

# DNA tests identify Russian Imperial family

Genetic testing has confirmed 'virtually beyond doubt' that bones found in a Russian forest are those of Tsar Nicholas II, his wife Alexandra and their three children. The family were killed by the Bolsheviks in 1918

**1.** Cells obtained from bones of corpses

**2.** Strands of DNA extracted from bone cells are cut into fragments using a chemical called a 'restriction enzyme'

DNA sample

Electric current

**3.** Fragments of DNA are separated into bands by passing an electric current through sample

**4.** Bands are absorbed, like inkblots, on to a nylon membrane

**5.** A radioactive 'probe' is combined with the bands on the membrane. The radioactive image is exposed on to x-ray film to create a permanent 'fingerprint'

Bone cell fingerprint

Living relative's fingerprint

Bands common to family members

**6.** The bone cell fingerprint is compared with a blood sample taken from living relatives of the Romanovs, including the Duke of Edinburgh, great-nephew of Empress Alexandra