

SWIFT'S CREEK-CASSILIS-BROOKVILLE NOTES

- 1854-7:** Swift's Creek opened - 12 men worked 3 claims - other parties followed, 1855-7 - first diggers' camp started at later-named Tongio West, at junction of Swift's and Gray's [later named Long Gully] creeks. (Flett, p. 172)
- mid-1850s:** Brookville originally known as Sheepstation - alluvial creek beds worked in early gold rushes.¹
- c.1858:** Rush to Swift's Creek - gullies running into Long Gully from N (locality later named Cassilis) opened by Chinese. (Flett, p. 172)
- 1858:** Omeo quartz reefs discovered near town (later named Township Reef) – prospecting association formed. (Flett, p. 171)
- 1858:** Rush to (later-named) Gum Forest - large, white trees, in contrast to the gnarled vegetation at Swift's Creek. (Flett, p. 172)
- 1858:** William Power discovered first quartz reef in Gippsland, near junction of Power's and Swift's creeks, on south side - his claim named Morning Light - on site of later Hepburn and King Cassilis mines. (Flett, pp. 172-3)
- early 1860s:** Major discoveries at Crooked River, Jordan and Kiandra caused virtual desertion of Swift's Creek - drifted back and small settlement grew up at Swift's Creek.²
- October 1863:** (Omeo Central Subdivision) Party of miners prospecting for quartz at Swift's Creek.
- June 1864:** 20 miners at Tambo River and Swift's Creek.
- December 1864:** Three quartz prospecting claims opened in Omeo Division: one was Star at Swift's Creek.
- June 1865:** March 1866: Seven miners at New Rush Creek, Upper Livingstone. Large Chinese parties have worked out their claims on Livingstone Creek and shifted to Swift's Creek – shepherding a great length of creek, awaiting rain.
- March 1866:** Large Chinese parties have worked out their claims on Livingstone Creek and shifted to Swift's Creek - shepherding a great length of creek, awaiting rain.
- 1866:** Reefs discovered near head of Swift's Creek, at place called Black Springs or Eureka (after main reef there) - others opened at Gum Forest - attracted about 250 miners. (Flett, p. 173)
- June 1866:** Swift's Creek 'the great point of attraction' in subdivision - 21 quartz leases applied for – creek itself extensively occupied, mainly by Chinese, for alluvial mining.
- September 1866:** Seven more quartz leases applied for at Swift's Creek. Crushing machinery (15-head battery) delayed because of 'uncertain state of the entrance of the Gipps Land Lakes' – two more machines to follow.
- December 1866:** Tambo River alluvial diggings gradually extending downward from mouth of Swift's Creek. Development of Swift's Creek reefs retarded by delay in completing Omeo Quartz Crushing Co. battery. 150 miners at Swift's Creek).
- March 1867:** Omeo Quartz Crushing Co. machine, Swift's Creek, changed hands.
- September 1867:** Swift's Creek Quartz Crushing Co. mill completed - 15-head, Cornish boiler and engine--ex-Clunes - located at foot of Charlotte Spur - ore brought down from Eureka, Black Prince, Montcalm, Himalaya and other mines in bullock wagons,

¹ Fairweather (2), p. 175

² Christie, p. 37

which travelled along the main divide between Riley's and Swift's Creek and then down the spur to the battery.³

- December 1867:** Claims crushing at Swift's Creek: Eldorado, Eureka, Sebastopol, All Nations, Star, Alma, Hand-in-Hand, Midas.
- 1867-9:** Crushings at Omeo Quartz Crushing Co., Swift's Creek, realised less than 1 oz/ton – unprofitable.⁴
- June 1868:** Many Chinese miners, ex-Swift's Creek, and some from the Buckland, working river claims on the Tambo, from Swift's Creek downwards. Extensive tunnel and tail-race just completed by New Adventure Co., by cutting through high rocky bluff known as Frenchman's Hill, on Livingstone Creek opposite Omeo township.
- September 1868:** Dispute between quartz miners and only crushing mill in Swift's Creek district as to price of crushing - company now arranging terms favourable to miners. Tambo River, for some miles below mouth of Swift's Creek, being vigorously worked by many Chinese and a few Europeans - river generally contains too much water to work its bed - water-level now low.
- 1868+:** Gum Forest (lower part of later Brookville) was cradle of reef mining in Omeo Shire, with mines working from 1868.⁵
- 1868:** Rush to Gray's Swamp [Gray Creek = Long Gully] on Swift's Creek - lead struck. (Flett, p. 173)
- March 1869:** Chinese struck promising lead near Swift's Creek Swamp.
- September 1869:** Some trial crushings from Swift's Creek reefs unsatisfactory - some claims abandoned.
- December 1869:** Eureka Co. - only co. on Swift's Creek reefs not to have forfeited lease.
- December 1869:** First mention of Hepburn Reef - opened up by Smart Boys claim - battery set up, but not a success.⁶
- 1869-83:** Reefing in Swift's Creek area almost ceased in 1869 - revived in 1872 - kept alive until 1883 mainly by enterprising battery owner, Peter Forsyth. (Flett, p. 173)
- 1870:** Peter Forsyth discovered Rob Roy Reef, Gum Forest.⁷

3 Mining Surveyors' Reports (Omeo Division), September 1867; Fairweather (2), p. 37

4 Christie, p. 37

5 Fairweather (2), p. 175

6 Christie, p. 43

7 Fairweather (2), p. 195

- March 1870:** Quartz mining on Swift's Creek, which for some time past has been in a languishing condition, has been brought to a premature close by the only mill in the district raising the price of crushing from 15s to 30s per ton. In consequence every reef is deserted, and no quartz has been crushed during the last quarter, although one company alone has over a hundred tons of good stone ... and the quartz miners themselves have been compelled to take to alluvial digging, or find employment in other pursuits. Alluvial mining on Swift's Creek suspended during dry weather - claimholders (mainly Chinese) took up new claims on Livingstone Creek, where water is always available - claims turned out well - doubtful whether miners will return to Swift's Creek.
- 1871:** Black Prince Co. purchased and made improvements to old Omeo Quartz Crushing Co. battery - crushing for own mine and other parties - realised over 1 oz/ton for first time.⁸
- March 1871:** 'Quartz reefing has again been resumed on a small scale at Swift's Creek, in the expectation that the Swift's Creek Company's crushing machine will be shortly set to work again, at lower rates than those that prevailed when all the miners struck work on account of the high price demanded for crushing.'
- September 1871:** Purchasers of Swift's Creek steam crushing mill have taken up 28 men's ground on site formerly held under lease by Eureka and Himalaya Cos. (at Gum Forest) - have put mill in thorough working order, with improved appliances. Chinese mining population increased by immigrants direct from China, for whom their countrymen had sent. European population also increased, chiefly by quartz miners.
- December 1871:** Black Prince Co.'s lease includes Eureka, Renovator, Eliza Kate and Black Prince reefs. Only crushing machine in district (Black Prince?) is at work night and day.
- June 1872:** Black Prince GM & C Co. formed new company to take their present engine and 2 nearest reefs, Snowstorm and Montcalm - old company now applying for lease of 50 acres on Black Prince and Eureka line of reef and has registered a machine site in vicinity to erect new engine.
- September 1872:** Two small water-powered batteries (1 x 3-head (Iron Duke), 1 x 5-head) erected on Swift's Creek to test various reefs. Reefs previously would not pay, due to cost of carriage to only steam mill in district (Black Prince) and to high charge for crushing - mill now closed, awaiting removed to Eureka Spur.
- March 1873:** Black Prince battery removed to a more central locality (old Eureka mine) at Swift's Creek and new Eureka Co. formed - the only mill in the district that has the requisite appliance for treating minerals other than gold with which the quartz at Swift's Creek abounds, and which cannot be properly separated from the gold by simple crushing and the use of quicksilver only.⁹
- December 1873:** Eureka Tunnelling and Quartz Crushing Co., Swift's Creek - renewed steam mill. In alluvial mining, all hands fully employed.
- March 1874:** Swift's Creek reefs may be unpayable - high gold content per ton of stone, but narrow leads in very hard ground - most work stopped. Eureka Co., with greater capital than others, still at work on main tunnel.
- September 1874:** Three quartz claims near old Charlotte Lease, Upper Swift's Creek (Eureka is one). Also 3 quartz claims opened on lower part of Swift's Creek - new and very extensive line of reef.
- 1874:** Marion mine, one of the earliest at Long Gully, opened - later named Chance mine.¹⁰

8 Christie, p. 37

9 Mining Surveyors' Reports (Omeo Division), March 1873; Christie, p. 38

10 Fairweather (2), p. 78

- 1874:** P. Forsyth operating water-powered battery at head of Swift's Creek.¹¹
- March 1875:** Eureka Co., Swift's Creek, abandoned lease - ground through which they were tunnelling proved too hard.
- mid-1870s:** Settlement at junction of Swift's and Gray's creeks named Tongio West by mid-1870s – butcher, store, mines registrar, two pubs.¹²
- March 1877:** Eureka battery, Swift's Creek, being shifted to a better site in the midst of the principal reefs - Duke of Cornwall Co. formed to work a reef discovered in 1874.¹³
- 1877:** Duke of Cornwall mine situated about midway between Swift's Creek and Tongio West – battery site on Swift's Creek, became known as White Sands.¹⁴
- June 1877:** Independent Quartz Crushing Co., Swift's Creek, began crushing. Duke of Cornwall to begin crushing shortly (mine and machine let on tribute by Dec 1878).
- 1880s:** Quartz mining at Swift's Creek continued spasmodically - numerous sites tried, machinery moved, but field seen mostly as a failure.¹⁵
- March 1880:** Duke of Cornwall Co., Swift's Creek - ground forfeited by June 1880 and taken up under miners' rights.
- June 1883:** Peter Forsyth erected (new) water-powered (26 ft wheel) battery at Swift's Creek, in connection with his Lady McGregor Reef - cost about £700.
- 1883:** Lady McGregor mine situated over top of Charlotte Spur, on fall of Riley's Creek - Peter Forsyth's batter was supplied with water by race from Sheepstation Creek and further race connecting into Riley's Creek.¹⁶
- December 1883:** Federal Australian Co., Dry Gully (Omeo) March 1884: Surprise Prospecting Association discovered what appears to be a payable reef at Gum Forest.
- March 1884:** Surprise Prospecting Association discovered what appears to be a payable reef at Gum Forest.
- September 1884:** Great scarcity of water. Slight revival in quartz mining at Gum Forest, Upper Swift's Creek. Several small parcels waiting for crushing at Jorgensen's Union battery. Mountain Maid battery just completed.
- December 1884:** Forsyth replaced (supplemented?) his waterwheel with 8-hp oil engine (25 ft 3 in waterwheel still attached to plant, Dec 1885).¹⁷
- mid-1880s:** Forsyth's Lady Macgregor was main producer on field.¹⁸
- March 1885:** Good quartz obtained at Swift's Creek, in a new place known as Long Gully (Lone Hand Mine, McLaren's Gully) - stone carried 7 miles to Forsyth's mill.¹⁹
- December 1885:** (James Stirling appointed Mining Registrar) Drought - 'Swift's Creek is now dry'.

11 Fairweather (2), p. 195

12 Christie, p. 38

13 Mining Surveyors' Reports (Omeo Division), March 1877; Christie, p. 38

14 Fairweather (2), p. 106

15 Christie, p. 38

16 Fairweather (2), p. 195

17 Mining Surveyors' Reports (Omeo Division); Fairweather (2), p. 195

18 Christie, p. 38

19 Mining Surveyors' Reports (Omeo Division), March 1885; Fairweather (2), pp. 31,107

- March 1886:** Power and Son working reef in the Gum forest, Swift's Creek. Just-in-Time Reef discovered on divide between Bald Hill Creek and Long Gully. Forsyth's battery idle, pending rainfall.
- September 1886:** Swift's Creek - 'Mr Power, a very old miner who has recently had a good crushing from his reef, informs me that he was the first to discover quartz gold in Gippsland, at Swift's Creek, 28 years ago.' Peter Forsyth - 'had, in spite of great difficulties established a good plant, and has been the genuine friend of the miners'. Dow and Reynolds' working reef on Riley's Creek, between Swift's Creek and Haunted Stream.
- December 1886:** Increased activity at Swift's Creek.
- March 1887:** Renewed mining activity at Swift's Creek area in Tambo Valley - 14 quartz prospecting claims registered at Long Gully.
- April 1887:** First reef opened at Bald Hill Creek - Cornstalk Reef - second reef named Change Reef. (Flett, pp. 174-5)
- June 1887:** Best yields of gold from Swift's Creek reefing area - crushed by Forsyth's battery, Gum Forest. 'A great desideratum in this district is the erection of a mill for the treatment of pyrites' - quartz highly charged with pyrites below the water line.
- July 1887:** Peter Forsyth found a reef on what was to become the famous Markey line - Lone Hand mine.²⁰
- September 1887:** About 80 miners at work at Bald Hill Creek and Long Gully - 40 claims, also applications for 8 leases. Angora Co. battery awaited. Lady McGregor mine, Gum Forest, crushed 100 tons for 206 oz - best-developed reef in division. MS advised that a large area of auriferous country between Bald Hill Creek, Long Gully, and Swift's Creek Junction be withdrawn from land selection - 'otherwise future mining operations in these localities will be vexatiously impeded.'
- September 1887:** Alluvial workings in Tambo valley hitherto confined to western watershed - Swift's Creek, Haunted Stream, Shady Creek. Gold found in Tambo Flats near Bindi, but not opened up. Payable returns from terraces below Doctor's Flat. (Stirling, J., 'Notes on the Geological Structure of the Tambo Valley', Appendix G to MSR, Sept 1887, pp. 80-85, plus map)
- November 1887:** Bald Hills Creek - tributary of Tambo River, rising at Mt Gingermunjie on Main Dividing Range, about 6 miles south of Omeo - about 30 miners at work. Long Gully - most westerly tributary of Swift's Creek - enters Swift's Creek at Government surveyed township of Tongio West (now inhabited by a few resident Chinese miners*) - about 30 miners at work. (Stirling, J., 'Preliminary Notes on the Geology of Bald Hills Creek and Long Gully, Omeo', Appendix G to MSR, Dec 1887)*A Chinese community had developed at what became known as Chinaman's Crossing (now Ben's Crossing) at Swift's Creek during the 1860s - by the 1890s only 20 or so Chinese remained.²¹
- 1887:** Cornstalk mine sold to Bald Hill Co.²²
- December 1887:** Bald Hill Creek Co. (Ball) erecting battery, constructing dams, &c. Shamrock, Lord of the Hills, and Chance quartz claims at Long Gully purchased by G. Smart of Melbourne for £2,000 - intends to erect 10-head battery on Swift's Creek, about 2 miles below claims. Stone from Long Gully presently crushed at Forsyth's Lady Macgregor battery – unprofitable because of distance.

20 Fairweather (2), p. 38

21 Fairweather (2), p. 118

22 Fairweather (2), p. 159

- 1888:** King of the Forest Reef discovered on divide between heads of Odell's and New Rush creeks (Gum Forest area) - followed by discovery of Pheasant Reef. (Flett, p. 176)
- March 1888:** Bald Hill Creek Co. battery started crushing - christened the 'Pioneer'. Initially 5-head; further 15 head added later in year - steam powered. Battery situated on banks of Bald Hill Creek, just below junction with Jasper Creek - water obtained from a well near mouth of Jasper Creek. Ore was brought from the mine by combination of sleigh and dray - one section of the dray track was corduroy.²³
- March 1888:** About 160 miners at Bald Hill Creek and Long Gully. Shamrock Co., Long Gully, will soon erect machinery - now on ground. Albion claim about to be sold. Bald Hill Creek Co.'s first crushing gave 2_ oz/ton.
- April 1888:** Telegram from Geo. W. Forsyth of Gum Forest, Swift's Creek, Omeo, Gipps Land, stating that his father, Peter, wanted me to erect Denny and Watson's pans for treating quartz tailings for gold.²⁴
- May 1888:** Only surface shows crushed so far from Bald Hill Creek and Long Gully claims - yields averaged between 8 and 30 oz to the ton.²⁵
- May 1888:** Forsyth's tailing works - John Gail building waterwheel to work the pan - 40 ft diam - Henry Morgan secured wheel pit - found that, according to plan, the Muller in pan would revolve the wrong way, so made alterations - have stand of pan in position and pans secured, shafts and pulleys in place and plumer [sic] blocks bolted down - mill completed and posts of shed up - work took about three weeks.²⁶
- June 1888:** At Bald Hill Creek, Long Gully, and Swift's Creek - little work done - most claimholders shepherding, hoping to sell. Ball and Smart (Shamrock) battery, Swift's Creek, nearly complete - 'altogether a new invention': 'what is termed a pulveriser' - no stampers, but a stone breaker, Chilian mill, and revolving discs, together with Denny's pans. Best claims in Long Gully: Never Can Tell, Red Jacket (north of Shamrock), and Rose of Australia. Forsyth's battery recently added 2 Denny's pans to treat about 2,000 tons of tailings.
- June 1888:** Henry Morgan erected pulveriser at Tongio West/Long Gully for Messrs Ball and Smart - Lloyd and Shelton building in boiler - HM & L&S living in old Chinese hut belonging to company - got Denny and Watson's pans in pit.²⁷
- July 1888:** Ball & Smart's works - building up engine bed and foundation for stone cracker.²⁸
- August 1888:** Ball & Smart's works - got steam up in one boiler and worked engine - engine does not seem strong enough to drive machinery - head of piston broke, damaging cylinder - engineers patched up machinery - came to see if engine capable of driving machinery, stone cracker, disks, and four pans.²⁹
- August 1888:** Ball and Smart took out Mt Hepburn lease - carted stone to Ryan's Brave George battery at Tongio West.³⁰
- 1888:** Brave George battery erected just below road at Tongio West, at the lower end of the (now?) sports ground - 5-head, perhaps later increased to 10-head.³¹

23 Christie, p. 39; Fairweather (2), p. 159
 24 Morgan
 25 *Omeo Telegraph*, 24 May 1888
 26 Morgan
 27 Morgan
 28 Morgan
 29 Morgan
 30 Christie, p. 43

- September 1888:** Ball & Smart's works - started crushing, with power only to run one pan and rest of machinery.³²
- September 1888:** Bald Hill Creek Co., Lady McGregor (Forsyth), and Ball and Smart (Hepburn Co.) of Long Gully - 'the only companies that have done anything like work'. Ball and Smart suspended operations - patent pulverising machinery proved unworkable. Bald Hill Creek Co. to erect another 15-head battery with three Denny's pans.
- October 1888:** Ball and Smart's machinery is a failure and abandoned - men off work except a few in mines - partnership likely to be dissolved between Smart and Ball, as the former accuses latter of dragging him into a test of a worthless patent (Dr Cox's) in which Ball was interested - whole enterprise carried on with Smart's money.³³
- December 1888:** Bald Hill Creek Co. - found new lode at depth of 110 feet - 'The theory hitherto promulgated by scientists and experts, that the reefs in this locality would not continue to any depth, has, by this discovery, been exploded'. Mining in Long Gully languishing for want of machinery. Several parcels of stone crushed at Lady McGregor battery (Gum Forest).
- February 1889:** Smart & Ball, Long Gully dissolved partnership - both erecting separate batteries - Henry Morgan engaged by Smart.³⁴
- March 1889:** Martin's new battery at Bald Hill Creek is a failure - can only get power to work 15 head of stamps and one pan out of 20 head and two pans - Martin not likely to last long there.³⁵
- March 1889:** Absence of machinery and lack of capital has caused depression in mining in the district. Now 3 batteries under construction in Long Gully - will 'make things lively in the gully' - and one at Bald Hill Creek. Shamrock GMC, Long Gully - 600-600 tons of stone awaiting battery. Never-can-tell GMC - 2 leases on Dandenong (Dundee) Spur, Long Gully - tunnel - battery site and water right in Springs Gully, 1,250 yards from tunnel - reservoir near battery site - tramroad from tunnel to battery.
- 1889:** Never Can Tell GMC battery - ex-Rob Roy mine, Haunted Stream - battery foundations high up Chance Gully (1975) may be site of NCT battery,³⁶
- April 1889:** Rose Syndicate, Bald Hill Creek, erecting plant. Smart's battery, Long Gully, started - 10-head and two pans - quite a gathering of local residents - battery erected at junction of Swift's Creek and Long Gully, the site of former (unsuccessful) Ball and Smart battery - new battery ex-Mt Birregun.³⁷
- 1889:** Hope battery on Rose of Australia claim - 10-head battery - later sold to Eckberg and McCulloch, and finally became the Warden Co. battery.³⁸
- 1889:** Rose battery at the Enterprise mine, upper reaches of Bald Hill Creek, owned by Lawrence brothers - 12-head, steam-powered - boiler removed to Ezard's sawmill during WWI.³⁹

31 Fairweather (2), p. 40
 32 Morgan
 33 Morgan
 34 Morgan
 35 Morgan
 36 Fairweather (2), p. 39
 37 Morgan; Christie, p. 40
 38 Fairweather (2), p. 40
 39 Fairweather (2), p. 166

- May 1889:** Geo. Smart died - 'He went to his mines this morning in company with Mr Pearse, a mining speculator, and in a mistake, took a drink out of a bottle at the mouth of a tunnel which he supposed to contain tea, but which proved to be rackerock oil or oil of almonds. This was at noon, and at 5 o'clock, he was a corpse.'⁴⁰
- May 1889:** Blanket tables laid at Smart's battery - shed erected over same.⁴¹
- May-June 1889:** Henry Morgan assisted in erection of Pegler's battery, Rose of Australia Reef.⁴²
- June 1889:** Henry Morgan laying 480 yards of incline tramway for Rose Syndicate, Bald Hill Creek.⁴³
- June 1889:** Tongio West goldfield (whole area of Cassilis, Tongio West and Bald Hill Creek) lies about 10 miles SE of Omeo - begins on summit of main dividing range and runs S to junction of Swift's Creek with Long Gully, where Tongio West township is situated. Reefs south of Swift's Creek - Hepburn, Smart Boys, and Corduroy - worked more than 20 years ago with good results - evidence on ground of a large amount of work having been done - crushing machinery removed years ago and field abandoned. Reefs now under lease - machinery about to be erected and mines reworked. Main reef is Smart Boys - 45 feet wide - battery to be erected beside creek. Goldfield north of Swift's Creek discovered 4 years ago - large no. of leases taken up about 2 years ago. High yielding reefs - eg. Black Pup, Wallaby, Never-can-Tell, Dargo. Country too steep for vehicles - stone packed on horses for about 15 miles to Forsyth's (Lady McGregor) mill, at head of Swift's Creek - stone promising to yield less than 2 oz/ton was left untouched. Now 3 working batteries on field - 2 more under construction. Long Gully reefs: Lord of the Hills and Shamrock reefs - battery on Swift's Creek. Never-can-Tell Reef, on Dundee Spur - N-c-T Co. erecting battery (ex Rob Roy Co., Haunted Stream). Golden Wattle Reef, on N side of Long Gully - discovered 18 mths ago - likely to be one of most permanent reefs on field - traced for over _ mile - battery nearly completed. A number of leases lately applied for in Long Gully - to be placed on English market. Bald Hill Creek reefs - lie to N of Long Gully reefs. Angora Reef - discovered 4 years ago - battery combines stampers with Watson and Denny pans. Rose Reef, W of Angora battery under construction close to claim (Rose Syndicate - different from Rose of Australia Syndicate). Centenary and Change reefs - very close together - surface workings only so far - tunnel now being cut. (Robinson, H., 'Report on the Tongio West Gold-field', in MSR, June 1889, pp. 30-31)
- 1889+:** Quartz at Cassilis proved very intractable - the sulphide ore, though valuable, was very difficult to treat, despite numerous different methods being tried - 'The oxidised surface portions of the many lodes in the district generally assayed several ounces of gold, but only a small proportion of this was recoverable by stamp milling ... At comparatively shallow depths, though, assays of one ounce or over were very common, the free gold disappeared and recoveries by stamp milling and amalgamation become unpayable.'⁴⁴
- June 1889:** Long Gully promises to be largest mining centre in district. Two batteries at work there. Rose of Australia Syndicate and late G. Smart's (Lord of the Hills and Shamrock reefs). Rose of Aust crushing for public at 10s per ton - first opportunity for claimholders in Long Gully to get stone crushed at a reasonable rate. Bald Hill Creek United suspended operations, pending reorganisation of company.

40 Morgan

41 Morgan

42 Morgan

43 Morgan

44 Christie, p. 43; Rose, W.j., *Report upon the Cassilis Properties of the National Gold Mining and Milling Co. Pty Ltd*, 1932

- 1889:** Long Gully township named Cassilis, after the station of the same name - most people still referred to the area as Long Gully. Mining township at Bald Hill Creek named Nugong - smaller than Cassilis.⁴⁵
- September 1889:** Henry Morgan contracted by Rose Syndicate for 200 yards of flat tramway and one hopper of 25-ton capacity. Peter Forsyth altering Denny pan so as to have it work like a Wheeler pan. Rose Syndicate unable to pay for work done.⁴⁶
- September 1889:** Mining in healthier condition than for years. Bald Hill Creek Co. crushed 40 tons of **roasted** stone for 94 oz - proves that a great deal of gold has hitherto been lost for want of proper treatment. Never-can-Tell Co., Long Gully - plant erected. Lady McGregor (Forsyth) mine - battery operating. Rich silver lode discovered at Riley's Creek, near Gum Forest - 640-acre lease applied for - ore also contains payable gold. Unable to ascertain crushing results from Brave George battery, the property of the late Geo Smart.
- December 1889:** Good wages being made at Long Gully, Bald Hill Creek, and O'Dell's Creek.
- 1889:** Hundred of the leases at Long Gully and Bald Creek lapsed in 1889. (Flett, p. 175)
- 1889:** Just before discovery of Markey's line of reef, mining took a down turn because oxidised zone had been passed in most mines and there was no satisfactory way of treating the mineralised ores found in the sulphide zone. Some mines closed down, to reopen later when more adequate plant was available.⁴⁷
- 1890-91:** James Markey discovered Markey's line of reef on steep dividing range between Bald Hill Creek and Long Gully, on the Long Gully fall. First crushing of 77 tons gave 408 oz. Leases pegged along reef - all found to be payable - richest claim was Ryan brothers'. Discovery of Markey's Reef was the catalyst for the major developments at Cassilis during the 1890s.⁴⁸
- 1890:** Cassilis mine discovered by Howard & McLaren on high ridge above town - initially gave poor yields, due to primitive gold-saving techniques.⁴⁹
- 1890:** Cassilis ground originally held by a co-operative party, who worked a small amount of the upper portion of the reef for the free gold it obtained.⁵⁰
- 1890:** All Nations installed battery (ex-Mountain Maid, Omeo) to Upper Swift's Creek.⁵¹
- 1890-93:** Eight parties working Gum Forest reefs area in 1890. John Forsyth (son of Peter?) had battery on Lady McGregor Reef near Riley's Creek. Odells's Creek (named after former mining registrar) reefs busy in 1892. Highland Chief Reef discovered. Dead Bird (ex Golden King) mine re-opened. New road built to area from Boggy Creek along 'Bowman's Track' - Omeo railway mooted. New reefs discovered in 1893 - Woolybutt, Crisps, Monte Cristo, and one at Marthadale. (Flett, p. 176)
- 1890s:** Old Stop mine (Hayward) installed battery near O'Dell's/Swifts Creek junction - later known as Dyson's battery.⁵²
- 1892:** Good alluvial gold re-discovered in Long Gully by Dolan and party. (Flett, p. 176)

45 Flett, p. 175; Christie, p. 42

46 Morgan

47 Fairweather (2), p. 36

48 Christie, p. 43; Flett, pp. 175-6

49 Christie, p. 48

50 Clark

51 Fairweather (2), p. 203

52 Fairweather (2), p. 203

- 1892:** Warden GMC (formed 1887) purchased Never Can Tell claim - battery (10-head) removed to Bingo.⁵³
- 1893:** Rich reefs found at head of Sheepstation Creek (Brookville) - until 1893, Brookville area commonly called Scotch Hollow because of large number of Scotsmen there - reflected in mine names: Highland Chief, Highland Creek, Rob Roy, Aberdeen, Scotchman, & Lady McGregor.⁵⁴
- 1893:** Mt Hepburn GMC financed by English capital - installed Otis rotary crusher driven by 16-hp engine.⁵⁵
- 1893:** Henry Morgan engaged to erect Otis ore crusher for Mt Hepburn GMC - tramway 18ft high (trestles) for 57 yards at mill - steam-powered plant.⁵⁶
- 1893:** McCulloch & Eckberg purchased the Hope battery and installed first chlorination plant at Cassilis.⁵⁷
- 1894-1900:** Mt Hepburn mine - Otis ball crushing mill (one of first in Victoria) with amalgamating plates and blanket tables - 5,000 tons were fine-ground for 1,675 oz, a better return than would have been achieved by a normal stamp battery - however, the tailings were found to contain 6 dwt/ton, due to heavy mineralisation - in 1896, new company installed a traditional 20-head stamp battery to replace the Otis mill - achieved poorer returns than the Otis mill and simple amalgamation - only 207 oz were produced from 2,893 tons of ore crushed -company also installed a large boiler, engine, and 60-ft brick chimney stack, all of which were found redundant and not used - in 1897, a small (25 ton/week capacity) cyanide plant was installed and worked with moderate success - in 1898, a larger (180 ton/week) cyanide plant was constructed by the Australian Gold Recovery Co., using the Siemens-Halske electrolytic precipitation method - cost £7,000 - managed by Alsop brothers - treated about 8,000 tons of tailings from Mt Hepburn and other mines for 3,200 oz - plant failed - the stone-walled foundations of cyanide vats can still be seen today - company ceased work and sold battery in 1900.⁵⁸
- 1894:** Cassilis mines include: Rose mine, working by tunnel - 12-head battery, blanket tables, two Halley's percussion tables, Berdan, tailings pit. Bald Hill Creek United, tributers working by tunnel - steam-powered 20-head battery, Denny and Watson's pan. Mount Hepburn, Long Gully (Mr Ball) - crushing by large-size Otis ball Crusher (Kugelmühle) - Mt Hepburn ore averaging 8 dwt/ton. Ryan's/Brave George battery, Long Gully - 10-head battery, 5 head crushing stone from Mt Hepburn mine, 5 head crushing from Ralston's Evening Star claim - Denny and Watson's pan, blanket table - charging 17s 6d per ton for crushing and treating with D & W pan - Evening Star claim paid a further 10s/ton for packing stone to mill. McCulloch and Ekberg's treatment plant, Long Gully: 10-head battery, hydraulic separator, Fruevanners, large settling pit - intend to treat tailings from pit by the Cyanogen process. The predominant peculiarity of the mines of the Tongio West Gold-fields, Bald Hill creek, and at Long Gully District is that the quartz vein-stone contains even at shallow depths a large percentage of mineral sulphides of different metals...Of late a number of claims that had been abandoned have been taken up, their value having become known from the returns obtained at the batteries and the extra amount paid for the concentrates by Messrs Parkes, McCulloch, and Ekberg, and others. Hence the erection of reduction plants in this district on the plan of Messrs McCulloch and Ekberg for the purpose of treating the dressed ores by chlorination, and the tailings therefrom by the Cyanogen process already described, or by smelting (should in depth the ore become more plumbiferous) is of great importance and should be encouraged... Mr Ball has made at Cassilis a new departure in the reduction of the

53 Fairweather (2), pp. 93, 108
 54 Fairweather (2), p. 175
 55 Fairweather (2), p. 81
 56 Morgan
 57 Fairweather (2), p. 79
 58 Christie, pp. 43-6; Griffiths, p. 28

quartz gangue by introducing at the Mount Hepburn Mill a large-sized Otis Ore Crusher... The stamping mill establishment of Messrs McCulloch and Ekberg is at present the best fitted plant to treat the sulphide ores as regards dressing, and will probably shortly be furnished also with the necessary furnaces, apparatus, &c., to work them on metallurgical principles...⁵⁹

1894-1900: Ground purchased by Cassilis GMC - erected small five-head battery only yards from mouth of tunnel - blanket tables and tyers were judged sufficient for concentrating purposes - the pyritic minerals caught in these crude appliances were roasted in a reverberatory furnace, then treated by the Muncktell process of chlorination, with the exception that a saturated, and not a dilute, solution of chlorine was used - subsequently 2 Halley tables were erected with more satisfactory results - mine is specially rich in heavy metallic minerals ('probably one of the most refractory ores in the world') - company not only able to carry on development work, but paid dividends - 'Considering that not one colour of gold is to be seen in the lower levels of the mine, and not one particle becomes visible by panning off, such a record is without parallel in the history of the State.'⁶⁰

mid 1890s: Mines Department took hundreds of men to Tambo area - rebuilt old huts of Tongio West. (Flett, p. 176)

1895: Golden King or Dead Bird mine, Brookville, made news in Melbourne papers and helped spark rush to Brookville - located 5 miles along track running from Reynolds' battery on Riley's Creek to Stirling, and right beside the track - a crushing at Forsyth's battery in October 1895 gave 304 oz/12_ tons.⁶¹

59 Rosales, pp. 7-10; Fairweather (2), p. 40

60 Clark; Fairweather (2), p. 43

61 Fairweather (2), pp. 187-8

- 1895:** Mount Hepburn is most remarkable mine on the field - the old stopes form a huge open chasm, extending from tunnel level to surface, and it is stated that 6,000 tons treated averaged 7 dwt per ton, an equal or even greater amount being lost. The appliances consist of a ball mill and short tables, without any concentrating plant, so it is no wonder that gold is lost.⁶²
- 1895:** Johnston's Sunbeam battery erected at Brookville.⁶³
- 1895+:** Character of Brookville area was that it had many good-yielding small mines, rather than one or two big mines - mines included Conservative, Richmond, Cripple's Reward (very rich), Grand United (Riley's Creek), Pheasant, Kangaroo, Federation, Doubtful.⁶⁴
- 1895:** Bald Hill Creek Co. wound up and sold to Australian Ore Reduction Co. who treated the tailings at a site near the mouth of Dip Creek - Siemens Halske precipitation chlorination process was used - furnace built at battery, bricks made by Highland and Wigg - their kiln was at Swift's Creek - bricks from the furnace were gradually removed and used elsewhere - tailings sand was later worked by Snellgrove (he also built furnace) and also cyanided. The only relic at Cornstalk/Bald Hill Creek Co. mine in 1975 was a vertical boiler, which once provided power for winding gear.⁶⁵
- 1895-6:** Rich reefs discovered between old Eureka Reef at Black Spring and Notch Hill. Brookville township formed on Sheep Station Creek, 1896. (Flett, p. 176)
- 1895-1900:** Highland Chief Reef discovered by G. Forsyth at Brookville - company floated in 1896, attracted considerable English capital - 10-head battery, steam-powered (Thompson's of Castlemaine) - cyanide plant (two 80-ton sand vats, one 14_-ft solution sump, one 6_-ft reservoir vat, 15 charcoal filters, and one 14_-ft mixer - battery house (28 ft high) and engine room, assay house of 4 rooms, with smelting room and 4 furnaces, poppet-head and brace 60 ft high, tramline - all added 1897 - plant sold to Brunswick Syndicate, 1900.⁶⁶
- 1896:** Brunswick Syndicate (English) purchased Chance mine.⁶⁷
- 1896-7:** Warden GMC purchased Eckberg & McCulloch 10-head battery, on bank of Gray's Creek - plant comprised five Frue and Triumph vanners, two Watson & Denny grinding pan, flue and chimney stack, also chlorination and cyanide plants - purchased Otis rotary mill from Mt Hepburn Co. - electric light put into battery and mine. The company's great disadvantage was that the mine was on a high ridge to the east of Cassilis, whilst battery was at mouth of a gully which headed on the opposite side of the ridge. Ore was sleighed up the hill, tipped down a chute to the head of the gully, then carted by drays to the battery. Most mines on the Markey line of reef crushed ore at Warden battery.⁶⁸

62 Murray, p. 3
 63 Fairweather (2), p. 186
 64 Fairweather (2), p. 190
 65 Fairweather (2), p. 161
 66 Fairweather (2), p. pp. 181-5
 67 Fairweather (2), p. 79
 68 Fairweather (2), pp. 40, 94-5, 103

- 1896-1900:** 'The Mount Hepburn Company Limited was floated on the premise of huge ore reserves and simple metallurgy, neither of which were investigated properly at the time, and both of which were quickly found to be incorrect.' The company was formed in England with a capital of £200,000, of which only £50,000 was available initially for working capital – shareholders lost some £180,000.⁶⁹
- 1898:** Cassilis is a field, which produces a fair amount of gold. The stone, however, is refractory, and up to the present cannot be said to have been dealt with successfully locally.⁷⁰
- 1898:** Jan Mayen mine, Brookville - at head of Perseverance Creek, on ridge between the creek and Bullocky Gully - erected battery 1898, ex-Mt Taylor, Bulumwaal district - battery manufactured by Anderson & Son of Richmond (installed at Mt Taylor in 1896), locomotive-type boiler, 10-hp Hornsby engine.⁷¹
- 1898:** Parnell battery (Rebecchi bros) erected on Perseverance Creek, Brookville, 1898 – below Perseverance mine.⁷²
- 1898-9:** Cassilis GMC took over Cassilis North Co. which included Shamrock and Sons of Freedom leases - in 1899, got 1000 oz from 350 tons - paid dividends.⁷³
- 1898-9:** Highland Chief (Dawson) Co. installed battery, Pelton wheel, and cable tramway - mine located on the fall into the easterly branch of New Rush Creek - later known as Australian Alps mine. Around same time, Scotchman mine, also owned by Dawson, was on ridge between the two branches of New Rush Creek - steam-driven battery - engine said to still be on site in 1975.⁷⁴
- 1898-1902:** Perseverance mine worked for longer than any other Brookville mine - located on Perseverance Creek, tributary of Sheepstation - 1902 yielded £8,000 worth of gold – 5-head battery.⁷⁵
- 1899:** Only signs of once-flourishing Swift's Creek field are decaying huts, now inhabited by a few Chinese.⁷⁶

69 Griffiths, p. 31

70 *Australian Mining Standard*, 5 May 1898

71 Fairweather (2), pp. 185-6; Fairweather (3), p. 59

72 Fairweather (2), p. 186

73 Christie, pp. 48-9

74 Fairweather (2), p. 203

75 Fairweather (2), p. 191

76 *Australian Mining Standard*, 1 June 1899, p. 75

- 1899:** Cassilis - 'This place as a goldfield will last for generations, the drawbacks to working giving it a longer life. Nearly all the creeks and spurs surrounding these places are auriferous, and one could not travel for more than a few miles without either seeing a battery or deserted shaft.' 'If the same amount of capital and energy were expended under similar conditions on the Cassilis that have been expended on the Bendigo Reefs, the former soon would be more famous than the latter.' Four batteries on the field, two crushing for public - also chlorination and cyanide works - best developed mines are Cassilis, Chance, Warden, and Mt Markey - Mt Markey the richest in district - Warden Co. works consist of 10-head battery driven by steam power, two Halley tables, and 4 Frue vanners, also a chlorination plant (ex-Cassilis Co.?) - Ryan Brothers (working Mt Markey & Oversight mines) have 10-head battery (Brave George) on the creek - other mines include the Just in Time, Evening Star, Glengarry, Grassmere (eastern side of Long Gully, on Markey line), and Rough and Ready. Ryan brothers' Oversight mine, adjoining the Warden and working from the same tunnel, has produced over £50,000 worth of gold - one crushing of 250 tons yielded 1,000 oz.⁷⁷
- 1899-1905:** Jirnkee Sluicing Co. (English co.) formed to work alluvial bed of Long Gully and Swift's Creek - lease of 185 acres comprised four mile of creeks from Warden battery at Cassilis to Chinaman's Crossing below Tongio West - alluvial deposits had been worked since 1851 (estimated 75,000 oz obtained, to 1890), but water supply had always been a problem - water race from Wentworth River commenced in 1899 - longest privately constructed water race in Victoria - total length of race reserve was 58 miles 38 chains, including one mile 37 chains of pipeline at Tongio West - completed in 1900 - cost £14,000, rather than the £4,000 originally estimated - operated by dredge, commencing in 1901 - race provided insufficient supply of water and dredge was unsuitable and inadequate for the type of deposit worked - instead of the treating a projected 500,000 cubic yards per year for a return of 25,000 oz, the operation had treated only 118,000 cubic yards for a total of 756 oz after five years - closed in 1905 - net loss on the venture estimated at around £40,000.⁷⁸
- 1900-03:** Chance mine equipped with plant ex-Highland Chief, Brookville - 10-head battery, steam engine and boiler, rock breaker, Wilfley tables, Edwards mechanical furnace, and chlorination plant - battery commenced crushing in 1901, using water from Jirnkee water-race - problems with chlorination process in 1902, changed to new process - after Jirnkee race closed down, sank water shaft and pumped to battery - mine closed in 1903.⁷⁹

⁷⁷ *Australian Mining Standard*, 1 June 1899, pp. 66, 76-7; Fairweather (2), p. 103

⁷⁸ Christie, pp. 53-5; Griffiths, p. 24

⁷⁹ Fairweather (2), p. 80

- 1900-05:** Cassilis GMC replaced 5-head battery with 20-head (ex Mt Hepburn mine), with concentrating appliances and extensive chlorination works - installed at new site at foot of range in Power's Gully - water race from Swift's Creek being cut, to ensure larger supply in summer - sulphide concentrates from blanket tables contained as much as 25 oz/ton - sent to Germany for treatment - grinding pans later added - 1901: cyanide plant enlarged and modernised, with vats as large as 100 tons capacity - 1902: installed new air compressor, constructed foundry, and purchased Ryan's Brave George battery (10-head) which enabling them to secure water rights on Swift's Creek - converted Ryan's battery into foundry furnace - then added dynamo to supply electricity to mine - one engine operated the foundry, mechanical furnaces, dynamo and workshop - another engine worked amalgamating barrel and cyanide plant - concentrates were roasted in a reverberatory furnace and treated by chlorination - after conversion to electricity, the chlorination process was changed from the barrel type to the open vat system - seven lead-lined vats, in which chloride of lime and sulphuric acid was used - tailings and slimes were stored for treatment.⁸⁰
- 1900:** Custom treatment works constructed by Alsop brothers at Mt Hepburn mine - purchased existing plant and installed a large desulphurising roasting furnace with long ground flue connected to the 60-ft chimney - trap doors at intervals along side of flue, for removal of arsenic - reverted part of cyanide works to original cyaniding (zinc shavings) process - mineral tailings were roasted, cyanided, then drained and filtered - treated tailings from as far away as Sunnyside and Glen Wills (Alsops had other works at those places) - also treated sand from Ryan's Brave George battery, which was just across creek from Mt Hepburn mine - 2,500 tons of concentrates and tailings yielded about 5,000.⁸¹
- 1900s:** Cassilis treatment works supplied by limeworks at Bindi.⁸²
- 1902:** Warden mine had so far produced 2,096 oz from 2,181 tons.⁸³
- 1902:** Scots Perseverance Co. purchased Perseverance mine, Brookville - added further 5-heads to battery (total of 10) & cyanide plant.⁸⁴
- 1903:** Mining at Cassilis less prosperous than previous year owing to falling off in Cassilis Co. yields, Warden mine not striking payable stone in lower levels, and suspension of operations at the Chance mine. Main mines are Cassilis, Warden, King Cassilis, Lone Hand, and Grassmere. Cassilis Co. plant includes classifiers, Wilfley tables, furnaces, chlorination and cyanide works, capable of treating 480 tons per week, also twelve rock drill plant.⁸⁵
- 1903:** Formation of Mt Cassilis GMC - lease on south side of King Cassilis, on fall into Riley's Creek - mine formerly known as Snowstorm or Himalaya.⁸⁶
- 1904:** Lady McGregor mine, Gum Forest, re-opened and new battery erected by Avery bros - 5-head and Pelton wheel (later government battery, moved in 1930s - now private land?)⁸⁷
- 1904:** Much improved performance from Cassilis mines. Principal mines: Cassilis, King Cassilis, Warden, Lady McGregor, Jirnee Hydraulic Sluicing Co. - also great number of co-operative and small parties. Cassilis mine situated on Mt Cassilis, about 1 mile from battery and about 1,200 ft above it - ore very refractory and difficult to treat, containing no fewer than six different minerals associated with the

80 Christie p. 48-9; Clark; Fairweather (2), p. 50

81 Griffiths, p. 29; Fairweather (2), p. 87

82 Fairweather (2), p. 52

83 Fairweather (2), p. 97

84 Fairweather (2), p. 191

85 Department of Mines Annual Report, 1903

86 Fairweather (2), p. 90

87 Fairweather (2), p. 196

gold - about 140 men employed - output is about 1,100 tons/month, average yield 1,000 oz/month - ten rock drills going continuously - stone taken from mine by horse tram about half a mile to a gravity tram-hopper, from there dropped by gravity tram to mill - galena taken from Wilfley tables and sent to Dapto Smelting works - concentrates put through Edwards' furnace - chlorination works comprises seven x 11-ton leaching vats, seven precipitating vats, and six other accessory vats - Munktell process in operation - each vat of ore takes from 10 to 12 days to treat - cyanide plant consists of five 80-ton vats - three boilers run plant - two Cornish, 26 x 6 ft 6 in, and one under-fired multitubular, 14 ft x 5 ft 6 in - whole plant and offices lit with electricity generated from a Parker continuous-current dynamo running at 110 volts. King Cassilis mine - small plant, only capable of treating 20 tons/week - 28 men employed. Warden Co. situated on Mt Markey, about 1 mile from Cassilis township - working by shaft. Lady McGregor mine, on Charlotte Spur, about 4 miles from Tongio West - worked some years ago with good results, but ore became heavily mineralised and refractory and mine deserted - Avery bros now opening up mine - plant nearly completed: 5-head battery, classifiers, and cyanide works - plant driven by 40-ft overshot water wheel, 2 ft 6 in breast. Jirnkee Hydraulic Sluicing Co. extended water race to Wentworth River, distance of 57 miles - plant consists of hydraulic jet elevator and two 2_-inch Giant nozzles.³⁴ co-operative and small parties on Cassilis field at various depths to 250 ft - about 600 tons treated during year for return of about 700 oz.⁸⁸

- 1904:** Nugong (Bald Hill Creek) - only mine of importance is that of Cornstalk Co-operative party - shaft down 210 ft - 10-head battery, reverberatory furnace and cyanide works - new boiler now being built in and preparations for small winding plant to replace whip - also Wilfley table - present concentrating appliances are old round buddle and blanket tables. Gippsland Gold Extracting Co. treating sand in creek, sent down years ago by parties working in locality - still large quantities of sand to treat - paying well - method of treating is roasting and cyaniding.⁸⁹
- 1904:** Brookville - Scot's Perseverance mine - worked by tunnel - 10-head battery and cyanide works.⁹⁰
- 1904:** Mullock heap of Lone Hand mine was crushed - hand-picked ore gave 3 oz/ton, bulk of heap gave 5 dwt - other early mullock heaps were probably also crushed at this time.⁹¹
- 1904-6:** King Cassilis GMC leased Mt Hepburn mine and treatment works - modified plant to incorporate a Victorian-developed Merton furnace, Dodge rock breaker, Niagara pulveriser and Krup ball mill - treated 1,890 tons of ore from Mt Hepburn mine for 1,379 oz.⁹²
- 1905:** Mt Hepburn/King Cassilis mine had yielded 1852 oz from 4,172 tons since 1888.⁹³

88 Department of Mines Annual Report, 1904
 89 Department of Mines Annual Report, 1904
 90 Department of Mines Annual Report, 1904
 91 Fairweather (2), p. 35
 92 Griffiths, p. 29
 93 Fairweather (2), p. 88

- 1905:** Cassilis mine treated 13,450 tons for 12,032 oz gold - 130 men employed. Additions to plant: new gravity tram, 2,450 ft long, for lowering ore to battery - small engine for driving concentrators and pans - one Hornsby oil-engine for driving furnaces, conveyors, elevators, machines in shop, dynamo, and blowers (cheaper and more efficient than coke) - foundry, testing-room, and cupola furnace, enabling company to 'work up all the old iron and steel obtainable in the district, making a great saving in the manufacturing of numerous parts of the plant' - telephone system. King Cassilis Co. made little progress, due to small reducing plant and constant breakdown of dry crusher, which does not appear to be suitable or strong enough for treating such hard, dense mineral ore as exists in this mine - new Merton's furnace and Krupp mill about to be installed - better results should follow - large bodies of ore in sight. Warden Co. worked on tribute, after co. made big outlay then were unable to raise capital to sink main shaft and further prospect. Chance mine, formerly worked by English co., which spent large amount of capital with poor results, recently taken up by two men who have found payable stone. Also Welcome and Grassmere mines and fourteen other small parties, from two to six men, working in locality. Jirnee GMC unsatisfactory - water shortages and poor ground - work stopped while co. being reconstructed.⁹⁴
- 1905:** New winding plant being erected at Cornstalk mine, Nugong - card concentrator added to battery. Large quantity of sand treated at Gippsland Gold Extracting Co. cyanide works.⁹⁵
- 1905:** King Cassilis mine working on a small scale - lower adit being driven. Cassilis mine - treatment works in valley, 'quite a model plant' - mine on top of range, connected to treatment works by self-acting tramway - classified concentrates sent to Dapto, NSW, but transport and other charges very heavy - even so, a handsome profit is obtained - pioneer mine of district 'and if it succeeds as it promises, the result will be the opening up of many lodes that on the surface yielded well, but which could not be worked in the sulphide zone.'⁹⁶
- 1905-16:** Cassilis mine averaging 22 dwt 14 gr per ton - shortage of timber and water was a problem - constructed hydro-electric scheme, with power station on Victoria River, completed in 1907 - by 1909, all old engines replaced with electric motors - ore becoming increasingly refractory, requiring additional modification of plant - now had 20-head battery, amalgamating plant, Wilfley table and Edwards furnaces - Wilfley table tailings were reground and cyanided - galena concentrates collected and sold - holding dam for hydro scheme was never completed, so water ran out during 1910 drought - slime treatment plant installed in 1911, but not successful - by 1912, only six men were employed at the mine - concentrates could not be sent to Germany during WWI - government grant to develop mine in 1914 - little work done - mine closed in 1916 - between 1898-1916, 114,044 tons yielded 93,385 oz, average 16.4 dwt/ton - mine was worked by adit and internal shaft to a maximum depth of 1,300 ft.⁹⁷

94 Department of Mines Annual Report, 1905

95 Department of Mines Annual Report, 1905

96 Dunn (1907/2)

97 Christie, pp. 49-50

- 1906:** Cassilis Co. - 170 men employed - in all 2,362 ft of ground opened up, 14,190 tons of ore treated for 12,641 oz - reverberatory furnace added to plant, for roasting galena concentrates before shipment to Cockle Creek - hydro-electric power plant being installed at Cobungra River - will mean a big saving in firewood. King Cassilis mine - results have not been satisfactory - ore treatment difficulties - mine closed down - taken over by some of the late shareholders. Warden mine - tributers got 245 oz from 178 tons from shallow levels. Cassilis Consols Co. erected 10-head battery - operating on stone in lower tunnel level.⁹⁸
- 1906:** Cassilis Consols (Dundee) battery on point of Dundee Spur, near creek crossing below Winter's Store, at head of Cemetery Gully.⁹⁹
- 1906:** Perseverance mine, Brookville, changed hands - stone hauled to battery by Hornsby Ackroyd engine.¹⁰⁰
- 1907:** Cassilis Co. employing over 200 men (including those constructing power plant?). King Cassilis Co. closed down. New Warden Co. developing mine with a Government loan.¹⁰¹
- 1907:** Eureka mine, Brookville, installed 3-head battery, driven by oil engine.¹⁰²
- 1907-8:** Cassilis hydro-electric power scheme was significant - its output of 400 kw was not exceeded until 1928, when the Rubicon-Royston group of plants totalled about 12 MW.¹⁰³
- 1908:** Cassilis Co. has 'one of the most up-to-date mining plants in the State' - employs close to 200 men. New Warden Co. failed to find anything payable in lower level. Cassilis Consols Co. operating on a small-scale. King Cassilis operations confined to cyaniding residues.¹⁰⁴
- 1908:** F. Cherry working a mine at head of Swifts Creek - 4-head battery.¹⁰⁵
- 1909:** Cassilis Co. crushed 16,620 tons for 3,615 oz from battery; 532 tons of battery concentrates yielded 3,341 oz; chlorination of 1,787 tons gave 3,483 oz; cyaniding 7,600 tons produced 399 oz - new rotary air compressor, electrically driven - plant is one of the most extensive and complete in the State.¹⁰⁶
- 1910:** Cassilis Co. - insufficient water to work hydro-electric plant - installed slimes treatment plant (vacuum filter process) for treatment of accumulated slimes - treated 7,215 tons of slimes for 1,046 oz. New Warden Co. installed small oil engine in tunnel level - ceased operations.¹⁰⁷
- 1910:** Cassilis Co. slimes plant was a failure.¹⁰⁸
- 1910:** Perseverance Co., Brookville - main shaft sunk to 300 ft below tunnel level - 20 men continuously employed. Other parties working Brookville mines include: Lucas and party (Riley's Creek), Reynolds Bros. (Gum Forest), Heighway and party (near head

98 Department of Mines Annual Report, 1906
 99 Fairweather (2), p. 92
 100 Fairweather (2), p. 192
 101 Department of Mines Annual Report, 1907
 102 Fairweather (2), p. 199
 103 Cecil & King, p. 6
 104 Department of Mines Annual Report, 1907
 105 Fairweather (2), p. 204
 106 Department of Mines Annual Report, 1909
 107 Department of Mines Annual Report, 1910
 108 Fairweather (2), p. 59

of Swift's Creek), Dawson Bros (same locality), Alexander and party (lower down Swift's Creek).¹⁰⁹

- 1911:** Cassilis Co. continued treating slimes and erected tube mill for re-treatment of residues from roasting furnaces by cyanide process - reduced output from mine. King Cassilis - 6 men prospecting.¹¹⁰
- 1912:** Cassilis mine 850 ft deep - water shortages affected power plant and working of mine. King Cassilis operations confined to stoping Beehive shoot of stone, with profitable returns. Tongio Dredging Co. commenced operations (just below Chinaman's Crossing) - working ground averaging 12 ft deep, with payable results. Brookville - Perseverance Syndicate mine operating, also some seven claims being worked by co-operative parties - four making good wages, others a subsistence.¹¹¹
- 1913:** Cassilis Co. 'is successfully overcoming the metallurgical difficulties presented by a more refractory product from the lower levels of the mine.' Assistance granted under Mining Development Act to further develop mine at depth. 'In this portion of the Gippsland reef workings have in the past resulted in a zone of poorer ores being encountered at a depth of about 500 feet, and, with the exception of the Cassilis Company, no serious attempt has been made by deeper sinking to prove a possible recurrence of richer ore at a depth. Albion Gold Mining Syndicate and Good-enough Syndicate also at work. Beehive, Warden, and King Cassilis mines defunct.¹¹²
- 1914:** Drought. Cassilis Co., through failure of hydro-electric power plant, unable to continue scheme for development of mine, for which government assistance had been granted – operations confined to the Ceresa lode.¹¹³
- 1915:** Drought. Cassilis mine - underground work carried on only intermittently - storage reservoir to enable continuous water supply to operate electrical power plant is now in course of construction. (Dam wall then washed out and had to be repaired.¹¹⁴) Tongio dredge idles, due to water shortage. Brookville - 'Of the several mines in the locality of Brookville provided with milling plants, only one, the Perseverance syndicate... has had sufficient water to crush the stone.'¹¹⁵
- 1916:** Brookville - only two parties at work. Cassilis mine closed down - Ceresa lode system too thin and poor in quality. Tongio dredge resumed operations after long period of idleness.¹¹⁶
- 1916:** Perseverance mine, Brookville, closed.¹¹⁷
- 1916:** Cassilis mine - total of 124,607 tons of ore treated for return of 93,572 oz, valued at £383,645.¹¹⁸
- 1916+:** Cassilis township faded after closure of Cassilis mine - partially destroyed by 1939 fires and the hotel closed in 1940.¹¹⁹
- 1917:** Tongio dredge running continuously.¹²⁰

109 Department of Mines Annual Report, 1910
110 Department of Mines Annual Report, 1911
111 Department of Mines Annual Report, 1912
112 Department of Mines Annual Report, 1913
113 Department of Mines Annual Report, 1914
114 Fairweather (2), pp. 61-2
115 Department of Mines Annual Report, 1915
116 Department of Mines Annual Report, 1916
117 Fairweather (2), p. 192
118 Fairweather (2), p. 63
119 Christie, p. 55
120 Department of Mines Annual Report, 1917

- 1918:** Tongio Dredging Co. cleaned out and repaired Jirnkee water race that taps headwaters of Wentworth River - allows continuous dredging throughout year.¹²¹
- 1920s:** Tongio West dredge stopped work sometime in 1920s.¹²²
- 1925:** King Cassilis lease taken up, but no work done - no plant on mine.¹²³
- 1930-31:** King Cassilis lease taken up by National Gold Mining and Milling Co. – installed small gravity concentration plant, consisting of 5-head battery and two concentrating tables - treated only 220 tons of ore for 114 oz.¹²⁴
- 1930:** As late as 1930, Bill Lucas worked a battery on Riley's Creek, Brookville, crushing mullock.¹²⁵
- 1930s:** Tongio West dredge broken up for scrap.¹²⁶
- 1937:** Arizona mine (Martin & son) - last mine worked in Brookville area - used Cherry's 1908 4-head battery (said to still be on site, collapsed, in 1975.¹²⁷
- 1938:** Profitable reefing work being carried out at Brookville.¹²⁸
- March 1949:** Encouraging results are being obtained at the Cassilis mine, Tongio West, where ore is being treated by a furnace plant installed at the mine.¹²⁹
- September 1949:** Smelting plant (Avery's) treating refractory ore at the Cassilis mine, Tongio West, closed due to 'present-day shortages'. Expected to reopen shortly.¹³⁰
- 1960s:** Attempt to re-open Perseverance mine, Brookville.¹³¹
- 1967:** Diamond drilling operations at Cassilis - expectation that the discovery of off-shore gas in Bass Strait might provide power for a smelting plant to treat the mineralised Cassilis ore - in earlier times, concentrates were sent to SA, NSW, or even Germany for smelting.¹³²
- 1979:** Cassilis Historic Area recommended by LCC.¹³³
- 1966-82:** Cassilis and Queen Cassilis (small mine at head of Powers Gully) held under mining lease at various time by DW & ML Hamilton - allowed various mining companies to explore leases. Planet Mining Co. surveyed and drilled between 1966-9 - Tanganyika Holdings Ltd, 1971-4 - in 1982, the renewal of the Hamilton's lease and its transfer to Apollo International Minerals NL for a 'concerted exploration effort' was under review by DME.¹³⁴

121 Department of Mines Annual Report, 1918
 122 Fairweather (2), p. 174
 123 Christie, p. 48
 124 Griffiths, p. 30
 125 Fairweather (2), p. 199
 126 Fairweather (2), p. 174
 127 Fairweather (2) p. 204
 128 *Mining and Geological Journal*, January 1938
 129 *Mining and Geological Journal*, March 1949
 130 *Mining and Geological Journal*, September 1949
 131 Fairweather (2), p. 192
 132 Pearson, pp. 394-5
 133 Cecil & King, pp 2-3
 134 Cecil & King, pp. 6-7

1975: All that remains at Nugong/Bald Hill Creek are overgrown battery sites, two fruit trees, mullock heaps, and the vertical boiler associated with the winding gear of the Bald Hill Co./Cornstalk mine.¹³⁵

1982: Many tons of brightly coloured sands still visible on the floor of Powers Gully, downstream of Cassilis Co. processing plant.¹³⁶

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