Who would have thought that silk made good armour! The Mongul horsemen, however, had discovered that wearing a tight silk vest meant that the barbed and faeces-smeared heads of their opponents never had a chance to lodge in and infect their flesh. Modern bomb disposal operatives wear silk pants for similar reasons: if they are unfortunately caught in an explosion the silk prevents dust and dirt from penetrating through their skin. Silk is both exceptionally tough and strong, beating every other polymer (natural and artificial) about which we know.

It has, at times, also been exceptionally valuable, particularly in countries at the far end of the “silk road”: literally worth its weight in gold, and a full silk costume might have cost the price of the palace. For a period of 200 years, 50% of Venetian tax revenues came from silk production and skilled silk weavers were forbidden to leave the city on pain of death. Even today, cultivating silk worms produces exceptionally high returns per unit area of land, and requires only modest capital investment. Furthermore, produce is not confined to China and can be found today in Rumania and Bulgaria. (Our own Queen had a dress made entirely from UK produced silk.)

Spider silk is even more remarkable than the product of the mulberry silk worm: it comes in seven different varieties - each used for different purposes such as structural parts of a web (strong and flexible) for catching flies (sticky and extensible) or making egg cases (soft and protective). Unlike mulberry worm silk it is exceptionally difficult to produce in commercial quantities (you need to a tethered live spider from which to draw the silk) and would be currently valued at millions of dollars per kilogram.

Bioengineering start-ups are, of course, trying to reproduce the complex polymer structure of spider silk using, for example, genetically engineered micro-organisms, which, however, as yet only produce short strands of rather simpler amino acid combinations - and having not at all the same properties as the real thing. Great commercial prizes await those who succeed because there are many valuable uses for such a unique material.

Prof Volrath completed his exceptionally interesting talk by discussing recent work on regeneration of nerves using silk frameworks. Nerves do like to regrow when damaged, but may not know in which direction they should be moving. It has been shown, however, in a number of cases that packing an excised vein with spider silk and then laying it along a damaged nerve track does encourage growth along the silk fibres, and in a few cases has been demonstrated to lead to recovery of muscle control after exceptional injuries to arms and legs.