Johann Christian Reil (1759–1813) who first described the insula

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His life

The German physician, anatomist, psychiatrist, and physiologist Johann Christian Reil (Fig. 1) was born on 20 February 1759 in Rhaude, Ostfriesland [1]. Reil was the biggest of five brothers. He was a son of a Lutheran pastor in the small East Friesland town of Rhaude. His father's name was *Johann Julius Friedrich Reil* and his mother's name was *Anna Jansen-Streng* [1–3]. In 1788, he had married *Johanna Wilhelmine Levaux*, who is a daughter of a wealthy and reputable Halle family, and he had two sons and four daughters [3].

His first education was near Norden, a small town on the sea. In 1779, he began medical education at the University of Göttingen. In 1780, he moved to the University of Halle. Two years later, he graduated with his thesis named *Tractatus de polycholia* on the biliary diseases. He took lessons from the teacher such as Phillip Friedrich Theodor Meckel (1756–1803) and the clinician Johann Friedrich Gottlieb Goldhagen (1742–1788) [1].

In 1782 and 1783, Reil went to Berlin to obtain *Cursus anatomicus*, a certificate to become a doctor in Prussia [3].

After that, he worked in his native city of Rhaude in Ostfriesland for a few years. In 1787, he returned to the University of Halle and he became an extraordinary professor there. After his teacher Goldhagen died in 1788, he continued as his successor [1, 3]. In 1789, he became Halle's municipal physician (Stadtphysikus). In 1806, his university was closed during the war. He was interested in soldiers wounded in the war during this time. In 1807, he made great efforts to reopen Halle's institution of higher learning. He reopened the university as the dean of the medical faculty in 1808. Reil's reputation grew steadily and many students came to the university to work with him. In 1810, he moved to the faculty of medicine that was established in Berlin with invitation from Wilhelm von Humboldt [1].

Between 1802 and 1805, the poet Johann Wolfgang von Goethe visited Reil in Halle and discussed with him many scientific issues, especially in the field of psychiatry [1]. It is also known that Goethe was treated by Reil because of his kidney complaints [1, 2]. Goethe stated that Reil had observed him before he was prescribed [2].

Reil contracted typhus while treating the wounded in the Battle of Leipzig [4]. He died in his sister's house in Halle [1].

His works

In 1795, he founded *Archiv für die Physiologie*, the first scientific journal on physiology in Germany. Physics, chemistry, histology, biology, and comparative anatomy studies were presented in this journal [1]. Following the publication of Reil's article in 1808, the psychiatry term began to be accepted. The most important issue for Reil was the prevention of the stigmatization of patients hospitalized with a mental illness [2].

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Reil was a valuable physician for his understanding and care of mental illnesses. Another important issue for him was to train paramedical personnel who could meet unmet medical needs in the countryside [1]. Reil who gave the discipline of psychiatry its name has contributed to medicine, physiology, and psychiatry with his studies on neuroanatomy, medicine, treatment, and mental illnesses [2]. Reil was the first person to describe the white fiber tract now called the arcuate fasciculus and the locus coeruleus [4].

In 1796, he published *Exercitationum anatomicarum fasciculus primus de structura nervorum, tribus tabulis aeneis illustratus* (First Volume of Anatomical Practice: On the Structure of Nerves) (Fig. 2). This study was about the nerves. In the book, he also mentioned the insula. Although the nerves were shown with illustrations, the insula was mentioned only in the text. In these illustrations, some nerves of the peripheral nervous system, the optic nerve and the optic chiasma, have been shown (Fig. 3 and Cover) [5].

Over time, the insula was named with many different names such as the central lobe, the fifth lobe of the brain,

intersylvian convolutions, and intralobular gyri. In the 1st edition of Gray's Anatomy (1858), Henry Gray named this region as *the island of Reil* [6].

Related eponyms

There are some eponyms with name of Johann Christian Reil

Reil's finger: Digitus mortuus or Raynaud syndrome

Island of Reil: the insula of the cerebral cortex

Reil's triangle: trigone of lateral lemniscus

Sulcus of Reil: circular sulcus of the insula

Conclusions

Reil should be remembered because he is a founder of psychiatry, a good neuroanatomist, a prominent medical educator and administrator, and a pioneer in scientific medical physiology and because of his contributions to today's knowledge.

Fig. 1 Johann Christian Reil, which can be found at [https://en.wikipedia.org/wiki/Johann_Christian_Reil#/media/File:Johann_Christian_Reil_\(1811\).jpg](https://en.wikipedia.org/wiki/Johann_Christian_Reil#/media/File:Johann_Christian_Reil_(1811).jpg) which can be found at Accessed 03.05.2020

Fig. 2 Title page of *Exercitationum anatomicarum fasciculus primus de structura nervorum, tribus tabulis aeneis illustratus*

Fig. 3 and Cover Some illustrations in *Exercitationum anatomicarum fasciculus primus de structura nervorum, tribus tabulis aeneis illustratus*

Compliance with ethical standards

Conflict of interest None.

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