How Hasse was led to the Theory of Quadratic Forms, the Local-Global Principle, the Theory of the Norm Residue Symbol, the Reciprocity Laws, and to Class Field Theory

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§1. Representation by Rational Quadratic Forms over $\mathbb{Q}$.

1. Hasse began his studies during the First World War on the 27th of September 1917 at the University in Kiel, where Otto Toeplitz was his principal teacher. After the war Hasse moved to Göttingen where he registered at the Georg-August University on the 16th of December 1918. At that time Göttingen was the center of mathematical research, not only in Germany but worldwide. The three main chairs for pure mathematics were occupied by Hilbert, Hecke (when Hecke left to Hamburg in 1920, Courant, who was Extraordinarius since 1918, became Hecke's successor) and Landau (see [Scha-1990]). Emmy Noether was Extraordinaria (associate professor). When Hecke, Hasse's most influential teacher, was appointed to the newly founded University of Hamburg in the spring of 1920, Hasse decided to leave Göttingen. He exmatriculated on the 23rd of March 1920 and moved to Marburg in order to study under Kurt Hensel the theory of p-adic numbers, introduced by Hensel in a short note in 1897 (see [He-1897]). This decision was taken after Hasse had acquired, while still in Göttingen, Hensel's book *"Zahlentheorie"* (see [He-1913)] on the 20th of March 1920. In this book Hensel developed in more detail the theory of p-adic numbers for the rational numbers $\mathbb{Q}$. He had already presented a thorough introduction to algebraic number theory and p-adic and, more generally, to π-adic numbers, for an algebraic number field K with respect to a prime divisor $\mathfrak{p}$ dividing $\pi \in K$ exactly to the first power, in the book *"Theorie der algebraischen Zahlen"* (see [He-1908]).