

Professor Per-Ingvar Branemark
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The Institute for Applied Biotechnology
Goteborg
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Oration
by
Professor Richard Johns
on the
Award of an honorary degree
Doctor Science by the Vice
Chancellor, Prof. Gareth Roberts
University of Sheffield

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The University of Sheffield
Honorary Degree Congregation,
Per-Ingvar Branemark

Vice Chancellor

There is one piece of literature by George Bernard Shaw which should, some believe, be compulsory reading for all medical and dental students, it is the preface to his play *The Doctor's Dilemma*. However it is in his "Maxims for Revolutionists" that one of the most obvious truths in life is to be found. In this he states that, "The reasonable man adapts himself to the world: the unreasonable one persists in trying to adapt the world to himself. Therefore all progress depends on the unreasonable man". Professor Per-Ingvar Branemark is indeed an unreasonable man.

We are here today to honour a man who is no stranger to controversy. Born at the end of the roaring 20's, he graduated in medicine and was awarded his MD and PhD from the University of Lund. He holds academic awards and gold medals, rather as Swedish tennis stars hold championships.

In 1983 he was awarded the Schweitzer Research Award and the Gold Medal of the Royal Swedish Academy of Engineering Sciences. Since then honours have flowed from universities around the world. But it was not like this in the beginning. On graduating the young Dr Branemark became interested in the microcirculation and rheology of blood and it was at the University of Lund where his early experiments were performed. Partly for economy and partly for logistic reasons, he used his infectious enthusiasm to persuade some of the post graduate students to co-operate in a most self-sacrificing way. One can empathise with these young people who were the first in a long line of us who have been inspired by this man. These human guinea pigs allowed a small pedicle of tissue to be raised on the inner aspect of their arm. The pedicle was then perforated by a small viewing chamber which allowed a microscopic examination of the reaction of small blood vessels within the living tissue while various insults were inflicted upon them.

The next question which occurred to Dr Branemark was if these reactions took place in soft tissue what happened inside bone, particularly if it were abused by heat. The animal, the device and the tissue changed but the underlying questions remained the same. It will come as no surprise to learn that money for this rather esoteric research was short. Resourceful as ever, Dr Branemark decided he would reuse the specially designed and expensive titanium viewing devices. This idea turned out not to be as simple as he had thought. When he attempted to remove the device from the bone the two were inseparable.

The serendipity of this observation, (which was to have a profound effect on the quality of life of countless individuals throughout the world), was not lost on him. The description and explanation of this phenomenon has and is keeping research workers in many disciplines challenged. A word - as Humpty Dumpty said in *Alice Through the Looking Glass*, means what I choose it to mean, nothing more and nothing less. In this instance the descriptive word is osseointegration. Like Humpty Dumpty who also has links with Oxford, the word was wrought by the Oxford wordmongers at the behest of Dr Branemark. Originally it was intended to signify the bonding of living bone directly to the tenacious oxide layer which surrounds titanium. The definition is however redefined and generally picked over at regular intervals but it is certainly inextricably associated indeed integrated with the name of Branemark. As Dr Spooner would have said, "a Wedish Sag", recently defined osseointegration as a "failed foreign body reaction".

Having realised the significance of his observation Dr Branemark set about developing the idea and providing unequivocal scientific evidence to demonstrate the clinical implications of what he had discovered. Now indeed came the time for the unreasonable man to try and change the world. The establishment refused to accept the evidence, like so many politicians it had made up its mind and did not wish to be confused by the facts. Eventually he did of course win the minds of the establishment. But Professor Branemark is the epitome of someone with an open mind.

It is a measure of the man that if something is thought to be found wanting in some respect of the technique or implant system which bears his name and he feels there is a case to be answered, then an invitation is issued to dinner in his think tank. After a meal and over coffee the critic is given the floor to make his case. If the case is found proven orders are immediately issued to rectify the defect and modify the product.

Professor Branemark, known to his friends as "P-I" holds the Chair in Anatomy at the University of Gothenburg and he is the Director of The Institute for Applied Biotechnology which he founded. Not surprisingly he is much in demand as both a speaker and surgeon round the world but in this electronic age he is never more than a fax away. In spite of a work rate in deed and thought which would do credit to a man half his age, Professor Branemark is both an outstanding scientist and a highly skilled clinician. He is an inspired surgeon and teacher, a man of renowned scientific and professional integrity. Above all this he has a compassion and love for his patients to whom he gives a life long commitment.

Vice Chancellor, I present Per-Ingvar Branemark as eminently worthy to receive the degree of Doctor of Science honoris causa.