Many passerine birds, particularly corvids, are known to express complex cognitive skills comparable to those observed in primates. In order to examine how these similarities are reflected at the cellular level, I counted neurons and nonneuronal cells in passerine brains using the isotropic fractionator method. I show that, in these birds, neuronal numbers scale almost isometrically with telencephalic size, i.e., the average neuron size shows little increase and neuronal density decreases minimally as brains get larger. Neuronal densities in the passerine telencephalon exceed those observed in the primate cerebral cortex by a factor of 3-6. As a result, the number of telencephalic neurons in the Common Raven (Corvus corax) equals those observed in the cerebral cortex of small monkeys. The cerebellum features similar scaling rules. However, because the relative size of the cerebellum is smaller than in mammalian brains, cerebellar neurons make a much smaller proportion of total brain neurons than in mammals. In contrast to the little variation in neuronal densities in telencephalon and cerebellum, the density of neurons rapidly decreases with increasing structure size in the diencephalon, optic tectum and brain stem. For all examined brain structures, the densities of nonneuronal cells remain constant regardless of structure size, a finding congruent with data from mammals. Findings strongly suggest that high neuronal numbers and hence high brain's computational capacity underpin the behavioural and cognitive complexity reported in passerine birds.