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The fertile controversy between Camillo Golgi and Ramon y Cajal about the structure of the nervous system

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Background

The evolution of scientific knowledge often occurs through intense dispute. An extreme, rational interpretation of science does not appear to supply a satisfactory answer to this phenomenon, especially when it comes to explaining the stubborn attachment of many scientists to obsolete positions against others supporting novelty.

Discussion

A characteristic example of such a controversy is the debate between Camillo Golgi and Santiago Ramon y Cajal at the turn of the 20th century, when the nervous system was still considered as a network formed by anastomosing nerve cells, in analogy to the vascular network. With his revolutionary staining method for visualizing individual neurons, Golgi pioneered a new era in the study of the central nervous system. However, it was Cajal who took full advantage of the potentials of the new method, offering a sound alternative interpretation of the images obtained. His work established the neuronal structure of the nervous system; Colgi himself continued to support the reticular theory, in spite of growing evidence for the opposite. However, the contributions of both researchers are equally significant, as they formed the basis, upon which our current knowledge about the structure and function of the nervous system was built, awaiting for future reversals. The exciting history of the synapse continues, reminding us that, in the sense that the etymology of the greek word aletheia = truth (negative prefix "a" + "lethe" = oblivion) implies, science never possesses THE truth, but rather produces truths, i.e. facts not to be forgotten for a long time.