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Nundle gold

Mineral Resources

Reef gold was first discovered at Nundle in 1852; alluvial gold may have been discovered as early as 1849. The field has since yielded some 8t of alluvial gold, and 2t of reef gold.

Most of the old mines are situated either near the hamlet of Bowling Alley Point, or between Nundle town and Hanging Rock village. Nundle is 50km southeast of Tamworth, in northern NSW.

The mineral deposits of the Nundle gold field can be classified as follows:

1. quartz veins and adjacent shear zones, both auriferous in doleritic intrusions, sediments, and basalt.
2. stibnite-bearing veins.
3. scheelite-bearing veins.
4. auriferous placers, in deep leads of Tertiary age, in terraces adjacent to the Peel River, and in present-day watercourses.

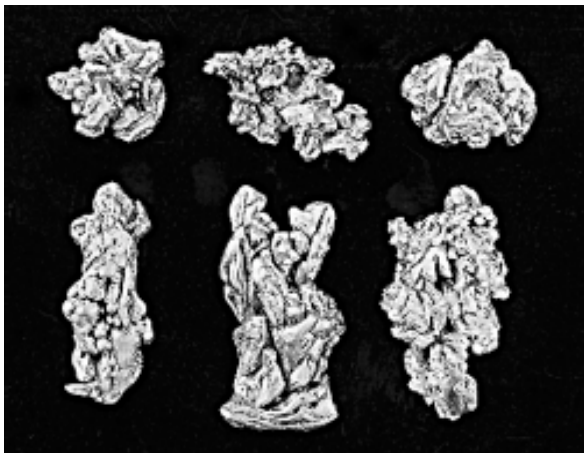
All the economically important gold reefs occur either wholly or partly in doleritic intrusions of the Devonian Tamworth Group.

The reefs appear to have formed after serpentinite intrusion, possibly during the late stages of development of the Peel Thrust in either Late Carboniferous or Permian times, at shallow depths possibly in a geothermal system beneath dry land.

Considerable supergene gold enrichment has taken place.

The surface distribution of the deposits suggests that some regional zoning is present, from east to west: a thin, poorly defined scheelite belt, a gold belt, and a stibnite belt. The belts are concordant with host rock bedding.

The general geology of the area is shown on the map of mineral deposits in the Nundle area. The older Woolomin Beds in the east are separated from the younger Tamworth Group in the west by the Peel Thrust, a geosuture along which the Great Serpentinite Belt occurs.



Gold nuggets from Nundle

In excess of 80 separate quartz veins have been mined. They vary in thickness from less than a centimetre to a metre, and have been proved to continue for up to 600m along strike, and to depths of 113m.

They mostly strike between northwesterly and northerly, and dip in the range 60°W to 80°E.

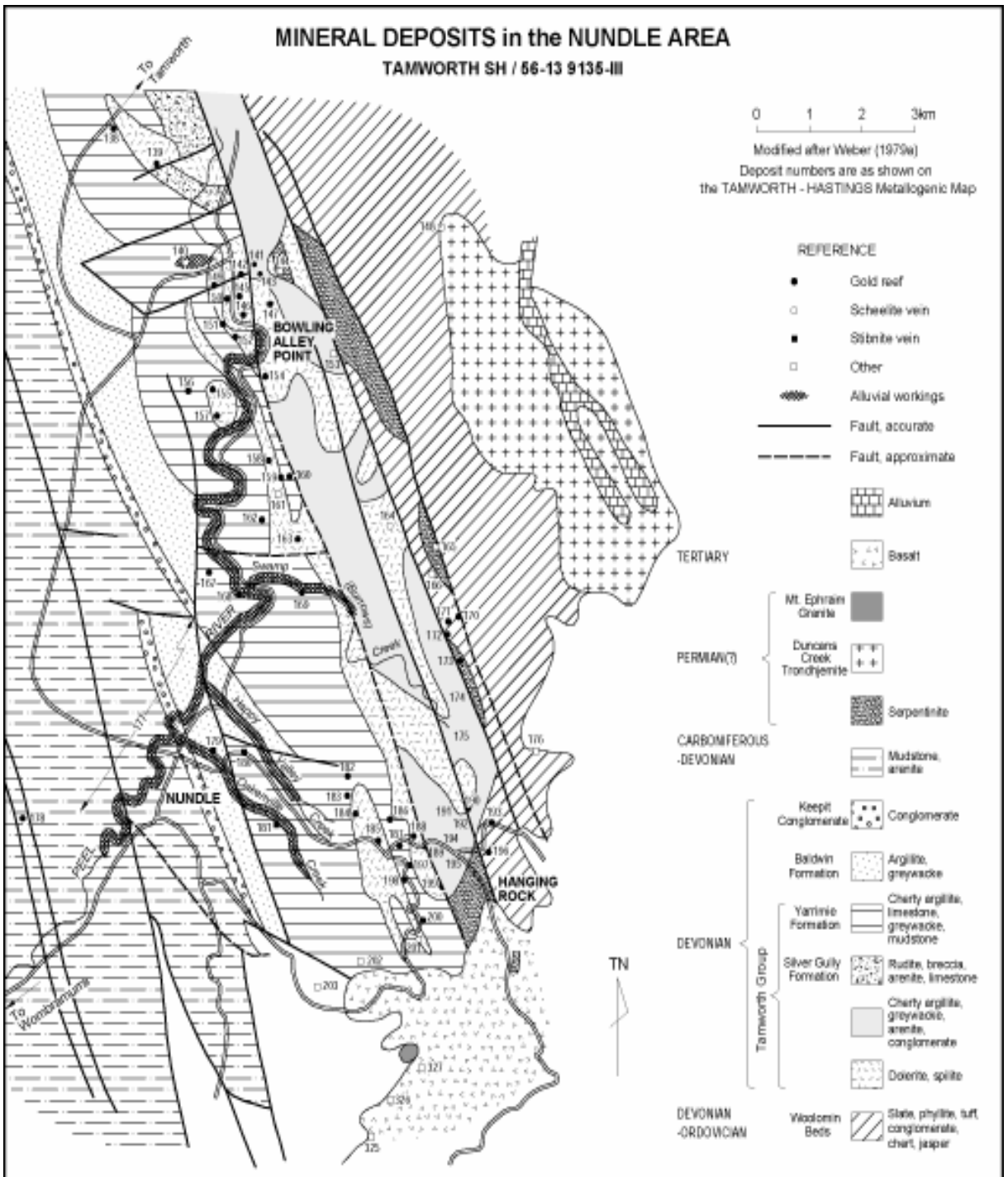
During the Tertiary period a major river system several kilometres in length and up to 200m wide, was buried under flows of plateau basalt, which protected considerable tracts of the valley-floor sediments from erosion and preserved them until the present.

Those sediments near the edge of the basalt capping have been worked in bulk by open cut methods at the Mount Ephraim, New and Old Sheba, Rip and Tear, and Harden Hill deep leads.

Partly cemented sands, gravels, and conglomerates were sluiced with generally very poor results.

Some deep leads were selectively mined for hundreds of metres under the basalt by underground methods with only slightly better results.

Boulder and cobble conglomerates which accumulated on terraces on both sides of the Peel River have been sluiced for gold at Bowling Alley



138	Hydes Creek prospect	Au
139	Alliance reef, Heymanns reef	Au (Cu)
140	Golden Bar and Brumby Charlie	Au
141	Foleys reef	Au
142	Golden Hole reef	Au
143	Opossum reef, Possum reef	Au
144	Chrome Gully mine, Chrome Hill	Cr
145	Lord Carrington, Carrington	Au
146	John Bull (Hard-Up) and Maitland reefs	Au
147	Blackfellows (Knob) reef	Au
148	Duncans Creek copper prospect	Cu (Mo)
149	Connollys reef, Blairmore mine	Au
150	Kinbalu reef and terrace	Au
151	Bourkes reef	Au
152	Kanaka reef, D'Uasons reef	Au
153	Poplars prospect	Mn (Cu)
154	South Common prospect	Au
155	The Gas reef	Au
156	Long Gully reef	Au
157	Marquis of Lorne, Prices Hill, Chamberlains reef, Prices reef	Au
158	Scandinavian reef	Au
159	Bonny Dundee mine	Au
160	Daylight mine	Au
161	Taroona copper prospect	Cu (Au)
162	Moonlight mine	Au
163	Tom Tiger prospect	Au
164	Zwara (or Weatheralls) scheelite mine	W
165	Munro Creek prase deposit	Common opal (Cu, Cr)
166	Gemmint lead	Au
167	Norton mine, John Norton mine	Au
168	Brands reef	Au
169	Thompsons reef	Au
170	Folly Creek prospect	Au
171	Trevena (Trevennis) gold mine	Au
172	Rowdy Gully copper deposit	Cu, Au
173	The Folly line (north): Foleys Folly, Golden Gate, Yankee Jack, The Gap	Au
174	The Folly line (south): Foleys Folly, Klondyke mine, Duke of York, Buckleys reef	Au
175	Bonds reef	Au
176	Scrubby Gully prospect	Au
177	Peel River and Oakenville, Happy Valley, Spring and Swamp Creeks	Au
178	Sugarloaf prospect	? Cu, Au
179	Fogartys antimony mine (Nundle antimony mine)	Sb (W, Au)
180	Stannings antimony mine	Sb
181	Woodleys antimony mine	Sb (Au)
182	Gohanna reef	Au
183	Wrights Spur reef	Au
184	Spring Gully prospect	Au
185	Lady Mary reef	Au
186	Tarvainens gold reef	Au
187	Brown Snake reef	Au
188	The Shamrock, Dead Bird mine	Au
189	-	Au
190	-	Au
191	Ruzickas reef, Lady of the Mountain	Au (Ag)
192	-	Au
193	Verden Road reefs	Au
194	-	Au
195	Harden Hill deep lead, Cemetery Hill deep lead	Au
196	Brayshaws reef	Au
197	Black Snake reef	Au
198	Tamworth reefs, Christmas reef, Kennedys reef, White Rose mine Excelsior mine	Au
199	Opossum Gully reef	Au (W)
200	-	Au
201	Rip and Tear scheelite prospect	W (Au)
202	Old Sheba, Rip and Tear, Mt Misery, Mt Pleasant, Red Hill, Deep Lead Gully	Au (W)
203	New Sheba, Red Hill, Mt Misery, Yahoo Gully	Au
325	Cement Hill deep lead	Au
326	Dirty Hole Creek deep lead	Au
327	Mt Ephraim deep lead	Au

Point, and on the west bank of the Peel near the Marquis of Lorne mine.

The deposits are situated about 5-10m above the present river bed. They extend up Jamisons Creek for about 300m (Golden Bar workings) and have been worked by means of a tunnel near its confluence with the Peel River (Brumby Charlie workings).

There is no doubt that all the rich ‘specimen’ gold and all the bonanzas, such as Ruzickas reef which contained 20kg gold in one small patch, were found at or within a few metres of the surface.

This was noted and it was concluded that the free gold was derived from pyrite which had decomposed near the surface.

Some secondary enrichment has also taken place. In order to form the ornate crystalline aggregates, some weighing more than a kilogram, the gold must have been transported from the scattered pyritic grains to the sites of gold crystal growth.

The only feasible transport medium is a solution, or possibly a colloidal suspension. Gold has been shown experimentally to be soluble in sodic and potassic sulphide solutions, especially when the pH is near-neutral.

Such solutions could well have been generated by the passage of waters through the sodic igneous country rocks. Precipitation of gold may have been caused by a near-surface change in pH.

If the specimen gold is of secondary origin, then it must be younger than the vein quartz in which it commonly occurs.

A specimen of gold in quartz breccia from the Mount Ephraim deep lead shows the gold to be younger than the quartz breccia, and therefore younger than the vein quartz.

In addition, it indicates that secondary enrichment of gold took place in the deep leads, as well as in the reefs.

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