner" 6s., "Head and Neck" 8s. 9d., etc. To those who study the development of human character it is of extraordinary interest to watch the cross currents working at this time in the young man's mind. There is the social current with the love of country pursuits which had dominated several of Francis' near relatives and collaterals; there is the observing "clinical" inclination, which had carried other relatives and collaterals into medicine and natural science, and then there is the love of mathematics and physics, which was again to manifest itself in other kinsmen. I doubt whether anyone watching the youth closely or reading his letters of those days would have been able to predict whether Francis Galton would end as a social leader, a country gentleman, a doyen of the medical faculty, or a noteworthy man of science. Tastes inherited from Beau Colyear, Erasmus Darwin, and Samuel Galton—wit and literary instinct, scientific imagination, power of organisation, with not a little Barclay tenacity were fermenting in a youthful mind, and none could have foretold with which victory would remain, or how they would ultimately be balanced. Examine Francis Galton's letters in these *Lehrjahre* superficially, and they amuse as their humour and boyish freshness necessitate. But behind this, those who can read between the lines will find a most instructive study in character development, one in which we seem to see not environment but innate tendencies contesting for mastership, and the environment itself is changed as each reaches control. None but the most careless reader could deny that the mind was seeking and making its environment, and not the environment moulding the mind.

When Francis Galton got back to Spring Gardens after the Christmas vacation we find one of his rare letters to his mother:

Jan. 6th, Monday [1840].

MY DEAR MOTHER,

I have been a wise person, that I have! Run away with Darwin's Dress Coat and left my own. Please send me mine by return of coach as in case of a party I have nothing to wear. I am full of contrition, etc., etc.

Now as I am writing I may as well tell you how I got here. As I got into the Coventry and Leamington Omnibus I saw at the other end a pair of thundering

moustachios, evidently part and parcel of Capt. Sayers. However nobody spoke a word and I fell fast asleep as usual, but before arriving at Coventry we found out that we each had to wait till $\frac{1}{2}$ past 12 for trains, he for the Birmingham and myself for the London train. So there being no coffee room we took the same sitting room and chatted away, balls, etc., etc., he complimented yours very much. He is a great African traveller; wears a beard, which he showed me, down to his waist and which he hides under his shirt and stock and sports it in travelling and in fancy dress balls. He showed me how to make a turban of my plaid, etc., etc., and was most agreeable.

Set off for London at 12 $\frac{1}{2}$. Got there 5 $\frac{1}{2}$ —Victoria Hotel—and am now at Partridge's.

Good bye. Loves, etc.,

FRAS. GALTON.

Writing on the 12th of January to his father, Francis says :

"I cannot say that I agree in what Hodgson says¹, but as I have written so often to you on this subject, giving my own reasons and those of others upon the question, it is scarcely necessary to repeat them. I will work like a trooper whilst I am here, and when I get to Cambridge and to Mathematics, which for the last three or four years it has been my principal wish to study, I am confident that I shall not lose time.

Please thank Mater for sending my coat. Tell Pemmy that I thought of her and the balls on Wednesday and Saturday."

On January 21 Francis reports to his father the loss of his purse :

"I am as angry with myself as possible; the only thing that consoles me is that everybody is served out similarly, even you, *e.g.* your gold watch at the Spread Eagle. Catch me putting anything above 5 shillings in my coat tail pocket again. Hang the rascals. I shall have to pay Cartwright's bill for a great coat and frock coat which I ordered from Leamington and which together will be about £11. So could you send me another cheque which I will take the same care of as a passport in Austria.

Everything else going on prosperously. I have just received your letter, and will certainly call on Lizzie Forster² as soon as I easily can (this week or so). Your Sliding Rule is in continual use. Thank you very much for writing for my rooms at Cambridge....."

The next letter is written three days later :

MY DEAR GOVERNOR,

Hurrah! not been pickpocketed after all. Purse and Door key slipped through a hole in pocket of my old Reading Coat into the lining, where I found them last night. I expect a regular good rowing blowing-up letter from you to cross this on the road, which will do me lots of good.

Tar, Tar.

FRAS. GALTON.

Thanks innumerable to Delly for cardcase.

¹ Presumably Hodgson was not in favour of the mathematical interlude in a medical career.

² Lizzie Forster was the Quaker lady who had been housekeeper at Duddeston after the death of Mrs Samuel Galton (Lucy Barclay).

In February the question of Clubs arises. Francis had met his Uncle Howard at the Hubert Galtons, and the relative advantages of the Oxford and Cambridge, the Athenaeum and the Parthenon had been discussed. Uncle Howard had promised to get him proposed and seconded for the Athenaeum, the Library being mentioned as a chief advantage. Actually it was not till fifteen years later, in 1855, that Galton, then distinguished as an African traveller, was elected under Rule II to the Athenaeum. He always spoke with great pleasure of the friendly meetings with many different minds at that Club, and already at 18 he had directed his thoughts towards it.

We have seen that Galton had started his College career with Anatomy, Physiology and Chemistry. He appears during this term to have worked more definitely for preliminary science, adding more Chemistry, some Botany and apparently Forensic Medicine to his studies. But the exact range of subjects he took up and the nature of the "matriculation" to which he frequently refers are not clear from the letters. In March we find plans being made for a visit to Paris with Sister Emma and his father—thus in a letter of the 28th :

"I have got my passport drawn out, but they will not give it me until I get from you a certificate stating that I go abroad with your approbation, I being a minor ; so please send me one, couched in the following manner :

This is to certify that my son, Francis Galton, is leaving England for France with my entire approbation.

(Signed)

S. TERTIUS GALTON.

Only think of the man's insolence in requiring one ; it was almost saying : ' Does your mother know you're out.' To get *your* passport you must attend *once* yourself and can represent the family. The times of attendance are between one and three, No. 6, Poland St., Oxford St. You must tell me however the *day before* you appear as I must get a ticket to fill up. Just come crammed full of information about Names, Height, Eyes, Hair, Complexion, Ages, and all that sort of thing which you know of Emma and Stone. Perhaps the 'Varmints' will want me next to write you a certificate certifying *my* approbation. The passports are 'free, gratis and for nothing,' as they say to the hospital patients. The *Viséing* I know nothing about as I have no passport to *Visé* yet. I am almost sure I can do that. Hodgson has just made his appearance, says he saw you and Darwin the other day—he looks very ill.

Now then for accounts."

The letter concludes with the usual summary of accounts¹. We

¹ Existing letters show that Tertius Galton's other sons, e.g. Erasmus, although much older than Francis, were at the same time returning equally elaborate accounts

learn that the expenditure of £12 on the great coat and frock coat at Cartwright's must have been paternally sanctioned. Other interesting items are "Pr of Foils and Handles," 14s.; "Medicine (& enough of it too)," 8s.; "Head, neck, leg and arm," £1. 6s.; "Magnetic and Galv. Apparatus," 5s. 6d.; "Rattletrap, stationery, etc.," 5s.; "Larks, etc., etc.," 12s. 6d.

There is also a paragraph in the letter bearing on the coming change to Cambridge:

"As to Blakesly please say that I wished to give my time principally to Mathematics and was entirely ignorant of the course usually pursued with regard to a private Tutor—whom he should recommend, whether Hopkins or another—and what steps I ought to take to enter myself under one."

A letter of April 8th is worth citing at length. It contains a neat drawing of the Coddington lens, with details of its construction and parts; that lens had been invented by Brewster in 1820, but brought into general use by Coddington's paper (*Camb. Phil. Trans.* vol. iii. p. 421) of 1830, so that it was new commercially.

MY DEAR GOVERNOR,

I have taken your places. I have not matriculated. I wish that you would send the enclosed paper to Mr Frederick Ledsam to ask him to nominate me, as I do not know him¹; there is no particular hurry. We are beginning to expect no Easter Holidays and consequently no Paris for me, as Partridge is dreadfully behindhand in his lectures. However, it can't be helped. The Sliding Rule was 12 shillings—wood, beautifully marked in every possible direction and of very great use. I invested yesterday in a Coddington Lens, as I very much wanted something of the sort. It admits at least 6 times as much light as the microscope that you gave me—though it does not magnify so highly—and is a hand lens—18 shillings certainly, but so very useful, they are just the size and shape of picture; it slides into its case with a huge joint (*a*).

FRAS. GALTON.

In case you cannot (like myself) read one word on the ticket, it means that you start from Boulogne at 12 o'clock and that I have paid £2. 9s. and that you will have to pay £1 at Boulogne.

to their father. He had certainly the banker's sense of order in this matter, and must have had a great share in his father's and grandfather's power of elaboration and organisation to be able to bear in mind, criticise and often correct these individual details. The nature of the entries in these accounts also demonstrate the affectionate freedom of expression and expenditure that governed the whole relationship.

¹ A student at King's College nominated by one of the members of the body was allowed a reduction of about 7 per cent. in fees.

The visit to France did come off, but Tertius Galton and Emma started first, and on April 13 Francis was to have his second near chance of losing his life by drowning. The event is described in the following letter to his sister Bessy¹:

Thursday, April 14th, 1840.

17 NEW SPRING GARDENS.

MY DEAR BESSY,

Yesterday at 17 minutes and 45 seconds to 5 (I know the time because my watch was stopped), just when you were puzzling yourself over some cross-stitch pattern and whilst Delly was trying to find out a type in the Old Testament for the fact that St Paul left his cloak behind at Ephesus—well, as you were both amusing yourselves at that said time—I, your humble servant, Lord Torment and Tease, clothes and boots on, was floundering under the wheels of a Steam Packet, the paddles of which were bumping upon my head with a 15-horse power, and some short time afterwards I found myself kicking about some 8 or 10 feet deep, rising to the top, which instead of reaching, I merely knocked my head against a huge piece of wood and sank down again, at the same time gulping in water like a fish and bubbling out air like a blacksmith's bellows, my life worth "a little less than nothing at all," as the sailors say. Well, I am alive, which is a great deal more than I had expected, but desperately beaten about my head. I can't lie in bed, so I'll write you all about it.

I went in a Steam Boat to Putney to see the Oxford and Cambridge rowing match. As we were returning, very fast and with the tide, through Battersea Bridge, we ran foul of the middle pier. I, who was behind the paddle-box, saw how we were going just before we struck, and caught tight hold of one of the paddle-box steps, expecting a general smash and determined to have a swim for it. Well, the body of the packet cleared, but the paddle-box, behind which I was, came full crash against the sides of the arch. It split open just before me by the shock. I was thrown head foremost through the cleft, right amongst the paddle wheels, which were still going round, they not having touched the pier, owing I suppose to the recoil from the smash of the paddle box, though when they did, they were doubled up and rendered useless immediately. Well, this regularly stunned me. Thank heavens my neck was not broken in the wheel (Escape No. 1). I was quite insensible, and how I cleared the bridge I have not the slightest conception. I must have been beaten down by the paddle wheels beneath the bottom of the boat—and fortunately enough, otherwise from the shape of the packet which heeled over I must have been jammed between it and the pier [illustrative sketch of packet and pier in elevation], and of course squashed. That

¹ The first event occurred in 1833, when Francis was 11 years old; he had been taught to swim. He went to pay a visit to his sister Lucy at Smethwick. He was walking by the canal at the bottom of the garden, when he saw a bird's nest on the branch of a tree and fell into the water in trying to get it. His legs got entangled in the tree so that he was held with his head under water, and no one near to help him. At last with a vigorous effort he made himself loose and swam to shore. (Mrs Wheler's *Reminiscences* under 1833.)

makes Escape No. 2. Well, as I said, I was insensible, and when I knew where I was, I found myself under a large piece of wood which proved to be the outer side of the paddle box, with part of the top still attached, thus making an angle in which after some floundering I got stuck, and though I dived as well as I could, for I was nearly spent and had swallowed a great deal of water, I still on rising bumped against the wood. [Illustrative sketch of floating portion of paddle-wheel, showing submerged angle under which F. G. was caught.] I of course gave myself up, but determined to have a regular good push for life. I felt the wood round me and could see a little, and at last I made out the edge of the top part of the paddle-box, grasped tight hold of it, and pulled myself from underneath and cleared it. I then rose rapidly towards the surface, when I bumped against another piece of wood, which, however, I easily pushed aside and rose; but I rose too high and consequently sank again, but I had had a good breath of air and was a little refreshed. I did not sink I daresay a foot below the surface, but I got entangled in some long bits of wood, which as I was all but spent nearly drowned me, and when I got to the surface they were too heavy to give me any real support, so I looked round and saw the side of the paddle-box, which had before been so much in my way, floating down with the tide. I struck out and soon reached it—and I did feel happy. I climbed onto it and it was a perfect raft. (Escape No. 3.) On looking about me I found that the steamer was 300 yards or so in front and could not stir. I was quite 200 yards and nearly 300 from the bridge, the whole of which distance I had floated down head under water (only one other man went overboard and he merely got a ducking, swam to a bit of wreck and was quite safe). Well, I was in the midst of the river, plenty of boats and watermen were at the shore, those nice dear fellows who when they see you struggling, look on, and never dream of rowing to you till you are either safe or dead—yes, and if safe, they swear they saved your life, march off to the Royal Humane Society and get a gold medal for their pains, with a long paragraph in the *Times* about “unparalleled bravery,” and so forth. Well, after waving my hat, for I don’t know how long, off some half-dozen came in a body. I was pulled into a boat and felt very seedy, I was dizzy and very sick. However, to put the captain out of his fright, I took an oar, declared nothing was the matter with me and pulled mechanically.

I was so dizzy that I scarce knew what I did. On getting to the packet everybody looked horrified, one or two ladies held up their handkerchiefs before their eyes. I couldn’t make out what at, but on getting ashore and to an inn, with a looking-glass I found my face, ears and whiskers, shirt, etc., all covered with blood. One nail had hooked me by the side of the nose, another had “sarved” out my face and I had as many cuts on my ear as a Christmas pig. I got to bed, half dried clothes and walked to London. Now don’t fancy I am ill. I took enough calomel and salts to do anything, and except a rather torn face and broken head, I really have *nothing* the matter with me. I have walked out to-day and am going to Lecture in half an hour. I have gained great glory by my splashes under water and it is a very good tale to tell—at least when the pain goes off. I now know something of what drowning is—I felt no pain, but rather dreamy—and I also know what my feeling will be when I am dying, as I firmly believed I was then.

Tell Dar that if he had not taught me to swim I should have been stiff by this

time and a coffin in process of being made. I am most grateful to him—and if I have children I'll make them amphibious.

Now don't fancy that I am ill—once again. Just send an epistle soon—all about journey to Isle of Man and everything. N.B. The ducking has cured a cold.

Yours, etc., FRANCIS GALTON.

I have got a relic from the wood which saved my life. It stuck into my waistcoat pocket and broke off as I was getting into the boat, and I send you some enclosed¹. My watch is much hurt.

In the account Sir Francis gives in his *Memories* (p. 46) of this event, the reason for his strong feeling about the watermen is manifest—the men in the first boat asked a sovereign to take him in, but being in comparative safety he was able to resist this extortion!

Ten days later Francis' examinations are over; he feels he has done well, and, ready for his holiday, he sets out a free man to overtake his father in Paris:

BOULOGNE, HÔTEL DE GIBRALTAR.

DEAR PATER,

Couldn't write before on account of the Examination in Anatomy and Chemistry. I will tell you why when I come, but I am too lazy now. Mr, one young Mr, and 3 Miss W—— (Civil Engineers), were in the Steam Packet with me from Dover to Boulogne. I came very "strong" with one of the Miss W——, who says that they are going to stay a week at Paris. I think that we shall travel together tomorrow at 9 o'clock. I being "dished" for this evening and they, I believe, ditto.

Hang their Vin Ordinaire, it has diluted my gumption, till it is as weak as their vermacelli soup, which hang also. Travelled by night from London to Dover; got there at 6 a.m., walked without interruption for 5 hours up the cliffs and in every direction, set off at 12; got here at 3. I have no particular news worth telling. Tell Emma that I have two views of Dover and one of Boulogne (having invested in a small board Sketching Book). There is nothing to be seen in Boulogne, so I am going to dress and promenade!!!

Good-bye.

FRA. GALTON.

N.B. It is the custom in France to write on *thin* paper and with a *wafer*, and not to direct epistles which are written on something very like *millboard* and sealed with a seal such as a Cardinal would affix to a Pope's Bull to London; and thereby make the postage 2 shillings and 4 pence. Such was the case with a certain letter I received.

N.B. to N.B. (or 1/NB²). I am not sure whether the letter was 1 shilling and 4 pence or 2 shillings and 4 pence. I think the latter. All mistakes to be referred to Vermacelli soup or Vin Ordinaire.

¹ I imagine this is the shaving of wood which has been preserved with a small triangular piece of lead in this bundle of letters.

None enjoyed the frolic of a holiday more than Francis, although no one could work harder at the proper time. The tour went by way of Paris to Nancy, Strasburg, Baden-Baden, Stuttgart, Heilbron, Heidelberg, Frankfurt, Schlangenbad, Coblenz, Bonn and Antwerp, Mr Galton and his daughter reaching England on June 4th. A sketch of the tour seems to have been made out by Francis at some Rhenish town on April 30th, and accords fairly closely with the route ultimately described by Emma Galton in her diary. But Francis was back at King's College on May 7th, and there is no record of how far he accompanied the party. On his way home he appears to have called in at Jersey and seen his old adversary, Dr Jeune of the Free School, now Dean of Jersey. His great news on arrival home is conveyed to his sister Delly¹:

17 NEW ST., SPRING GARDENS,
LONDON, *May 7th* [1840].

DEAR DELLY,

Hurrah! Hurrah!! I am 2nd Prizeman in Anatomy and Chemistry. I had only expected a certificate of honour. Hurrah! Go it, ye cripples.

An undated letter of a few days later to his sister Bessy puts the circumstances of the prize in more detail:

17 NEW STREET,
SPRING GARDENS, LONDON.

MY DEAR BETSY,

Thank you for your letter, and thanks innumerable for your congratulations. I am excessively glad that I have gained this prize, as it is such a good introduction; it was the only prize open to me, else I hoped that my name would have appeared in another place as well; however look again, about the first week in August in the papers and in the meantime wish me success in Botany and Forensic Medicine.

Had I gained the first prize instead of the second it would have been an improvement, but if you consider that the class consists of between 70 and 80, and that Anatomy and Chemistry are the Sciences which students principally follow, and again that of these 70 or 80 students, about 30 were 2nd year men, that is had dissected for two years, whilst I had only dissected for one, you will see that it was plenty for me to do; however I was within a *very few* marks of being first, but a miss is as good as a mile.

¹ This letter has upon it the first postage stamp on any of Francis Galton's letters, and an endorsement on it states that it is the first the home circle had seen. Francis stuck the stamp in the top left-hand corner at an angle of 45°, head downwards. Ten days later he has adopted the now usual method.

My books are, one folio Seneca, printed Antwerp 1652, very scarce, good type and very valuable; D'Israeli's Essays, which originally appeared in three volumes, now printed in *one*; Songs of England and Scotland, 2 vols. small 8vo, all gilt stamped with College arms and so forth,—they are well worth having.

I am quite glad that you like Tenby so much, and the good memory of the Lady at the Post Office is highly laudable¹. I had capital fun in France, I do love travelling. Oh, Betsy, if you could but see Mr Y., poor man, so down in the mouth whenever Mrs Y. contradicts him. He was talking to me of his manservant who had married a housemaid and said, "That fellow John, like a great fool, has just been married, the idiot! A man is good for nothing after marrying; he would do so though in spite of all that I could say." Poor Y. There is however one thing in him highly commendable, which is that unlike the tame elephants who delight to decoy wild ones into their own state of captivity, he loudly declaims against all marriage in all circumstances.....He began once during dinner to argue, and after his old style was debating whether "Cause should be considered as the precursor of Effect, or Effect as the consequence of Cause," when the baby, who was sitting on his knee, having previously unobserved insinuated its paw into a wine-glass of Port, splashed a volley of the wine right upon Y.'s white tie, and then upset the glass and what remained in it over Y.'s knees. I did so pity him, he is irrevocably a family man.

Write occasional epistles. Yours, etc.,

FRANCIS GALTON.

P.S. I think my old schoolfellow C—— is at Tenby; he is dying of consumption, poor fellow; he was the kindest boy possible and very talented. Should you find out that he is there, please tell me. I saw Dicky Doyne yesterday.

How little we grasp at 18, what we shall sigh for at 50 as incomparably more weighty than many soiled shirt fronts!

The few days' holiday in France enabled Galton to return to his work with renewed vigour. He was taking several new subjects, and as is the case with each man of original power, they came to him as new worlds to be discovered and conquered afresh.

May 17, 1839 [?1840],

17 NEW ST., SPRING GARDENS.

MY DEAR MOTHER,

When you next write to my father, please tell him that a letter which I directed to him shortly after my arrival in London at Baden-Baden, was returned to me the other day, opened from the Dead Letter Box, owing to my not having previously paid the sum of 1s. 8d., which it seems is necessary, and of which I was not aware. Please tell him this in order to account for his not having received a letter from me. I would write, but as of course by this time he has left Baden-Baden, I do not know his address. As I suppose that by this time you have heard from him,

¹ See the first footnote, p. 83.

please write shortly and tell me all the news and his present plans. I shall also want £10 (the Governor told me to apply to you), which please send soon as I am in some want of it. I have to invest in several new books owing to my attending perfectly new subjects for lectures. Don't forget to tell the Governor in your *next* letter that you have given it to me. Also please tell him that the lectures that I am attending are 1. Botany at King's College, 2. Forensic Medicine, 3. Chemical Manipulation, 4. Surgical Operations, and 5. Botany under Lindley¹ at the Chelsea Botanical Gardens, only twice a week. I do not attend the Civil Engineering Classes as it would be too much I think to do well²; neither do I dissect as I had previously intended, because I can only get pickled subjects, and also because there is an immense deal of microscopifying required in Vegetable Physiology, to which, it seems to me, that I had better at present give my time. I like my summer course very much indeed, it is not half such hard work as the Winter Course, and much more amusing, and two good prizes open to me at the end of the course, viz. Botany and Forensic Medicine.

I received a letter from Bessy the other day, who told me that she had just had a letter from Delly, who assumed the honour of sending her (Bessy) the first glutinous stamp, but Delly not being very expert, the stamp did not stick on, and so Bessy had to pay double Postage.

Oh, Delly! Delly! your congratulatory letters with regard to the reduced Postage System have been singularly unfortunate; in case of any fresh alteration, please *don't* write to me.

Good bye,

Your affectionate son,

FRAS. GALTON.

P.S. Mrs and Miss Hodgson are just gone to Brighton to recruit from the Hooping Cough (no vicious w, you observe, to my Hooping Cough³). How are Darwin and Claverdon getting on?

On Tertius Galton's return in June there was a good deal of correspondence about expenses. Francis had not been really extravagant, but he had taken his accounts to Paris to show to his father, he had not shown them and then he had lost them! Further, he did not always promptly acknowledge the receipt of remittances and Tertius' training as a banker demanded absolute punctuality in these matters.

¹ Lindley was Professor of Botany at University College (1829—1860), and attracted large classes. He was also lecturer on Botany to the Apothecaries Company at Chelsea (1836—1853). He was a botanist of great distinction, and it is pleasant to think of Galton attending his Chelsea lectures.

² This is the first evidence of Francis Galton's interest in Engineering. No earlier reference to the possibility of attending these lectures has been found, and it is probable that mechanical rather than civil engineering would have specially interested him.

³ Francis Galton appears to have hit off the older form (see on the point Skeat and Johnson). Or was it the French tour?

WEDNESDAY, [June] 10th, 1840,

17 NEW ST., SPRING GARDENS.

MY DEAR GOVERNOR,

You are the most delectable Governor going in the early part of your letter, but in the last not a man of business (!!!). Now to support my charge. When I dined with you at the Euston did not you, the defendant, say that if the 40 pounds did not come that it would be my business to look after them, thereby leaving me to mine own resources, and dependent upon them alone to obtain the said forty pounds? Under such order I acted and accordingly under my "auspices" the 40 pounds appeared in my pocket. There was nothing more evidently for me to say. ∴ I said nothing. Q.E.D.

Now as to the other part¹. My holidays will begin on the 21...28 of July. I certainly should not disapprove of 70 days journey; indeed I have no doubt but that I should see a very great deal very well worth seeing in that journey, and see it well too.

The route I propose taking is Hamburg, Copenhagen, Esteborg, Stockholm (by Gotha canal) (St Petersburg by Abo?), Stockholm to Sundsvall, Trondheim (this is beautiful scenery), Bergen (splendid), Christiania (by Vøringsfoss and the Hardanger Fjeld (Pørgnis) [? word not readable], Christiansund [? Christiansand], Hull, or else going exactly the opposite way and landing from Hull at Göteborg, thence to Christiania and so on, and thus I shall be able to judge more correctly about St Petersburg. There is reindeer shooting!!!! and only 4 hours night at Bergen, Eternal Snow in the form of glaciers 300 feet high!! In fact I am raving mad about it. I have of course taken care that Cambridge shall not suffer in *anyway* by it.

Please to make enquiries for a companion. I am not yet sure of one. Would you let me have the liberty of taking one book at a time from Saunders and Ottley and give me the necessary instructions, that I may cram up about Sweden, Norway and Finland?

Please tell Emma that that lady with an illegible name something like Oh law! has sent me no seals.

Your affectionate, half-cracked son,

FRAS. GALTON.

The *Wanderlust* was seizing Francis, another factor becoming almost dominant, and the blood of Buttons and Colyears manifesting its influence. We know our Norway now as we do our Switzerland, but it was not so usual for a boy of 18 in those days to plan a tour through Norway, especially with the three days' fjeld journey across the Hardanger Vidda from Vik to the Hallingdal. It was, I know, a fairly lonely track 25 years ago, and more than 70 years back it would indeed be an unusual route, probably taken only by a few reindeer hunters. Francis gives no clue as to the source of his

¹ The "most delectable Governor" in the early part of his letter had clearly been proposing ten weeks of travel.

projected journey. But his letter a week later to his father shows Francis still wholeheartedly for the Norwegian tour.

June 15, 1840,

17 NEW ST., SPRING GARDENS.

DEAR FATHER,

Thanks innumerable for intended tour and for book order. [There follows an explanation as to non-acknowledgement of a remittance.] I have just received from Leonard Horner a report "On the Employment of Children in Factories and other Works," to be transmitted to you by the next opportunity. N.B. Though I know that an opportunity won't present itself, I write to ask what I am to do, that I may have time to read it before your answer comes. Now acting life to the maxim of business first and pleasure afterwards—and having pitched into business, here goes for pleasure—about my tour, I mentioned 70 days, though I believe that 50 days will do, just to take the outside, as, in case of a good wind and in case of a boat sailing that way when at Trondheim, why I may just as well go to the Lofoden Isles, which rise several *thousands* of feet *bolt upright* from the water's edge and are superb—and besides close to them is the Malström. My chief expenses are in getting to Norway and back, when in the country they are but slight and will be much less with a companion.

I shall be free in the 3rd week of July. Poor Di¹—when will she be buried? How is your asthma?

Your affect. son,

FRAS. GALTON.

The next few letters are chiefly occupied with the distressing subject of accounts. After giving details of his expenditure, which are chiefly of interest for us as showing the nature of Francis's occupations—two botanical excursions with Professor Lindley, two visits to the Opera, etc.—Francis continues (June 16):

"I own that I have not kept my accounts, especially my Paris ones, at all carefully. I have generally set my expenses down, but on scraps of papers and consequently lost them afterwards from carelessness. I do not think that I have wasted any money, though I doubt if I could account for all. I am sure that I could not accurately. I don't owe anything except 32 shillings for a pair of boots and I cannot get the bill. My present riches are £14. 8s. I shall have to get a frock coat and waistcoat. The frock coat being the 3rd that I have had in London.

As my journey to Norway and Sweden can scarcely be less than £50, I shall not grumble at giving it up 'in toto,' but am quite ready to do so. I expect a good *row* from you by return of post, and as I deserve it, am resigned.

And now having to the letter followed the example of our Ministers, and when the Budget must come, having made a clean breast of it—what is to be done? It

¹ His cousin Diana Galton, daughter of Hubert Galton. Emma Galton, who had been staying with the Gurneys, writes on June 7 of the grave illness of Diana.

is no use on my part to blarney about 'full of contrition' and so forth, but beginning from to-day, I will send you by every Monday's post my accounts for the week preceding; and in case of omission, I wish that you would write and blow me up. Please tell me by return of post—how much I am in arrear, as not understanding your figures I cannot calculate it.

Good Bye, and believe me ever,

Your affectionate son,

FRAS. GALTON."

How we should have valued the answer of Tertius Galton to this letter of his son Francis! How few young men at College now-a-days would satisfy their father's desire for a weekly account of all expenditure, and how neat and elaborate are the little weekly accounts we find sent to Tertius after this date! To us it would have seemed more reasonable to grant a fixed allowance and to make no inquiry, if it were not exceeded, as to the details of expenditure. But Tertius Galton had his own views, and he insisted on the most elaborate system of petty cash accounts. Can we assert that Francis Galton's business habits and his full appreciation of the value of money arose from his father's training? Is it not rather probable that the instinct of elaboration and organisation was already there, for we find it taking strange forms in several of Francis Galton's relatives¹?

A further letter about expenses is dated June 24 (by the recipient Tertius!).

"I am very glad indeed to find that my private expenses have not been extravagant.

On consideration I have determined to give up Norway and Sweden for the following reasons. First that although I should otherwise have *enough* time for

¹ Thus one of Tertius Galton's sisters had a triple inkstand with three coloured inks, triple penwipers and pens; every conceivable apparatus for writing, printed envelopes for her various banks and business correspondents; printed questions for her grooms, "Has the mare had her corn?" etc., etc.; a dozen or more cash boxes elaborately arranged to receive in separate labelled compartments each kind of coin from each type of her property. The apparatus for the instruction and relief of the poor-tracts, ounces of tea and sugar, worsted stockings, bundles for mother's aid, etc., etc., were arranged in separate indexed presses, with records of all transactions relating thereto. The crockery ware of the store-room and housekeeper's room was all lettered, and all metal articles, pans and pots were duly labelled, as were the garden tools, and there were corresponding labels on the pegs on which they were hung. As many as 100 painted labels have been counted in a flower bed of hers of 12 square feet. In short, we appreciate what Francis Galton meant when he said that the desire to classify and organise which existed in his family, he felt at times as almost a danger in himself.

Cambridge—yet an increase of 6 weeks would give me abundance. Secondly, I have already been the cause of so much expense that I have made up my mind not to incur a greater.

I called upon Leonard Horner to tell him what I had determined, and to thank him for having made enquiries for a companion, but he was not at home, nor expected till the middle of next month; so I should be obliged if you would write to him.

The cause of the cheapness of the envelopes is this—The stationer who sells them has an advertising sheet printed on their inside, which of course will enable him to sell them at a great reduction. This man has, however, not found them to answer, as he has no more, but I hear that they are to be got for 8*d.* the dozen. I will make enquiries. I call to-morrow on the Huberts. I have not had time owing to Hospital engagements. Everything, including accounts, getting on flourishly. There will be very near play whoever gets the prize for Forensic Medicine. I do not make myself sure of it.

Good bye.

Your affectionate Son,

FRAS. GALTON."

In his next letter (June 29) Francis tells his father that he fully understands and appreciates his arguments about the money: "I am most obliged to you for your liberality; however I think that for many reasons, I had better give up Norway and Sweden and go elsewhere." He suggests a month in Paris, boarding in a family who don't understand a word of English—

"a large family, as good a class of life as possible—and the most complete innocence of anything like the knowledge of the English language. In case of several equally qualified that those who can talk the most gossip be the chosen ones. This will explain my taste pretty well,—of course if the daughters *are* comely—why *tant gagné*."

FRIDAY, 10th (I think), 1840,

17 NEW ST., SPRING GARDENS, LONDON.

MY DEAR FATHER,

Thanks for your unanswered letters—that one which you wrote to Paris really was a perfect specimen of English composition—had it been a will and had £50,000 a year depended on it, I am sure a lawyer could not have picked a flaw in it.

...Everything gets on capitally, especially accounts. When I want to know if I have any coppers in my pocket to give to a begging crossing sweeper I do not condescend to feel but pull out my pocket-book add up and the result is sure to be correct. I shall want some more money, not enough though for the Paris expedition, as I propose to come to you at home first—then Rassy¹, and then Paris. Shall I send you my account book or an extract?

[Here follow accounts.]

¹ Erasmus Galton, who had given up the Navy and settled down to farm at Loxton. Darwin Galton was farming at Claverdon.

So much for business. Went to the Opera last night, Taglioni, last appearance—am quite hoarse with bellowing out “bravo.” Aunt Gurney¹ has been out of town for 3 weeks, just returned. I went to see Courvoisier hung, and was close to the gallows, poor fellow. I went professionally for death by hanging is a medico-legal subject of some importance.

Tell Delly that I have not seen a scrap of her handwriting for ages and that she must send me a letter. What does she do without her school? I am glad that she is going to Somersetshire [Loxton], it will do her back so much good. Nothing is so bad for health, such as hers is, as a sedentary (lying-down-in-a-school-all-day) habit of living and one without variation. If she divides her attention between two sets of objects—to both of which she is attached—school and farm—her health will be wonderfully improved, Frampton’s pills of health discarded and steel mixtures thrown down the sink.

My accounts shall be sent by return of post, if you will tell me in your next letter how you would like me to send them.

Good bye.

Your affectionate Son,

FRAS. GALTON.

This is wrapped in an “11d. a dozen” cover.

The Paris trip was not destined to come off. A new direction was to be given to Francis Galton’s plans; but the goal reached was far from the direction indicated at the start. The *Wanderlust* had seized Francis, although he was little conscious of it, and laboratories and lecture-rooms were incapable of holding him back.

MONDAY, July [13], 1840, 17 NEW ST., SPRING GARDENS.

DEAR PATER,

Thanks for letter, I am in a great hurry for the post, so I will send accounts to-morrow.

Please write an answer and send it with all the speed a penny envelope is capable of.

Wm Miller is going to Giessen in Germany, to Liebig’s Laboratory—Liebig is the 1st Chemist (in organic chemistry) in the world. In his Laboratory there is every opportunity for getting on, in addition to the certainty of a knowledge of German being acquired. The terms are very low, not more than £5 for admission, though of course there are many more expenses in the way of tests and other documents. Wm Miller tries to persuade me to go with him. I should like to go. Have you any objection? I write to Hodgson by this post to ask his opinion. Miller is as you know exceedingly talented and will in all probability rise high. My acquaintance with Bowman has proved to be most useful—a similar acquaintance with Miller promises to be so. Liebig’s assistance will of course be invaluable to me in after life; and as his immediate pupil, more especially as I am a foreigner and come with an introduction from Daniell, I shall have every opportunity of acquiring his friendship. Again Daniell

¹ Mrs Hudson Gurney: see Plate XLVII.

will necessarily be much pleased with one of his class, more especially his prizeman, following up so good an opportunity of working at practical chemistry; he will of course give me introductions to Liebig and will take more interest in me. Liebig's season begins next week and ends Sept. 8th nearly, all which time I shall be with him. My going there will not interfere with my Forensic Medicine Examination. I am sure that it is the best thing that I can do. I shall not gain refinement most certainly—but will have every advantage possible for obtaining Chem. Knowledge, and will return as dirty and as clever as can reasonably be expected.

Your affectionate Son,

FRAS. GALTON.

Glad very, about asthma.

In Captain Donellan's case you used to tell a story of a Mr Somebody who lent Capt. Donellan some book or other containing a description of the manufacture of laurel water, this book after the Capt.'s execution was found always to open in the place where the process was described. Please give me the names.

Attached to the neat account which followed next day, duly headed by the receipt for the last cheque, are a few lines in which Francis states that he should not have time to write to Liebig and wait for an answer, and that if Liebig cannot take him, what is he to do—"Go to Paris or to Switzerland?"

The next letter from Spring Gardens acknowledges the receipt of a credit on Barclay and Co. for £100. Hodgson approved of the visit to Liebig. Francis is in his holiday mood:

July 16, 1840.

...You enjoin me not to smoke cigars. I will not, but I will buy a meerschaum with a pipe 4 feet and a half long, and with a bowl that will contain an ounce of Tobacco at a time. Shall I get one for you?

I have got my money changed into circular notes at Herries, Farquahar & Co. I land at Ostend, railroad Liège, diligence Aix and Cologne, steam Coblenz; diligence or voiturier, if I must, to Giessen. Does not Bessy return to-day? How is his worship the farmer at Claverdon getting on?

Good bye.

Affectionate Son,

FRAS. GALTON.

I will write again. Loves and all that sort of thing.

The last letter from the old environment is written on July 22, just before the start for Giessen:

TUESDAY.

MY DEAR FATHER,

I am 2nd in Forensic Medicine. There is only 1 prize and so I get a Certificate of Honour. I am much vexed at not being first, but there was more competition than usual. One of the men (I am above him) got a Certificate of Honour

last year. As you understand the circumstances in which I was placed as regards juniority, I shall not attempt any further to justify my failure. If it is not *infra dig.* after a Cambridge degree, I shall of course go in again....

I have secured my berth in the Ostend steamer and start to-morrow at 12. I will send you my medical books in a parcel. Don't let them be opened. My other books I will pack up separately. My chemicals too I had rather were not touched. I have been unavoidably prevented from calling on Leonard Horner. Will you write to him and tell him of my proceedings? I saw the Gurneys to-day. She talks about coaxing Bessy or Emma to Chiswick. As I have much to do, I will wish you good-bye. Loves to all.

Your affectionate Son,

FRAS. GALTON.

Of this "stay in Giessen" Francis's letters must themselves speak. There are two dated Giessen, the others are from Vienna, Buda Pest and Constantinople!. A sketch-book diary shows that Francis, then 18 years of age, went down the Danube to Vienna, thence to Constantinople, thence to Smyrna, Syra, Athens. Beyond this records are obscure. Sketches show that he was at the Bay of Navarino on Sept. 13, and at Missolonghi on Sept. 14. A projected itinerary in the early part of the book gave a return by Rome, Pisa, Genoa, Marseilles and Paris. But he was still in Ithaca, when he should have been near Pisa, and from Constantinople he requested money to be sent to Trieste. The brief notes ceased after Sept. 14, and I do not know how Francis got home!

Those who had seen the *Wanderlust* rising to full intensity in the planned Norwegian expedition might have been fairly sure that Liebig would not hold him. His diary tells only the external side of the attack:

"*Giessen, July 30th, 4½ p.m.* Being thoroughly ennuied and kicking about on the sofa, I suddenly thought of a voyage to Constantinople and made up my mind in a quarter of an hour and sent off my passport to be viséed to Frankfurt; then went to Herr Prof. Adrian for my grammar lesson, who it seems went the same route last year, and who gave me several good hints. Wrote a penitent letter home begging for absolution, and without waiting for an answer packed up."

MONDAY, 27 *July*, 1840,

GIESSEN, 1 o'clock.

MY DEAR FATHER,

I arrived yesterday at Giessen in the afternoon. I find that Liebig's laboratory is under quite different arrangements to those which Mr Daniell, Mr Miller and myself had expected. The plan with which it is conducted is as follows: A number of men (30 at present), who have long studied practical Chemistry, wish

individually to examine certain organic substances. Now in analysing bodies of this class much tact is required in devising the mode of treating them, and in adapting trains of experiment to the individual case. These men go to Liebig who gives his opinion as to how they are to set to work. He has a room where there are tables and sinks and some furnaces, about a yard's length of table is allotted to each man and there he experimentalises (he brings his own apparatus and tests). Liebig looks up the men once or twice a day, telling them how to go on, etc. etc. Their investigations are all published with the name of the experimentalizer attached. Liebig therefore presupposes delicacy of manipulation, and professes to teach the *application* of it to particular cases. It is the first part that I wish to practise and, not having done so sufficiently, of course instruction in the after part is useless. Under these circumstances and with the advice of Mr Miller I have determined not to enter the chemistry class, but shall work at learning German instead. My arrangements I will tell you at the end.

I set off from London at 12. Motley assemblage of passengers. Lady Noel on board; and with the exception of treading upon a little poodle-dog's tail by accident, and making it squeal horribly, and of tumbling against a lady who was trying to drink unobserved a glass of wine, and so causing her to spill it over her neighbours, I got on very well. Calm passage, not sick, good berth, in which I didn't sleep, and splendid appetite. Ostend at $3\frac{1}{2}$ in the morning, shore at $4\frac{1}{2}$, tooled about, got passport viséed etc., breakfast and railroad at 6. Very agreeable companions they had come with me in the steamboat, and were travelling for their first time, a lady and her Governor; there were other English also in the same carriage. Stopped an hour at Malines just looked about me. Liège at $4\frac{1}{2}$; ran about with one of my fellow-travellers, saw everything—dined and set off for Aix at 10 at night; a couple of Englishmen still sticking to me, one of whom tried to inveigle me into acting as a sort of courier, etc. a "Speed Malise speed," but I dished him nicely. Aix at $4\frac{1}{2}$ in the morning, warm bath etc.; ran about the town, Charlemagne's throne, etc., etc. Good breakfast and set off for Cöln at $7\frac{1}{2}$, arrived there at $3\frac{1}{2}$; bolted to the bankers; just had time to look at the cathedral and off in the steamer; we came opposite Drachenfels about $\frac{1}{2}$ past 11 at night. I disembarked at Königswinter; ran to the top of the Drachenfels and waited to see the sun rise (the steamer would have been in Coblenz by 4 o'clock), bolted down again in 13 minutes and $\frac{3}{4}$ ters, grabbed a breakfast, and off for Coblenz; found that I could not get off to Giessen till 3 o'clock next morning, so I walked up the Chartreuse, and in every possible direction till I was thoroughly tired (boiling sun); reinvigorated myself with a brace of ices etc. The men at the inn (Hof zum Riesen) very uncivil, so I knew that if I went to bed they would not awake me at 2 in the morning; consequently I took my luggage to the Schnellpost office, told the man my unfortunate condition and asked him to let me sleep in a diligence. He immediately took compassion on me and bundled about for the keys of the Passagierstube, but the keys were not to be found so I picked out the most comfortable Postwagen and fell asleep most cosily. However the chocolate ices, bonbons, and coffee that I had taken not exactly agreeing in my inside, I had a desperate nightmare, fancying that 2 vipers were dancing the "Cachuca," whilst an old rattlesnake was posturising in the "La Gitana." At this I squealed awfully and being thoroughly awakened by a desperate rattling at the door,

I found the Sentinel standing with a fixed bayonet. I however kept still and soon went to sleep. Set off at 3 in the morning (Sunday) and got to Giessen at 4½ p.m., toiled to the inn and on inquiry fortunately found Miller there. In the evening walked about the town round the ramparts etc., etc. Miller introduced me to Playfair, late chemical assistant to Graham, to Gilbert, also assistant to Thompson, and to Herr Bettenbacher, a Vienna professor, all studying at Liebig's. Went to bed, slept gloriously, up at 6 this morning, went to the Laboratory, heard Liebig lecture, saw all that was going on. Made arrangements with the German Professor for daily lessons. My present plans are as follows. Work hard at Giessen for a fortnight till I can speak it tolerably. I shall then expect letters from you with Berlin, Dresden or Hanover introductions; go to one of these places, and mix in society and lark for 3 weeks at least, and shall be in England on the 14th of September.—Please write to Hodgson and tell him about my alteration mentioning that Miller thinks it the best thing that I can do. Write an answer please by return of post and another letter with introductions (if you approve of the plan) as soon as you can get them.

I am most comfortably housed etc., eating, drinking and sleeping cost 3 shillings a day. I dine with the chemicalizers at 6 o'clock. There are great top-sawyers amongst them. We always speak German. I am much vexed at losing my Chemistry, but I shall gain far more by stewing away at German, than I should had I worked at Chemistry, Liebig's arrangements being as I had expected. I have enjoyed myself excessively,

Good bye.

Y^r affectionate Son,

FRAS. GALTON.

Miller and myself are great chums and we talk German to each other most unintelligibly. I have no doubt that the linguists at the table d'hôte will have much discussion on what the tongue is in which we converse.

Of the men mentioned in this letter several reached distinction later. William Allen Miller—also a Birmingham General Hospital man—became Professor of Chemistry at King's College, London, and later, especially in conjunction with Huggins, made noteworthy chemical investigations. Playfair, afterward Lord Playfair, was well-known to our generation both as chemist and politician. But the mood of Francis Galton was at this moment neither for research nor intellectual society. He could not possibly have settled down to either chemical analysis or "stewing at German." The roving lust had seized him and it was to hold him for many years, until indeed it should itself become subservient to his love of scientific inquiry.

GIESSEN, July 30, 1840.

MY DEAR FATHER,

Being thoroughly ennuied at Giessen and having nothing to do from morning to night¹, I have determined to make a bolt down the Danube and to see Constantinople and Athens. I have made all the calculations of time and cost and they are very favourable. Can I take any message to the Skeys? I do not wait for an answer before I start for two reasons, 1st that I have not time and 2^{ndly} as you promised me a good summer's tour to Sweden and Norway, of course you can have no objection to a comparatively civilised trip. I am getting on in German capitally, and shall learn almost as much of it in these my travels as if I had settled in the midst of Berlin—much more than by staying in Giessen. Another reason for my unhesitating bolt is that as I shall have very little time after I am settled at Cambridge, I had better make the most of the present opportunity. So I will fancy that I have received a favourable answer, and so thank you very much indeed for your consent. My conscience being thus pacified, I will tell you something of Giessen.—It is a scrubby, abominably paved little town—cram full of students, noisy, smoky and dirty. Of these students, by far the best are the Chemicals, they being all first-rate men, wot write books and so forth; they are one shade less dirty than the others, that is to say they are of the colour of umber, the others being Bt Sienna. They have a table d'hôte to themselves at 6 o'clock (at which I join) and they drink much sour wine and Seltzer water. Every now and then they dissipate, *i.e.* send for a quart bottle extra of Rauenthaler, and drink healths and sing songs. To drink healths you clink your glass with everybody else's glass at table, thereby spilling much wine on the table-cloth and over your neighbours' necks—over which you are stretching. As there were 30 sitting down together at the one which I witnessed, by the simple rule of combinations², $n(n-1)$, or 30×29 , the glasses must have clinked 870 times for each health that was drunk say (at a low computation 20 were drunk) then 17,400 clinks must have ensued!! If one student calls out to another: "Sie sind Doctor," it is a challenge to drink 2 glasses of wine with him; if "Sie sind Professor," then 4 and so on. They have also a very uncomfortable custom for foreigners which is this—one man walks up to another (whom he knows) and asks him if he has any objection to drink "Schmollens" with him; the consequence of which ceremony is the calling each other "du" ever after instead of "sie," and in fact making them perpetual chums. The way in which it is performed is by drinking a glass of wine, the arm which holds the glass being put through the corresponding arm of the other—and then saluting each other on both cheeks; this last part to be continually repeated after any absence! I have not seen it performed, but I was in great fear and trepidation, even more so than when before Mary Luard at a Christmas party.—The

¹ Our hero forgets that in his last letter to his father he had arranged to work hard at German for a fortnight! I do not think that Francis Galton ever obtained more than a working knowledge of German, *i.e.* that he spoke it fluently or read its literature from inclination.

² Francis's mathematics seem to have failed him, or the Giessen custom differed from that of Heidelberg forty years later; each pair clink only once, not twice. Perhaps he counted a clink to each glass!

Professor who gives me lessons is a delectable old man, quite an original, who has 17 (!) pipes in his room and who smokes to a corresponding extent. Tell Pemmy that there is a splendid cathedral at Limburg, almost unknown to Englishmen,—and Byzantine architecture with a touch of Gothic, just like the church of the apostles at Cöln, only much more splendid. By the bye in case that you should fancy any part of this letter to be a “take in,” I can assure you that I never was more in earnest in my life. Having nothing more to say—with many thanks for your kind consent to my travels. I remain

Your affectionate son FRAS. GALTON.

P.S. I have just opened to say that I have seen one of the professors here who went a similar tour last year, and the one that we have together concocted is Frankfort, Würzburg, Ratisbon, Passau, Linz, Vienna, Constantinople, Smyrna, Athens, Patras, Ancona, Rome, Livorno, Pisa, Florence, Livorno, Genoa, Marseilles and Paris. I have *plenty* of time. I could see this all very well, quarantines &c., and be back on the 18th Sept., but I will take more time. [In pencil.] I start tomorrow at 7 in the morning. In case of a letter from you crossing this Miller will take care of it.

Francis actually set off on July 31st with Dr Meyer for Frankfort, the Doctor having parted “Schmollens” fashion from several of his fellow-students. The picture the diary provides for us is that of an intensely happy boy—full of fun and feeling himself out for a bit of a frolic truant fashion. At Frankfort, Francis began to drop the unnecessary: “Left in a parcel 1 coat, 1 p^r trousers, Liebig’s Chemistry Part I., Liebig’s Organic Chemistry and the handbook for Northern Germany (1836) with the map torn out.” He had time, however, to “scetch” (*sic!*) very neatly in pen and ink the Katharinen-Kirche and a general view of the town. The next stage is Würzburg, with some careful pencil work sketches of the town, and here Galton fell in with a travelling companion:

“*Aug. 2.* Went to sleep on the sofa in the coffee room and on awaking a scrubby-looking little Hungarian addressed me in bad English, asked me my route and said that we should be fellow travellers to Wien. Set off at 12 for Nürnberg, a Lady being the only other person in the diligence. The little Hungarian no sooner perceived a petticoat in the diligence than he bellowed out for lanterns most furiously, but notwithstanding his exertions couldn’t get one, so cursing awfully sat down with his eyes 3 inches from the girl’s face. On passing out we came close by a light which exposed the physiognomy of the girl, and the Hungarian being satisfied commenced a most vigorous courtship. He told me that it was quite necessary for me to make myself an adept in the art, and so I tried and with some success fell fast asleep.

“*Aug. 3.* Awoke and found him holding both hands of the girl and singing love songs. I accordingly burst out laughing in which they both joined. I then began my flirtation with much more success than my rival, at which his mustachios desponded and looked sad. Arrived at Nürnberg at 12. Marie, for such she said was her name, gave me a bit of an artificial flower that she wore, but would not let me crib some of her

hair, because I had only a penknife to cut it with, though she said had I had a pair of scissors it would have been different."

Ratisbon and Walhalla followed, the sketchbook showing various details of buildings, rafts, and country folk. At Passau the steamer is found to be injured and on Aug. 6 Galton set out with Major Parry in a boat with one rower to go down the Danube to Vienna, which was reached on the 7th. In Vienna there was sightseeing, opera and gaiety. Then down the Danube to Buda-Pest and on to Semlin, reached on August 13th.

"The natives beastly dirty, sheepskin clothes, wide full trousers, long greasy hair, turned-up hat. Passed Peterwardein, anything but picturesque. Slept at Semlin having first walked about the dirty town and up to the cemetery, whence is a very good view of junction of the Save and Danube. It was too dark to see Belgrade well. [There is a picture of Belgrade from Semlin by moonlight, Aug. 13.] Sang 'God save the Queen' and went to bed loyal."

Then by way of Sistova, Kustendje, Castle of Europa to Constantinople, reached on August 22nd. There is little in the diary here but a youthful traveller's impressions, a long description of the first Turkish bath, the slave-market and the mosques, only seen from outside. From this first section of Galton's tour three home letters remain. The first is from Vienna:

VIENNA, Hurrah!!! Aug. 7, 1840.

STADT FRANKFORT HOTEL.

MY DEAR PATER. It has just struck me (*i.e.* after having taken my place to Constantinople—not before) that this expedition of mine is about the coolest and most impudent thing that I have done for a long time. But I remember when about 6 yrs old you telling Darwin and Erasmus of an exploit of yours in kindly offering to escort some young lady (I forget whom) from Birmingham for a mile or two, and somehow or other when once in the carriage you thought it better to go on to Bromsgrove merely as a protection to her; at Bromsgrove of course the same reason held good and so on to Worcester. I thought it then a very naughty thing. Now from Birmingham to Worcester is at least 40 miles and from Franfort to Constantinople is only 2075 (I have carefully counted them) a *leettle* more certainly, but not enough to matter, so please be lenient. How I shall get scolded when I return! But there is one consolation, viz. that I go too fast for any letter to overtake me and disturb my serenity, when once started from here on Monday next the 10th. Now for my diary.....[Then follows the account of the flight from Giessen and the journey to Linz.]

Splendid scenery, dark lovely pine-wood forests, many rapids and boiling sun. Here you feel that it is the sun, it puts life into one and warms one quite into the sublime. Bye the bye I am as nearly mad in that way as a person can possibly be imagined to be, who does not actually turn down his shirt collar and go about without his cravat. On arriving at Linz found that the steamboat was, as a waiter who tried to

speaking French said to an Englishman who was with me, "malade," *i.e.* injured in one of the rapids and obliged to lie by. I accordingly made an agreement with this Englishman whom I had picked up the day before to hire a boat between us and to get down as we could to Vienna. Well a boat we got, *i.e.* a punt of unplanned boards kept together with wooden spikes and in this we set off at 3 a.m. It was horribly cold and a strong wind in our teeth, but we luckily got on, bailing out continually. On leaving the hills the wind troubled us less and about 2 o'clock we passed Mülk having gone down all the rapids; here the wind freshened. I accordingly took an oar, *i.e.* a tip of a fir-tree with a bit of board nailed to one end and rowed as hard as I could to Stein (look in the map), it was very hard work. At Stein we changed men and got two rowers and arrived at Vienna at 2 o'clock this morning. Being not allowed to cross the barriers we had to walk two miles with baggage to the Police Station and then another mile to a sleeping place, 13 beds in one room. Got up at 7 and have been walking about seeing sights, till about an hour ago 9½ p.m. The Englishman is a Major Parry, has seen some Canadian service, and in an eternal fuss and flurry, clubs with me and as he does not know one word of German is always full of gratitude. I have just come from hearing Strauss play. I have had the pleasantest possible voyage, nice companions—very nice indeed in some cases. N.B. Linz is universally famous for the beauty of its fair sex, and so is Würzburg, and everything prosperous. I have never enjoyed myself more. I shall be back in quite time enough to Cambridge (I have altered my return route) so don't be at all uneasy about that—and I shall be in Constantinople on the 23rd. Don't write after me because I am not quite sure of my return route, but I will write, if I have time from Constantinople. I would have given anything to see your physiognomies, when you received my letter from Giessen. Didn't Bessy say: "What a monkey"? Well, Good bye and believe me ever

Your affectionate son FRAS. GALTON.

Dear Pemy, I have been sketching away. I wish that I had you with me, you would so enjoy the journey. You certainly nowhere see such universally happy faces as in Germany, it puts one in the best possible humour. I am laughing half the day, and I am tanned as red as mahogany, perfectly independent and in the best good humour imaginable. Then in the evenings I toiled with a diligence friend to the coffee gardens where all the fashionable of the town are assembled, and flirt furiously; really I feel quite at home everywhere. I saw such splendid etchings and sketches today by all the first masters. Every style from Albert Dürer to Raphael, the trees are done beautifully (Ah! Mr Francis!) I wish you could see them they are the Archduke Charles' Collection and 35,000 in all—and how is Bessy, I suppose as fat and healthy as possible after Tenby, and Delly and Mammy and Lucy and brothers? I should like just to have a peep at all your pretty faces again, it seems at least a month since I left Frankfort and I do not know how long since I saw you last. Well, Good bye. I think of you all sometimes.

FRAS. GALTON.

Oh, the joy of it all, when the roving lust is on you, and all men reflect the happiness that radiates from yourself! The writer can recollect a three months' journey on foot alone from Heidelberg to the gates of Vienna and back when only a little older than Francis Galton;

and the same strong impression received that the race of men from the Neckar to the Danube must be the happiest population on earth! But if the *Wanderlust* grips a man, he runs grave risk of never settling down again in this life; it is one of the fascinating features of Galton's career, that with all the means and tastes to become a wanderer, he yet settled down—after fourteen years—to steady scientific work. Might it not well have been a case of:

“What's become of Waring
 Since he gave us all the slip,
 Chose land-travel or seafaring,
 Boots and chest or staff and scrip,
 Rather than pace up and down
 Any longer London town?”

From Buda Pest Francis Galton writes to his father for a remittance to place him on the safe side on his journey home:

“Would you therefore send me to Trieste £15; if the correct way of sending it be in letters of credit please make them payable at several of the places about there, Venice especially. Should you, however, have disinherited me or forbidden my reading mathematics or some equally severe punishment, then please send duplicates of that letter to Malta, Syra, Athens etc., etc., because after that I have read one of them I shall be sure not to enquire after the others, and they will so amuse the postmasters. Well here I am in the most Hungarian town of Hungary, and already fully entitled to the Travellers' Club. There is such a capital specimen of an Hungarian opposite that I must scetch [*sic!*] him. The hair and mustachios are no exaggeration [sketch of the Hungarian]. I never fully understood what a hot day was till I came here, in truth sight seeing opens the mind and the perspiratory pores also. The water that I drink oozes through as fast as through a patent filtering machine. I must really invest in a parasol to-day, the heat at midday is absolutely awful. This morning I actually saw a live cow not *half-roasted*, but really and truly quite *dun*. I have got a mosquito net of which I shall find the full benefit, shortly, about Skela Gladova (pronounced Skela Glädövä). A water coat pea-coat is the greatest comfort imaginable. Yesterday in a storm of rain on the river, which by the bye was much more violent than any Scotch storms, and which looked just as in the scetch [*sic!*], I coolly posted myself on the top of the paddle box, looking quietly and comfortably with my hands in my pocket at the poor miserable-looking passengers for whom there was not room in the cabin and who umbrellas being useless, posted themselves as well as they could under the tarpaulin, their exposed parts suffering considerably. I was considered a maniac or something like it, but two or three Newfoundland-dog-like shakes made my peacoat half dry and not an atom of rain had gone through it.....In 11 days more I am in Istamboul, hurrah! I remember a bit of advice of Darwin's when I was climbing up a ladder to the cistern in the yard at the Larches,—not to look down, but only upwards and see what was left to be climbed; just so with my present tour. I fancy myself not much farther than Belgium, quite at home and only calculate what I have to do.”

The last letter we have is that from Constantinople :

STAMBOUL, *Aug. 22nd*, 1840.

MR (not Madame) JOSEPHINE'S LODGING HOUSE.

MY DEAR FATHER, Here I am at Constantinople—among Turks, Armenians, Greeks, Jews and Franks, in a good Lodging House, as well as possible and happier and happier every day. The Golden Horn is just in front of me, crammed full of mosques and minarets, Seraglios and Towers. Scutari to my left on the other side of the Bosphorus and on bona fide Asia, and I myself in Pera on the top of the Giaour's Hill (remember the "G" in that word is pronounced hard, and it is only two syllables, thus (^{Gia}_{ow-ar}) the "ia" is just audible). I never in my life had a more pleasant voyage than down the Danube. The funny costumes, and languages, viz. German, Wallachian, Slavonian, Illyrian, Turkish, Russian, Italian, French and English were all spoken around me. We eat water melons and grapes. I scetched (*sic*!) a good deal, walked on the land wherever the steamer stopped and really saw an immense deal. Tell Bessy that I passed by the cave where St George killed the Dragon, and sketched too—and that the putrid body of the Dragon gives birth yearly (so says the legend) to myriads of mosquitoes, very many of whom bye the bye bit me. At Orsova I went to the baths of Mehadia (see Murray—as you have got my "Southern Germany Murray" you must read up my route) the rapids and between Alt Mordöva and Skela Gladöva are very fine rough brown mountains on each side, a good deal of wood, a swift stream below, whirlpools occasionally, and splendid eagles soaring about. The Iron Gate is a humbug, the rapid is swift enough but the scenery nothing particular. At Orsóva (Ör-shöwa) on stepping into the boat we were tabooed for 10 days quarantine had we returned, and we were in a minute among turbanned Turks. The Quarantine laws are a great bore. A Turk has 3 days Quarantine in Wallachia and 10 in Hungary, a Wallachian 7 days in Hungary. So there are 3 nations close together none of whom can trade &c. to any extent, with the other. See Murray as to the way of making exchange, and passing the money through water. Stopped at Czernaböda (that is a Russian name) and went overland to Kustendje—3 other English with myself made the first English party who had ever done it with the exception of one solitary Englishman about three weeks since. We arrived at Kustendje and the Black Sea (!!) all comfortably (except one breakdown of the axle tree), and found a very good inn and actually Barclay and Perkins' porter, a bottle of which I drank to the health of all at home. Steamer was to set off next morning at 12. Was lent a gun by an inhabitant and so went out a-shooting. Shot a couple of Sea Gulls first, then broke the leg of a heron, when flop flap up got an eagle, bang! Mr Eagle lay a subject for dissection on the ground. Accordingly I did dissect him, at least skin him to the admiration of all beholders (I had my dissecting knives with me)—and I shall bring him to England. It is not a large one, not above 3½ to 4 feet from tip to tip of wings, but a very powerful one. (Dinner's ready so I must stop.) Set off in a steamer on the Black Sea having first bathed therein. Very windy—cross sea worst passage since March. My breakfast and dinner were soon food for fishes, if they could digest them—I could not, in fact I was horribly squeamish at last having during my short time of health seen a splendid storm, lightning as bright as in the most vivid illumination, a broad glare of sheet lightning

extending along a quadrant of the horizon concentrated itself together in the middle to a broad band of forked lightning, it was splendid. The Black Sea is really very black, I do not know to what it is owing—rocky bottom?. [We] sailed down the Bosphorus through the Symplegades. Egad the Bosphorus beats any thing in the way of a view I have ever set my peepers upon. The kiosks are so opera-scene-like, so white and so much trellis work about them, the mountains are so grand and the Bosphorus so broad and blue, that (I am stuck fast in the mud about how to finish the sentence being afraid of verging on the romantic).

Arrived at Stamboul seeing as Byron says

“The selfsame view
That charmed the charming Mary Montague.”

The seraglios are splendid, ditto palaces, such a great deal of trellis work about them, and then there are cypresses, and the veiled ladies just looking out [sketch of one] between folds of gauze and very pretty eyes they have too; then there are the Greeks, I never saw such black eyes in all my life. I should like to put one of them in a rage; they must look splendid then. I saw the women's slave-market today—if I had had 50 pounds at my disposal I could have invested in an excessively beautiful one, a Georgian. Some of the slaves had their nails dyed in henna. Most of the black ones were fettered, but they seemed very happy dancing and singing and looking on complacently whilst a couple of Turks were wrangling about their prices. I took a Turkish bath today, such a shampoing and lathering and steaming. Now about getting home. These plaguy quarantines have been extended, though there is no plague now in Turkey (a great bore for I wanted to see some cases) and that at Syra with that at Trieste will be, I fear 24 days I therefore shall scarcely be able to see you before going to Cambridge. If I can get books I will read away in quarantine at mathematics and classics if I can't why I must learn Turkish or something desperate of that sort. In my last letter (from Pest) I asked you to send me £15 to Trieste—if you have not done so already please send it now—as I shall then have no possible anxiety about money matters. Good bye, loves in all directions.

Your affectionate son,

FRAS. GALTON.

Those who have had the privilege of examining Sir Francis Darwin's journal of his tour in Turkey and Greece, and comparing it with Francis Galton's diary and letters of more than 30 years later, must at once be struck by the close resemblance of the two men; they sketch much the same objects, in much the same style, and they are both interested in the same sort of things, especially the plague. The impression of the marked hereditary resemblance between uncle and nephew is much strengthened when we read these diaries.

Beyond Constantinople the diary—and it is very fragmentary—is all that tells us of Francis's further progress :

"Aug. 26. Set off from Constantinople in the *Crescent* at 4 p.m. Italian captain, English mate. One English gentleman, 4 ditto Ladies; French, Greeks, etc. and innumerable Turks, lying about, men and women, smoking and drinking coffee. They are a great nuisance; the clear space on the quarter deck is not 18 inches broad and the consequence is that when the ship rolls you are almost sure to tumble over their feet, right into the middle of them, and as they are mostly women, such a position is very indelicate, and as they are all sea sick highly disagreeable also. Very rainy on setting out; it was soon dark. Entered the Dardanelles at 8 next morning.

"August 27.....Came to the place where Troy was, thoroughly disappointed. There is no truth in the proverb 'Ex nihilo, nihil fit,' for Homer has shown its fallacy. He must have had a brilliant imagination to make a little bit of plain 2 miles long and 1 mile broad the scene of all the manoeuvres of a ten years' war. The idea too of fighting ten years for a woman! Catch me doing such a thing for the fair Mary Anne, but the days of gallantry have passed. Achilles' tomb, a little hillock; as for Tenedos opposite which the Greek toiled a couple of days to reach, I would bet anything that I could row over in 40 minutes (supposing the marsh on which Troy stood to have been increased by alluvial deposit, still Mount Ida and the rocks of Tenedos are necessarily stationary and so there cannot be much mistake about relative distances). Tenedos is rocky and barren, has a large stone fortress built on it. Mytelene rocky and barren also; if it used to be in the same state Orpheus must have been a dab hand to find beasts to charm with his lyre. Anchored off Smyrna at 11 p.m....."

In Smyrna Galton bought two pistols and a rifle barrel and he was "as happy as possible" with his purchase. On August 28 he walked out to the Aqueduct, practising shooting with his pistol and sketching the Aqueduct.

"Caught a splendid locust which I keep for Delly; got to the Aqueduct at last having had previously to walk up the middle of the stream on natural stepping stones for about 200 yards and trespassing in orchards innumerable. The Aqueduct is a very large one, I should guess 500 yards and only from 3 to 5 feet wide. I walked on the top from one side to the other, a feat which my valet de place had told me had been once accomplished at great peril by an adventurous Englishman....."

"Aug. 29. Set off on board a French man of war steamer *Dante* for Syra; very large and roomy, very slow sailer. Eat a fearfully large breakfast of meat and fruits, drowsiness and some symptoms of multigrub supervened. Passed Scio, rocky and bare. Eat an enormous dinner, terrible cholera, stomach-ache and nausea all night."

On Sept. 3 we find Galton in the Quarantine House at Syra, of which he provides a sketch. Here on the 6th he records a dream of ill omen to a friend, Miss Hawke, and adds, "I can't help fancying this true." A note is added at a later date, "which signified nothing." Most persons record such dreams after the event and only when they come off. In this Quarantine House Galton stayed 10 days, then he passed to Athens with a brief visit and so to quarantine at Trieste.

He has himself in his *Memories* (p. 55) told us how he escaped three or four days' quarantine at Trieste by the quaint process of making *Spoglio*. The assumption made is that an apparently healthy human body passed through water is not as dangerous as the clothes it carries. Accordingly a few days before termination of the usual quarantine there is a medical inspection and the doctor directs those who satisfy him, and wish to "make *Spoglio*," to a covered quay; opposite to this, at a distance of about 20 feet, is a second quay, the two being separated by a strip of water four or five feet deep. On the second quay are vendors of clothes.

"A bargain had to be made with one of the old-clothes men by shouting across the water. I," writes Galton, "was to leave everything I had on me, excepting coin or other metal, and papers which were about to be fumigated, in exchange for the offered clothes. When the bargain was concluded, I stripped, plunged in, and emerged on the opposite quay stark naked, to be newly clothed and receive freedom. The clothesman got my old things in due time—that was his affair. The new clothes were thin, and the trousers were made of a sort of calico and deficient in the fashionable cut of my old ones; but as it was not then late in the year the thinness mattered little in those latitudes, and I did not care about the rest."

From Trieste Galton returned by way of Venice, Milan, Geneva and Boulogne. We have no record of the home-coming beyond what Galton himself has told us:

"My dear kind father took my escapade humorously. He was pleased with it rather than otherwise, for I had much to tell and had obviously gained a great deal of experience." *Memories*, p. 57.

But the seed had been sown; the first attack had run its triumphant course, and the *Wanderlust* would manifest its power year after year in Galton's life. He himself says:

"This little expedition proved an important factor in moulding my after-life. It vastly widened my views of humanity and civilisation, and it confirmed aspirations for travel which were afterwards indulged."