Scotland has a magmatic record covering much of the period 3100-50 Ma. In this review, we pull together information on Scotland's igneous rocks into a continuous story, showing how magmatic activity has contributed to the country's structural development and assessing whether the effects of older magmatic events can be recognised in later episodes. The oldest igneous rocks are part of supracrustal sequences within the Lewisian Gneiss Complex, formed when Scotland was part of the supercontinent Kenorland. The supracrustal rocks were intruded between 3100 and 2800 Ma by granodiorites and tonalites, which were metamorphosed and deformed in a major tectonothermal event between 2700 and 2500 Ma. The break-up of Kenorland (2400-2200 Ma) was marked by the intrusion of mafic dyke swarms of tholeiitic affinity. The convergence of continental masses to form the supercontinent Columbia resulted, at ~1900 Ma, in a series of subduction-related volcanic rocks and gabbro-anorthosite masses. Subsequent continent-continent collision formed a series of granite-pegmatite sheets at ~1855 Ma and ~1675 Ma and reworked much of the earlier rocks in the amphibolite facies. Columbia was breaking up by 1200 Ma, an event marked by remnants of basaltic magmatism in the NW of the country. Re-assembly of the continental fragments to form the supercontinent Rodinia resulted in the Grenville Orogeny, which in Scotland was marked by basement reworking but no confirmed magmatic activity. Early attempts to split Rodinia produced a rift-related, bimodal, mafic-felsic sequence in the Moine Supergroup of the Northern Highlands, at least some of the mafic rocks having mid-ocean ridge basalt affinities. Crustal thickening during a disputed orogenic event, the Knoydartian, may have caused regional migmatisation. The final break-up of Rodinia occurred in Scotland at ~600 Ma, when very extensive tholeiitic magmatism characterised the later parts of the Dalradian Supergroup, while a series of granites intruded the Moine and Dalradian successions. Ordovician and Silurian times saw the closure of the Iapetus Ocean and the convergence of Laurentia, Avalonia and Baltica. The collision of a major arc system with Laurentia caused the Grampian event (480-465 Ma) of the Caledonian Orogeny, marked by ophiolite obduction, the generation of (largely) anatectic granites, volcanism in the Midland Valley and Southern Uplands, and intrusion of a major gabbro-granite suite in the NE. The late-Caledonian events (435-420 Ma) were largely post-collisional and were marked by the emplacement of alkaline igneous intrusions in the NW, calc-alkaline granitic intrusions over much of the country, widespread volcanic activity and regional dyke swarms. Laurentia, Avalonia and Baltica amalgamated to form the supercontinent Laurussia. Magmatic activity recommenced at 350 Ma, when intra-plate alkaline magmatism affected much of southern Scotland, in particular, through into Permian times. The alkaline magmatism was interrupted at ~295 Ma by a short-lived event in which tholeiitic magmas were intruded as sills and dykes in a swarm ~200 km wide. In the early Palaeogene, lithospheric attenuation related to proto-North Atlantic formation and the splitting of Pangaea was complemented by the arrival of the Iceland mantle plume. Huge volumes of mafic magma were

emplaced as lava fields, central complexes and regional swarms, locally increasing crustal thickness by 30%. Articles that cite this article?