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Geology of the Turkish-Iranian and Tibetan Plateaux: the effects of young continental collision and the implications for older orogenic belts.

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The high plateaux resulting from collision of India and Arabia with Eurasia show a distinctive suite of tectonic features and extensive calc-alkaline magmatism not due to subduction. Continental crust up to twice normal thickness underlies these areas; the distribution of plateau uplift in time indicates that thickening occurred by widespread homogeneous crustal shortening shortly after the start of collision, and not by large-scale underthrusting of continental crust, such as has formed the Himalayas. The terminal episodes of regional deformation, metamorphism and calc-alkaline magmatism that characterise most parts of old orogenic belts of wide extent (and which are used to define provinces of the Canadian shield) are readily explained as products of major continental collisions.

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