

I arrived in Manchester last Monday evening and spent Tuesday and Wednesday at Hollinwood and Vickers, mostly on the shell contract. I arranged terms with Vickers and arranged for the machinery. Then Whittaker did not like to settle it without the other Directors, and in fact did not want to do the business at all. I had to wire Vickers that the business was off and I felt thoroughly disgusted and nearly made up my mind to drop it. I however thought it was so important that it was worth fighting for and so went up to London to persuade the other directors. In the meantime Vickers wrote saying how disappointed they were and asking to see what we could do. On my way to Town I went to Newark and spent Wednesday evening with Vincent. . . . I went to Town by an early train on Thursday and at once saw Tait and Henderson and partly converted them. I then saw the agents for the American machinery that would be wanted and then wrote out the whole scheme for Tait for the meeting on Friday. . . . We had our meeting the next day and everybody agreed to all I wanted, which was wonderful after what had gone before. I immediately wired Vickers and got cables sent off to the States for the machinery. . . . I expect to be at Hollinwood to-morrow and Tuesday and to come to Scotland on Tuesday evening. I may however be telegraphed for to the War Office at any moment as we have made an offer to them for a large quantity of shell, and I am sure to have to see them several times about it.

This letter shows clearly, I think, how it was entirely Basti's push and determination that enabled the works to take up munitions, and what a fight he had to get his own way. And I always feel that he took the right course.

It struck me as so extraordinary that he got no recognition for all this work he did for the country during the war, altogether apart from the benefits his works conferred in peace time. But laurels have a

curious habit of alighting on the wrong heads—generally lawyers or politicians.

The company commenced the manufacture of munitions following the negotiations the Doctor had with Messrs. Vickers Limited, Sheffield, in the early part of the year 1915, the first order being for the machining of 50,000 18-pounder H.E. shells. This order was successfully completed and further contracts were arranged directly with the Ministry of Munitions for the supply of shell, etc.

When my husband settled that we were to go on and make munitions and that we should have to employ girls, we decided to ask Miss Forbes (in whose home our boys had lived whilst going through Yarrow's works), if she would come and be our lady supervisor at the works. I remember so well she and I going to the Labour Exchange in Hollinwood and choosing together our first twelve girls. She has been with us ever since and has been most helpful to Ferranti's in this capacity. It made it very interesting for me having her there, and I was able to help her in many ways.

My husband actively supervised and controlled the work in connection with the manufacture of munitions, and was assisted by Messrs. Donner, Parsons, Aitkenhead, Tucker, and Mr. V. Z. de Ferranti (following his return from active service with H.M. Forces in Gallipoli, etc.). Mr. J. W. Davies also assisted in the production of fuzes and gaines.

The final settlement of all munition contracts was agreed with the Ministry of Munitions in November 1920, and the company reverted to its post-war production of meters, transformers, instruments, etc.

Early in January 1919 Basti showed Vincent all special work in progress at Hollinwood, as it was decided that Vincent should take over the running of

the transformer shop, work which he carried on until his father's death.

This year, 1919, started very sadly for us. Our second great loss was the death of Yolanda during the Christmas holidays, at the age of seventeen, of acute appendicitis. She was taken ill at the Waldorf Hotel, where she was staying with a school friend on her way to visit my mother at Crowborough. She was operated on at the hotel on January 10th, and died on the 16th. She had always been the strongest of our girls and the cleverest, and was at St. Leonard's School, St. Andrews. Miss Bentinck Smith went to see her three days after the operation and was terribly sorry as she thought very highly of Yolanda.

Poor Basti, who was ill at the time with his own trouble (prostate gland), was so completely overcome that he could do nothing for some days. My brother John and friends kindly helped me all they could. Yolanda was buried on January 18th at Hampstead Cemetery.

In March we started to wire Baslow Hall for electric light and power. We thought of using the old Baslow Mill to supply our power, but came to the conclusion it would cost more than putting in a heavy-oil engine and batteries, as the dam was out of repair.

Early in August of this year my father was taken ill with cerebral haemorrhage and we went to see him on August 7th. He could not speak and was much affected at seeing Basti: he was so fond of him and so interested in all he was doing. Each time Basti went to see him during his long illness he used to talk about all he was working on and this seemed to calm him and do him good.

September 5, 1919, was a great day with us. All of the family who were at home at the time gathered in

the engine-house to see the dynamo start up, slowly at first—"puff—puff—puff"—and then she was off. It was about 8 p.m. and we had left all the switches on in the house. It was beautiful to see the Hall suddenly all glowing with light. At last we had light—which was the commencement of our all-electric home.

Vincent and Dorothy Wilson were married on September 25th at the Church of Our Lady of Victoria, Kensington, by Father Riordan, who had been with Vincent as padre during the war.

They drove away (or tried to) in a little two-seater car they were going touring in. Unfortunately water had got into the petrol with the result that the car spat and spat and would not go. My daughter-in-law's account of the honeymoon was that she spent it pushing the car uphill and running after it downhill.

It is necessary to give some account of the electrification of Baslow Hall, for the problem connected with it occupied most of my husband's spare time during our first years there. After the war domestic servants were still very difficult to get, and we came to the conclusion that it was hopeless to try and carry on our home without the aid of electricity, which at that time was not available. Basti therefore started on the very big task of making Baslow Hall absolutely modern. This meant putting down our own plant and a large enough one to do everything in the house by electricity. It is astonishing how much thought Basti devoted to this. He had decided to heat the house by means of radiators from the ceiling. Then there was the running of the farm by electricity to be considered. It all meant constant labour for him after his day's work was over. As soon as he returned from a long day at the works he would devote himself to the various

electrical problems connected with the home. Everything was rather complicated because he was doing so much experimental work with this plant. I was, therefore, thankful for his sake when, in 1923, we were able to give up our private plant and take current from the Notts and Derbyshire Electricity Company.

From 1921 to 1925 various improvements and additions were made to the plant. Nobody but myself and members of the family living at Baslow Hall during those years can realize how these improvements temporarily disorganized the domestic routine. The continual alterations made it necessary to plan the cooking a day ahead. Frequently the current would have to be cut off unexpectedly, and we would have to sit in our fur coats for two or three hours whilst Basti patiently worked away putting things right. However, our knowledge of the keen interest he took in all he was doing, if it did not keep us warm, helped us to be patient. And I always feel that anything we suffered was amply justified, for he was one of the first to bring comfort into the home by means of electricity. And when, later on, we got on to the Notts and Derby supply, I felt so grateful to my husband for having fitted every possible comfort and convenience in the house and reduced the need for domestic service to a minimum.

By degrees automatic engine-starting gear was fitted, extensions to the lighting of the outside buildings added, more cooking gear installed, and electric fires connected in all the rooms.

In the cattle-house an electric motor of 5 h.p. was installed for chaff-cutting and pulping. My husband also carried out experiments in hay drying, using the total amount of energy available with the plant for this purpose.

The Crossley engine was taken out in August 1925 and replaced by a Ruston Hornsby fuel-oil engine of 18 h.p. This drove an Electromotors dynamo (belt drive) and used fuel oil.

When running on our own plant, a 1,000-gallon water tank was installed in the cellar and energy stored in the form of hot water. We found this arrangement most satisfactory and very economical. Basti was always convinced that, to ensure cheap electricity, it must be stored in some form and the only way, at that time, to store it was in the form of hot water. The day, he thought, would come when every house would have a large boiler that could be heated by electricity at night. It would be to the interest of the Central Supply authorities to encourage this idea, as it would help them to run their plant so much more economically.

Panel heating with thermostatically operated pumps and valves to control the house temperature automatically was fitted throughout.

In the interests of economy a regenerative exhaust unit was fitted on the engine exhausts and this otherwise waste heat was utilized for heating up the garage and boosting up the hot water storage system.

The general arrangement was such that the generating plant was always operating on full load at its highest efficiency. (I am not an engineer, but I have my doubts whether this is happening in any of the large generating plants of the day.) The energy which was not needed for cooking, lighting, radiant heating, chaff-cutting, dairy work, etc., being switched on to a series of immersion heaters of different capacities according to general load fluctuations.

Additional plant had been installed in the dairy, milk separator, churn, etc. I learnt to operate these

machines myself, making the butter and doing all the dairy work. An electric laundry was also installed with washer, ironer, electric clothes dryer and airer. These my youngest daughter and I used, running the laundry ourselves. It was not that we had to do the work, but we enjoyed doing it and we wanted to be proficient in order to show others how to use the apparatus.

Points were also wired for electric lawn mower, lighting of tennis courts, pig-food boiler in cattle-house, incubators, brooders, extensions to outside lighting, etc.

At that time the only electrical brooder we could get was an American one. It gave a great deal of trouble and electrocuted a number of chickens. Also its ventilation was poor. Unfortunately my husband did not live to see the use we made of his radiator, which we have found has made the best brooder in the world. We use it in our chicken-houses and have found it most successful. It is indeed a pity he did not live to see this, as he was keenly interested in this branch of farming and had taken so much trouble at Baslow in trying to find a satisfactory electrical incubator and brooder but did not himself experiment in that direction. Little did he think that his radiator would ever have been brought to such a useful purpose.

In January 1929 the grid system feeders extended to Baslow and my husband decided to change the whole of the plant on to it. Mr. Phillips, of the Derbyshire and Nottinghamshire Electric Supply Company spent many hours discussing prices with my husband. Mr. Phillips stands out very vividly in my mind in this connection. He was most helpful and kind and arranged all matters satisfactorily with Basti. It was the greatest relief to me when we were joined up to the grid, not so much for the comforts of electricity which we had

enjoyed for some time but for the knowledge that my husband would in future have a much easier time and get a little rest of an evening instead of always being in and out looking after our plant. I am afraid, considering the state of his health, he had done far too much of this.

Practically every labour-saving or other device which contributed to comfort was fitted at Baslow, including wireless to all rooms, floor polishers, vacuum cleaners, bed warmers and airers, ultra-violet ray apparatus, every example of electric cookers and heaters, electric vacuum clothes brush, complete electric dairy and laundry, refrigerators, etc.

A new system of heating was also about to be tried—hot air being blown at a low pressure into the rooms as required, the temperature being automatically controlled by thermostats.

By reversing the fan on the system it was intended to use the hot-air outlets in points for vacuum cleaning in each room. A small system on these lines was successfully installed at my cottage at Deganwy, which we tested on linen cupboard and cloak-room in this manner most satisfactorily.

On February 20, 1920, my husband noted in his diary:

Bought Cole car. Drove it through Trafalgar Square.

He and I stayed that night at the Great Central Hotel, London. The next day we took our first ride in her to Stamford and then home to Baslow next day. I felt a bit nervous as she was a large and powerful car, but she ran beautifully. This was the commencement of Basti's love for high-speed cars.

On March 7th the entry in his diary is interesting. He wrote:

Motored to Baslow from London in 6 hours. Running time 5 hrs. 164 miles = 33 miles p. hour. 545 miles = 13.6 M.P.G. Best run = 72 miles in 2 hrs.

His mind at this time was very much on fast cars with economical running, and he kept all statistics of the Cole's running.

Basti was very anxious later on that the Rolls-Royce people should improve their cars in the way of economical running, and he spent many hours with officials at their Derby works, also at their place in Conduit Street. He felt that the Rolls-Royce authorities could learn a great deal from his experience. He got very annoyed with them at times for being so satisfied with themselves. However, he did, I believe, persuade them to take a few of his ideas. It was their lack of interest in any suggestions of a man like himself, outside their own firm, that delayed him so long in buying a Rolls-Royce. In the end, in 1928, he bought me a 40-50 h.p. Rolls-Royce. For himself he bought an Alfa-Romeo.

In this year, 1920, Denis went to a preparatory school at Seaford, and Yvonne to the convent there.

I had been very anxious for some time to go over to France and Belgium to see the battlefields and the country near Ypres, where my son Basil had spent most of his time. Now I had the children safely settled at school Basti promised to arrange a trip for me. I begged him to come too, but he said it was out of the question; he felt it was quite impossible to leave the works then, but was very keen that I should go. We had hoped that my sister-in-law Juliet would accompany me, and all arrangements had been made for the two of us. Unfortunately there had been some difficulty about her passport, and at the last moment she was unable to get it in time. I therefore had to go alone. Fortunately, having so many Belgian friends, both

COURTSHIP, MARRIAGE, AND LATER YEARS

soldiers and refugees, in different parts of Belgium, I was well looked after and met at the various places I wished to visit.

I shall never forget the terrible chaos in Belgium. It seemed to me that things could never be built up again—everywhere piles of bricks. Since then I have been over once or twice, and it is marvellous to see all again in order.

In a letter Basti wrote to me on May 18, 1920, while I was at Bruges, he said:

When you get this you will be at Bruges. Do you remember our coffee and rolls there after our walk from Ostend? I think that seemed the nicest meal I ever had. I suppose it was the circumstances and the company.

and in a later letter he wrote:

I think the best holiday I ever had was that ten days at Ostend when you were thirteen and I was eighteen. Just fancy; it was nearly forty years ago that we sat together on the Sand Dunes and you told me about the "risen people" who lived in Fitzjohn's Avenue. It was fortunate that we could not see into the future and see that our greatest sorrow was to be the loss of our dear Basil killed in the War so near to where we were then. I think really that we thought of nothing in particular except that we were quite happy; at any rate I was. It was near there at Mariakirke when I carried you, a little dripping seal, out of the water when you thought you were drowning. And do you remember when you were not allowed to paddle before breakfast so I took you on my back in the water? I am sure you will think what nonsense I am writing because you are so matter of fact; but these things mean so much to me because I suppose I am not.

He then referred to the trip he was planning for us to take with Vincent and Dorothy to the Isle of Wight:

I am getting Vincent to rearrange our motor trip, to take advantage of the extra three days we have, due to the Works being closed *after* Whit-week for Oldham holidays. Possibly we may be able to go through Dawlish. I wonder if you would like this? We propose to go straight through to the Isle of Wight on Tuesday the first day, crossing over from Southsea by the five o'clock boat. We would then leave the island on the Thursday and stay somewhere in the New Forest or at any rate go through it. It is a pity that we have to arrange rooms beforehand as it would be nicer to go as we felt inclined at the time, but I am afraid this would be too risky. You said in one of your letters that you liked moving on instead of staying at any one place so that our motor tour ought to suit you.

Good-bye now, dearest, I am so looking forward to Monday.

Ever your very loving

BASTI.

On my return Basti met me in London. I think he had missed me a good deal (it was the first time I had left him for so long—three weeks). Dorothy afterwards told me she had never known him drive so fast as he did when he brought them from Manchester to London.

We had a most enjoyable holiday, motoring (in the Cole car) through Hindhead to Swanage via the New Forest and back by Littlehampton through Seaford to see Denis and Yvonne, and then via Stamford to Baslow.

On July 16, 1920, Mr. and Mrs. Merz wanted us to stay with them at Grasmere. We motored up through Keswick and spent some very enjoyable days with them. On Monday the 19th we all went on a delightful expedition. We started out in cars and then climbed "Pike-o-Bliste" (2,300 feet). It was the only time we ever climbed anywhere in that district and we found

it much more enjoyable than Snowdon. My husband was always happy to be with Mr. Merz; they had so much in common to talk about, and I always enjoyed what I called "listening in" to their conversations.

On our return to Manchester on July 20th we were delighted to find that Dorothy's first baby, a girl, had arrived. We went straight to Knott Hill, where she and Vincent were living, and found both mother and baby flourishing. She was called Yolanda, after her aunt, who had died so young.

On November 20, 1920, my father died after his long illness, and we went to Rotherfield, Sussex, to attend the funeral.

Basti felt that it was the closing of a long chapter in his life. It was Francis Ince who had helped him climb the first rungs of the ladder in his wonderful career. They had shared a great many adventures together, taken part in a great many discussions and met with not a few differences of opinion. But through it all they had continued the closest of friends. Their characters presented a vivid contrast. My father, the practical man of business, by temperament excitable, impetuous, and impatient of quick results: my husband always quiet, collected, calm, living for the most part in a world of dreams—but dreams which he was able to bring to earth and make practical for the benefit of mankind. Yet each was able to appreciate the gifts and qualities of the other.

In my husband's diary there is an entry under January 4, 1921:

Vincent took over Transformer Department from Monday January 3rd.

In March 1921 Basti was busy with a new invention—an arrangement to stop punctures in tyres—we

called them "Nail catchers." In those days, when the tyres were much smaller, this invention of his was most efficient. On the first trial we went 205,000 miles without a puncture. Before fitting this device we were constantly troubled. Later he gave up this invention. Tyres became larger and better made, and with the improvements of the roads it was not necessary. But at that time he fitted a great many cars with it.

We were thinking, in March 1922, that we would try and take a holiday abroad some time in this month, as we were both unpleasantly reminded that Derbyshire is damp, and I thought for the sake of his health he should try and get away to the sunshine. We therefore decided this year to combine business with pleasure by using the nail catchers on our car and at the same time trying to do business with these in France and Belgium.

We started off for the South of England, taking Denis and Yvonne with us in the Cole car. We were to visit Sir Alfred Yarrow at Hindhead on our way to the coast. After Basti had seen Sir Alfred we continued our journey to Dover. Unfortunately we had trouble with the car, and had to stop at Farnham. We found the cylinder had cracked. This was successfully welded, and after two days' delay we once more started on our trip.

This being our first motor-tour abroad we were all very thrilled. We took no chauffeur, and Basti did everything himself. The children were greatly interested in seeing the car slung up in the air and deposited on the boat.

We got to Abbeville the first day and stayed at the Hotel Tête de Bœuf. It was our first and last stay there. It was a very old-fashioned hotel with a large courtyard. The latter went some way back from the

street, and must have housed horses and cattle for centuries. We had quite comfortable beds in primitive, but clean rooms. At about 4 a.m. Basti wakened me saying that there appeared to be a terrible smell. He got up, put his head out of the window, quickly pulled it in again, and said: "It comes from here, what can it be?" He went into the children's room, which led into ours, and found the same volume and degree of smell there. I said, "Shut up all the windows," which he did, but he couldn't rest. It seemed to come in at the doors, up the chimney, and between the floorboards. He at last went down in his pyjamas and found a porter. "What on earth is it?" he asked. The porter assured Basti it was quite all right. They were only carting away the manure from the stable under our rooms, an operation that had to be done once a year. It seemed rather strange that we should have hit upon the one night out of the three hundred and sixty-five when this happened. Abbeville is certainly a very old town with some very old customs.

We always avoided Abbeville on future occasions. Our next stop was Paris. As we were doing our trip as economically as possible we did not stay at an hotel, but at a pension up in Arrondissement XIV, to be near our French cousins, one of whom, Robert, was joining us there and accompanying us to the South of France as he was to act as agent for selling the nail catchers in France. We none of us thought much of the pension, and were glad to get Robert on board with us and move on to Lyons.

We had some trying times on that tour, but also some very amusing ones. Denis, Yvonne, and I had to sit in the back of the car with all the luggage. In those days we had no such thing as a luggage carrier.

It was at the time when the ridiculous "Beaver"

craze was at its height, and the excitement and quarrelling between Denis and Yvonne as to who had shouted "Beaver" first when they saw a bearded man was quite alarming. I was every minute expecting one of them to fall out of the car. Basti occasionally had to appear really cross with them.

Another trouble we had was with Basti's "Trilby" hat. He wore a cap, but would bring a "Trilby" with him for occasions of ceremony. He had bought a new one and had put it carefully in a brown-paper bag. This he gave into my hands to look after, and what with the two children and the Beavers and having to sit tight lest anything should fall out, I sometimes made a mistake and sat tight on the *hat*! This, when discovered, caused a dreadful commotion. *His hat* was the one and only thing that he fussed over, and I did try to remember it, but with the best intentions under some circumstances one does the wrong thing.

Our cousin Robert had such very long legs, too. He had to sit in front with Basti. Our car did not behave well, and it seemed to me that nearly every other day it needed repairs. Basti, I believe, thoroughly enjoyed these repairs. He spent hours in garages *en route*, and found the French mechanics so good—far better, he used to say, than in any of our English workshops.

One place we stopped at—Sisteron in the Alps—I well remember. We had come from Grenoble, and it had been a very mountainous ride. It was a road where one continually met hairpin bends, and the car was such a long one that when the bonnet was turning the corner at a bend it felt as if we at the back must go over the edge. I was most thankful when we arrived at Sisteron. It was such a beautiful evening there, and although eight o'clock, and in March, we had supper outside.

I am afraid that Denis, who was always a highly strung, nervy child, had felt the strain of the mountain drive. In the night we heard a fearful thud and rushed into his room to find he had fallen out of bed on to the hard tiled floor. Robert was searching for him under a load of blankets and sheets. Fortunately, when he fell he took plenty of bedding with him. When at last we got him disentangled, he said: "Oh, I thought I was at the bottom of a precipice!"

The next day we arrived at Cap Ferrat and stayed at the Parc Hotel. It was very delightful at last to get a few days rest. Basti and Robert immediately started on the nail catcher business. I remember they fitted them on a Daimler at Nice, and also on other cars. Our own had proved a great success during the trip. After a week at Cap Ferrat they left me with the children and went on to Turin in Italy.

During their absence the children and I had an exciting adventure. We decided one day to go for a long walk, and after following a path some distance inland to the left of Cap Ferrat we came out on to the coast. We found a wooden platform running along the edge of the cliffs. It looked as if made for a lovers' walk, and further on it ran between the high rocks and the sea.

We met a man near this walk and asked in our best French if it were safe to go along it. We understood him to say, "*Oui, certainement.*" So we continued on a voyage of discovery. As we proceeded further round the coast, which jutted out into the sea, the path narrowed and the cliff became higher. The wind was getting up, and the sea became decidedly rough, almost lapping this narrow platform. Then we began to find small gaps in the woodwork which we had to jump over. By this time I was feeling rather nervous. It seemed to

me that the waves, which were already breaking right across the platform, might wash us off into the sea. We did not know what to do. We dared not go back, as the sea had now risen so high and become so rough that parts of the platform where we had already passed were now impassable. The children were marvellous; they showed no fear. We hoped if we went a little further on we should find that the land turned in again; the rocks above might not be so steep, in which case we could climb up. One gap in the platform was so large, and I had at last got into such a state of fright, that I clung to the rocks and said that I dared not cross over with the huge waves dashing up as I should fall in. Denis, calm and collected, said: "You *must* do it. If only you get over this gap, I'm certain to find a way up round the bend of this land." He got over first, held my hands and pulled me over, and then got Yvonne over. She appeared perfectly calm, though she said afterwards she was in a terrible fright. A little further on we found some grass-covered land that was not too steep. We managed to climb up here and eventually discovered a steep path that led back to Cap Ferrat.

From Cap Ferrat we motored to Paris, where we left Robert and started off for Belgium via Rheims. We found at Rheims that the springs of the car were wearing thin, so we had to go slowly. On arrival at Namur, Basti discovered a very good garage and we had all the springs renewed. From Namur we went on to Brussels and had nail catchers fitted on to several cars. We then returned via Courtrai and Dunkerque to Calais. It had been a very happy trip; it was such a treat to have Basti with us and driving us, for when in England he was continually travelling and having to be away from us.

He was not too well at this time, and I had very much wanted him to see a French doctor when in Paris who treated people electrically for the trouble he was suffering from, but I could never get him to go and see this doctor.

In November and December 1923 he did a great deal of speaking at political meetings for Lord Hartington, who was standing for Derbyshire. Basti's appearance on the platform was always welcome, and I remember at one meeting a voter shouting: "Why don't *you* stand? we'd all vote for *you*!" He was so anxious that Lord Hartington should be returned to Parliament that he gave up valuable time to help get him elected.

In January 1924 he gave me my first car—a little Standard 8 h.p., and taught me to drive. The thing he told me always to remember, and which was of the greatest importance was, how to stop quickly: I was to put both feet down hard. If he mastered the art of fast driving, I certainly mastered the art of quick stopping!

At the end of this month of January 1924 he was ill in bed for a week. Our local doctor again advised him to see a specialist as he felt sure an operation should be performed, but to this he would not consent. I felt it was important that he should again get away as soon as possible to the South. I therefore persuaded him to take a motor trip to Italy. This was easier because he had some business to do in Paris. He was always so much happier on holiday when he had an object in view beyond mere travelling. We arrived in Paris safely, where we met his agent, Mr. Testard. We then went on to Lugano. This trip, as usual, was fitted in during the Whitsuntide holidays, so we were able to take Denis and Yvonne with us. We always felt

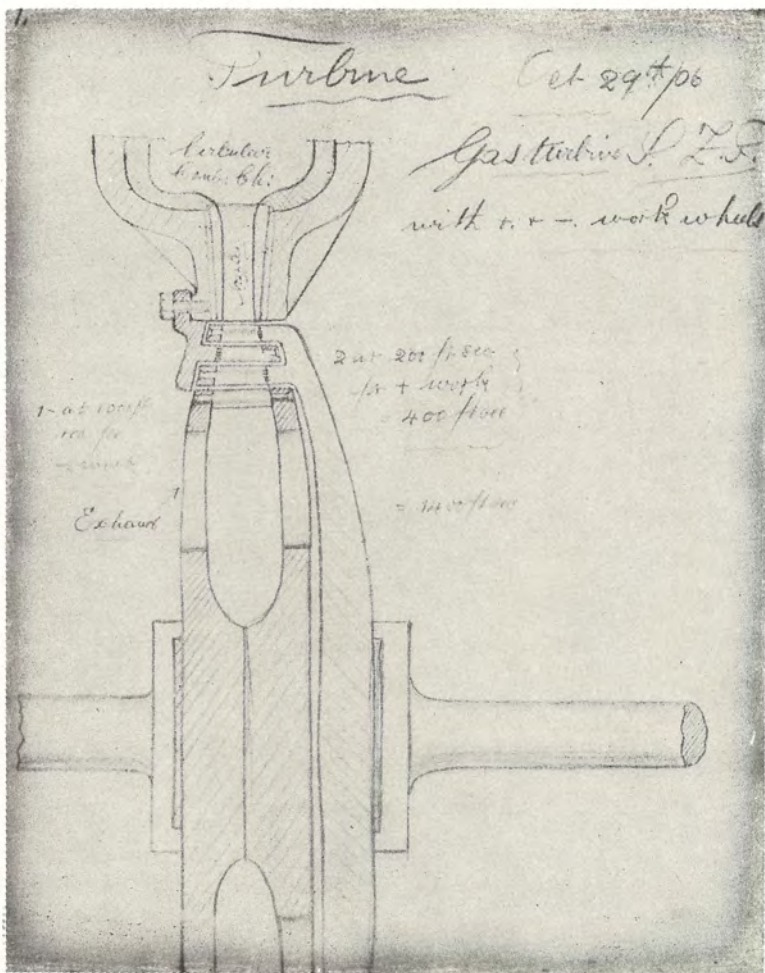
it was a good education for them to travel abroad with us as much as possible. We put the car on the train at Lugano and went to Chiasso. Here, unfortunately, the clutch lever broke and had to be welded, which delayed us. However, we reached Milan the same night but had difficulty in finding suitable quarters. Eventually Basti found a small hotel in which we were able to get two small rooms with two beds in each. So Yvonne and I were able to share a room and Denis and his father the other.

We left the next day for Genoa and motored from there along the coast to Arenzano—a nice little fishing village, and Basti and I enjoyed watching the peasants making their boats by hand on the beach. We only stayed at Arenzano just under a week, as the hotel was not heated and Basti could not keep warm. We then continued along the Italian Riviera to Bordighera, where we spent a very pleasant week in glorious sunshine. From there we went on to the French Riviera and stayed at Agay and Bormes—both beautiful spots. We returned via Avignon, where it was raining hard, Valence, Mâcon, Beaune, and Dijon. We lunched at Mâcon, and I remember how Basti enjoyed the wine there, and remarked how different it was to the Mâcon we had in England. We went on to Paris, and my husband went to Vitrai to see 1,000,000 volts at work, and also to, I think, the Sifane works at Vincennes.

On our return journey we stopped, as we always did in passing, at the Wimereux Cemetery to visit the grave of our dear son Basil.

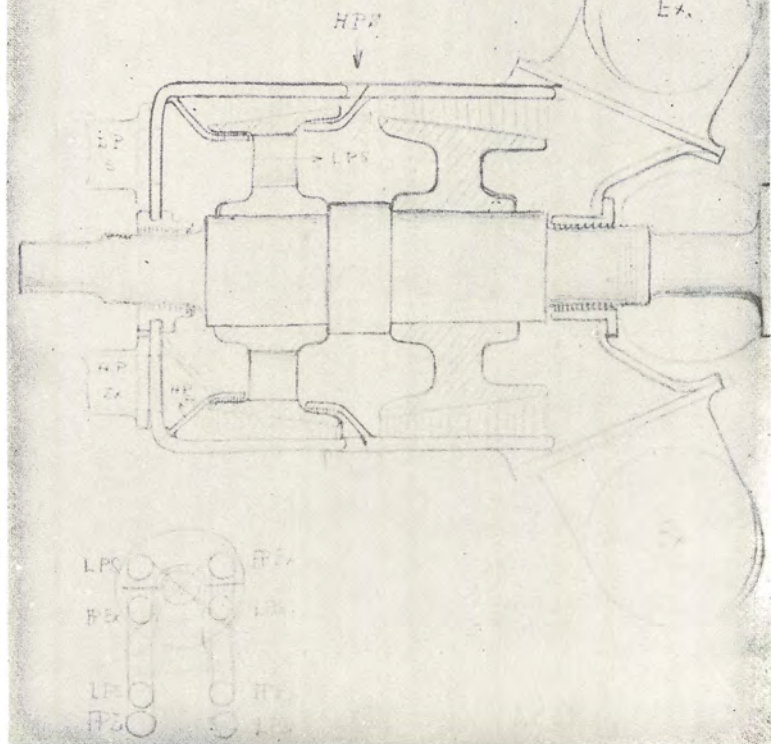
On April 24, 1924, our thirty-sixth wedding anniversary, Basti was presented with the Faraday Medal by the Institution of Electrical Engineers. I was at the presentation.

About this time he was experimenting with wireless,



GAS TURBINE
(Facsimile Sketch)

Turbines. June 28/08
Steam re superheating. P.L.O.



RE-SUPERHEATING TURBINE
(Facsimile Sketch)

and he used often to bring Mr. Hall home with him in the evening to Baslow: together they produced some marvellous noises. He entered in his diary for May 3rd:

Perfect reception from Radio-Paris.

which I know pleased him immensely.

I remember very well in the June of this year the meeting at Chester of the Incorporated Municipal Electrical Association. Basti and I were always invited to these meetings as guests, and we were, I believe, the only guests who had attended them from their commencement (which took place in June 1896 in London), the President of the Association at that time being Mr. Arthur Wright, Chief Engineer and Manager of the Brighton Electricity Undertaking.

I remember I came up from Sidmouth to attend the I.M.E.A. meeting at Chelsea in 1924. We were staying at Sidmouth as Yvonne was to have her tonsils removed and Denis was recovering from his *first* (but not last) motor-bike accident. He had run into a sheep at Chatsworth Park, killed the sheep, and injured his knee. I got a good trained hospital nurse to take my place; otherwise I could not have left them.

Chester was a very enjoyable meeting as my friend Mrs. Christie, who always looked after me so well at these meetings, was with me. It was at the dance here that she and I first met Mr. and Mrs. Hirst, of Brook Hirst, Ltd., Chester. I remember asking Basti, after he had introduced them to us, who they were, and he said: "He is Brook Hirst, the switchgear firm, who do very good work; in fact, an ideal small firm. I have met him often." I flattered myself that I knew, by name at least, most electrical firms, and yet had

understand and they will do the right thing." He was quite right. It took the Americans, I believe, nearly two years to settle, but they did it, and paid up handsomely. Unfortunately much of the money was invested for the children in Samuel Insull's company and a large part of it has been lost.

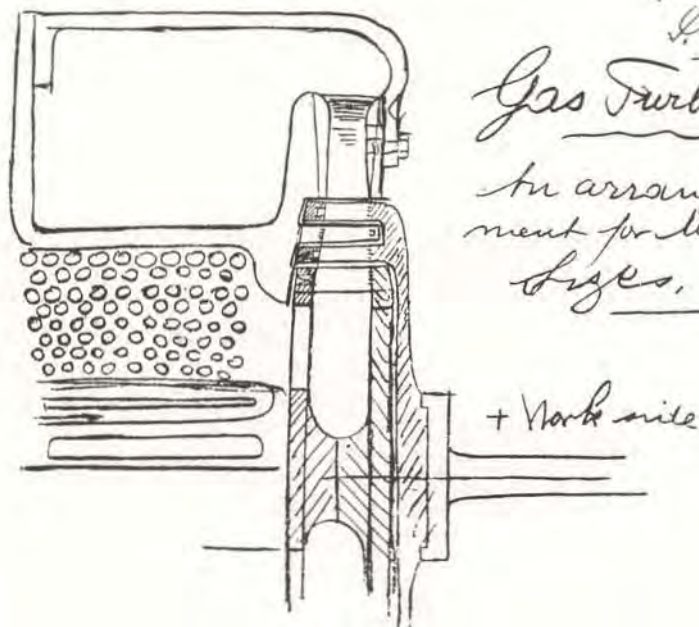
In January and February 1925 Basti was experimenting a good deal at home on wireless, and at the same time looking after the alterations to our electrical installation at Baslow Hall.

In April we took our third motor trip abroad. Once again we had a Cole car. Mr. Kolle came with us, and as it was nearing Easter holidays, we were able once again to take Denis and Yvonne. We went to St. Jean de Luz via Paris and Limoges. We spent the Easter week in St. Jean. Unfortunately we had very bad weather and much rain. From there we motored to Pau and stayed a few days. From Pau, Basti, Denis, and Mr. Kolle went to see the Lermes power house, 5,000 h.p., and afterwards to Tarbes insulation factory. Yvonne and I spent the day at Lourdes and were lucky in seeing a most impressive sight—a pilgrimage of many hundreds of people. Mr. Kolle, who had joined us in the afternoon (as the Cole had broken down—the springs this time—owing to the dreadful roads), was very much impressed with this ceremony. Mr. Kolle took Yvonne and me back to Pau by train, where later Basti and Denis arrived in the Cole, which had been repaired. We left Pau on our journey home on April 18th, going via Bordeaux, Angoulême, Tours, and Rouen. At the last two places we met Lord and Lady Oxford, who were also motoring and we all happened to return on the same boat to Dover. It was a swift but most enjoyable trip. As Mr. Kolle remarked: "If only the Doctor had gone a little bit

Pirvine Nov 2nd /06.

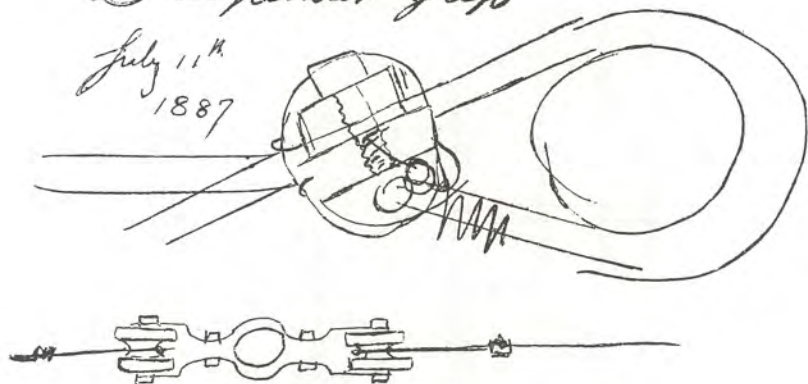
V. L. F.

Gas Turbine
An arrange-
ment for medium
sizes.

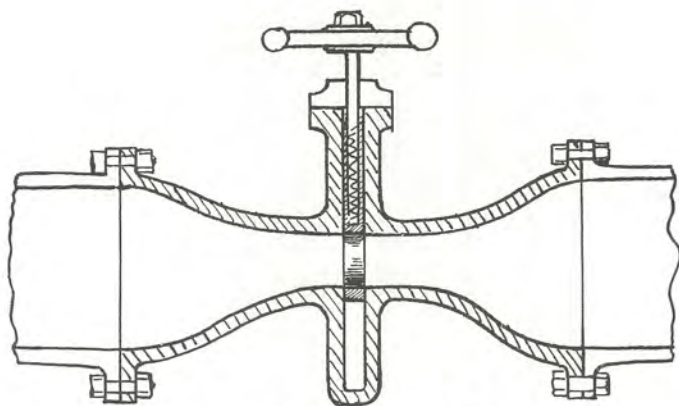


GAS TURBINE, 1906
(Facsimile Sketch)

Suspender grip
July 11th
1887



SUSPENSION GRIP FOR CABLES, 1887
(Facsimile Sketch)



FERRANTI-HOPKINSON STEAM VALVE

slower many repairs *en route* would not have been needed." Mr. Kolle was a most useful companion as he attended to all hotel arrangements and bill-paying, which enabled Basti to give his whole attention to the car.

In October Basti bought an Alfa-Romeo 22-h.p. car with balloon tyres. He wanted something faster than the Cole to take him backwards and forwards to the works. He used this car up to the last day he was at the works. I was always nervous about him driving home alone across the moors in the winter; sometimes it would be thick fog and the roads were often slippery with snow or ice. But he loved driving and was an excellent driver. An interesting note in his diary at this time states:

Brought back Raspberry (his most trusted mechanic) in Alfa-Romeo 59 minutes from Works to Baslow Hall gates.

The distance of this run was 42 miles. Raspberry's hair was, I have no doubt, standing on end by the time they reached Baslow.

In February 1926 Denis started to go through the shops at Ferranti's. It is, I believe, rather unusual to put a son into one's own workshops. But I strongly advised this because I was so anxious that he should be under his father and learn as much as possible of our methods and manufactures. I am so thankful now to think that this was done. It made all the difference, since at his father's death he knew all that there was to know of the manufacture of meters in our own works, and was able without any delay to become head of the meter department.

During the General Strike of 1926 Basti sent Yvonne and myself over to Deganwy to stay at the

attend at the Society's headquarters (Burlington House) for admission "on or before the fourth meeting from the day of his election, or such further time as the Society or Council might grant." He was elected a Fellow on May 12, 1927.

Naturally I hoped that he would have to wear some even more splendid robes than his Doctor's gown and hood for the occasion, but—to his great relief and my disappointment—he didn't, the ceremony of admission to this, the greatest and most exclusive of learned societies in Great Britain, consisting simply in shaking hands with the President and signing the Charter Book.

We spent Christmas in 1928 at Baslow Hall. My husband was not very well and said he would rather stay at home and go away in March abroad again when he could get some warmth. It was decided that after Christmas, as Dorothy and Vincent wished to take their two little girls for the first time to Celerina to the Swiss sports, I should go with them and help with the children. Their two younger children were to stay at Baslow Hall with the nurse under the care of Basti and Yvonne. We stayed two weeks and I thoroughly enjoyed being with the children on their first winter sports holiday.

The first piece of news I received on arriving in London was that Ferranti's had got an order for the large grid transformers. On arrival at Baslow the second piece of news was not so good. It appeared that baby Sebastian, aged about one and a half years, had fallen from the top of the steep back staircase to the bottom. The commotion had been tremendous, and the doctor was sent for at once. Fortunately he had been so much bundled up with clothes ready for an outing in his perambulator that he was not hurt at all.

This year Basti was invited to deliver the Faraday Lecture before the Institution of Electrical Engineers. He gave his lecture on March 1st in London and, later in the year, at various other centres. The subject he chose was, "Electricity in the Service of Man."

After dealing with the rapid progress of electricity and its application to commercial uses, he dealt in more detail with its practical domestic utility:

Consider the work involved in connection with a coal fire. We fetch the coals; we lay and light the fire; then we have to persuade it to burn, particularly if, as we generally find, we have not laid it well; then we have to feed it to keep it burning; and finally, when the fire goes out, we have to clean up all the dirt which the fire has created, not only in and around the fire itself, but all over the room. This is really a considerable amount of work of the most irksome kind. To people who are always doing it, it may perhaps mean very little, but to anyone who is used to the comforts of an electric house it seems appalling. My point is that electric heating and heating by other means are not comparable. People generally are willing to pay for convenience and the saving of labour, and these, except by the use of electricity, are most difficult to procure at any price.

He went on to deplore the apathy with which domestic electrical devices are too often regarded:

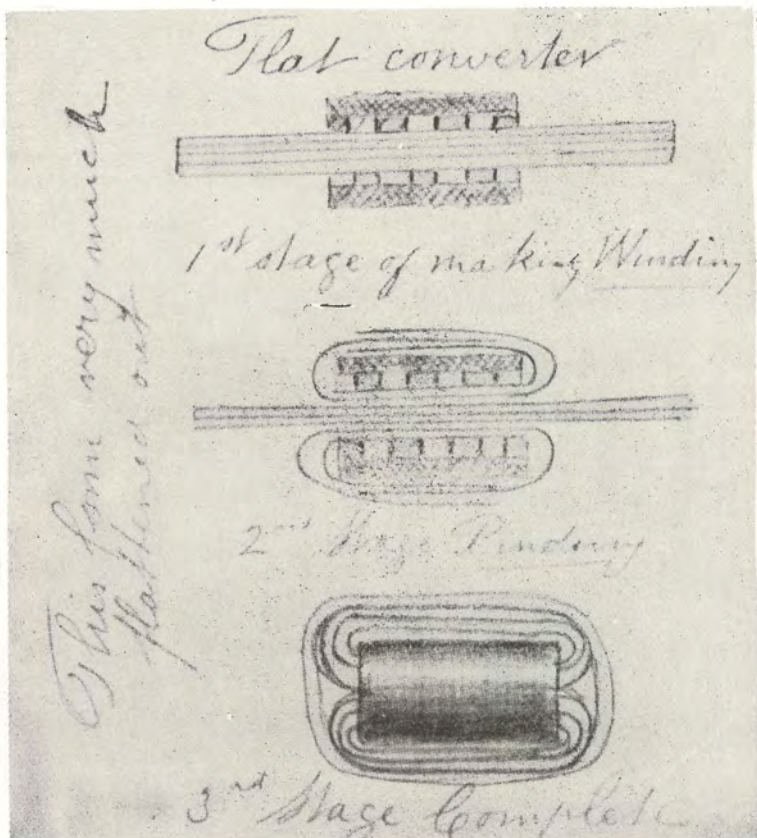
Happily a different outlook is now being rapidly developed, and people are beginning to see that the saving of labour in the home is an aim worthy of the most earnest pursuit. We have learnt that electricity is, before all things, the greatest labour saver, and a little investigation shows that in the application of electricity to the requirements of the home we have open to us a field almost unimaginably wide. There is of course already a considerable use being made of electricity for domestic purposes.

Lighting alone represents a very big item, but even in regard to lighting there is a great deal more to be done. The electric iron is a great convenience which readily attained popularity on account of the small amount of electric power required for its use—small enough to cause no concern either to the householder or the central-station engineer. In the same way electric kettles, toasters, small motors, vacuum cleaners and other small current-consuming appliances have been brought into use. This development, it will be noticed, followed naturally along the line of least resistance—the installation of those devices which consumed the least electricity and thus provided the least work for the central station to do. Proceeding on these lines, the movement grew somewhat further. Small fires were introduced and larger fires followed, but, in general, they were both intended merely for occasional use, according to the same idea of consuming as little current as possible and giving, of course, the greatest amount of convenience in relation to the expenditure involved.

Education in the uses of electricity he held to be vitally necessary among women. "The Electrical Association for Women can be most helpful to the electrical industry by propagation of the knowledge which is necessary to the satisfactory running of the various labour-saving devices in the home."

He advocated the storage of energy by means of water:

Water has a wonderful capacity for storing heat. When raised to a moderate temperature it contains a very great deal of energy. It is fortunate too that the principal energy requirements of the household are for low-grade heat. We want heat to warm our rooms; we need a great deal of hot water for washing and for baths, and it is the filling of these requirements which is at present so difficult and which is the principal cause of all the labour expended



FACSIMILE SKETCH FOR EARLY CONVERTER (OR TRANSFORMER), 1885
 (This shows Origin of Dr. Ferranti's Powerful Transformers as made
 for the Grid)



SPECTACLE-MAKING MACHINES INVENTED BY DR. FERRANTI

COURTSHIP, MARRIAGE, AND LATER YEARS

in the house, both in providing the heat and in cleaning up the mess resulting from the burning of various fuels. My experience over a long period of trying to do things has been that the most difficult problems are in connection with combustion. Years ago this made me feel that the correct way of dealing with the process of combustion was to carry it out only at the great electric generating stations which would supply and deliver their product all over the country to meet the various requirements as they arose. Combustion, undoubtedly, is a most difficult problem, and the great advantage of electricity in producing heat is that it goes straight to the point leaving nothing difficult to be done in bringing about the final result. Fortunately, as I have said, the heat which we require in our homes is low-grade and therefore can be stored in the form of hot water. We have also a great deal of industrial heating which comes under the same heading and which, I have no doubt, will be dealt with in the same way.

His scientific imagination was also concerned with the electrical developments of the future. The possible storing of electricity by some method not yet devised was a problem which had fascinated him since boyhood:

Suppose however that our researches should lead us to the discovery of a means of storing electricity, or, as I think is more likely, some product of electricity, in a very much easier manner involving less weight, less cost, and giving a higher efficiency of return; suppose that we should discover some product of electricity which, weight for weight, had about the same energy content as, for example, oil; and that we could reconvert that energy into electricity just as easily as in the case of the chemical energy stored in the lead battery. What wonderful results would flow from that development! think of the myriads of motor-cars and the mass of machinery, practically of a reciprocating nature, which they represent. Mechanical

reciprocation is always wasteful—starting up from rest, reaching a very high velocity, stopping down again, and reversing the process. That all means wear and costly maintenance. The motor vehicle is giving us a wonderful service, but we have to pay very heavily for its maintenance. If only we had available some means of electrical storage such as I have suggested, what a difference it would make! Mechanical reciprocation would almost entirely disappear and all these vehicles would be driven by simple rotary electric motors, which would make all the difference in the world. The service would be even better and more reliable than what we have to-day, and the maintenance costs would be reduced to a figure truly negligible in comparison with what we now spend. Take certain sections of our railways on which the traffic might be insufficient to justify the cost of electrifying the line; such means of storage could obviously be used with the greatest possible advantage. Take again our ships. What a boon it would be if they could simply take on board this electrical product and travel to the other side of the world upon the power derived from it, with merely several motors to do the work which to-day requires all the complex machinery represented by oil engines, or turbines and boilers.

He looked forward to the solution of many mechanical problems by means of an ever greater simplification:

It is true that the turbine itself is a rotary motor, but there is a marked tendency at present to adopt the more complex oil engine for propulsion of ships on account of the special service which it renders, and it would indeed be a great thing if all this could be replaced by the simple electric motor. In aircraft, too, the advantage would be enormous if those wonderful and beautiful engines which have given such extraordinary performances could be replaced by a much simpler element in the form of an

electric motor. Wonderful indeed has been the performance of these engines, but they are too complex and we know unfortunately of many cases in which disaster has followed upon their failure. I feel it is hardly too much to say that upon the discovery of this ideal means of electrical storage and the consequent application of the electric motor to aeroplane propulsion, rests the chief hope of making aviation sufficiently safe for it to become quite general.

The lecture closed with an eloquent tribute to the debt owed by all electrical scientists to the work of Michael Faraday.

At the Motor Show in November 1928 my husband bought me a beautiful 40-50 Rolls-Royce car. It was his last present to me. He gave me the very best. I'm afraid I did not deserve it. I sometimes think that he felt he would not live very much longer and that this might be his last present to me.

We decided to send Yvonne for her last year at school to Lausanne and as we were going on our usual motor trip abroad we thought we would leave her there on our way. When we arrived at Lausanne I went with Yvonne to look at the school. Unfortunately the first thing we noticed on entering the house was an overwhelming smell of onions, or was it garlic? Yvonne, who is very much like her grandmother, Madame de Ferranti, is like her also in this, that she is not fond of onions. The house looked very dingy and poor. We returned to the hotel feeling depressed by the onions and the dinginess. I felt it would be quite impossible to leave her here and went round and inspected many other schools. The result of it all was that her father, who had really not wanted to part with her, decided we would not leave her, much to her joy. He paid a term's fees and wrote the good lady

that we had decided to keep Yvonne with us. We all three left Lausanne very happy and joyful *en route* for the French Riviera. I have forgotten to mention that this time we went in my Rolls with a chauffeur. Basti did not seem to wish to do all the driving himself, and was certainly not in a condition to look after the car entirely. Our chauffeur, Warrick, who was a real Cockney, spoke French in a manner peculiar to himself. He was a particularly nice man, and we were all very fond of him. Unfortunately, later, he died from appendicitis, greatly to our grief.

Our first stop on the Riviera was at Bormes. During the whole of this trip Basti was very quiet and seemed to take little interest in what was going on. From there we went on to Juan-les-Pins and stayed at the Hôtel le Provençal. We had intended to go via the Italian Riviera to Bologna, where many of my husband's ancestors had lived. I believe his grandfather died in one of his palaces at Bologna. However, we heard that Bologna was cold and he seemed to need warmth so much that we decided to return home slowly through the Rhone valley.

In September Denis, who had always had a craze for racing, took part in the motor races in the Isle of Man. He was the winner in his first race but unfortunately on the second day's racing he skidded round a corner, crashed into a wall and broke his pelvis. I was with him at the time. Basti was coming over to see him after he had been in hospital a week, but at the last moment was prevented from leaving. I was very thankful he did not come as the sea was terribly rough and he was certainly not in a condition to make the voyage. Later on, when we got Denis home to Baslow Hall in an ambulance he recovered much sooner than we expected. I had been over in the Isle

of Man three weeks, at a time when I should have been home with Basti, as his health was very much worse that summer.

We thought of going to Arosa for Christmas, not having been to Switzerland for the last two winters. I felt my husband ought to get right away and we knew in Switzerland we could be sure of sun and dry air, which we never by any chance got in Derbyshire at this time of the year. He decided that if we went to Arosa, a place he had always wished to see, he would go.

The week before we left London he attended a meeting of the Institution of Electrical Engineers and I believe spoke very well. He and I also attended Mr. Robert Hopkinson's banquet at the Hotel Cecil. Just before going in to dinner he came to me and said, "Mr. Hopkinson has asked me to speak at the dinner." He added that he was feeling ill and really not fit to do it. All the same he went bravely through it and made a very good speech.

We were to cross on December 21st. Basti was already in London, so Yvonne and I motored up to town. It was a terrible day, blowing a gale. The arrangements had been to leave on Saturday midday. It suddenly occurred to me it might be better to motor down to Dover on Saturday morning and cross over on the *Golden Arrow* boat, as Basti was such a bad sailor, and I did not like the idea of taking the little boat later in the day. When he came to the hotel about seven o'clock I told him the plans we had made. I can never forget his look when I told him this. He said, "Yes, it is certainly better to go that way, but I had intended to ring up the head of each department at the works in the morning before leaving and have a word with them, and now it will be impossible." He seemed to be looking far into the distance and

dreaming. For a moment I felt afraid, for some reason or other, and wished we were not going away. I immediately said, "But, Basti, we need not go on the *Golden Arrow*. The only reason I altered the arrangements was for your sake. I don't want you to be seasick." He said quietly, "It is better to go as you have arranged."

We started off early that Saturday, before the works opened, but I was not happy about him from that day. We had a rough passage, but only Yvonne was ill. Basti stood the journey very well. He and Yvonne thoroughly enjoyed the mountain railway up to Arosa, both of them looking out of the window and trying to get me to do the same, but I dislike looking over heights, which made them laugh at me. When we arrived at Arosa the sun was shining brightly. We all thought it a lovely spot. A large party of us gathered there for Christmas. After our arrival my daughter Vera and her two children arrived, also Mr. King Forster and his sister; Mr. Robert Hopkinson's nephew, Frank, and a family of friends of Vera from Sheffield, also Mr. Cox, a member of our staff from Hollinwood.

Basti skated one day, but I could see he did not enjoy it. He preferred walking in the sunshine and now and again standing near the skating rink and watching the grandchildren skate. He thought his granddaughter Vanda, aged about six, showed such promise that he said he should pay for some lessons for her, which he did.

On the last day of the year 1929 he and I went for a long walk up the mountain to watch the family ski-ing. I felt the wind very cold and said, "I don't think we ought to stay." He did not seem to notice the cold and stayed on watching them longer than I

did, and I think got a chill. We had all of the family in on New Year's Eve to supper and dance, but I am afraid he wasn't enjoying it. Directly after the New Year supper was over he and I left the young people and went to bed. When we got up to our room he gave me a kiss and wished me a happy New Year.

In the early morning of New Year's Day he was taken very ill and was in much pain, so much so that he could neither rest nor sleep. I got hot-water bottles and did all I could for him. When it was time for me to get up he, of course, stayed in his bed. Before I went down to breakfast he begged me not to mention that he was ill, but to tell them that he was having breakfast upstairs. He then said, "On no account say anything to Dr. Ord" (my son-in-law). When I got down to breakfast I was terribly worried and anxious about him, and felt I must tell Mr. Forster what had happened, at the same time asking him when he saw Dr. Ferranti not to mention that I had said anything about his being ill. I also sent Mr. Forster with the same message to Dr. Ord, who was at another hotel. Basti got up for lunch, and even walked as far as the rink in the sun. After lunch he looked so ill and miserable that I thought I would say nothing but go and find a doctor. I made inquiries and found there were two or three in Arosa, but all of them doctors for pulmonary complaints. I called on one and told him the difficulty I was in with my husband and asked him could he come and see him. This doctor advised our consulting another medical man in Arosa who had rather more general knowledge, and he would be at the hotel at six o'clock. I returned to the hotel and told Basti what I had done, saying I could not let him go through another night like the last. To my surprise he seemed quite pleased and thankful I had

taken the decision for him. I felt at that moment that I ought to have had the strength of mind to have made that decision months before in England. I knew he had such an imaginative mind that he would visualize all the details of an operation and in this way increase his suffering. Added to this he had read, I should think, nearly every scientific and medical book dealing with his complaint, which would make matters still worse.

Between six and seven, two doctors appeared, and by that time I had sent for Dr. Ord and asked him to be present. After two hours with Basti the doctors said they could do nothing, and advised me to take him down to the hospital at Chur. This meant getting a special train with an ambulance. The doctors put this order through at once and at twelve o'clock we started off. Mr. Forster and Dr. Ord carried him down to a covered sleigh to take him to the train. I am afraid he was suffering badly all the time. We were lucky in being able to get such a beautiful train-ambulance, which I suppose happened to be at Arosa for the use of pulmonary patients. Before leaving for Chur the doctor had telephoned through to a Zürich specialist, who happened to be spending his holidays at Davos. They asked him to get down to Chur to meet us there. My first great disappointment on arriving at Chur was to hear that the specialist from Davos could only arrive in the morning as the last train had left when he received the message. I would have done anything and had a special train put on if only I had known that he was not to be there. The only thing now to be done, the resident surgeon said, was to have a slight operation, make an incision, and put a tube in, as later on, no doubt, the prostate gland would have to be removed.

Basti was taken to the operating room and my son-in-law went with him. When brought back to bed at the hospital he said he felt easier, and told me what an extraordinary experience he had been through in the way of watching himself being operated on and feeling nothing, having been given a local anaesthetic. He appeared to me to be thinking that he would not object to any operation half so much if it could be done in this way.

The hospital was a convent kept by nuns, and they could not have been better or kinder to us, giving him all the attention possible and making up a bed for me so that he might not be left alone in the room. His room had the most beautiful balcony, from which one could see the sunsets on the snow-peaked mountains—a splendour of delicate colour. The specialist arrived next morning. I could see he was very disturbed that the slight operation had had to be performed and was very surprised that the doctors at Arosa had not been able to avoid this operation. He said to me more than once: "It is the first man that counts in a case like this." As soon as the specialist had arrived I telegraphed to Vincent, telling him his father was seriously ill. He rang me up on the 'phone and told me that he and Denis were coming over as quickly as possible, for which I was very thankful. It was a terrible ordeal for me to have Basti ill in a foreign hospital where they spoke mostly German. My son-in-law, Will Pycroft, and his wife were staying at Pontresina. I phoned them, and Will very kindly came down at once to me and stayed until the boys arrived. The specialist came again on their arrival and told us what he thought was the best thing to do. He advised us, if Basti was well enough, as he hoped he would be, to take him on the following Tuesday, January 7th, to

Zürich to the Canton Hospital, where he practised. He would arrange the ambulance, train, etc., and meet us at the station *en route* on his way back from Davos to Zürich. This we decided to do.

When the boys arrived Basti was quite anxious to discuss all sorts of business affairs with them and to arrange for them to carry on as there was no doubt the time had come when he would have to undergo the major operation, and we hoped we might get him to Paris, if he preferred it, or back to London for this. We said: "It will mean a long convalescence, and how much better for you not to have to trouble about all this as the boys can quite well carry on with you to advise them." We even went so far as to say: "Much better this, than to lose you and have to manage entirely on our own," little thinking that this would happen.

Basti did not seem so well the last day before we left Chur. The nuns brought him a small electric pad to give him warmth and comfort. This was about the only thing that day that seemed to give him immediate interest. He remarked: "This is the first I have seen with a switch for two heats." On the Tuesday he was brought in an ambulance to the train. When he was wheeled along the station he asked them to stop so that he could talk to Denis about the electric locomotive that was taking us to Zürich. We arrived at the hospital at Zürich with the specialist. It was a huge hospital; he was given a very nice room, but the trams were rather noisy and disturbed him. I did not like the hospital nearly as much as the Convent at Chur. It was such a huge place; one could not find one's way about. Also they did not seem to wish me to stay there at night, with the result that we went to the nearest hotel up on the hill. It was decided that Denis

should return to England the next day. Yvonne, whom I had left at Arosa, came down to stay with us, as by this time the rest of our party, including the Ords, were returning to England. By a strange chance, as it seemed, all the family saw Basti during that last week before he died; the Ords having called in at Chur on their way home, and the Pycrofts coming back through Zürich specially to see him.

Each day Vincent was expecting to return to England, but Basti's temperature was going up and down, and we did not feel at all satisfied about his condition, although neither the house-surgeon nor the specialist hinted to us for one moment that they did not think he would pull through.

When we arrived at the hospital next morning (January 13th) I thought he looked terribly ill. He was not even sitting up, and told me he had had a very bad night with much pain in his right arm and side. His day-nurse, who was there, and who spoke English very well, said: "I have been telling Dr. Ferranti I am sure it is just a touch of rheumatism." I, wishing to cheer him, said: "Oh, of course it is rheumatism. You know how rheumatic we both are." Within an hour of this conversation he had passed away.

The pain he was suffering in his side was due to a clot of blood, and when the specialist came that morning to make an internal examination the sudden movement sent this clot to the heart. Basti passed away thirteen days after being taken to the hospital.

* * * * *

I have tried to tell the story of Sebastian Ziani de Ferranti's life during the many years that I knew and loved him. Naturally I have not said all I should like

to say. There are many things that must be left to silence, for when husband and wife love one another Romance is born and Romance can never be adequately expressed in words. Though I could not enter into all the interests of his mind (few indeed could do that), I was privileged to watch him at work and to know something of the enthusiasm that always inspired him. He was respected and beloved by many, not because he was endowed with genius such as is rarely seen, but for the humbler qualities which made him a good father, a loving husband, and a loyal friend. His gentleness, kindness, and courtesy won the hearts of many in all classes of society.

In ending my story I feel I must finish it by returning to the power station at Deptford, which will always be associated with the name of Sebastian de Ferranti. It was there that the extraordinary triumphs of his boyhood and early manhood were won.

It was not until November of last year (1933) that the original 10,000-volt mains designed by my husband for the transmission of single-phase energy from Deptford to London (and which had been in service ever since) were finally disconnected. On that occasion a short article appeared in *The Times* (December 21, 1933) which will, I think, be of interest to readers of this book.

AN ELECTRICAL FEAT RECALLED

LONDON'S ORIGINAL 10,000 VOLT TRANSMISSION

One of the earliest feats in the history of high tension transmission of electrical energy is recalled by the taking out of service of the original 10,000 volt alternating current transmission in London, the first instance in the world of transmission at this pressure underground.

Forty-five years ago at a time when 1,000 and 2,000 volts was the limit of alternating current transmissions to a radius of a mile or so and when numerous continuous current stations were being set up for distribution to a radius of a few hundred yards, the late Dr. S. Z. de Ferranti conceived the idea of placing generating stations on river-side sites miles from the centre of the area to be served, and the transmission of the energy from such stations to the point of use by means of cables operating at the then unheard of pressure of 10,000 volts between the conductors.

On the formation of the London Electric Supply Corporation Limited, the business of Sir Coutts Lindsay & Co., carried on from a generating station in New Bond Street, was purchased, and the proposals of Dr. Ferranti, their Chief Engineer, were put into execution by the selection of a site at Deptford on the Thames about $6\frac{1}{4}$ miles from the centre of distribution.

The Corporation had to manufacture their own cables. In the summer and autumn of 1890 mains were laid from Deptford to the Grosvenor Gallery in New Bond Street, the total length being 11,725 yards. At first the four cables from Deptford after a stage of 900 yards underground, ascended to a position on the eastern side of the South Eastern Railway viaduct, outside the parapet wall and were suspended on cast-iron hangers. They were carried in this manner, except for a return to the ground at Spa Road Station, to London Bridge. Fires in the arches under the viaduct however led to the relaying of the cables underground in 1893. On the north side of the Thames very little trouble was experienced from cable faults and the two mains laid in 1890 from Belvedere Road, across Charing Cross Bridge to the Grosvenor Gallery remained in use at a pressure of 10,500 volts between conductors, until the closing down of the original single-phase 85 period Ferranti system on November 24th this year after it had been in use for forty-three years.

Part of the original Deptford Station buildings, designed by Dr. Ferranti, still forms part of the London

SEBASTIAN ZIANI DE FERRANTI

Power Company's Deptford "East" Station and houses turbine plant of several times the capacity which even he contemplated nearly fifty years ago.

I am very happy to think that although the original cables and machinery have gone, the building of his design still remains and forms part of the greatest power station in London.

And just as I am ending my story I find in *Electrical Industries* of January 3, 1934, the following statement with regard to the Ferranti cables:

CLOSED DOWN BUT NOT WORN OUT

On the north side of the Thames very little has been experienced from cable faults and the two mains laid in 1890 between Belvedere Road across Charing Cross Bridge and on to the Grosvenor Gallery remained in use at a pressure of 10,000 volts between conductors until the closing down of the original single-phase 85-period Ferranti system on November 24, 1933, after having been in use for 43 years. Had it not been for the necessity of bringing the system into line with modern practice by changing the frequency to 50 the Ferranti mains would probably have given effective service for years to come.

The technical pictures that I have shown in this book are only a few from the enormous number of patents which my husband applied for during his lifetime.

So far as I could I have described our life together and outlined my husband's work. But his true position in the world of science will probably not be generally recognized for many years. In order to become aware of the full height of a mountain one needs to climb another mountain. Much of the grandeur of his work must remain hidden from those incapable of pursuing the studies he pursued.

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