

the shale was transported as required, in specially designed iron-bodied skips provided with a bottom unloading door. These special skips were manually pushed, on their rails, over the open lid of any one of the forty retorts which needed shale replenishment. It was a heavy, hot, fumey, and dusty job for the operators, who worked in the open without shelter from wind or rain, on the basis, no doubt, that good Scotsmen should be inured to such climatic conditions. The retorts were only charged during the day-time, the top covers being luted, or rough sealed with sand at night. The spent shale was drawn off about every five hours. The firing of the retorts was done with coal taken from a nearby low level tunnel served by an extension of the bottom skipway system. Each vertical retort had a length of fifty-two feet and the diameter ranged from fifty-four inches at the base to thirty inches at the top lidded section, they had a capacity of fourteen tons of shale.

In addition to serving the "Export" shale loading staith, and or bank, the bottom skipway system sent another branch beneath the overhead gantry in a southerly direction which was used probably for the standage of spare skips and possibly those awaiting repair at the company's workshop. The above notes re the lower surface tramways are based on photographic evidence and in consequence the description of the layout may not be complete. A site inspection made in 1955 only showed washed out traces here and there of these several two-foot gauge lines.

The main shale transport double tracked skipway, built by Mr. C. Williams in 1898, when clear of the tippler appliances at the "Picking Table" immediately ascended the steep eastern flanks of the ridge dividing the oil-works from the shale adits of the Genowlan Valley, the gradient being estimated at one in one. The clivities in the hillside were spanned by rough timbered trestles bolted to vertical posts cemented into the sandstone rock face. Nearing the summit the skipway passed through the base floor of a natural chasm in the escarpment, the side walls of which were some sixty feet in height. At the top of the incline the tramway curved on a vertical axis to commence its corresponding steep descent, to fall rapidly at a grade of 1 in 4 for about 120 yards where the tracks passed through another natural cutting formed by two huge boulders. A steeper descent

followed with the tracks passing over random rubble embankments packed across a hillside depression to maintain some semblance of an even grade. Proceeding through an excavated cutting and over a second rubble-packed bank five feet in height and about one hundred and fifty feet in length, the edge of a normally dry creek bed was reached, the water-worn chasm being crossed by a single span log bridge about fifteen feet in length. Skirting the southern face of a rocky projection the still sharply descending tramway passed along a sidling where the still descending grade eased to about 1 in 7 before reaching a second single span log bridge some eighteen feet in length and elevated at a height of about twelve feet above the rocky torrent bed. Here the grade eased to 1 in 15 for about five hundred feet after which a slight upgraded section was needed to maintain the straight alignment necessary for cable haulage. The two lines then descended at varying grades for the next one thousand three hundred and fifty feet to reach a third bridge and commence an ascent at easy grades until the sidings at the winding engine and boiler house were reached, this installation marking the virtual eastern terminal of the cable haulage system which had a length of about one and a half miles.

Beyond the previously mentioned haulage terminal sidings the now single-tracked skipway continued in a north-easterly direction past the company's stables (erected on the southern side of, and against, the line) in a series of shallow curves to reach the facing point which sent its curved branch southwards to immediately enter a shale adit. Then, on the southern side came a high side cutting in the north-eastern bluff of Airly Mountain overlooking the entrance to the Genowlan Creek Valley. This side cut and its base level formation curved south-eastward to follow the almost level alignment of the shale seam as it out-cropped along the western wall of the Genowlan Valley.

Shale-mining was recommenced in 1944 when the outer portion of the original formation was used to lay a skipway from a loading bank located above the entrance to the Genowlan Creek Valley for the use of the road transport. A trailing point sent its curved branch south-westward a short distance to serve the loading bank, then, within a quarter of a mile, a facing point sent its curved branch

*Opposite:*

*Shale retorts at Torbane, 1906. The end of the narrow gauge incline is at the extreme left of the photo.*

*N.S.W. Govt. Printer.*