

Frans R. J. Verhey

## Alois Alzheimer (1864–1915)



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On November 3, 1906, the German neuropsychiatrist Alois Alzheimer gave a lecture for South German neuropsychiatrists, entitled “Ueber eine eigenartige Erkrankung der Hirnrinde” (About a remarkable illness of the cerebral cortex), in which he discussed the case of a 55-year-old woman named Auguste Deter. The patient had become demented at a relatively young age and, after she died, microscopical study revealed plaques and tangles in the cerebral cortex. The lecture was later published as a small two-page report which ended with a “Keine Diskussion” [1]. Alzheimer must have felt somewhat disappointed that the audience had no questions and seemed to be more interested in the next lecture, on compulsive masturbation. One hundred years later, however, every Western citizen knows his name, which now generates more than 15 million hits on the Internet.

Alzheimer was born in Marktbreit am Main, Bavaria, on June 14, 1864. He studied medicine in Tübingen, Berlin and Würzburg. These travels were inspired by his enormous drive and scientific curiosity, especially in the field of histopathology [3]. In 1894, he married Cecile Geisenheimer, from a very well-off family. Financially independent, Alzheimer could devote part of his time to unpaid scientific research. Sadly, his wife passed away in 1901, leaving

the 37-year old Alois with three small children, who were then taken care of by his sister. Little is known about the man, Alois Alzheimer, except that he was a hard worker who preferred to spend his holidays in his laboratory, and who gained much respect from his colleagues because of his thoroughness, wisdom and passion, being careful and courageous at the same time [4, 9]. In addition, Alzheimer was a neuropsychiatrist in the true sense, a species that is rare nowadays, bridging the gap between brain and behaviour, being both a devoted clinician and a meticulous neuropathologist [8]. In those days patients were often admitted life-long. He used to show a warm interest in his patients and a similar enthusiasm to examine their brains after their death. Alzheimer had a firm belief that clinical work and laboratory research were complementary: his mission was “to serve psychiatry with the microscope” [9].

Three people in particular were important in Alzheimer’s career: Emil Sioli, Franz Nissl and Emil Kraepelin. Sioli was Director of the Mental Hospital in Frankfurt, Germany, where Alzheimer had his very first job as Sekundararzt. Both were devoted clinicians, sharing an interest in neuro-anatomy and neuropathology. Franz Nissl, appointed to the same clinic, developed an entirely new method to fix and stain

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cerebral tissues for microscopic studies, using impregnation by magenta, silver solutions and alcohol. Sioli, Nissl and Alzheimer spent many evenings together in the laboratory, after their hectic clinical work during the day. Several years later, Alzheimer moved to other locations, first to Heidelberg (from 1895), and later, in 1902, to Munich, where he was invited by the well-known Professor of Psychiatry, Emile Kraepelin, to join his scientific team. Kraepelin was convinced that the cause of all mental disturbances could be found by connecting accurate psychopathological observations to microscopical studies of the brain. This principle dominated the research in the Munich 'Nervenlinik', the world famous research centre for clinical psychiatry and brain research. Alzheimer was appointed there as Director of the Neuropathological Laboratory in 1903. Some of his co-workers were Friedrich Lewy, Gerhard Creutzfeldt and Alfons Jakob; their names would later be linked to other dementing disorders.

In 1898, Alzheimer, while still in Frankfurt, started to doubt whether dementia was always caused by cerebral atherosclerosis. In this year, he examined the brain of a patient who presented with dementia at a relatively young age. His brain showed a remarkable amount of neuronal cell loss, but, much to his surprise, hardly any atherosclerotic changes. Alzheimer therefore assumed that another, as yet unknown, pathological process should be involved, perhaps a form of inborn hereditary weakness. Several years later, he was presented a second pa-

tient, by Sioli: the case of Auguste Deter, a 50-year-old woman in the Frankfurt Mental Hospital. She was sometimes delirious, hallucinating and calling for her husband and daughter. She also had memory problems, and when she did not understand a question, she would start to cry loudly. In the years that followed she became increasingly apathetic; meanwhile, treatment probably consisted of diets, lukewarm baths (balneotherapy) with simultaneous cooling of the head, moist wrappings, hypnotic suggestion and weak electric currents (galvanization) [5]. Auguste Deter deteriorated to a condition of mutism and apathy, and eventually she died in 1905. Alzheimer was not the first to report on amyloid plaques; previous descriptions included those of Fischer and Redlich [6]. In contrast, in Deter's brain Alzheimer saw neurofibrillary tangles for the first time. These findings were reported in his lecture of November 1906. A third case, Johann F, was later examined by Alzheimer and his colleague Gaetano Perusini [6]. The findings again confirmed that senile plaques and neurofibrillary tangles were the pathological substrate of dementia. Interestingly, the clinical notes revealed that Alzheimer himself spoke by then of 'Alzheimerische Krankheit' [7].

Alzheimer only wanted to draw attention to the fact that senile plaques could occur at younger ages than previously thought. He had no intention of proposing a new disease entity. The findings supported the ideas of a new brain psychiatry of his coworker Kraepelin. He changed the term 'illness' ('Er-

krankung') to that of 'disease' ('Krankheit'), which he felt was a much stronger term [2] and included Alzheimer's disease as a new nosological entity in the next edition of his Textbook of Psychiatry.

## References

1. Alzheimer A (1907) Ueber eine eigenartige Erkrankung der Hirnrinde. *Allgemeine Zeitschrift für Psychiatrie und psychisch-gerichtliche Medizin* 64:146–148
2. Berrios GE (1996) Cognitive impairment (chapter 8). The history of mental symptoms Descriptive psychopathology since the 19th century. Cambridge: Cambridge University Press, pp 172–207
3. Maurer K, Maurer U (1998) Alois Alzheimer: das Leben eines Arztes und die Karriere einer Krankheit. Munich/Zurich
4. Maurer K, Volk S, Gerbaldo H (1997) Auguste D and Alzheimer's disease. *Lancet* 349:1546–1549
5. Maurer K, McKeith I, Cummings J, Ames D, Burns A (2006) Has the management of Alzheimer's disease changed over the past 100 years? *Lancet* 368:1619–1621
6. Möller HJ, Graeber MB (1998) The case described by Alois Alzheimer in 1911. Historical and conceptual perspectives based on the clinical record and neuro-histological sections. *Eur Arch Psychiatry Clin Neurosci* 248:111–122
7. Möller HJ, Graeber MB, Johann F (2000) The historical relevance of the case for the concept of Alzheimer's Disease. In: Whitehouse P, Maurer K, Ballenger JF (eds) *Concepts of Alzheimer's disease Biological, clinical and cultural perspectives*. Baltimore & London: John Hopkins University Press, pp 1–29
8. Verhey FR (2004) Old and forgotten: Alzheimer's lessons (opening lecture of the ABCDE Congress of Bologna). *Arch Gerontol Geriatr Suppl* 9:455–464
9. Weber MM (1997) Aloys Alzheimer, a coworker of Emil Kraepelin. *J Psychiatr Res* 31:635–643