



### **The Welcome Nugget, Australia**

Straggling around Ballarat and Bendigo, the goldfields in the Australian state of Victoria are notable for the number of large nuggets that they yielded. The ultimate source of the Victoria gold lies in the bedrock of Palaeozoic turbidites and in the veins within them. However, the 19th-century miners soon realised that the best payable ore was in the overlying placer deposits, and particularly in the zone of alluvium lying old stream courses and now just above rockhead. To follow the floor of a sediment-filled buried channel beneath the eastern outskirts of Ballarat, the Red Hill Mine had a horizontal heading 54 metres below ground level. Working in this on June 15, 1858, Richard Jeffrey uncovered the massive Welcome Nugget. It was almost pure solid gold, and it weighed in at 62 kg (the plaster replica in this photo weighs a lot less). Hauled out of the mine, it was exhibited locally, and then again in London, before it was sold for £10,500 and melted down to make sovereigns. Its value today would be about £1,600,000. The only larger nugget ever found was the Welcome Stranger, which was uncovered in 1869 from beneath just two centimetres of soil near Moliagul, west of Bendigo. It contained 72 kg of gold but this was mixed with a lot of quartz and it lacked the solidity of the pure gold in the Ballarat nugget. Perhaps that explains why it was never photographed before it was crushed and melted. There is no mining in the Victoria goldfields today, but prospectors use hand-held metal-detectors, and early in 2013 a nugget weighing more than five kilograms was found buried just half a metre deep in alluvium near Ballarat. Some large nuggets contain twinned crystals of gold, that can only have formed at temperatures above 350°C, confirming that the nuggets originate within the veins and are then washed out into the placer deposits. The alternative theory, that nuggets formed by accretion and annealing within the sedimentary environment, appears to lack firm supporting evidence. © *Photograph and text by Tony Waltham Geophotos*