Page 3 Figures – Draft Tiered Captions

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| **Pic** | **Minimal** | **Modest** | **Extended** |
| 3:1 | Banting’s Idea | Banting’s Idea | This shows a picture of the entry written by Banting in his notebook in the early hours of 31st October 1920 (with a more clearly legible typed version alongside). This was Banting’s big idea that set him off on the road to Macleod and research studies in Toronto. The incorrect spelling of diabetes may reflect Banting’s very limited knowledge of the subject. The idea was to tie off the main duct in the pancreas in dogs to cause the collections of digestive cells (the acini) to die off over a few weeks leaving only the islet cells which may be the source of the factor that lowered blood sugar (later called insulin). The idea had been tried years before with no success and, while it stimulated Banting’s involvement in new studies in Macleod’s laboratory, it was discarded in due course as an irrelevant and cumbersome step in the production of the pancreatic extracts that eventually proved effective in life-saving diabetes treatment. |
| 3:2 | Rennie | John Rennie | John Rennie (1865 – 1928) was an assistant to the Professor in Zoology 1899-1917 when he was promoted to the post of Lecturer in Parasitology. Some of his early research into teleost fishes showed that their pancreas had a nodule of tissue (the principal islet) that may be composed of cells similar to islet cells, the suspected source of insulin, that are scattered through the pancreas in mammals. This led to an attempt to find the treatment for diabetes (see paper below). He was later responsible for his book and lectures on natural history education for a generation of trainee schoolteachers, and gained further fame among bee keepers for his researches into Isle of Wight disease of honey bees. |
| 3:3 | Fraser | Thomas Fraser | Thomas Fraser (1872-1951) was born in Kintore and studied arts (MA ’94) then medicine at the University of Aberdeen in the same class as JJR Macleod (MB ChB ’98). As a young medic in the University, he worked with John Rennie on a study trying to treat diabetes with an extract from fish pancreas. He later had a distinguished military career in WW1 earning a DSO. He worked at the Royal Infirmary and in General Practice from 16 Albyn Place where there is a commemorative plaque erected by the City Council. |
| 3:4 | R&F Paper | 1907 Paper by Rennie & Fraser | This paper, published in the Journal of Biochemistry in early 1907 describes the studies undertaken by Rennie and Fraser in attempting to relieve the symptoms of diabetes by making an extract of the principal islet from teleost fishes (including monkfish and wolf fish) landed at Aberdeen Fish Market. In most cases the extract was given by mouth but in one by injection – and the experiments were abandoned after no benefit was apparent. We now know that any insulin given by mouth would be destroyed by injection and it is likely that impurities in the extract would have made the injected version too irritant. However, with improved techniques in later years useful insulin was made from fish pancreas – and so Rennie and Fraser were indeed on the right tracks to finding insulin years before the Toronto studies. |
| 3:5 | B&B&dog | Banting and Best 1921 | This picture shows summer student Charles Best with Frederick banting on the Roof of the Medical School in Toronto in the summer of 1921 with one of their experimental dogs. |