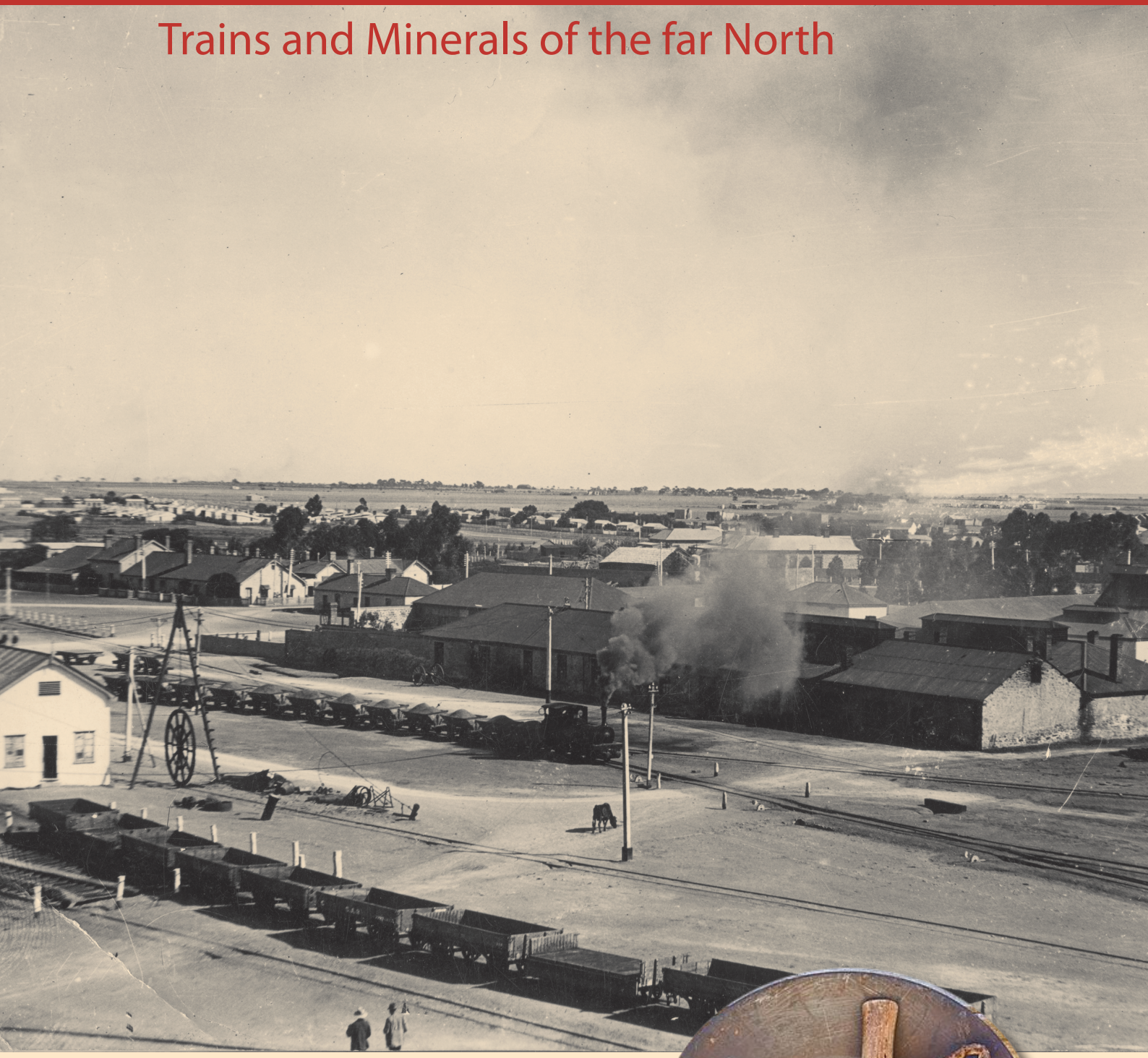
Bob the Dog

Trains and Minerals of the far North



Christine Phillips

Bob the Dog

Trains and Minerals of the far North

Acknowledgement
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Amateur Mineralogist

Images in this publication late 1880s - early 1900s
NRM Collection

Tray 2

2/1, 2/2

Note
Tray numbers and specimen numbers relate
to the three specimen boxes in the display case

Front cover
Moonta, mines in the distance

Bob the Dog
Trains and Minerals of the far North

In the late 1800s and early 1900s, there was a mining boom in South Australia with hundreds upon hundreds of mineral deposits discovered, usually by shepherds or animals like wombats and rabbits digging holes and putting their diggings on the surface only to be 'discovered' by someone passing by.

At that time, South Australia had no real mining industry and everything had to be taken back to England, firstly to confirm that it was indeed a good find and secondly to process the mineral and make it into the many types of metals and medicines we still see today. Therein lay a major problem in itself.

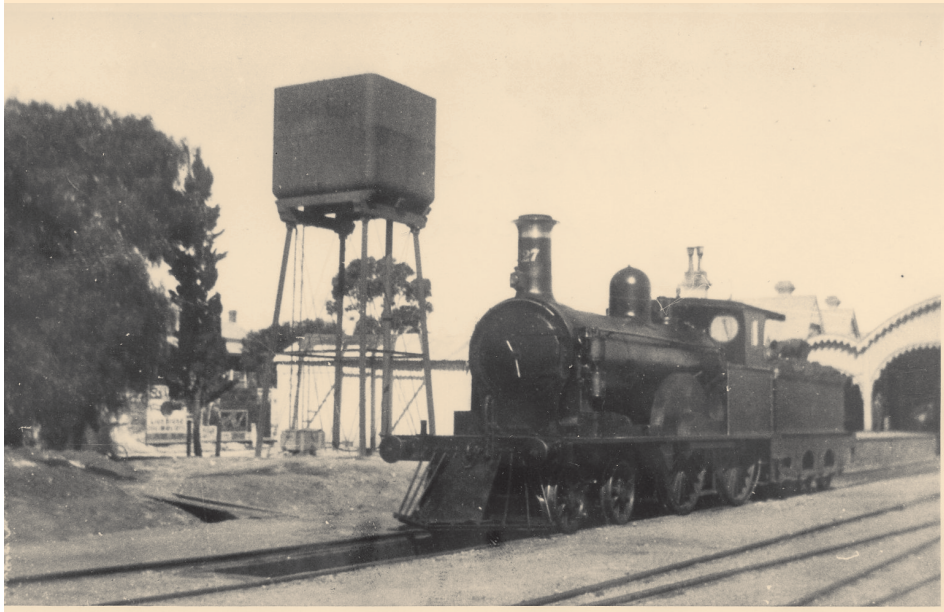
Burra was one of the first major mineral deposits to be discovered and although it only takes a few hours to travel by car to Burra today, in those times it was a major expedition. South Australia's population was still only small and there wasn't enough 'man' power to dig it out and cart it to Adelaide, so there was a massive influx of people from many countries, mainly Cornwall where miners were already well established. They came to Australia for a chance to have a more productive life and provide better for their families. Burra ended up with five little towns all in one and it became a huge mine and very profitable.

My family were a part of the beginning of the Burra mine travelling from Cornwall after being tin miners for most of their life. However, life was far from easy. It was hard work, very little machinery to help with the heavy lifting and with thousands of people living in a small area, disease took hold and many died including a lot of children. The creek which supplied their water became contaminated with copper to a point it was dangerous to drink and many died of copper poisoning.

There were not enough houses for everyone, so many families including some of my own family, dug out the sides of the creek and made rooms and lived there but again many died when the creek flooded. Food was just as hard to get and many farmers came out from England to help feed the miners and my husband's family did just that. However, the mine continued for many years and the only way to get the copper ore to Port Wakefield where it was to be shipped to England, was to use bullock wagons which was extremely slow and dangerous – there were no bitumen roads then, just dusty tracks where wheels on the wagons broke regularly due to the extreme weight of the ore, very little water for the animals and long working hours. It could take up to two days or more to get a load to the ship.

S Class steam
Locmotive S127
Burra

1-1-06456



The next big find after Burra was Broken Hill and even though it was 'over the border' in New South Wales, many miners left to go there in search of work. Broken Hill is just that – a broken hill. It became 'the' mine, the type and amount of minerals were staggering and at last South Australia had the potential to make steel but again most of it had to be shipped back to England to be processed. It was time consuming, very costly and South Australia saw little benefit from it – most of the profits from processing remained in England.

Little by little other mineral deposits were found – copper, gold, iron, silver, lead, titanium, in fact almost all the known minerals at that time were found in and around Broken Hill or in the Olary Province which runs from Peterborough to Broken Hill. Indeed, it was one of the most mineral wealthy areas in the world and to some extent it still is today. Olary Province had hundreds of mines and, together with the Broken Hill mine, transporting the ore became a major problem. With the mines, came the miners and their families, mining camps sprung up everywhere. Transporting ore was not the only major problem – food, water, utensils, tools, tents in fact everything had to be transported TO the mine as well. Horses and bullocks were used extensively but in the end, they could only do so much.

This was the 'outback' - there was precious little water and what there was, was needed by the people there or in the mine. There was very little feed for the animals, usually only saltbush which horses and bullocks couldn't eat - during drought times there was even less. Those times were terrible for everyone and mines were often abandoned when the miners just couldn't continue.

It looked like the mineral wealth of South Australia would stop. There had to be a way of not only making life easier for the miners but also processing the ore here thus saving the continual transport back to England. A smelting plant was built and a railway was born!

The discovery of copper at Moonta and Kapunda cemented the need for a railway for transport even more.

Narrow gauge railway lines sprung up everywhere and looking at old maps and where the major mines were there is a noticeable link between the two. The railway from Adelaide reached Kapunda in1870, and became the first railway to transport copper ore for export via Port Adelaide.

A main line was built from Broken Hill and down through Olary Province to Peterborough, Carrieton and Terowie reaching Burra by 1860 and eventually linked up with the line from Yorke Pensinsula and the Moonta mines. Port Pirie came into being with a processing plant which could handle all the lead and copper minerals and that continues today. Mines in the Flinders Ranges could transport their minerals to areas like Yunta where it could be transported by train thus saving the miners time and headache.

Group of SAR drivers and firemen, Peterborough, c1910
1-1-01662

SAR Y class and T class steam locomotives at Peterborough loco depot, with portable coal, grab crane loading coal into tender of T class steam locomotive c1900

1-1-05612

But the most important aspect of the narrow gauge to these 'outback' areas, was not only transporting ore down to the plants or ports but transporting things UP the line. Food, medicine, water – virtually everything the mines and their families would need and then machinery for the major mines. Life on the mining fields was a very lonely and isolating existence, but the train provided relief in the form of friendship with the drivers, relief of water and food and in a place where domestic animals would not have survived, a chance to have a pat with a dog that travelled the train. One of these dogs was named 'BOB'.

There were hundreds of different types of minerals found in these areas. Below is a list of the major ones- what they are and what their use is.

Many millions of years ago, there were thousands of volcanoes and hot magma underneath and as it gradually cooled and solidified, heavy metals began to clump together in the bottom of chambers underground which in our time is often called the 'mother lode' where the mineral is concentrated in one area. Other deposits have formed where there have been cracks in the earth and water both from above the ground and under the ground seeped into these cracks. These waters are usually hot and contain a lot of dissolved minerals and as the water gradually cools, the minerals solidify in the ground.

South Australia is a very old, ancient land. One of the earliest lands upon the young earth and over time deposits of the minerals had a chance to develop. Our ancestors thought our State was just pinpricked with little deposits with the occasional big one like Burra or Moonta – even Broken Hill. Today with all our new instruments we know that there is a major copper deposit that goes from the outback right down to the sea. Our mines are just the areas where it has broken the surface. In time, a lot of South Australia will be mined for it was once very volcanic but as it is so old there are at least 20 kilometres of sediment sitting on top. It will be a very expensive exercise and may not be worth it but South Australia is indeed a very wealthy State as far as minerals go.

Small grain ships at Port Wakefield wharf, South Australia 1913

1-1-22226

The railway reached Peterborough 1881

1-1-00184

Copper

This can be a very beautiful mineral. It comes in many forms and colours as you see by the examples. Copper was discovered many thousands of years ago, probably when someone put some in an extremely hot fire which turned the flame green and noticed a little bead coming out of the rock. That is copper. Copper is a rose-red or brownish colour in its pure state but darkens to a deeper brown when it is left to tarnish in the air. All copper minerals will melt at a temperature of around 2582 degrees centigrade and the metal that comes out is gathered and used for many things even today.

Tray 2

7, 9, 12,19

In ancient times copper has been found in Egypt where it was used as mirrors, made into weapons, coins - indeed just about anything. The ancients also found a way of making it stronger by mixing it in percentages with zinc to form brass. It can be flattened into sheets or drawn out into long thin wires ie copper wire for electrical use, made into pipes, taps, coins, bracelets and jewellery, virtually anything you can imagine!

Tray 3

2,10,14,15, 18

The main minerals of copper are malachite, azurite, chrysocolla and cuprite. Chalcopyrite and atacamite are other minerals of copper found in abundance in South Australia. There is also native copper which is pure copper. Most copper minerals are green or blue when first dug up and remain that way until they reach the smelter where they are heated and the pure copper seeps out of the rock. This is then made into ingots ready to be used for whatever purpose. It is interesting that the miners at Burra used to say that they never needed to have a garden on the surface – it was so green underground that that was their garden! Malachite comes in many crystal forms but the green in consistent as is azurite which is normally a brilliant dark blue. Chrysocolla can be greenish or white and cuprite is rich coloured crimson until it is left in the open air where it turns a silver colour.

You will notice this on some of the samples. Copper minerals should be treated with care as they can be quite harmful.

Cobalt

Cobalt is often found in copper mines and it is often a silvery pink or even bright pink. It is used in stainless steel and high-strength alloys which have to withstand oxidisation at high temperatures. These alloys are used to make turbine blades and cutting tools like high speed drills. Although cobalt steel is hard, it can be brittle. Cobalt is also a component of alnico, which is an alloy to make permanent magnets. It is also used in electroplating and in blue pigment dyes. Cobalt has a use in medicine – it was developed in two man-made radioisotopes and as a by-product it can also be used to alter the colour of sapphires.

Tray 1

7

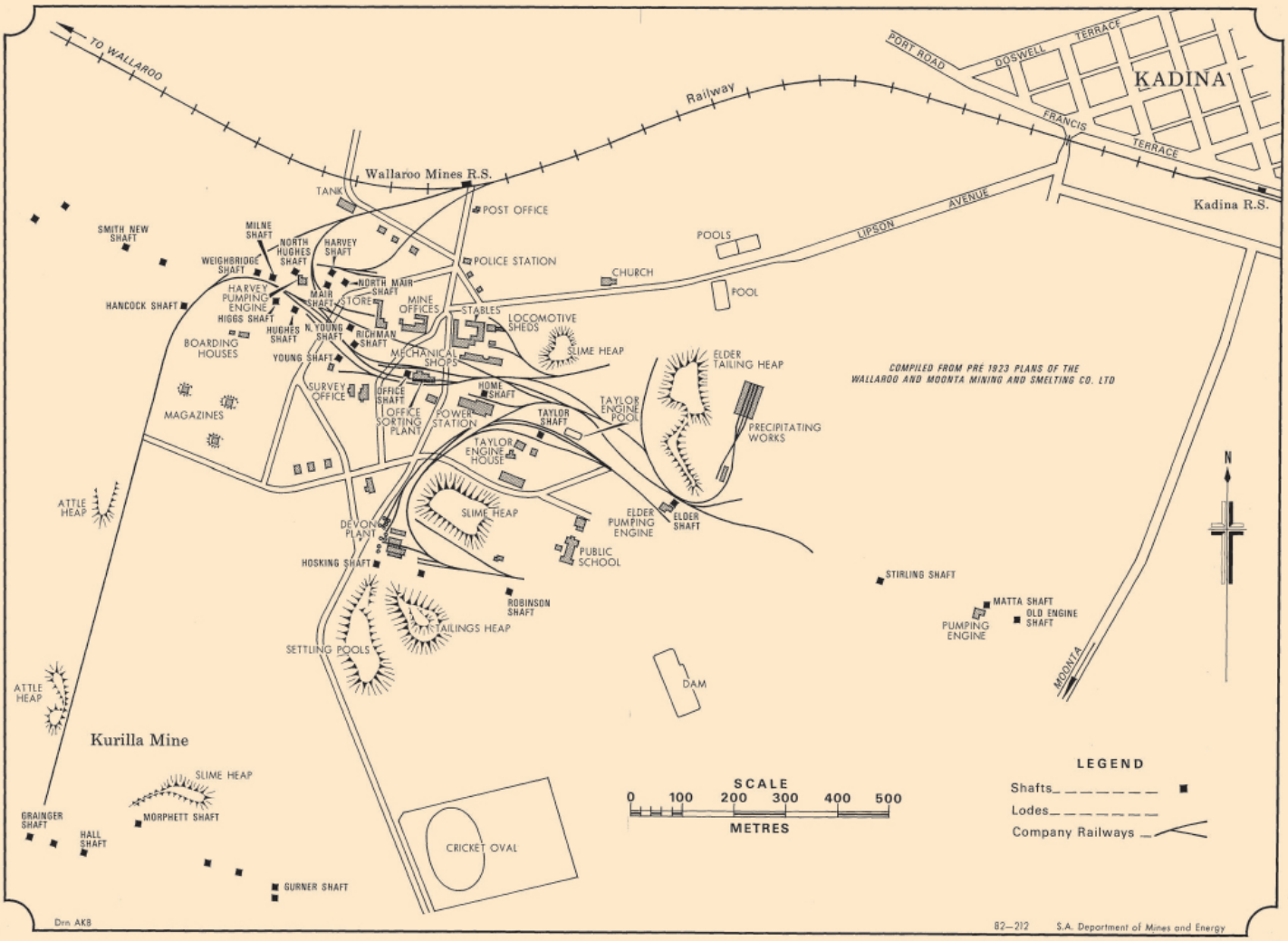
In ancient times, the Egyptians and Mesopotamians used cobalt minerals to make deep blue glass and right up into the 20th century it was used in the artist's palette as cobalt blue. This practice has now stopped as it is quite poisonous. It is very strange that a pink mineral produces such an intense blue colour!

Hamley Flat, Moonta. On the left: Hamley Mine; engine house; blacksmith shop. The tramline was laid in 1896; the house with the cypress trees was known as *Spangler's*.

7-1001-040-251

View of Moonta, mine chimney, foreground ore train

7-1001-034-148


TO WALLAROO
Railway
PORT ROAD
DOSWELL TERRACE
KADINA
FRANCIS TERRACE
Wallaroo Mines R.S.
Kadina R.S.
LIPSON AVENUE
TANK
POST OFFICE
POLICE STATION
CHURCH
POOLS
POOL
SMITH NEW SHAFT
MILNE SHAFT
NORTH HUGHES SHAFT
HARVEY SHAFT
WEIGHBRIDGE SHAFT
NORTH MAIN SHAFT
HARVEY PUMPING ENGINE
MAIN SHAFT
STORE
MINE OFFICES
STABLES
LOCOMOTIVE SHEDS
HANCOCK SHAFT
HIGGS SHAFT
HUGHES SHAFT
N. YOUNG SHAFT
RICHMAN SHAFT
BOARDING HOUSES
YOUNG SHAFT
MECHANICAL SHOPS
SLIME HEAP
ELDER TAILING HEAP
COMPILED FROM PRE 1923 PLANS OF THE WALLAROO AND MOONTA MINING AND SMELTING CO. LTD
SURVEY OFFICE
OFFICE SHAFT
HOME SHAFT
MAGAZINES
OFFICE SORTING PLANT
POWER STATION
TAYLOR SHAFT
TAYLOR ENGINE POOL
PRECIPITATING WORKS
TAYLOR ENGINE HOUSE
ATTLE HEAP
SLIME HEAP
ELDER PUMPING ENGINE
ELDER SHAFT
DEVON PLANT
PUBLIC SCHOOL
HOSKING SHAFT
STIRLING SHAFT
ROBINSON SHAFT
MATTA SHAFT
OLD ENGINE SHAFT
PUMPING ENGINE
TAILINGS HEAP
SETTLING POOLS
MOONTA
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82—212 S.A. Department of Mines and Energy

Iron

If you can imagine when our planet was first forming, there was so much iron and it was so heavy, that as the earth was spinning it worked its way down to the core of the planet. Thank goodness it is still there but the earth is known as an 'Iron Planet'. There is iron everywhere – just look at the colour of our dirt – some brown but a lot in Australia is red. That is iron and because it has rusted it takes on that real red colour. When iron mixes with oxygen, it goes rusty.

Tray 1

6/1-6/8,
1/1-1/3

In Western Australia and around Iron Knob in South Australia, you will find banded iron where while the iron was under water, it remained a metallic colour but when the water receded a band rusted and then it went back under water and the process went on and on. Every living thing on earth has iron in it. Our own blood is red because it is iron based. Iron is in every cell of our body and we need iron to survive. There is only one exception and that is a species of crab whose blood is blue and based on copper! As a result of all this iron, many of our minerals have a measure of iron in them but no native iron or pure iron has ever been found. It comes in many colours – yellow (called limonite), brown, red, fawn – all the 'earthy colours'. Iron can be magnetic and has been used for centuries as magnets.

Tray 2

11, 18

Once again, many discovered the uses of iron thousands of years ago in what we call the 'Iron Age'. However the Aboriginal peoples were using iron for many thousands of years before that. Ochre, used in Aboriginal art thousands of years ago was different colours of iron. Palaeolithic man used to ground hematite and use it as rouge in around 4000BC and the Egyptians and Sumerians first used iron from meteorites to make beads, ornaments, weapons and tools. The Hittites were the first to forge iron and they were able to heat it enough to melt it, then hammer it and cool it quickly to produce iron that was stronger than any metal that had been known before including Bronze. By the time of the Romans, iron was used for beds, gates, chariots, nails, saws, axes, spears etc. A few hundred years ago iron was used as cannon balls. We have all heard of blacksmiths – they were the workmen who heated iron and fashioned it into anything that was required. The uses for iron are endless. Even today iron is used in corrugated iron – an Australian icon.

Tray 3

4,
12/1-12/3,
21

There are examples of iron – pyrite being one. It is not used for its iron content but it's sulphur content! Pyrite is a mix of sulphur and iron and the sulphur is extracted to make sulphuric acid. Another is 'Devil's Dice'. They aren't dice at all but cubes of pyrite where the iron has taken over and the sulphur is released. They go rusty if left on the ground. Technically they are called pseudomorphs – limonite after pyrite!

Lead

Lead in the form of galena, cerussite, pyromorphite are just a few of the lead minerals. Most minerals from this group except for cerussite and galena are brightly coloured and very beautiful. But nature has a good warning system! The more brightly coloured – the more dangerous and that includes lead for lead is very poisonous indeed. There is sufficient evidence that the downfall of the Roman Empire was caused by lead. Lead is processed out of the many minerals into a dull silvery metal. It is very dense and heavy and today it is used on storage batteries, solder, bullets, lead shot and other ammunition.

Tray 1

2, 4

Lead has the ability to absorb radiation and is used as a protective shield around nuclear reactors and x-ray equipment. Many fishermen use lead sinkers on their fishing rods as it is highly resistant to corrosion and that is where its main use came into being. During Roman times and after that, lead was used as roof tiles and pipes. All their drinking water travelled through these pipes. All their cooking utensils, cups, plates were lead and they even used it in cooking. But as we know today, lead is very poisonous and can lead to brain damage and a host of serious illnesses. Even today, old lead pipes are gradually been replaced. It is simply too dangerous to leave them in the ground.

Tray 2

3/1-3/4
4, 10,14

Where does lead originate? When uranium breaks down and loses its radioactivity, it then becomes lead in the form of galena and when lead breaks down it becomes cerussite – white lead (the ladies of old used to use cerussite to whiten their faces as was the fashion but they never knew it was actually killing them).

Galena is still mined today as it has many uses and galena often contains some silver so it makes it worthwhile, however, be aware that lead and its minerals are poisonous and hands must be thoroughly washed after handling.

Tray 3

16

Manganese

This is an interesting mineral. Manganese oxide (manganese and oxygen mixed together) is jet black and messy to handle. It often forms with iron and is almost as 'everywhere' as iron. It forms a part of the chemical formula of many minerals but it is major deposits that interest miners. Manganese ore is a hard, brittle, grey-white metal. It is vital for health and helps the body absorb vitamin B1 and promotes the action of enzymes. Likewise too much can be toxic. Manganese has never been found in a native form and only combined with many other minerals. It is a part of many alloys of metals and when alloyed with copper, antimony and aluminium it can become magnetic.

Tray 2

4

One of the greatest joys to mineral collectors is another form of manganese – rhodonite. It is plentiful at Broken Hill and is a beautiful cherry red colour and is a calcite silicate of manganese. It use is mainly ornamental but it is mixed thoroughly with galena at Broken Hill so to mine one, the other must be mined as well.

Tray 3

20

Garnet

Tray 1

5/1, 5/2, 5/3, 10

Garnets are very plentiful all over the world and have a wide range of uses. The garnets in the specimen box come from an area around Broken Hill. Garnet has been used in industry for a long, long time. Sandpaper used for smoothing wood etc, is often tiny bits of garnet stuck on paper, it is used in sand blasters - even stone-washed jeans are actually blasted by garnet to give them that 'washed look'.

Calcite

Tray 1

1, 2,10

Tray 2

18

There is no real use for this mineral except for its beauty. It comes in over 360 different crystal systems and forms with many of the ore minerals. South Australia has a LOT of calcite.

Tray 3

8,21

Barite

Barite was found in great quantities in the Flinders Ranges and surrounding areas. It's not normally a 'pretty' mineral but it has some important uses. It is often associated with lead and zinc mines and is very important for preparing muds for drilling gas and oil wells. However, its most useful part is barium which is extracted from barite. Barium is used in metallurgy especially in refining processes and as a substance which is placed on the walls of a cavum tube to absorb unwanted residual gases. It is also used as a deoxidiser in copper refining and as a constituent of certain alloys.

Tray 1

8

The alloy it forms with nickel gives off electrons and is used in spark plugs. Barite is so dense and un-reactive it absorbs gamma rays, so special concrete and bricks are made with barite for shielding radioactive sources in hospitals.

Even though barite is poisonous, another by-product barium sulphate is used when having barium 'meal' x-rays in hospital – as a contrast medium in x-rays of the stomach and intestines. This type is insoluble and we do not absorb it, so it is not poisonous to us during these x-rays. Powdered barite is also used as a filler in paper and cloth making, as an inert body in coloured paints and as a white pigment. At one time barite was used in making asbestos goods.

Ilmenite

Tray 2

2/1, 2/2

This is basically another heavy iron mineral but it also contains a great deal of titanium. That in itself makes it a valuable mineral to mine. The metal that can be seen in the specimen box is very dense and heavy but when processed to titanium it suddenly becomes the new 'in' metal and technology is embracing it with open arms. As a metal it is low-density, silver white in between silver and stainless steel in colour. The metal itself owes its importance to its lightness, strength and resistance to corrosion. Further it has a high resistance to fatigue and impact.

It is for this reason that spacecraft are now being developed with this metal in mind even though it has a relatively low melting point of 1670 degrees (C) and cannot be used for extensive periods with temperatures that exceed 538degrees(C). Titanium is now an important metal in the production of aircraft and ships and anything that needs to be highly resistant to corrosion yet lightweight.

Tray 3

12/1, 12/2, 12/3

Historically titanium was found in another metal – rutile - which is also found in South Australia especially in the Olary Province. In 1790 and later in 1795 ilmenite was discovered to hold titanium as well by a German scientist but it wasn't until 1936 scientists managed to produce the metal in its pure state.

While the aircraft and sea-craft benefitted from using titanium not all was used in this industry. Titanium dioxide was developed and the pigment is mixed with paint to improve the opacity and colour of paint, plastics and paper - making it a brighter white! Better still it is non-toxic. It is further used as a flux coating on welding rods and because of its resistance to corrosion it is used in desalinisation plants as it will not corrode under sea water. Titanium is used as a grain refiner for alloys of aluminium, nickel and iron, especially during welding operations. It is also used in the chemical processing industry, power plants, marine applications (fibreglass) and in steel and other alloys. Titanium oxide is also used in the ceramic industry and glass formulae. It is further used in a number of tools especially ceramic capacitors and carbide cutting tools and those tools used in high speed drilling.

Medically, titanium is now used widely as implants, giving strength to broken bones and artificial hip joints etc, where strength but lightness is required.

Titanium continues to have many more uses in industry and every day another application is found for it. The above is only a small example of its uses but our ancestors knew they were onto something good when mining began.

A steam tram and small horse drawn vehicles travelling along Argent Street in Broken Hill passing the Oriental Hotel and shops, 1912

1-1-06456

Zinc

Native zinc is heavy and silvery in colour and rarely found. It forms in many minerals and although some are very beautiful all are crushed to produce zinc, however one of the main sources of zinc is in the mineral of sphalerite. In the specimen box there are examples also of smithsonite – one of the 'pretty' forms of zinc. The history of zinc goes back thousands of years, indeed brass – an alloy of zinc and copper has been recorded in Egypt as far back as 1500BC – over 3,500 years ago! All through the Middle East, India and China, zinc found many uses such as in coins. However, zinc has a low melting point and it was easily 'lost' in the processing stage but by the end of the 19th century, a new development was made for processing and hot rolling metallic zinc sheets which greatly extended its use. It became a substitute for lead in water pipes and was used in a number of alloys.

Tray 1

1

Tray 2

13, 16

Zinc in the form of brass is used in electric batteries, as sheet zinc, and is used in alloys to make die casts (metal moulds). Zinc oxide is used extensively in making paint and in the production of phosphors when TV tubes were around and in fluorescent lights, cosmetics, plastics and printing inks and as a catalyst in the manufacture of synthetic rubber. Zinc chloride is used as a preservative for wood and zinc sulphate is used in dyeing and in medicine – calamine lotion and zinc paste we use for sunscreen.

Zinc is essential for our bodies. A lack of zinc has been linked to behavioural problems in children and adults alike, diminished growth and slow healing of wounds. So when you are told to eat fish, shell fish, fruit and nuts make sure you eat up because they have high levels of zinc which our bodies constantly need to remain healthy.

Tray 3

9, 13

In industry and indeed in Australia the most important use of zinc is galvanised sheets for fencing, sheds and roofs. It was named after Dr Luigi Galvani, an Italian chemist who invented the process and at this time Australia uses more coated steel (colour-bond) per person than any other country. Where would we be without the **old tin-shed (that's not tin at all!).**

We have some very large deposits of zinc in Australia and South Australia certainly has some as well. Puttapa in the Flinders Ranges was a high producer of zinc in the early 1900s as well as Broken Hill which still continues to mine sphalerite for zinc production.

Tray 2

8

Tray 3

19/1, 19/2

Silver

Silver is a native element in that it occurs in nature by itself – it doesn't need other chemicals to make it silver! It has always been highly prized – just slightly less than gold and was especially sought after in ancient times for jewellery and in some cases eating utensils. In many ways it can look like native copper but it is silver in colour instead! Today, high prices are still commanded for silver. Broken Hill was especially rich in silver where it occasionally occurred in its natural state but more often than not it was a part of other minerals. Like everything else it had to be extracted and minerals were crushed and heated until droplets of silver began running out of the mix. **One of those minerals, embolite is in the specimen box.** It has a high amount of silver in it but it can't be seen by the naked eye.

There were many deposits of silver throughout South Australia, but many years ago the work needed to extract it was far too costly. Today, pure silver has been found in the north of the State.

Silver has many uses and like gold it is often used in computers and other electrical components but one of its main uses still remains with jewellery.

Tray 2

20

Gold

Gold is one of the most sought after minerals in the world and is very, very expensive to buy. It is very heavy and mainly occurs in quartz 'reefs'– areas where quartz has banded on the surface. However although people see gold as the most expensive and the heaviest of all the precious minerals it actually plays second to another mineral that is not found in South Australia – platinum!

Like silver, gold can be heated and melted into ingots, flattened, stretched, hammered- just about anything. It never corrodes and it is well known that the sea contains many thousands of tons of gold and it will still be as shiny as when first dug up. It won't degrade, rust or any of the other nasties that often occur with other minerals. In fact, it is really hard, if not impossible, to destroy it. It can be melted over and over again and it will still remain the same. Gold has played a very important part in our ancient civilisations. Not only was it worn as jewellery but the Egyptians used it extensively in their royal tombs to decorate the site of the burial of the king or queen. Gold was traded throughout the known world then and to have a gold coin meant you were extremely rich indeed. Sometimes it didn't have to be made into a coin, just gold dust or nuggets would be considered money enough. Gold coins are still made today but not everyone could afford one!

So what is gold used for? Today it is still mainly used for jewellery, but a country's wealth can be determined by how much gold they have. You may see on television during the news 'that an ounce of gold today it now worth.....' (an ounce is an old measurement -1 ounce equals 28 grams). There is so much that can be written about gold and it is worthwhile looking it up either on the computer or in books.

Gold is used in medicine as well. Many teeth were filled with gold because gold never rotted – unlike teeth! People with arthritis often have gold injections for it is believed to help stop further arthritis developing. Gold is in computers and all manner of electronic devices simply because it is considered inert – in other words nothing worries it!

One handy hint about gold. Many old miners thought they discovered gold when in fact it was pyrite! Gold is quite yellow looking and pyrite brassy in colour but sometimes people are fooled into thinking it is gold. Pyrite quickly became known as 'Fool's Gold' simply because so many people were fooled into thinking they had struck it rich with gold. There are some simple ways of telling the difference but not all miners knew what to look for.

South Australia, like the rest of Australia is very rich in gold and the narrow gauge railway would have carried many rocks to Peterborough to the stampers (machines that crush the rock) so gold could be extracted.

As you can see, it's not just a case of digging up old rocks! It can be and often is dirty, dangerous work even in our modern era but without our pioneers who struggled through unbelievable hardships and the railway that came to support them, we would not be living the comfortable lives we do today. Just think of a world where there were no mobile phones, iPads/iPods, computers, medicines and just about everything else you could think of. Life would be very different.

It's hard to imagine, but 'Bob' the dog, probably played a very important part in the lives of the miners and their families. Who could not be cheered up by a friendly, tail-wagging dog in an otherwise dreary life - who was happy with a pat and a few friendly words. He would have made a lot of people very happy in his lifetime.