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HISTORY OF A PUMMELLED LANDSCAPE

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If Aboriginals had stood on the West Coast Range on a summer day 20,000 years ago, and had looked west, they might have seen no sea; the Southern Ocean then was perhaps 30 to 50 kilometres to the west of today's shoreline. If they had looked to the east they would have seen, even in the height of summer, permanent snow on Frenchmans Cap and the high peaks in the interior. Whether the glacier was still active in the Linda Valley, between Mt. Lyell and Mt. Owen, is not certain. About 20,000 years ago the world was in the last phase of an ice age, and it was probably about that time that the first people settled on what is now Tasmania. Archaeological evidence from Sandra Bowdler suggests that people were on Hunter Island - it was not yet an island - at least 21,000 years ago. It is possible that people were living on the western coastline at the same time.

If Aboriginals had stood on a summit of the West Coast Range ten thousand years ago, they would have looked down on a different world. The ocean had come closer, and had slowly pushed up the river valley of the Gordon and the King to form Macquarie Harbour. As it is likely that the great harbour was formed when Aboriginals permanently lived in the area, they must have seen, generation after generation, the inlets and bays creep inland. Ten thousand years ago the view to the east was also changing and the Frenchmans Cap was one of the few central peaks permanently capped with ice and snow. And from the high points of Mount Lyell and Mount Owen the smoke of scrub or grass fires would probably have been visible, just as smoke was visible in A.D. 1799 when the Europeans, Flinders and Bass, first saw the west coast from the open sea in summer time (Collins 1802).

Aboriginals who stood on Mount Owen only a thousand years ago would have looked down on a landscape which had again changed. To the east they would have seen, in the valley of the King River, a plain of button grass which was possibly their own creation - the result of persistent burning by the firesticks which their ancestors carried everywhere. The Aboriginals in Tasmania and Australia not only altered the landscape they also resembled our society in the way they discovered or wasted natural resources. Their use of the firestick, by increasing the grassed areas of western Tasmania, had probably increased the population of the wallaby, thylacine and other edible animals. The Aboriginals also discovered payable minerals; and we forget that the first great prospector on the west coast was not Philosopher Smith at Mt. Bischoff in 1871 but a nameless Aboriginal who, probably thousands of years earlier, began to mine iron ore and pound it into red ochre. We know that most of the early silver and lead mined at Zeehan in the 1890s was shipped to Europe and made into ornaments, decorations and lead-based paints, but the earliest ore mined on the west coast had found an even more sophisticated use in the Aboriginals' massive consumer industry - the cosmetics trade. The woolly-haired Tasmanians often decorated themselves from head to toe with ochres.

Three hundred years ago, on 24 November 1642, a few Aboriginals on high ground probably saw the canvas sails of Abel Tasman's two Dutch ships, ten miles off the west coast. Tasman had set sail from the island of Mauritius, where the tall bird - the dodo - was only half a century away from extinction; and now he found a larger island where as a result of European contact a whole people were to die out. The canvas of Tasman's sails can thus be seen as the symbol of coming death. When Trucanini was prepared for her burial in Hobart in 1876 she was wrapped in a shroud of canvas (Ellis 1976).

The year of Trucanini's death coincided with the finding of the first payable

mineral south of the Pieman: the tin of Heemskirk. As more and more prospectors penetrated the region in search of minerals they felt they were seeing ranges, valleys, waterfalls and bold outcrops which had never been seen by human eyes: so complete was the vanishing of the first Tasmanians. The interaction of landscape and man had entered a new phase. Where a few hundred people lived in Aboriginal times, thousands now settled.

Prospectors and surveyors who in 1900 climbed one of the high mountains between Mount Read and Mount Jukes saw how the terrain was already slashed or scarred by the mining boom. The country was being criss-crossed by railways: narrow railways with their iron locomotives or horse-drawn trams running on wooden rails. Each railway cut a curving swathe through the forest, and in the mountains the cuttings, embankments and earthworks stood out like unbandaged wounds until the vegetation began the healing. From many sidings on the railway lines, roads and tracks disappeared into the forest. Some were tracks on which professional packers carried foodstuffs, explosives and mining equipment on their back. Some were muddy tracks on which strings of pack-horses carried out bags of ore from new mines, and a few were dray roads consisting of saplings laid side by side - the corduroy road. By March 1901, the month of a census, the population between the Pieman and Macquarie Harbour had already passed its peak of some 22,000, and was closer to 17,000. Queenstown and Zeehan each held 5,000 people and were third and fourth largest towns in Tasmania, and Gormanston was seventh and Strahan the port was ninth. These pockets of population and their insatiable demand for timber and firewood were already pushing back the scrub and forest.

The actual mining operations could pollute nearby creeks; but mining, contrary to popular impressions, did not turn the landscape upside down. On the west coast most mines were underground, so that only small areas of surface ground were directly interfered with; the mullock heaps of these mines occupied surface space, but much of the mullock stayed underground as filling for the depleted workings. The most severe mining scar was at Mt. Lyell where most of the ore came from open cuts or quarries worked on a large scale. The great hole created by mining at the Iron Blow at Gormanston was the most conspicuous crater, and at the time of the First World War that great terraced excavation probably would have ranked second to the Proprietary Company's open cut at Broken Hill as the largest man-made hole in the Commonwealth.

The rushes for shallow alluvial gold in Victoria were far harder on the terrain - for every thousand tons of gravel or rock removed - than were the base-metal mines of western Tasmania. Indeed one of the landscapes on the west coast which was most devastated was the small shallow goldfield near Lynchford. There the diggers dug shallow holes and a company dredged the flats of the Queen River, so that the surface of the ground was disturbed even more than on some fields which produced perhaps a hundred times more wealth.

On the west coast the wood-cutters were possibly the main devastators. More than one thousand of them must have been working every day at the turn of the century. While many gangs of men were sawing wood for bridges, houses, public buildings, or the mining timbers used underground, most axemen cut firewood for the steam engines at the mines, concentrating mills and smelters. As coal and coke had to be imported from New South Wales at high expense, firewood was preferred as fuel. In photographs of Zeehan, Queenstown, Gormanston and the new mining towns at the start of this century the foreground and background are almost invariably studded with the blackened stumps of felled trees. The totem of the west was the black stump. Some pictures of Zeehan, with the black peat or black mud around the black stumps, resemble the western front in France in 1917 and 1918. Admittedly, axemen had also cut down forests near many goldfields in Victoria and New South Wales, but there the soil and climate were favourable for farming; and the ruined forests had soon been turned into paddocks of potatoes, wheat, oats, and sown grass. On the west coast, however, farming was usually impracticable, and so the stumps simply stood until summer bushfires destroyed them and the regrowth

concealed them. In the destruction of forest - a destruction which was widespread between about 1896 and 1912 - some species of fauna and flora were possibly extinguished before they were ever recorded.

Bushfires helped to alter the landscape around the mines. Loggers and firewood-cutters unintentionally prepared the way for bushfires by opening damp ancient forests to air and light and by leaving behind the debris and brushwood which quickly dried in a hot week of summer. Freelance prospectors often started the bushfires. The dense vegetation was both a barrier to fast travelling and a blanket over rocks which might hold valuable minerals; and so a box of matches was really the old-time prospector's equivalent of our Landrovers, geophysical apparatus and geiger counters. Many mineral men applauded frequent bushfires. Donald Clark, who was perhaps Australia's best mining correspondent, cheerfully described in 1904 the effect of fires on the west coast: "The combined action of clearing and fires will enable a great deal more ground to be prospected than could have been done otherwise."

At Mt. Lyell the vegetation was also affected by the copper smelters. The Mount Lyell Mining and Railway Company, the creator of Queenstown, used fire metallurgy more than any large mining concern in Australia's history. That company eliminated any preliminary process of concentrating the ore, whether by roasting, leaching, or gravity milling. Instead the lumps of ore that came from the mine were tipped, whether wet or dry, straight into one of the roaring furnaces.

The ores were tipped into the furnace in the ratio of about one ton of the siliceous North Lyell ore to two tons of Mt. Lyell ore; and the dominating Mt. Lyell ore was rich in that sulphur which was so harmful to vegetation. A typical ton of ore from the great Mt. Lyell open cut consisted of 48 per cent sulphur, 40 per cent iron, about 9 per cent of silica and alumina and barium sulphate, and rather less than 3 per cent copper. The iron and the sulphur provided most of the fuel required for the smelting process. In a sense the ore was self-fuelling, and that made possible the process of pyritic smelting which was adopted at Mt. Lyell in 1896. In the international history of fire metallurgy - in the history of those inventions which so shaped the march of civilization from the iron age and the bronze age to the nuclear age - Mt. Lyell has a special place. For here at Queenstown on 13 November 1902 the American metallurgist Robert Carl Sticht fulfilled the ancient dream of metallurgists by smelting ore on the large scale without the addition of either coke or coal. Ultimately he was to use small amounts of coke again, but nearly all the heat in the furnaces was generated by the iron and sulphur within the ore.

Many visitors to Mt. Lyell in the early years of this century were fascinated by the knowledge that they were in the presence of a technological triumph. Today, visitors are fascinated by the sight of an ecological disaster. The triumph and the disaster were inseparable. From the starting of the copper smelters at Queenstown in June 1896, the chimney stacks poured out a cloud of fumes, which on still days might wrap the Queen Valley in fog and on windy days were blown west towards the mountain ridge. Some men claimed that they could taste the windblown sulphur in the air at least seven miles from the smelters. On clear days passengers standing on the deck of tiny steamships entering Macquarie Harbour could see the haze of sulphurous smoke from the Mt. Lyell smelters, fifteen or twenty miles away.

While the sulphur constituent of the ore provided essential fuel for the smelting process, most of the sulphur escaped from the blast furnaces. Mr. Sticht himself, in an address in Queenstown in 1915, reported that 55 to 60 per cent of the original sulphur "distills out of the furnace as sulphur vapour". That sulphur could have been trapped and used to make sulphuric acid, but there was only a trifling demand for sulphuric acid on the west coast, and moreover the shipment of acid to markets in Melbourne and Sydney was too expensive to pay. As the furnaces worked day and night, weekdays and Sundays, the emission of sulphur was on a massive scale. Soon the sulphur

killed virtually all the plants growing in the path of the smelter fumes. As the woodcutters had chopped down the large trees, and as bushfires in summer often swept through the hills, burning even the black peat that coated the country rock, the growth of new vegetation was the last hope. The fumes prevented that growth. The heavy rains of Australia's wettest mining region eroded what remained of the top soil, exposing the ribs and flanks of the steep hills. The landscape slowly came to resemble what people imagined was the surface of the moon - forbidding on dull or rainy days but strangely beautiful in slanting sunlight.

I hope that a large part of the bare landscape can be preserved from the scrub which is now rapidly advancing. It may sound heretical but the case for conserving such an area is powerful. The bare slopes would act as a reminder of the way in which industrial processes can devastate the vegetation; they would commemorate a remarkable achievement in metallurgy; they would preserve a terrain which possesses, in varying lights, a sombre starkness or a delicate beauty; and they would assist a town which, in order to flourish, may have to rely increasingly on tourism.

Not all the bareness of the landscape around Mt. Lyell should be blamed on the copper smelters. The pastel pinks and whites of the high slopes of Mt. Owen stood out long before the first miners arrived. The forest then stretched high up the slopes of Mt. Owen but the steep faces of the summit were virtually naked.

Nowadays visitors to the west coast often enquire why nothing was done to prevent the sulphur escaping in the fumes. Preventive plans were considered but were dismissed as either too ineffective or too costly. When the process of pyritic smelting was adopted Australia was just beginning to emerge from the severe depression of the early 1890s: hunger was considered a worse enemy than pollution, and so a company which employed more than 2,000 men would have been welcomed even if its smelter fumes were, in fact, twice as sulphurous as Mt. Lyell's. Moreover, most people on the west coast at first were birds of passage and so were less likely to deplore the denudation of a landscape from which they themselves would soon escape. Even those who settled permanently at Mt. Lyell mostly shut themselves off from the scenery, whether grand or desolate. As Charles Whitham of Queenstown wrote sadly in 1923 in one of the most imaginative nature books written by an Australian: "most of our western folk would rather see a racecourse, a crowded danceroom, or a billiard-saloon, than the prospect from a hill overlooking Macquarie Harbour, with its winding bays and the changing lights on its waters."

Nonetheless many residents were perturbed at the desolation made so quickly by man at Mt. Lyell. Robert Sticht, who presided over the smelters at Queenstown, was not a Philistine. In his large house on the headland of rock at Queenstown he assembled what was probably the finest private library in Australia as well as a remarkable collection of European works of art. Sticht's memory has been guarded so frugally by his descendants that it is difficult - in the absence of adequate material - to ascertain some of his attitudes; and at times he gave the impression that a glorious mountain was slightly less a work of art in its own right than an obstacle to be overcome by skilled engineering. Certainly he admired a virgin forest but he also thought a perfectly functioning furnace was an aesthetic experience

Many visitors to Mt. Lyell were perturbed by the swift defoliation. We do not yet know much about the changing Australian attitudes to scenery, but my impression is that in the 1890s the finest scenery on the west coast probably stood even higher in the hierarchy, the subjective hierarchy, of natural beauty than it stands today. In those days Australian nationalism was new and the dry outback and the plains were just beginning to touch the emotions of Australians. English and Scottish scenery and light and Irish greens were more in favour amongst Australians then than today; and so on the west coast the evergreen scrub, the foliage of such trees as myrtle and King William and Huon Pine, the softer light and the dark still water on the lower reaches of the

rivers, especially won the admiration of visitors. One sharebroker travelling up the King River in a steam launch to the Mt. Lyell Company's railway in the late 1890s said the voyage along the winding forest-fringed river was an aesthetic experience almost matching his recent visit to the famous art gallery in Madrid. Although he was biased - he owned shares in Mt. Lyell and none in Madrid - his view was widely shared.

At the turn of the century the conflict between mines and landscape was virtually insoluble, and the dilemma can be seen in the verses written by that talented feminist and socialist Marie Pitt. Her husband was a miner, and they lived in Tasmania from 1893 to 1905, and for some of those years they lived near the Hercules mine on the high western slope of Mount Hamilton:

Wild and wet, and windy wet falls the night on Hamilton,

So begins one of her popular poems, and it catches the scent of the white leatherwood and describes *the nodding myrtle plumes* and the sound of the mottled mountain thrush singing in the rain. If Marie Pitt were living today she would be a fighting conservationist, but at the turn of the century she knew that jobs were scarce and that even the west-coast axemen deserved praise because they were clearing forests or finding new mines:

They slew the pine and sassafras,
The myrtle host laid low,
Tramping through the button-grass ....
Forty years ago !

Those critics who today blame the pioneers for scarring parts of the west coast forget that a nature-conservation crusade can fight only on a full stomach. Likewise those critics of conservation who insist that hydro-electric and mining projects should always have first call on land forget that people can't live on bread alone.

The relations of man and nature are laced with contradictions. We barrack either for man or for nature as if this were a game in which a clear winner was essential, but this game is more subtle, and the loser can also be the victor. The entry of logging and mining to the west coast endangered nature and in places pummelled it but these primary industries in turn provided transport and enabled tourists to see the natural beauty and enabled natural scientists to study the region. By 1920 far more must have been known of the zoology and geology, and possibly the botany, of the mining region to the north of Macquarie Harbour than of the untapped region to the south of the harbour. One of the west coast's early exports - once the mineral boom began - was knowledge: knowledge not only in metallurgy but in mineralogy and other sciences. Western Tasmania also exported things of beauty. In the most magical room of the greatest of American museums, the Smithsonian in Washington, the massive but delicate specimens of crocoite - or chromate of lead - from the west coast town of Dundas have been seen and marvelled at by more people than have ever set eyes on the west coast.

The interlaced relations between man and the natural environment are also unpredictable. Some people who lived at Mt. Lyell through the quarter century of pyritic smelting longed for the day when most of the sulphur would cease to blow from the smelter stacks. That day came in 1922, on the eve of Sticht's death, when the high-sulphur ore of the Mount Lyell mine was finally abandoned and new milling and smelting processes were adopted in order to save the mining field from insolvency. Now at last the lichen and the life crept back slowly onto the bare hills, but a new menace instantly replaced the old. Whereas the waste materials of the old metallurgy had either billowed into the atmosphere or had passed to the black mountain of slag, the waste materials of the new processes flowed as a grey sludge down the river to Macquarie Harbour. Today the lower reaches of the King River should be likened less to Madrid's great art gallery than to Madrid's main sewer.

Fortunately the devastation by the axemen had also been curbed. The Mt. Lyell Company opened in 1914 the largest hydro-electric powerhouse in the Commonwealth, and the Mt. Bischoff and Magnet mines adopted the same clean cheap power, enabling the

small army of firewood cutters on the west coast to be dismissed. Hydro-electricity in those days was welcomed as the guardian of the forests. Nobody could conceive of a time when hydro-electricity and the valleys which it drowned would become a prime source of complaint from nature-lovers.

The relations between man and environment will continue to be influenced by the unpredictable. But in deciding which land should ideally be allocated to particular purposes, the unpredictable element can at least be minimised if knowledge of the environment and its history is maximised.

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