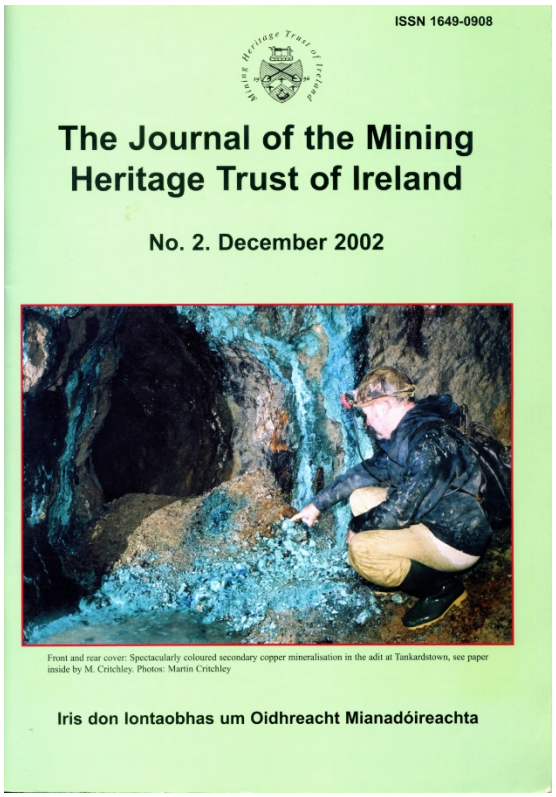


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# GLANDORE MINES, COUNTY CORK: HISTORY AND SURVEY

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**Abstract: While the history of Colonel Hall's cupriferous-turf burning at Glandore is comparatively well recorded, little survives directly about the first manganese workings there (1835-'61). A trawl through the Skibereen Eagle newspapers of the 1870s and early '80s casts new, but incomplete, light on the earlier and the 1876-'81 manganese operation. Only basic facts about the 1907-'11 revival survive but hitherto unexamined surveys of 1918 and 1939 throw some additional light on the later phases of manganese mining. An underground and surface survey in 2001 adds a little more detail.** *Journal of the Mining Heritage Trust of Ireland*, **2, 2002, 51-59.**

## COLONEL HALL'S TURF-BURNING OPERATION

The Glandore of 1810 was little more than a quiet backwater when Colonel Robert Hall first set his eyes on its beautiful landscape. In that year the harbour entrance was straddled by dangerous rocks preventing shipping from entering an otherwise safe haven. The 136-foot long curved pier, the three stone mansions in the pine trees, the link-road to nearby Leap and the local school were all in the future. The majority of the population were illiterate paupers living in squalid conditions. Hall, a Cornish man, initially came to Ireland in 1775 as head of the Devon and Cornwall Fencibles Regiment. Hall's regiment included men who had worked as miners in their native Cornwall. Undoubtedly, Hall himself possessed considerable mining and geological skills which he put to good use when he landed on Irish shores.

His career saw him stationed variously at places like Killarney and later Wexford to quell the 1798 rising. Having departed the British army in 1805 Hall returned to Ireland to pursue his vocation: the development of numerous mines and copper showings he had noted along the coast. Mines stretching from Waterford to the Beara Peninsula are associated with his name; his son claimed that his father had discovered thirteen mines on the south coast of Ireland. He is credited with the discovery of Allihies copper mine on the Beara Peninsula; the richest mine in Ireland in its heyday. Hall arrived at Glandore in 1810 and it was said that his attention was drawn to jade-green fish bones in local ash heaps. The source of this unusual ash was the nearby Maulagow bog also known as the "stinking bog". It was said that not a dog nor cat would remain in a house that burned Maulagow turf in its fire. At first Hall purchased copper-rich ash from the locals and exported it to Swansea at £8 per ton. (Cowman and Reilly, p. 31).

What could possibly have caused Maulagow's stinking bog to become impregnated with valuable copper? Captain W.

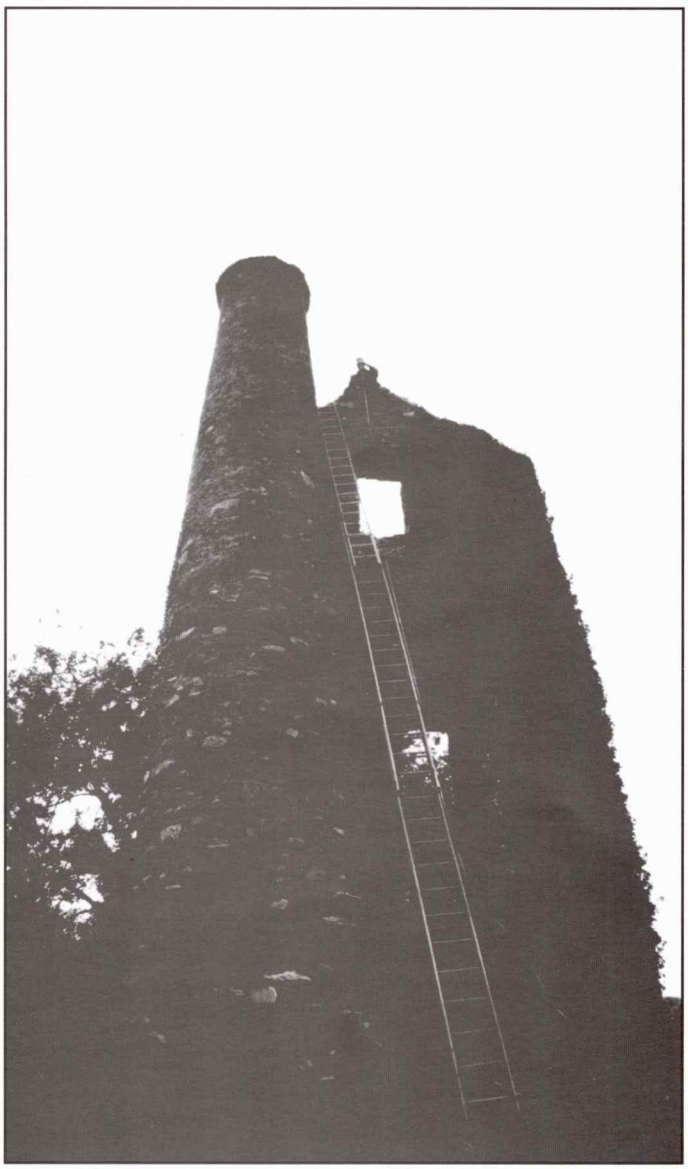

*Figure 1. The engine house at Glandore.*

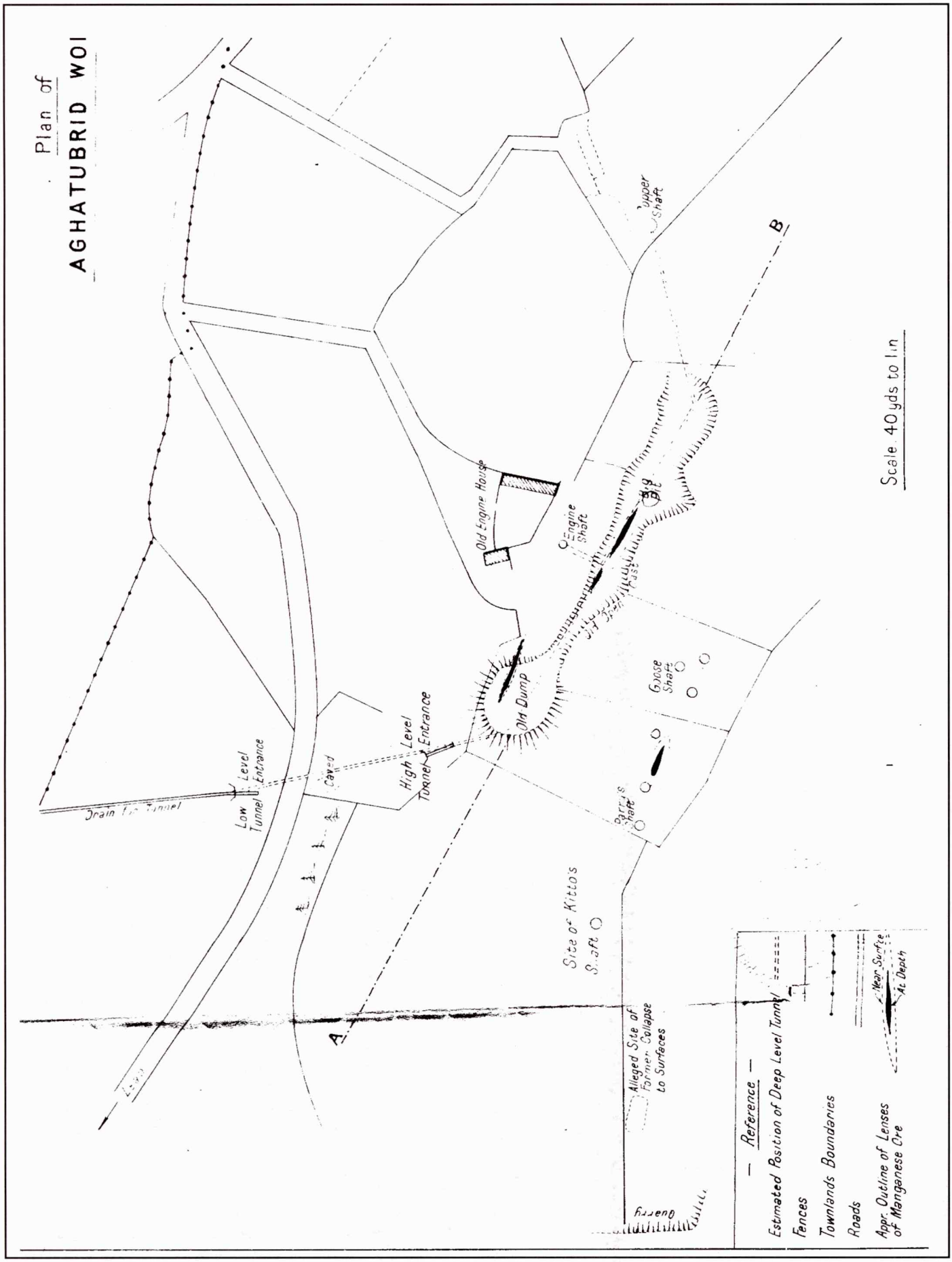


***Figure 2. Plan of the Glandore mine by Rundall, 1939.***

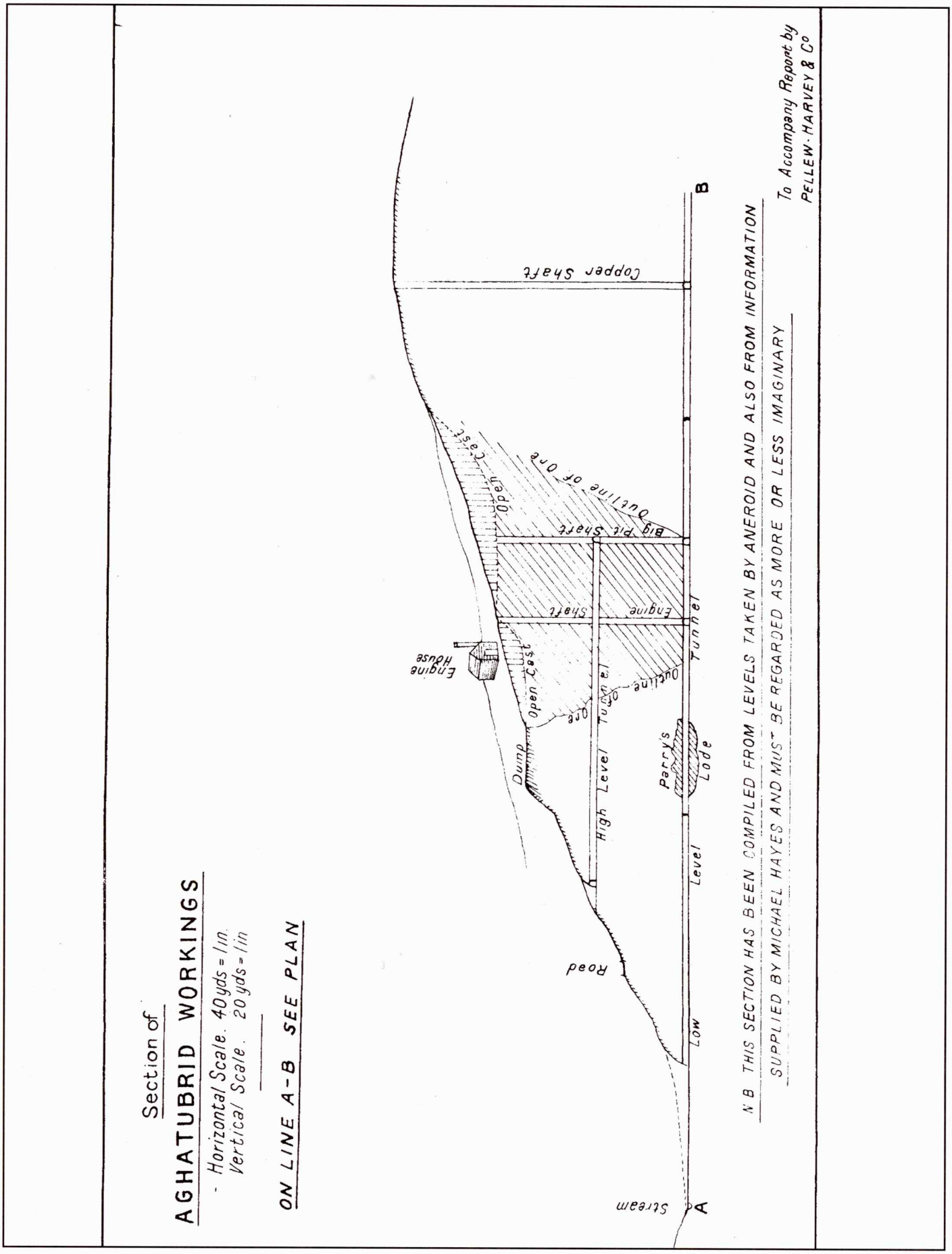


*Figure 3. Section of Glandore mine by Rundall, 1939.*

Thomas, a well known Cornish mining engineer in the locality theorised later as follows:
*A spring high on the hillside and flowing continuously throughout summer and winter must have passed over the back of a [copper] lode taking up copper into solution as it flowed. As the stream emerged into daylight, meandering its way to the sea, it spilled across Maulagow bog depositing its copper-rich water. The actions of iron and acids in the bog caused a precipitate of copper to form in the peat* (SE 24/8/1876).

Early successes prompted Hall to burn the source of the copper, Maulagow bog itself. He established kilns to dry and burn the turf and was said to have gathered 600 tons of ashes from 1810 to 1819 valued at £5000. A local farmer named Jeremiah Daly, living north of Maulagow Bog made an unusual discovery in recent times. A portion of his land had an enormous mound peppered by rabbit burrows. Daly hired a bulldozer to level his field; as the machine stripped the mantle of grass from the mound it was found to consist entirely of ash, no doubt a clue to the location of Hall's kilns.

A later account gives some statistical details of Hall's peat burning activities:
*In 1812 there existed a cupriferous peat bog here, fifty tons of dried peat produced when burnt, one ton of ashes, containing ten to fifteen percent copper.* (Guy's Cork Directory 1875)

Between 1811 and 1819 Hall exported 575 tons of ashes from the peat over a period spanning seven years (Hunt 1848). Multiplying this tonnage by fifty, a total of nearly 28,000 tons would have had to be burned or 4000 tons yearly. In practice however, peat-burning would be impossible during the months of winter when Maulagow bog: peat burning would only be practical for about five months each year. On that basis Hall's bog labourers would have harvested and burnt an average of 200 tons of peat per week during the summer season.

Working at the bog would demand such labour as cutting turf, stacking for drying, setting fires, tending kilns, gathering ash, bagging for shipping to Swansea and dumping scrub and other waste material. No doubt Hall made a handsome profit from his venture at Glandore. However, it was inevitable that his peat resource would eventually exhaust itself; as his bonfires died in their glowing embers and the last wisps of stinking smoke wafted across the bog his thoughts turned once again to prospecting.

Hall seemingly invested the profits of his peat-burning venture fruitlessly trenching and prospecting for the mother lode [of copper] above the area of the bog. During his Glandore explorations he probably identified detached blocks of manganese but soon departed for new adventures in Ballydehob (Cowman and Reilly, p. 31).

## MANGANESE WORKINGS 1833-'61

A small-scale operation to quarry manganese was started up in Glandore by the local landlords - a J.R. Barry and Allen of Stone Hall (SE 12/7/1879). Little information has survived about this since it was mainly a private operation. Some initial cargoes of manganese were sent to Dublin only to be rejected by bleach manufacturers because of the excessive hardness of the ore which made grinding into fine powder difficult. (##) Possibly an alternative market was found as by 1833 the Catholic landlord James Redmond Barry was showing concern for the education of 100 young girls ("poor creatures") working at the mine "if only for a short period each day. (SE 9/5/1885). It is likely that they were engaged in cobbing or dressing the mined material to concentrate the ore for export.

However, this operation was not considered significant enough in 1840 to be listed in an otherwise comprehensive encomium of Irish mineral locations. (Kane 1840) In may have been restarted about this time as new names emerge - a Mr Underwood along with Captain Tonkin. A shaft sixteen to eighteen fathoms was also sunk to search for copper. While carrying out this work Underwood stumbled on a rich bed of manganese in 1840. His find was said to be twelve feet wide and running in an east-west direction. By 1843 a stockpile of 1,000 tons was reportedly ready and a first shipment of 100 tons was made to Liverpool by the new lease-holders, Tonkin & Co. Industrial progress also created a demand for manganese as its value came to be recognised as an alloy to harden brass and steel. The new discovery saw a more systematic approach being adopted to working the mine. Manganese blocks were blasted with gunpowder in a twelve to forty-foot deep open-cast on the lode - a process similar to standard stone-quarry working (MJ 1845, pp, 360, 384 and 407))

The number employed at this time was about thirty including women and boys. The wages of the day were said to be eight pence to ten pence for men and four to six pence for women and boys. While the wages were meagre they were double that of a farm labourer (SE 9/5/1885). This phase of Glandore's mining history reportedly lasted until 1861 and over twenty seven years some 20,000 tons of manganese were reportedly extracted (SE 12/7/1879). It was probably quite a low-tech operation as the equipment on the site in 1873 was valued at only £173. (#) Before it closed an experiment would appear to have been engaged in iron mining. Sixty tons of brown haematite were sold on 1860 but its value of £25 was clearly unremunerative (Min. Stats. 1860). However, there were later claims that that iron continued to be sold after 1860 at a more remunerative price (MJ 1872 pp 395, 420, 467 & 491)

## MANGANESE REVIVED 1876-'81

High prices for manganese in the mid 1870s attract the London company of Foster & Willis to Glandore in 1876 to reopen the mine. Their capital was £12,000. The local newspaper reported: *Glandore manganese was of too low a quality to be converted to chlorine for bleaching purposes and was being converted under patent by the proprietors to Ferio manganese, and by using a small percentage of this material with iron in the manufacture of steel, great tenacity and toughness is given to the latter, rendering it especially useful in the manufacture of armour plating, and in making conical balls for the "Woolwich Infant"- the new 8-ton gun being developed.* (SE10/6/1876)

In that same year Glandore manganese sold at £4 per ton, the following year the price dropped to £3 per ton and in a depressing spiral was found to realise only £2 per ton in 1878 and only 35 shillings the following year (Min, Stats.). Despite the depression in market prices it would appear that Foster & Willis were still optimistic, and restructured the company in 1879, possibly anticipating a new market for manganese as an alloy for "bearings etc. (and) for machinery" (SE 19/7/1879)
*It has been arranged that operations on an extensive scale will be commenced on 1 July. An engine-house, stores, and a few miners' cottages will be built at once, as accommodation for miners is much required (some of whom are coming over from Cornwall.* (SE 12/7/1879)

Following the July re-opening:
*the resident agent, Captain Rowse, having arrived, operations were on Wednesday last commenced by selecting the site for sinking the new engine-shaft, which, with the usual formalities, was named "Gordon's shaft" after a director of the company. This was done amid cheers or large numbers of men anxious for employment, many of whom have been unemployed for some time past.* (SE 12/7/1879)

Whether this engine house is the currently standing one is not clear as a report of six years later states that "*A powerful winding and pumping engine was added*" and goes on to describe "*suitable machinery for crushing by steam power is also on the ground, although it has not yet been brought into use*".(SE 9/5/1885) As the mine probably was drained by adit, never having gone below 200 feet from the surface, it seems likely that the present engine house was built in 1879 both to raise ore and drive a crusher. It has been suggested that it was never actually used. (MHT/SI Newsletter No. 8, p. 12 & No. 18, p. 5).

The local paper retrospectively described other aspects of this operation:
*The manganese was raised to the surface in large blocks, and, having first been subjected to a process of cobbing or breaking into small pieces, any lumps which were not deemed to be of sufficiently good quality were bucked and jigged, that is to say, broken into still small pieces, and finally washed through a sieve in a large tank constructed for the purpose. Having thus been dressed and refined, the manganese was packed in bags, [and] carted to Glandore.* (SE 9/5/1885)

Very little emerges about its impact on the local community. "Thirty men and boys" were said to have been employed (SE 9/5/1885). Some social insight is offered by a report of an accident, including strange deeds at Glandore regatta -
*On Saturday a gunpowder explosion occurred at the Glandore Mines, Leap, resulting in injuries which, it is feared will prove fatal to two men employed at the works, named James Crowley and Jeremiah McCarthy, belonging respectively to Glandore and Leap. They are at present under the treatment of Doctors Somerville of Union Hall and Hadden of Skibbereen, whose attendance was immediately summoned by the representatives of the Mining Company. Only the faintest hopes are entertained of Crowley's recovery. Both men are disfigured. Crowley has the misfortune being rather disfigured previously, having got his nose partially bitten off on the day of Glandore regatta, whilst in some petty squabble, for which his assailant is at present undergoing imprisonment in the county gaol.* (SE 27/9/1879)

Despite earlier optimism, falling ore prices could not justify continuing the operation; Glandore mine appears to have closed down its operations in 1881. One employee of the mine is noted in 1883 & '84 (Min. Stats) who might have been Cornishman Captain Ellis charged with investigating what the copper potential of the mine might be as signs had been detected leading to possible optimism about finding Hall's "lode". (SE 9/5/1885)

## THE 1907-'11 OPERATION

At the time of closure in 1881 ownership of the mine vested in Dr. Siemes and others". Formal ownership continued to be recorded up to 1887, mainly under former director. Gordon though there may have been some attempt at subletting in 1885. (Min, Stats) However the price of copper and manganese remained depressed until a brief boom appear in the former in 1905. Nobody was tempted to reopen Glandore at that stage but 10/- per ton of manganese in 1907 apparently tempted the

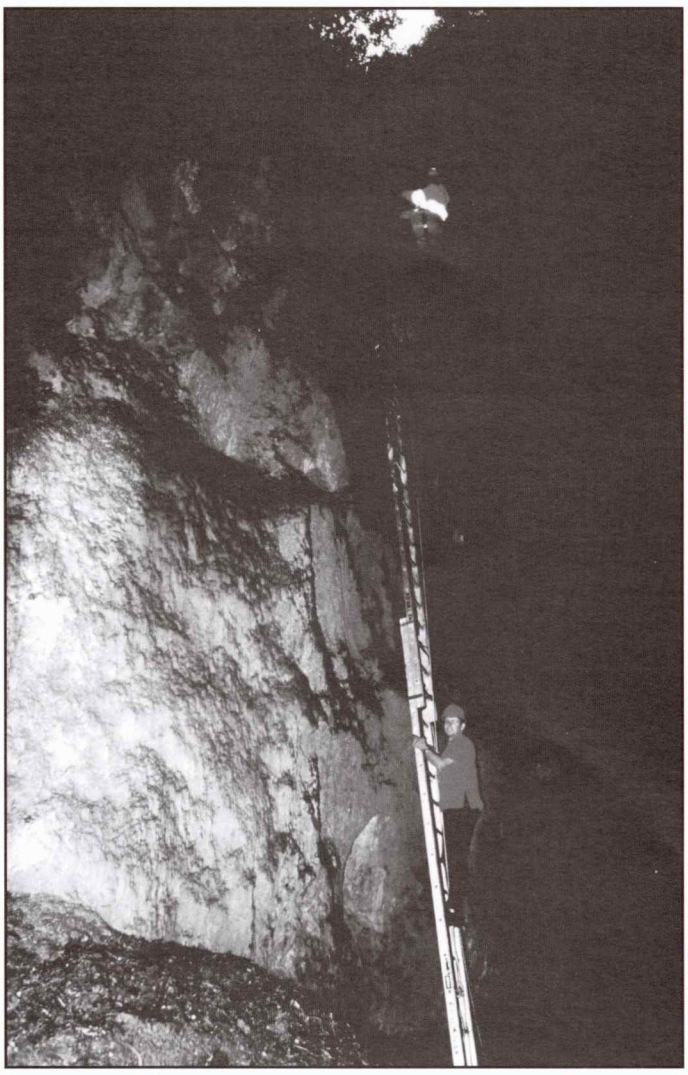

***Figure 4. A view back up the "big pit" shaft.***

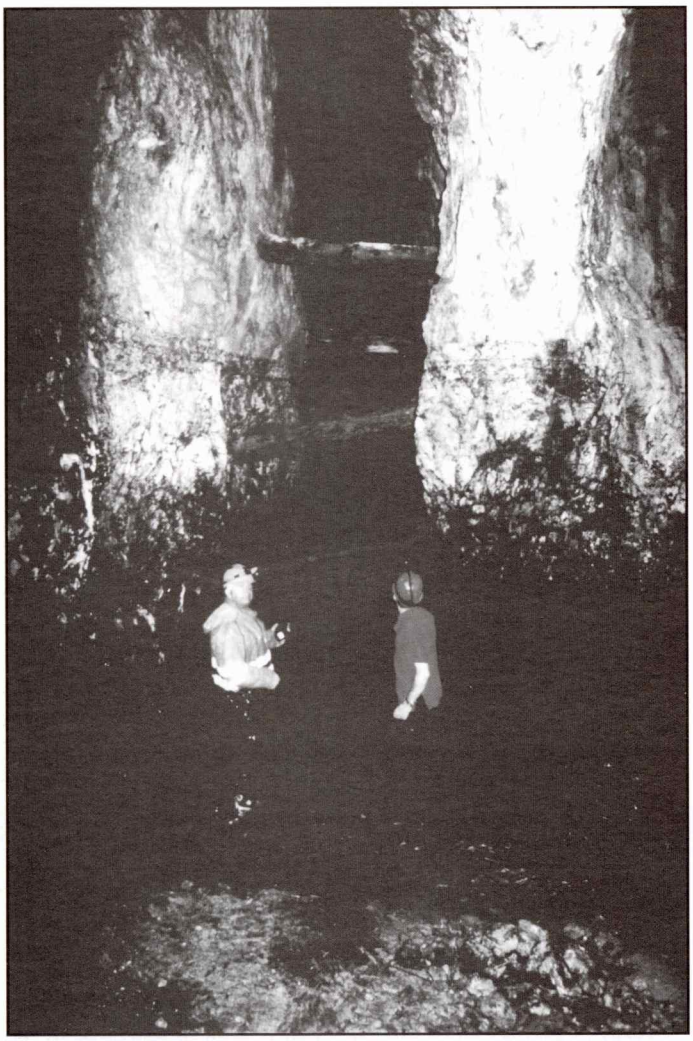

***Figure 5. Timbered stopes***

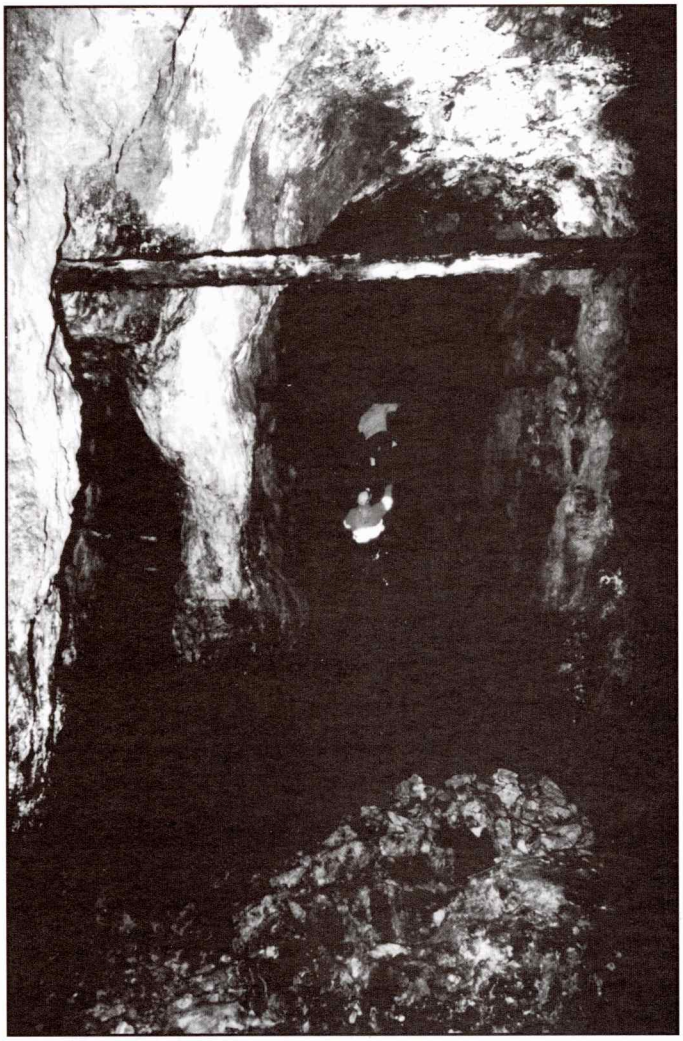

***Figure 6.***

Liverpool Manganese Company to take out a lease, Edwin Owen Parry acting as manager (Daly, 1918).

In their first year sold 256 tons of manganese for £128. The following year they sold 70 tons of manganese which still only realised ten shillings per ton, however, facing transport costs of seven shillings and four pence per ton. On an annual average throughout their five-year operation they employed fifteen people before closing down in 1911 (Min. Stats). Little is known of this company's efforts at Glandore but it is said they worked a lode of ore left unprospected by the earlier London company, Foster & Willis. The records refer to this as "Parry's lode"; it may well have been located near the entrance of the adit (see Fig 2). It was for this company that Michael Hayes worked; his father had also worked in the mine during the Foster & Willis period (Rundall, 1939). With the departure the Liverpool company the mine finally closed.

## LATER SURVEYS

In 1918 Herbert J. Daly was commissioned by the Ministry of Munitions in Dublin to carry out a survey and feasibility study of the mine. In a thirteen-page report Daly recounts much of the mine's past history. In regard to inspection, Daly declares the mine: "*To be abandoned and water-logged, therefore no inspection of the old workings was possible. Recent falls of earth have blocked the entrance to the tunnels*". Daly goes on to state in his report that a diviner from London, a Mr S. Lockhart, spent six days about the mine with his divining rod and thus located six lodes! (Daly 1918)

The next survey was initiated in 1939 when the Department of Industry & Commerce engaged the British firm of mining consultants: Messrs. Harvey - Pellew & Co. Their agent, Mr Rundall, first called to the Dublin offices of the department and later spent a day or two at the Geological Survey Office. He then proceeded to Glandore accompanied by a Mr Cluskey from the Department .In his report Rundall reiterates the comments of the Daly 1918 survey when he states:
"*Unfortunately all the shafts have either caved or have been filled, and tunnels which connect with the shafts and drain the workings have also collapsed, consequently the underground workings are quite inaccessible and it was not possible to enter the workings at any point.*"
Not being able to access the mine, Rundall relied heavily on

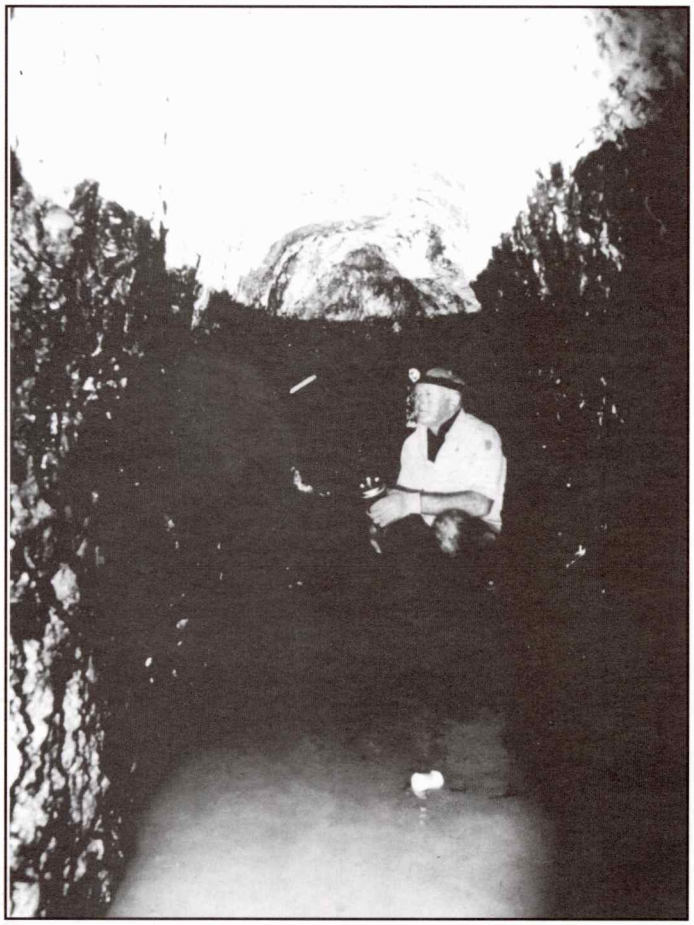

***Figure 7. Black walls and white ceiling within adit.***

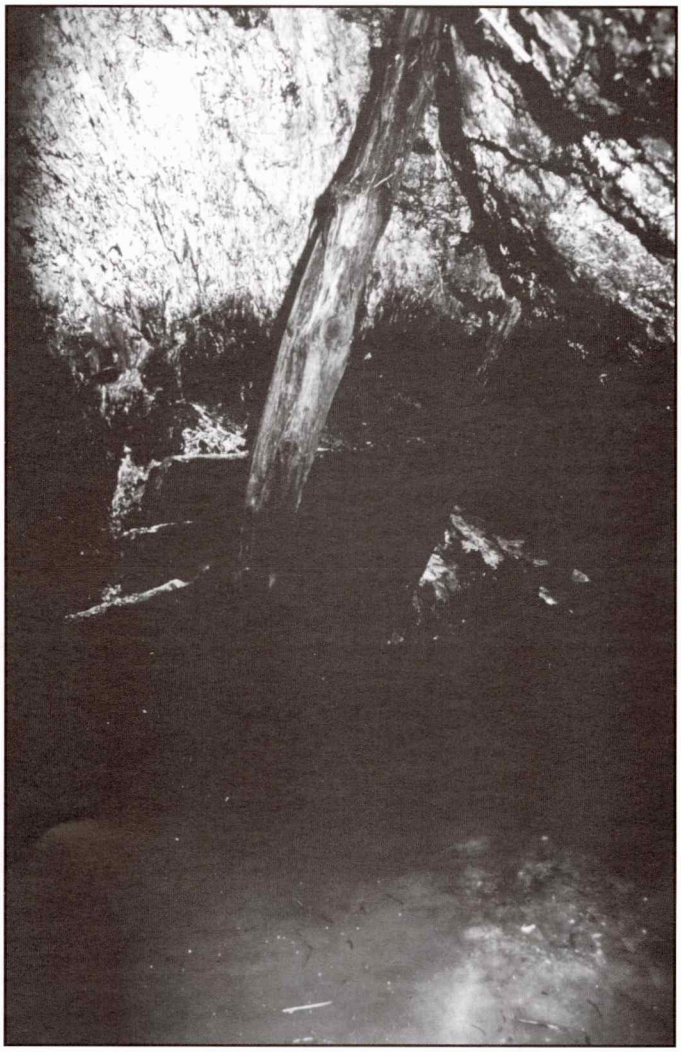

***Figure 8. Chute packed with ore indicating hasty abandonment.***

local ex-miner, Michael Hayes, for information. Rundall superimposed details given by Hayes on an ordnance survey map of the area, he also produced maps and sketches of shafts and levels based on Hayes's information. Rundall also gave a character opinion of Michael Hayes in his report to his superiors in London. *Mr Hayes is an honest and intelligent man with a very good memory. He never once contradicted himself and appeared to have a reasonably good grasp of the nature and extent of the workings.*

Rundall went to great lengths to analyse samples from six different dumps on the mine site; he even drew a freehand map showing the location of these dumps and numbers he had allocated to them. These samples could not have been representative of ore mined and shipped in the past; the dumps could only have consisted of rejected waste material or low grade ore. Rundall also submitted three poor quality photographs in his report. One is especially significant as it shows a lean-to boiler-house attached to the engine-house Only the flashing for this remains and the magazine he mentions is gone without trace. Rundall also noted that manganese ore was being replaced by iron at depth. In total he spent five days in Glandore, accompanied by a Mr McCluskey from the department, returning to London on 15th November. (Rundall 1939)

In 1966-67 a company called Denison Mines Limited obtained a prospecting licence covering the Glandore area. It appears that their work was orientated towards finding targets for a future drill survey. In 1968 a prospecting licence was issued to the Irish Metal Mining Company Limited; the licence number 998, covered an area of eight square miles. This company introduced a diamond rock-drilling machine at the site and drilled numerous core-sampling holes throughout the area. Some cores were taken at depths of 150 feet while the deepest touched 600 feet. In many cases drilling was angled; sometimes by as much as 50 degrees in attempt to intersect lodes of ore. The findings seemed optimistic and hinted at a lode of copper ore near the stream north of the mine. The report mentions the sudden and inexplicable departure of the drilling team. Finally, during the Easter vacation of 1969, a group of Master of Science students and two supervisors carried out various surveys at and around Glandore. (GSI)

## THE CURRENT STATE OF GLANDORE MINE

In September 2001 this writer, his son Frank and colleague Ray White, having gained the owner's permission, abseiled down the 120 foot "big pit" shaft the only current access to the mine workings. This dangerous shaft is almost inaccessible due to an impenetrable thicket of briars and thorns in the remains of the original open-cast. On our descent we had with us the plan of 1939 (fig 2) on which its compiler, Rundall, had inscribed the warning that it "must be regarded as more or less imaginary". In fact it provided a useful basis for exploration and on our descent we could see the high level adit but were unable to reach it.

The base of the shaft on the lower level forms a cathedral sized cavern with sixty-foot high ceilings displaying a kaleidoscope of colours due to various minerals in the rock. The floor is littered with props which once supported platforms ("stulls") enabling miners to work the ore face. Two still straddle the great cavern about twenty-five feet above the ground; though they look as if they might collapse at any moment. The atmosphere in the great cavern is heavy with damp from seeping rock surfaces within the mine. From the base of the moss-shrouded shaft one has to wade through two six-foot deep lakes to access the levels. Some are dry but two are flooded to ceiling height. They would probably drain naturally if the partially blocked lower adit were cleared of winter flood debris.

Two dog skeletons were found about the floor of the mine; one even had its collar in place, though it bore no name; they appear to have lain there for many years. A putrid smell at the base of the big shaft was found to be a decaying rat which must have fallen from the surface into one of the shallow lakes within days of our visit. On a return visit to the mine, the following week, another rat had joined his decaying colleague.

Standing on its dry floor of the 'big cavern', iron-ore on the rock face appears jet-black and leads upwards to meet white or pink streaked rock as though one were looking at the layers of a cake. West from the same spot the cavern narrows sharply to a gorge-like structure which is flooded at its base to an average depth of five feet. Wading westwards for thirteen meters through the chilling water, the gorge ends in a cul de sac to reveal a flooded adit running due northwards. A further flooded level runs southwards from the cul de sac.

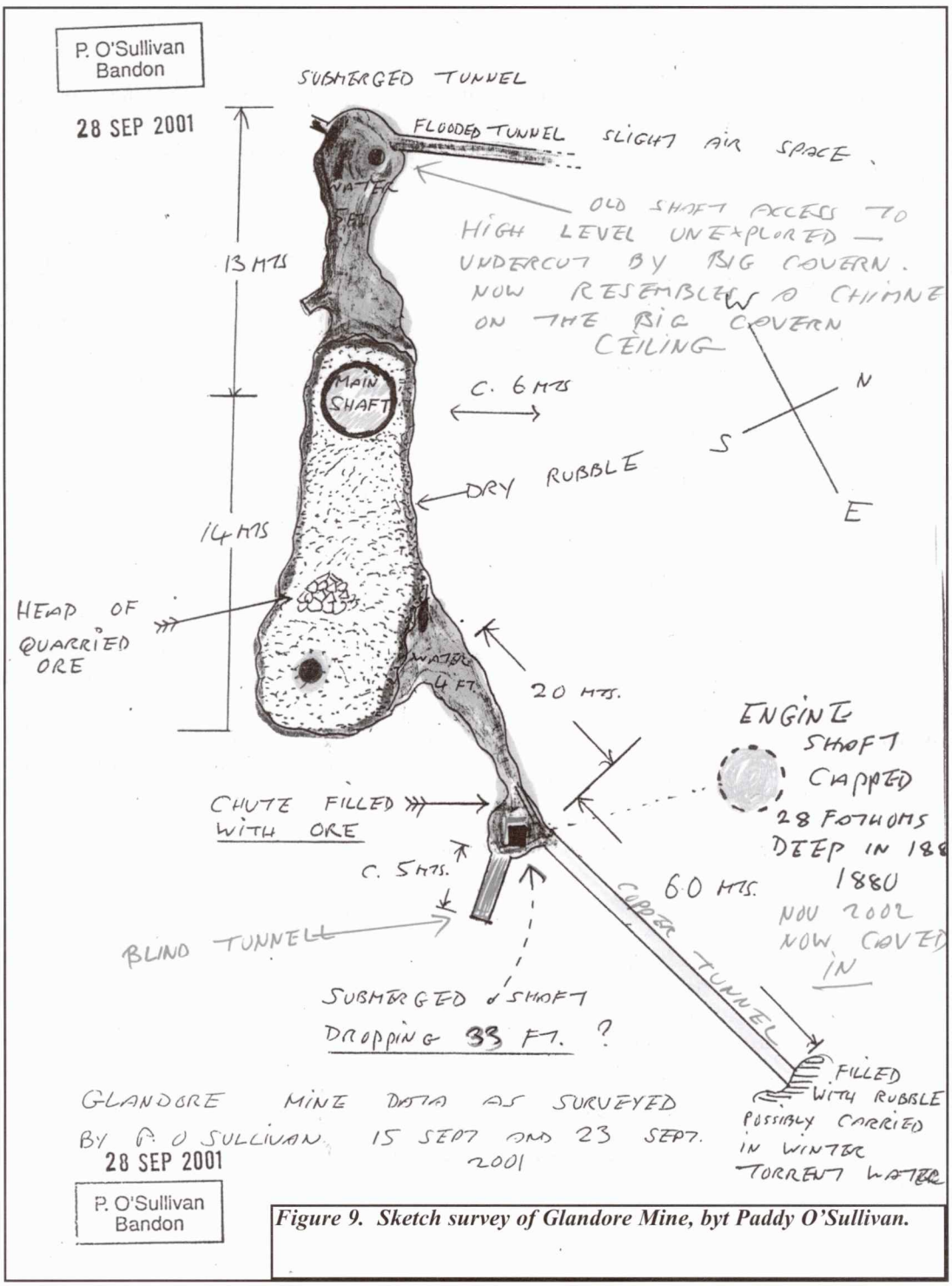


*Figure 9. Sketch survey of Glandore Mine, byt Paddy O'Sullivan.*

We returned to the big cavern in order to explore eastwards in the opposite direction. Once again the big-cavern narrows to gorge-like proportions now displaying timber props which seem to hold its sidewalls apart. As before this area is flooded for a distance of twenty metres before leading upwards to the dry copper level. A timbered chute filled with quarried blocks of ore marks the entrance to this. The base of the timer-chute area is submerged to a depth of four feet. Special care is need in the area, as a step backwards will mean falling into the gaping mouth of another flooded shaft measured to a depth of thirty-three feet. It is likely that this surprise shaft connects to the engine shaft of the 1880 period; no mention of this feature appears on the Daly or Rundall reports.

The copper level is by far the most interesting feature of the Glandore mine workings. It may be traversed for a distance of 60 meters before meeting obstruction caused by flood debris, presumably the material used in the 1950s to fill the copper shaft itself. The barrel vaulted ceiling here is pure white contrasting sharply with its black sidewalls. The monotony of black on its sides is relieved by a large jade-green patch as though verdigris was oozing from the rock itself. Yet further eastwards in the same level one can observe rock of reddish port-wine hue.

On the surface, only the derelict engine-house and its elegant chimney stand sentinel-like to mark the mine's location. The chimney is forty-five feet high with its top section made entirely of brick; the chimney itself is built of rubble stone and lime mortar displaying the highest standards of the stonemason's craft. While in perfect condition it would be reassuring to see it protected by a lightning conductor. Only twelve months ago, a similar chimney at Cappagh mine was blown down in a lightning storm. The masonry of the engine house is in need of repair and stabilising. The timber lintels have gone and the unsupported gable wall facing south hangs in mid-air as if defying gravity. It represents the sole surviving example of Cornish engine houses in the West Carbery mining district; for that reason alone it should feature prominently for conservation.

A miner's cottage, and the mine manager's house are still occupied. However, various shafts bearing such historic names as the Goose shaft, Captain Kitto's shaft, the Copper shaft, and Gordon's shaft have all been filled in or capped. The gorge-like opencast quarry of the pre-1861 working was filled in and levelled by contractor, Richie Brown, in the late 1950s as was the entrance to the high level adit. Brendan O'Mahony, the present owner of the mine, remembers playing in the opencast in his childhood.

The water flowing from the mine adit makes its way west into Maulagow valley where Colonel Hall once burned off the turf. This lower adit still contains a tramway and a four-wheeled ore-buggie but is flooded to chin height and runs underground sixty-four feet before cave-in (at Parry's lode, possibly). The stream from it runs past a tramway embankment and presumably the dressing floors stood here. The adjoining land was long barren according to its owner, Sean O'Donovan. In several attempts, he failed to grow grass, potatoes, turnips and other crops on his "poisoned field". Having sent samples for analysis to the Department of Agriculture, copper was identified as the culprit. Rather then waiting several centuries for it to revert to cupriferous bog, he dosed it copiously with slurry and lime so that the area is now restored to good health and covered in grass.

One thing missing from the site are tip-heaps. There were six of them in 1939 despite the fact that that they were utilised whenever trunking for local roads was needed (Rundall 1839). Presumably this process continued and anything that was left by the 1950s went to fill the opencast. Such reclamation makes it difficult for the casual visitor to envisage Glandore mine as it might once have been.

## ACKNOWLEDGEMENTS

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