

CAPE TOWN'S EARLY WATER SUPPLIES

by T W TIMONEY

THE HISTORY OF THE CAPE TOWN water supply is an interesting one. From the time of the early navigators, Table Bay was known as a place to call for fresh water and the importance of maintaining a good supply was evident after the establishment of the Dutch East India Company's settlement.

At that time, a mountain stream found its outlet in the bay fairly near the present railway station. A small reservoir was constructed to preserve this water and from it lead piping with wood cladding to prevent it from being damaged was led down to the ship's jetties.

The rest of the town got its water from runnels and furrows connected to this stream and various mountain springs. However, due to pollution of this stream, wooden pipes (which usually had a bore of 10cm to 15cm) were laid down from its source to the reservoir. At first, these pipes were made of local timber but this was found to be unsatisfactory, so teak from Burma was used instead. One of these pipes can be seen at the Cultural History Museum.

Pipes were also laid from the Stadtsfontein or Main Spring into the town, which then had a population of 612 Europeans and 310 slaves. This and other springs were



Stadtsfontein or Main Spring on the Van Breda Estate, Oranjezicht, which was covered over in 1813.

found above the town in what became known as the Oranjezicht Estate. The first grant of land in that area had the major supply of water so vegetables from there were supplied to visiting ships. It changed hands in 1731 to Pieter van Breda and remained one of the largest estates in the Cape until it was bought in 1879 by the Town Council of Cape Town for the water rights. By the eighteenth century, with an increased population of 2 200, fountains had been erected in different parts of the town from which water was drawn by the slaves for their masters.

The water supply remained in this condition until the British Occupation in 1806. By this time, with a population reaching 17 000, the shortage of water was causing much misery and illness among the inhabitants and the troops.

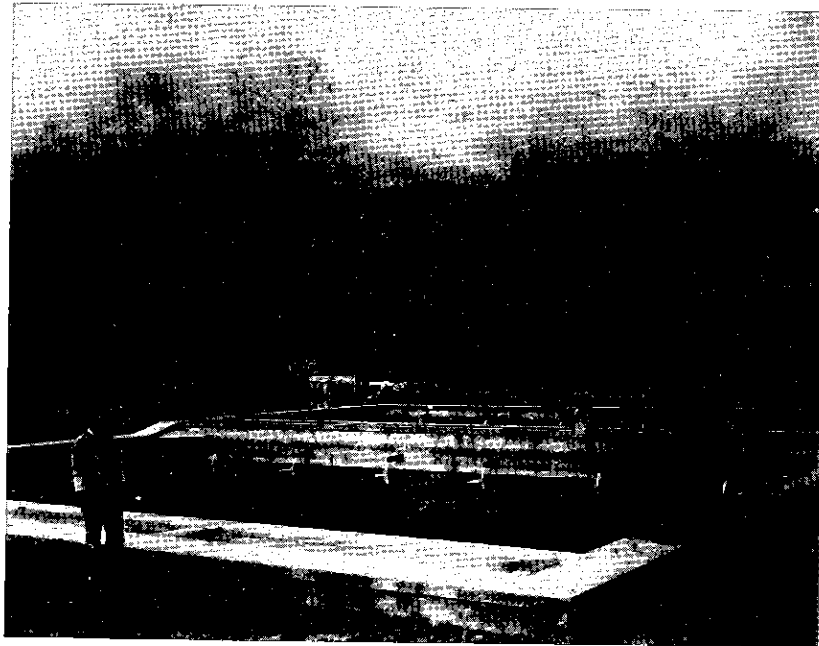
The Burgher Senate referred the matter of water supply improvements to the Home Government. An engineer, Mr John Rennie was requested to prepare plans for new works, and Mr John Chisholm was sent out (arriving in 1811) to become the first waterworks engineer.

His first task, with the help of the Governor, the Earl of Caledon, was to have cast-iron pipes sent out from England to replace the wooden ones. In 1812 these pipes were first laid down in Orange, Long and Strand Streets. Lead leadings from the pipes were connected to all householders property but all applications for the connections had to be approved by the Governor. Water was scarce during the hot season, so a small covered reservoir, described as a water house in those days, was built off Hof Street Gardens, and all the surrounding springs such as Kotze and Waterhof were piped into it in an attempt to conserve water.

The fountains serving the various squares in the town were replaced by pumps connected to the newly installed water mains and an official called a Pump Master was duly appointed to look after them. It was felt that there would be less waste if some physical effort were required to collect water. The pumps were operated by pulling a long lever in a swinging fashion, hence the name, 'Swaai Pumps'. The only remaining pump, which can be seen at the corner of Sir George Grey Street and Prince Street, Oranjezicht was erected on a piece of ground belonging to a farmer named Hurling, so it was called Hurling's Pump. The old farmhouse called Zorgvliet remains close by and is one of the oldest properties in the Cape. It came into the possession of Frederick Hurling in 1791.

The water supply to Cape Town and shipping was the responsibility of the Colonial Government until a Municipality established in 1840 took over. It had to face the problem of water shortage due to the rise in population (now 31 000) and increased shipping. So in 1847 Mr John Chisholm, the water engineer, recommended that a larger reservoir be built above the old water house. He both designed it and supervised the construction. A pipeline was laid from the Stadtsfontein and the Plattekloof Stream to this reservoir and at last Cape Town had some satisfactory water storage for its population and its first water reticulation scheme. In 1856 a larger reservoir based on the same design was built adjacent to the first one.

In Platteklouf Gorge above Oranjezicht a weir was constructed at the juncture of the Silver and the Platteklip streams. A pipe was taken from here to a filter bed in 1869 to give Cape Town its first filtered water supply.

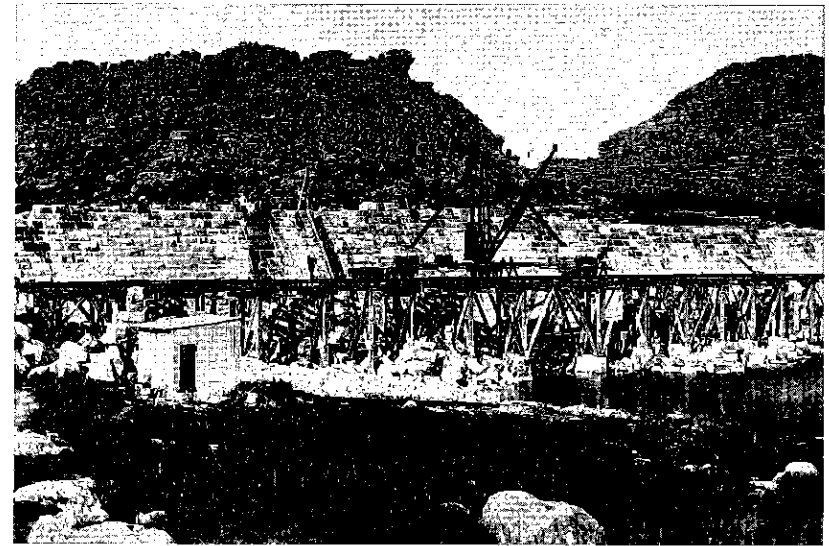


The filterbeds situated in Platteklip Gorge.

In 1875, the Colonial Government appointed the first hydraulic engineer of the Colony, a Mr John Gamble. This marked the birth of our present day Department of Water Affairs. He was asked to advise the Municipality on its water supply problems and recommended the building of a large reservoir above the town on a site called the Van Breda's field. He also advised them on the designing of the reservoir but, due to poor workmanship, it was only completed in 1886. Every available spring, including the Platteklip stream, was piped to this reservoir which was later named the Molteno, after Sir John Molteno, Premier of the Cape Colony.

Even the building of the Molteno Reservoir was found to be insufficient, so in 1881 John Gamble was approached again to draw up plans for a bigger scheme for augmenting the water supply. His report favoured Table Mountain. The Berg River was suggested as a possible source of supply, but the great distance and large number of servitudes, etc, made this source impracticable. Previously Mr Patrick Fletcher, a surveyor, had done a preliminary survey of Table Mountain water resources in 1858 and he had recommended that reservoirs could be built on what he called the 'back

stream' of the mountain and that water be brought to Cape Town via Kasteel's Poort in the Twelve Apostle Range overlooking Camps Bay.



Putting in the dressed stone facing of the wall during the construction of the Hely-Hutchinson Reservoir on Table Mountain. Note the stream-operated derrick lifting a stone off the trolley.

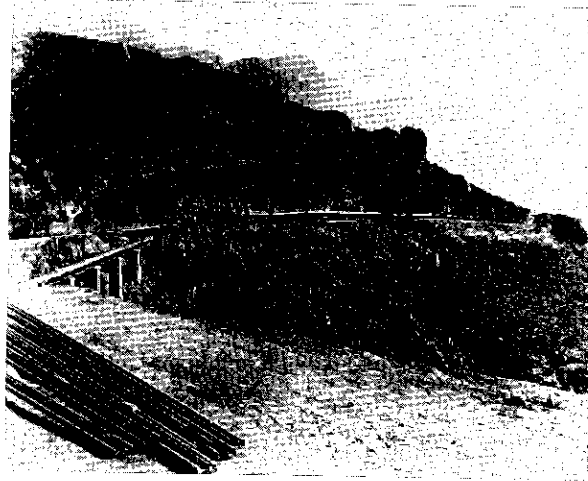
Two schemes were put forward using the untapped water from the largest catchment area draining into what was then called the 'Back Water Stream' running unchecked down Orange Kloof into the sea at Hout Bay.

Scheme 1 proposed collecting the water at 519 metres in the main stream and making a tunnel 640 metres in length through the Twelve Apostle Range to Slangolie Ravine on the Camps Bay side of the mountain. The water would then be conveyed in cast-iron pipes along the slopes of the mountain over Kloof Nek to the Molteno Reservoir at Van Breda's field.

Scheme 2 was to collect the water further down the stream at 244 metres and convey it in cast-iron pipes over Constantia Nek through Klaasenbosch, Kirstenbosch and Mowbray to Van Breda's field and the Molteno reservoir.

The council decided that Gamble's tunnel scheme would be more suitable. However, instead of doing the work themselves, they sold the plans for £500 to a private company called the Table Mountain Water Supply Company. Due to financial reasons the job was shelved for five years. By then there was a serious shortage of water and the people of Cape Town were not satisfied. So the Council bought the plans back for £1 000 and decided to go ahead with Scheme 1 themselves.

Unwisely they gave the construction of the tunnel to a private contractor, who due to inexperience made no progress whatsoever. The council had to do the work using mainly Cornish men recruited from the newly opened gold diggings at Millwood, Knysna and the De Beers Diamond Fields in Kimberley.



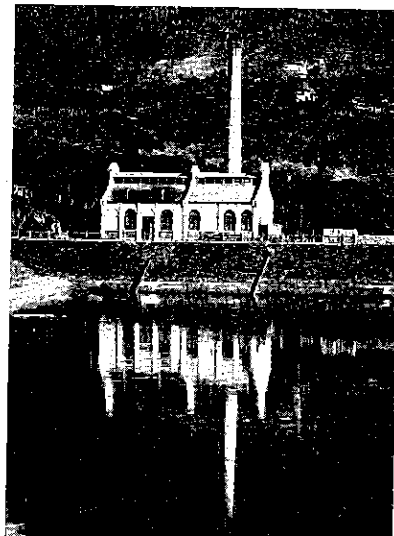
The pipe track showing cast-iron pipes in preparation for the laying operation to the Woodhead Tunnel.

In 1887, work was begun on both sides of the tunnel. On the north-west side, where there was hard quartzed sandstone, progress was slow but trouble free. On the south-east side, however, due to the poor structure of the rock, severe problems arose. Every metre had to be close-timbered and accidents occurred through blasting and falling rocks. It was a great loss when the foreman was killed in the tunnel and a labourer on the Camps Bay side was

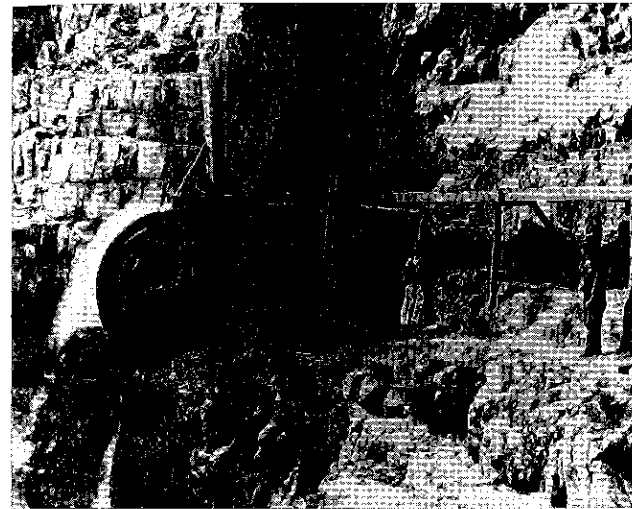
killed by falling rock. After many setbacks the tunnel was completed in 1891.

At the same time as the work progressed in the tunnel, a cast-iron water main was being laid from the Molteno Reservoir over Kloof Nek above Camps Bay to the tunnel intake in the Disa Stream. This was a tedious and hazardous job.

Temporarily, Cape Town's water problems were solved once again. However, at the end of winter, the flow down the Disa Gorge diminished, so immediately plans were made to construct a storage reservoir at



Molteno Reservoir — terminal point of the pipe line from the Woodhead Tunnel. Note the power station. The water from the Woodhead Tunnel operated a turbine, generating Cape Town's first electricity.

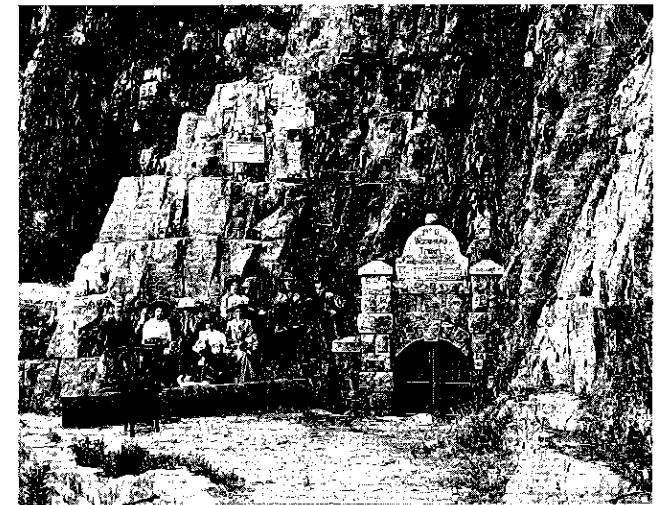


The water wheel operating the ventilation fan during the construction of the Woodhead tunnel

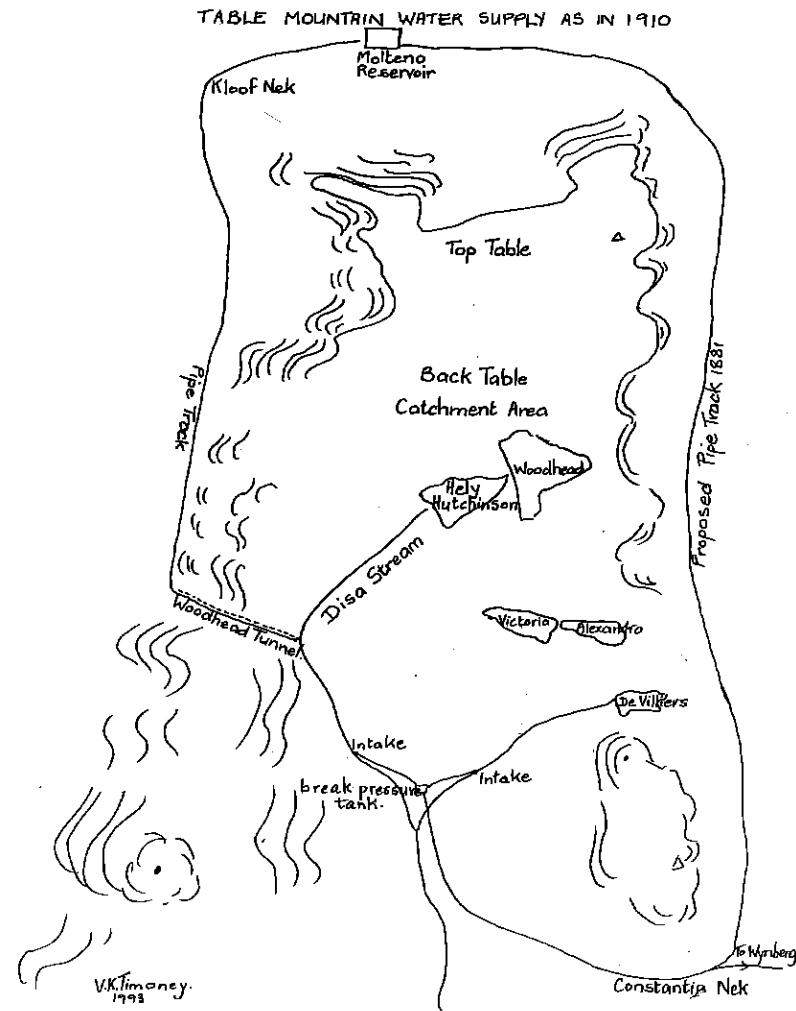
the top of Disa Gorge. The council decided to do the work themselves and a consulting engineer, Mr Thomas Stewart, was appointed to design and organize the construction. It must be mentioned here that the Wynberg Municipality, independently from the Cape Town Municipality, had built an intake at a lower level to the tunnel intakes to feed a pipeline over the Constantia Nek to

Wynberg. This was proving inadequate, so they were also in the process of building an intake storage dam on top of the mountain, and they too, commissioned Mr Thomas Stewart to design the dam.

To bring materials up the mountain for the building of the dam at the top of Disa Gorge, it was decided to erect a cableway or ropeway from the Camps Bay side. This was built in nine months, in 1893, the starting station being adjacent to Victoria Road and the terminal point at the top of Kasteel's Poort. It was powered by a steam engine operating the main haulage



The completed Woodhead Tunnel



winch and could carry 155kg to the top in 12 minutes and was able to transport long pieces of timber. The site of the reservoir was carefully cleared and work began. Scottish stone masons, with 300-400 unskilled labourers, were used. The lower plateau looked like a small village with rows of huts and a small shop. The workers had a piano, a choir, a mandolin band and a football team. It took four and half years to build the first reservoir, which was named Woodhead after the Chairman of the Waterworks Committee, a prime mover in the scheme. In design and construction the dam (capacity 955 megalitres) was of a type employed by Mr Stewart and conventional for its time. The availability of sound sandstone in quarries near the dam and competent, dedicated stone masons rendered masonry a logical choice, more so where access was of extreme difficulty.

When the last stone was laid in May 1897, the Mayor, Sir John Woodhead, expressed the hope that no time should be lost in building another reservoir further up the gorge. This was done. As a point of interest, whereas when the Woodhead Reservoir was constructed two mules pulling a small truck were used to convey material on the site, for the construction of the second reservoir a small locomotive was brought up in parts, assembled at the top and put into use, replacing the mule truck.

While only a minor contribution to Cape Town's present total water supply, the reservoirs on the top of the mountain will always remain an invaluable asset affording reliable gravity supplies to high level zones on both sides of the mountain.

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