Public-key cryptographic schemes based on the complexity of solving multivariate quadratic equations over a finite field represent an alternative to widely used schemes relying on the complexity of factorization or on the discrete logarithm. Such a scheme was proposed by D. Gligoroski et al. [8]. Keys in this scheme are constructed using a special kind of quasigroups, the socalled quadratic quasigroups. In this paper we try and describe the quadratic quasigroups and classify them according to their properties. Finally, we present a theory which can be used to generate such quasigroups.