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Asymptotic group theory has been used to reveal weaknesses in some proposed cryptosystems due to the presence of generic free subgroups. In all known cases where free subgroups are present, they are generic in the sense that asymptotically, a random k -generated subgroup has probability one of being free of rank k . Thompson's group F contains no free subgroups, and we investigate asymptotic densities of subgroups with respect to two natural stratifications. We find a wide range of visible isomorphism classes of subgroups (that is, those with positive asymptotic density) and we find a new phenomenon of persistence, not seen in any other known examples. (Received July 31, 2008)