45 kittens and cats ranging in age from newborn to adult were used in an investigation of the vasculature of the lumbar vertebrae. Observations were recorded on the ossification process during the development of the lumbar vertebrae. The lumbar vertebrae are mainly supplied by the rami spinales of the arteria lumbalis. The development and ramification of arterial branches to the various portions of the lumbar vertebrae are described together with the venous drainage. The importance of the vertebral blood supply and its relationship to the readily mobilisable calcium depot in the substantia spongiosa, are discussed.