From the first announcement of its discovery in the atmosphere of Mars in 2003, methane has “punched above its weight” of a mere few parts per billion in our scientific imagination of the red planet. This fascination is the result of two factors. First, methane has a lifetime of only a few centuries in the Martian atmosphere, which implies that any methane observed must be resupplied in the present day. Secondly, on the Earth, atmospheric methane is produced mostly through biological processes. This has prompted cautious excitement surrounding the idea that a martian biology working deep underground could be providing the needed methane. The reality is more complex with numerous sources and sinks of methane in the martian environment, most of which are abiotic. In this talk, I will present a history of the investigation of martian methane and discuss some of my own work on this topic before looking to our future hopes of unravelling the story of this mysterious gas.