Finding surface gold

Surface gold is found on or just below the ground's surface. It is often carried along by running water and then left at the bottom of a stream or creek. It is also called **alluvial gold**. During the gold rushes, methods of finding surface gold included panning, cradling, puddling and sluicing. These methods were used to remove gold from places that were easy to reach, such as from gravel in riverbeds, or from just underground where a river had once been.

Panning

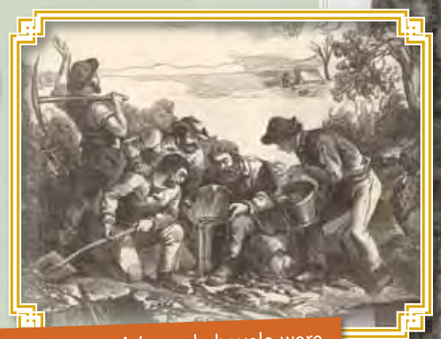
Panning was the simplest and cheapest way of finding surface gold.

Equipment

pick shovel gold pan bucket

Method

1. Loosen the gravel with the pick.
2. Shovel gravel and pour water into the pan.
3. Swirl the water around so the gravel settles on the bottom.
4. Carefully drain off the water and gravel.
5. Take any grains of gold found on the bottom of the pan.



Gold pans, picks and shovels were used to pan for surface gold.

Cradling

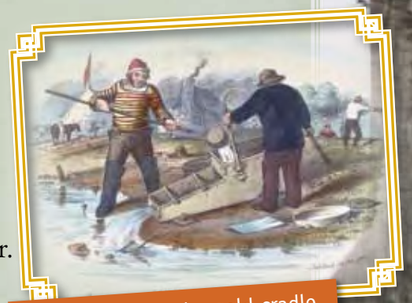
Diggers used a gold cradle if they could afford one. A gold cradle was a wooden box with a strainer in the top. More gravel could be washed at one time than in a gold pan.

Equipment

pick shovel gold cradle bucket

Method

1. Loosen the gravel with the pick.
2. Shovel gravel and pour water into the gold cradle.
3. Rock the handle so that the gravel settles on the bottom.
4. Let the water drain off and let the gravel catch in the strainer.
5. Take any grains of gold found on the bottom of the cradle.



Some miners used a gold cradle to search for surface gold.

Puddling

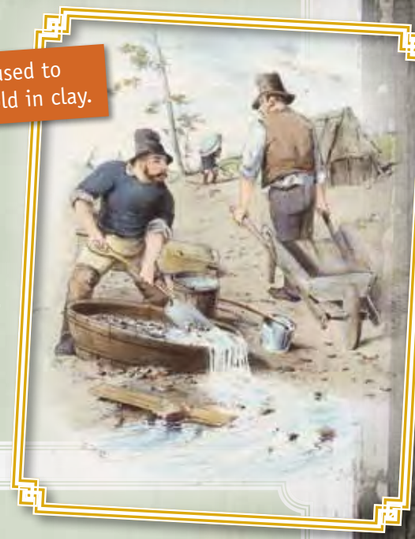
Diggers used a puddling tub if the gold flakes were buried in heavy clay rather than gravel. In a large version of a puddling tub, a horse walked in circles to pull a rake around a circular trough.

Equipment

shovel gold pan, cradle or sluice
wooden paddle bucket
puddling tub

Method

1. Shovel clay and pour water into the puddling tub.
2. Stir the mixture with the wooden paddle to break up the clay.
3. Put the soupy mix of clay and water through a gold pan, cradle or sluice.
4. Take any grains of gold found on the bottom.



A puddling tub was used to search for surface gold in clay.

Sluicing

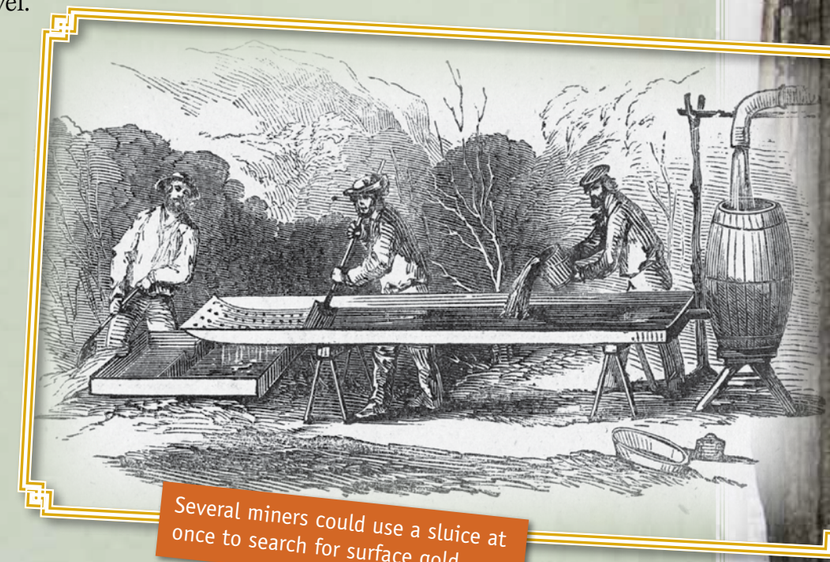
A sluice was a larger version of the gold cradle. It could hold much larger amounts of gravel.

Equipment

pick sluice
shovel bucket

Method

1. Loosen the gravel with the pick.
2. Shovel gravel and pour water into the sluice.
3. Run water through the sluice.
4. Take any grains of gold found on the bottom of the sluice.



Several miners could use a sluice at once to search for surface gold.

Finding gold underground

Finding gold underground was difficult and expensive. Once the surface gold had been stripped from an area, many diggers moved on to new goldfields. Those who remained usually joined together in companies or partnerships to mine for gold in **leads** or **quartz-reefs**. Leads were often deep underground and expensive equipment was needed to remove the gold. It was dangerous work.

Mining shallow leads

To mine a shallow lead, miners dug a **shaft** that was several metres deep. A windlass was used to raise rock from the mine. This consisted of a rope wound around a pole or barrel, with a bucket attached to the other end of the rope.

Equipment

pick
buckets
cradle or sluice
shovel
windlass with rope

Method

1. Dig a shaft and possibly some **drives**.
2. Use the pick to loosen rock from the shaft or drive walls.
3. Shovel the rock into the windlass bucket.
4. Have a partner wind up the windlass and empty the bucket.
5. The partner then cradles or sluices the rock to search for gold.

A windlass was used to raise rock from a shallow mine.

Mining deep leads

If a lead was more than 40 metres deep, even more expensive equipment was needed, such as a horse-powered whim. This consisted of a cable wound around a large drum. The horse pulled on the cable to raise a bucket attached to the other end.

Equipment

pick
buckets
horse
wind sail for clean air
shovel
whim with cable
cradle or sluice

Method

1. Dig a shaft and drives.
2. Use the wind sail to blow air down the shaft.
3. Use the pick to loosen rock from the drive walls.
4. Shovel the rock into the bucket.
5. Have a partner work the horse-powered whim and raise and then empty the bucket.
6. The partner then cradles or sluices the rock to search for gold.

A horse-powered whim was used to raise rock from a deep lead.

Reef mining

Reef mining was used to mine **gold ore**, which consists of quartz rock containing gold. Reef mining required a lot of expensive machinery, such as a poppet head over the mineshaft to raise the ore, and a Chilean mill or stamper battery to crush the ore.

Equipment

pick
steam-powered poppet head
Chilean mill or stamper battery
shovel
buckets

Method

1. Dig a shaft and drives.
2. Use the pick to remove the ore from the drive walls.
3. Shovel the ore into buckets.
4. The buckets are pulled up by the poppet head.
5. The ore is crushed in the Chilean mill or stamper battery and the gold is separated out.

A poppet head was used to raise the ore from a reef goldmine.

Goldfields in Australia

By 1900, gold had been discovered in every Australian colony, but some goldfields proved to be much richer than others. Each colony experienced several gold rushes, with thousands of people arriving soon after the first discoveries. A few people made fortunes on the goldfields.

New South Wales

Major goldfields in New South Wales were centred around Bathurst, the Braidwood–Araluen district, and at Gulgong, Hill End and Cobar.

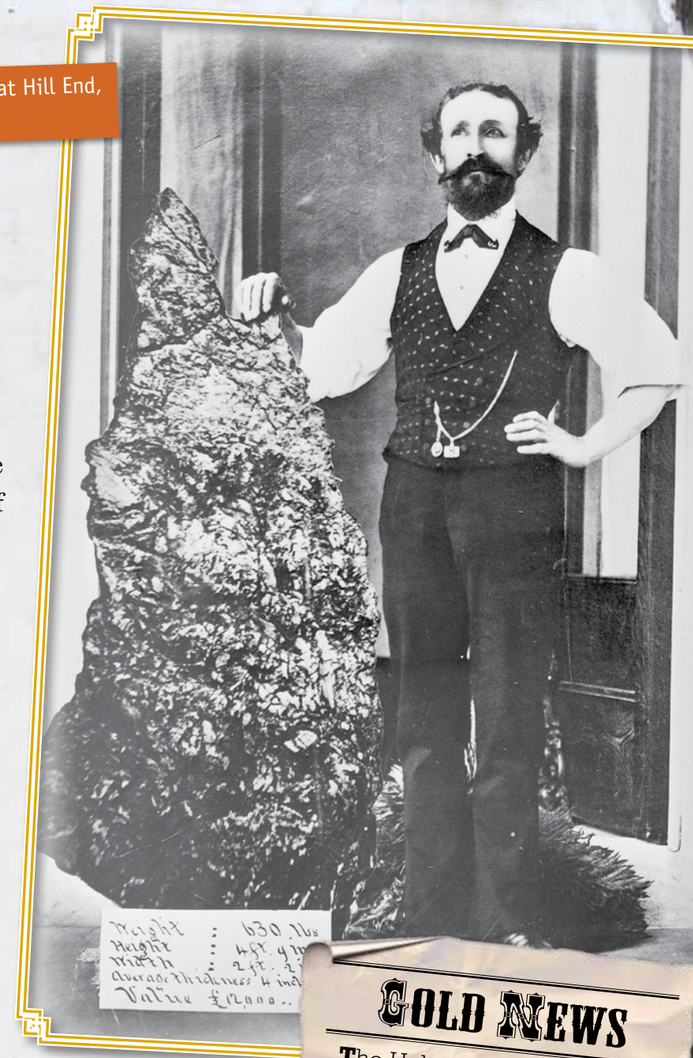
Bathurst

The first official gold find was near Bathurst in 1851. There were several other goldfields in the area over the next few years, but miners began to leave when it became harder to find surface gold.

This map shows some of the major goldfields and goldfields towns in New South Wales.

Braidwood–Araluen district

As surface gold became harder to find near Bathurst, many miners travelled to the goldfields in the Braidwood–Araluen district. By 1852, 15 000 miners were working there. It became one of the highest gold-producing areas in New South Wales. By 1874, 4944 kilograms of gold had been sent to banks from Araluen, and 19 596 kilograms from Braidwood.



The Holtermann Nugget was found at Hill End, New South Wales.

Gulgong

In 1870, a very rich field of alluvial gold was discovered at Gulgong, north of Bathurst. This set off another major rush that reached a peak in 1872, when 20 000 people lived in the district. In the first four years of mining, 8500 kilograms of gold was found there.

Hill End

Gold was first discovered at Hill End, then called Bald Hill, in 1851. From 1871 to 1874, reef mining was carried out successfully at Hill End. The population peaked at 30 000 people and at one stage the town had 52 hotels. The total gold production in the area was over 50 tonnes.

Cobar

From 1887, Cobar in western New South Wales was another rich reef-mining goldfield. It contained the richest goldmine in the state. By 1900, the population reached 10 000. Experts believe that there was originally about 56 tonnes of gold in Cobar. Much of the gold has been mined, but there is still a great deal that could be mined in the future.

GOLD NEWS

The Holtermann Nugget was discovered at Hill End in 1872. It was not a true gold nugget because there was slate and quartz running through it, but it is the largest single mass of gold ever discovered in the world. It was 1.5 metres high and weighed almost 290 kilograms.