

Ainsley Iggo recalls his first paper on recording from single C-fibers

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AINSLEY IGGO: Now, that led to a report to the International Physiological Congress in Leiden [Netherlands] in 1956, at which I reported that I was recording from single c-fibers. And it was quite interesting, given the subsequent history of this subject, that the audience, as I recollect, comprised seven people, including the chairman. [both laugh] So this particular development was not initially paid much attention.

JOHN LIEBESKIND: Do you remember who any of those people were? Were there any prominent people? I mean, someone like [Yngve] Zotterman [Zotterman (1898-1982), Professor of Physiology at the Royal Veterinary College in Stockholm until 1963, was a pioneering neurophysiologist and a leader in the field until his death] who had been --

IGGO: Well, I don't actually think -- I would certainly have remembered had Zotterman been in the audience, because I had a meeting with Zotterman which I can tell you about in a moment. But Sybil -- I remember Sybil Creed, who was a physiologist from Oxford, so it was a sort of friends turning up to provide this kind of support. But I don't recollect that there was anybody that I now can name, apart from Sybil.

LIEBESKIND: Was that your first presentation?

IGGO: That was my first international meeting. I had -- Before then I had reported on these afferent fibers in the stomach and bladder, which was what I -- was while I was learning the techniques. But that really was the first exposure internationally and it did not make much of a stir, I have to say.

LIEBESKIND: How did you feel about it at that time? I mean, it must have -- You must have been stirred yourself, knowing that this was really a first and that -- I mean, did you have a sense then of what you would have now, thinking back on it, of the significance of it?

IGGO: Well, I was aware that Zotterman, in the 1930s, had attempted to explore the characteristics of these very small sensory nerve fibers. And there's a paper of his published in 1939 in which he deduces that these things must be from small axons [Zotterman Y. Touch, pain and tickling: an electrophysiological investigation on cutaneous sensory nerves. *Journal of Physiology* (London) 95 (1939): 1-28.] But this work was the first definite proof that that was the case.

But did I realize that? Well, I realized, certainly, that it opened up a whole new ball park. But I also remember, actually, presenting this material at a Physiological Society meeting in Cambridge and one of the doyens of physiology was Alan Hodgkin [Alan Lloyd Hodgkin (1914-1998), received the Nobel Prize in 1963 for his studies of the giant axon of the Atlantic squid; he was appointed Plummer Professor of Biophysics at Cambridge in 1970].

And Alan Hodgkin got up and said that, "Well, do you really know that these are non-myelinated fibers? What is the evidence? Have you made measurements on current flow and so on?" And I had to say, "Well, no, I hadn't done that." My conclusions were based very largely on conduction velocity measurements. And he sat down, I think half convinced, that perhaps these really were c-fibers.

So those really were the early days of obtaining -- with some difficulty, I have to say -- access to the group of sensory nerve fibers which outnumber the myelinated by maybe four times to one. And so here, really, would appear to be an enormous field for exploration. Up until that point, I had been working on gastric or visceral reflexes. And then it was at that moment that I thought I should really switch to looking at cutaneous sensory fibers and hopefully do something about pain mechanisms.

LIEBESKIND: Well, let me ask you about that now. So why did you make that decision? Was it -- I mean, was there any sense of the clinical problem of pain that kind of motivated you in some way?

IGGO: Well, I think I was aware of the fact that most of the previous studies on pain mechanisms had been done by psychophysical methods and using techniques of differential nerve block. And certainly there were some quite significant papers, including some by Gasser, on trying to discover what were the properties of these pain receptors. So my interest was really a sort of fundamental interest in the mechanism of the pain receptors, what we have since, of course, learned to call nociceptors. And largely because the previous evidence was conflicting and it was always indirect, and so this seemed to me to offer, for the first time, an opportunity for the direct sampling of the properties of these particular sensory receptors.

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