Liebig, meat extracts and the Misses Muspratt

To Mr and Mrs James Muspratt, Muspratt Soda Works, Liverpool
15th November 1853
Dear Papa and Mama,

I am having a wonderful time in Munich at Mr Justus von Liebig's. I can see why you became friends when he came to our country to test his theories on fertilisers, and I can also see why my brothers Frederick, Richard and James Sheridan were so happy to be working at Giessen, in Mr von Liebig's school of chemistry. So many talented chemists were trained there!
I have learnt that Mr von Liebigs' life has changed considerably since he moved from Giessen to Munich a year ago. The Giessen laboratory attracted students from all over the world, but Mr von Liebig told me that he had grown a little tired of squeezing into small rooms to teach so many students. He now has an institute built in accordance with his wishes. The laboratories are larger and better laid out than in Giessen, and there is a large lecture theatre. He can now devote his time to a few assistants and a small number of selected students. He still performs experiments, but he spends much of his time writing. He also has a social life, with his family, who have been so nice to me.
Yesterday, we celebrated Mr von Liebig's fiftieth birthday. The party was attended by a large number of guests, some of whom made speeches. Several people reminded those present of the importance of Mr von Liebig's work in chemistry. Among others, there was his friend Friedrich Wöhler, the first person to reconstitute urea, a substance which is produced naturally by living organisms (see how I remember). In his reply to Friedrich Wöhler's speech, Mr von Liebig said that, in doing this, Wöhler had proven that life could be understood by chemistry, and was therefore not the result of a divine, incomprehensible mechanism. Mr Wöhler told those present how Mr von Liebig, along with his students and assistants, had been a pioneer in the field of "organic chemistry". He explained to us that organic substances were those which, like urea, are essentially composed of carbon, hydrogen, oxygen and nitrogen. Another chemist, whose name escapes me, explained how Mr von Liebig had not only made ("synthesised", he called it) a great many molecules, but had also greatly improved chemical analysis. Since I remembered what Mr Wöhler had just said, I understood that this analysis involved determining the composition of a body. I'll ask Mr von Liebig this evening, because I think that his contribution was to determine how much carbon, hydrogen, oxygen, etc. were contained in the compounds examined. A last person spoke about how, from April 1840, Mr von Liebig took an interest in agricultural chemistry and in fertilisers. I then learnt that Mr von Liebig had examined the organic compounds present in the soil, and realised that some such compounds were missing and would need to be replaced. That is what manure is used for on many farms, but Mr von Liebig seems to have found a wonderful new way of giving the soil the substances which it lacks.
I am thankful to you every day, dearest Papa and Mama, for sending me to Munich at the tender age of seventeen, to meet so many remarkable personalities – not to mention the fact that there is still much celebration in the city after the great industrial exhibition which has been held here.
I have to go now, because my friends Nanny and Mary von Liebig have come to take me to the opera. Ich verstehe besser Deutsch (I understand German better now). What good fortune!
Emma Muspratt

To Mr and Mrs James Muspratt, Muspratt Soda Works, Liverpool
27th March 1854
Dear Papa and Mama,
I am so weak that I can cannot hold my quill, so Mrs von Liebig has been kind enough to write this letter for me. I believe that Mr von Liebig wrote to you explaining that – after a wonderful period of outings, balls, operas, theatre and riding – I had fallen seriously ill. Dr Pfeufer diagnosed typhoid fever, and I almost died. I could no longer move, and I would not eat. I missed you, our native Ireland, and even the soda works in Liverpool, where I played so often at hide-and-seek with my brothers and sisters. I was so weak that dear Dr Pfeufer thought he might not save me, and he told Mr von Liebig that the only possible remedy would be a food that would give me back some of my strength. I believe that Mr von Liebig then wrote to you, but journeys are so long and difficult during winters as severe as this!
Mr von Liebig saved me thanks to a remarkable discovery. Since he had taken a keen interest in the chemical composition of meat and in the preparation of meat extracts, he decided to prepare an infusion of meat

immediately. He presented Dr Pfeufer with a potion which he had made up, using minced chicken which had been soaked for several hours in water with a few drops of hydrochloric acid, in order to make the flesh tender. I was administered that potion every half-hour, and I will be up and about by the time you arrive!
Dearest Papa and Mama, I cannot wait for your visit.
All my love,
Emma Muspratt

To James Sheridan Muspratt, Liverpool
2nd April 1854
My dearest brother,
I believe that you have been informed of my illness. I almost died... but, yesterday, when Papa and Mama arrived, we danced at Mr and Mrs von Liebig's. I even waltzed for the first time with dear Dr Pfeufer, who is a most gracious partner, portliness notwithstanding. He is delighted with Mr von Liebig's preparation, and intends to use it in the hospitals of Munich.
Emma Muspratt

To Miss Emma Muspratt, Liverpool
19th January 1863
Ma dearest Emma,
My husband and I were most upset when your sister was struck by the same typhoid fever as you suffered from some years ago. Dr Pfeufer used the same remedy, to comparable effect.
You may have heard of my husband's Extractum Carnis ("meat extract", in Latin), which is now on sale all over the world. It is not the same as the infusion of meat that saved your sister and you. Very little of that infusion was sold. No, the product which is selling so well today throughout the world – the famous "Liebig extract" – is the result of a footnote to an article written by my husband in 1844: "It need scarcely be mentioned that those who would prepare this meat extract industrially will not achieve their end if they repeat the errors made by their predecessors. In order to dissolve all of the active ingredients, minced meat must be boiled for half an hour in eight to ten times its weight of water. Before the decoction is reduced in a bain-marie, all of the grease must be carefully removed, for it would turn rancid. The first operation must be performed in a copper container, but the reduction must take place in a container made of pure tin or, preferably, of porcelain."
In 1862, the German engineer Georg Christian Giebert – who has built such fine railroads in Brazil and Uruguay – drew my husband's attention to the wasteful South-American practice of slaughtering cattle essentially for their skins. Little use was made of their meat, while famine was raging on the other side of the Atlantic! Mr Giebert had read my husband's article, and, on visiting the meat infusion works, he came to the conclusion that South-American meat could be used to make extract at a lower cost. That is precisely what the new Liebig Company did. You see, the illness in our house – which is, I trust no more than an unpleasant memory – has led to an industrial success! At first, my husband thought that his meat extract had nutritional and therapeutic virtues. We now know, however, why the infusion of meat helped your sister and you to recover. Not only do typhoid fever patients become dehydrated very quickly; their digestive systems are also attacked by bacteria. The infusion of meat prepared by my husband merely provided you with water and easily-assimilable food. The chief advantage of the extract was clearly that it added taste to stocks and sauces. Do you use it?
Do write, dearest Emma, with news of your family.
Miss Henriette von Liebig

Hervé This and Georges Bram