Maie TOOMSALU

Friedrich Bidder

Georg Friedrich Karl Heinrich Bidder was born on 28 October (9 November NS) 1819 at the manor of Treppenhof in Livonia (Vipe village on the right bank of the Daugava River, Jekabils district, Latvia) as the son of a bailiff. In 1828 took up studies of medicine at the University of Tartu (Dorpat). He graduated from the Faculty of Medicine on 24 (12) April 1834 with a doctoral dissertation on obstetrics, Graviditatis vi medicatice. On application by the University, the Emperor allowed him to remain at the service of the Faculty of Medicine, and he was sent to continue his education abroad.. The results of studies of nerve anastomoses of the head were summed up in Tartu (Dorpat) in 1836 under the title Neurologische Beobachtungen (Käbin, 1982, p.40).After his return from abroad, he was employed as a prosector. In 1836 he became Professor Extraordinary and in 1842 Professor in Ordinary of Anatomy — this means Head of the Department of Anatomy. Bidder was Head of the joint Department of Physiology and Pathology and from 1860—1869 of the independent Department of Physiology.F. Bidder's first research papers dealt with the histophysiology of the retina and the functional significance of the cones (1839, 1841).In 1842 F. Bidder published jointly with A. W. Volkmann, and thereafter independently, his results of sympathetic nervous system research, which morphologically and experimentally confirmed its functional autonomy and introduced the concept of the neuron. In 1847 F. Bidder proved the integrity of the ganglion cell and the berve fibre in the sympathetic nervous system. He was put forward to the authorities of the Russian Empire for a prize.

In 1857 F. Bidder and C. v. Kupffer generalised the results of embryogenetic studies of structural elements of the spinal cord. In their numerous morphophysiological studies on the unity of structure and function established the embryogenesis, structure and function of the vegetative nervous system, cytoarchitectonics of the spinal cord, laid foundation to the concept of neuroglia (first describred by R. Virchow), differentiated between the ganglion cells, introduced the concept of the neuron. The Paris Academy of Science awarded the authors the Montioni Prize.

In these years F. Bidder also published the results of his research in lymph circulation, diuresis, innervation of blood vessels and several other areas of physiology. In 1846 they resulted in the discovery and description of "Bidder's organ" in amphibians' secretory system and in 1852 in the discovery of a complex of ganglion cells in frog's heart on the border between the atrium and the ventricle, which became known as Bidder's knot. Particularly important among F. Bidder's

papers are those on the role of digestive juices in metabolism. Digestive juices and Metabolism (1852). In an extremely interesting experiment F. Bidder and C. Schmidt introduced in dogs' stomachs hollow sounds through which gastric juice could flow out. During meals the amount of gastric juice increased. Then, however, an original change was made in the experiments: instead of feeding the dogs, food was only placed in their range of vision. The amount of gastric juice increased even then. This led to the discovery of the psychomotor reaction. Bidder's student Philip Ovsyannikov later was, the teacher of Ivan Pavlov, who understood the importance of the experiments carried out in Tartu (Dorpat).
F. Bidder died on 10 August (22 August NS) 1894 in Tartu (Dorpat).

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