

sideration. Thus, taking an actual installation as an example where a wheel occupying a space of 325 cub. ft. is replacing another occupying 15,000 cub. ft., it is obvious that the amount of brickwork required to enclose the former is very much less than that needed by the latter. An additional saving is frequently effected in the reduced size of the engine and motor house, due to the use of a high-speed in place of a low-speed, and consequently larger-dimensioned, machine.

Although the "Sirocco" multivane fans are small in diameter, they are capable of fulfilling large duties, as is borne out by a number of installations. As instances may be noted a double-inlet fan 119 in. in diameter, which is capable of passing 300,000 cub. ft. per minute at 3 in. water gauge, while another measuring 140 in. can deliver 375,000 cub. ft. per minute at 4 in. water gauge. Furthermore, one of these fans is now in course of construction in Great Britain, which will have an output of half a million cubic feet at 6 in. water gauge, and will be direct-coupled to a motor of 1,000-horse power.

It has been sometimes argued that the slow-speed fans of large diameters show far better efficiencies than the smaller high-speed fans. This, however, cannot be the case, considering that a turbine fan is able to give an efficiency of more than 70 per cent. when tested under actual working-conditions in mines.

The change that has been brought about in mine-ventilation by the introduction of the multivane fan not only counts for economy, it counts also for increased safety and efficiency.

The application of electricity is now becoming general at the more up-to-date of the collieries; the Westport-Stockton Mine, recently opened, having installed a complete (three-phase) plant for coal-cutting, ventilation, electric traction, and lighting. The Point Elizabeth State No. 2 Colliery will also utilise this power somewhat extensively, and the Westport Coal Company propose to instal the power for ventilation and perhaps coal-cutters also.

COAL-SHIPPING PORTS.

Westport.

The following official statement for the year 1908, furnished by the Secretary to the Westport Harbour, will serve to illustrate the progress of this the chief coal-shipping port of the Dominion:—

Coal-output for year 1908:—

Westport Coal Company (Limited)	..	..	..	613,216 tons coal.
Seddonville State Coal-mine	..	..	..	42,550 " "
"	..	..	..	11,570 " briquettes.
Westport-Stockton Coal Company (Limited)	..	..	..	2,930 " coal.
Total	..	..	..	670,266 tons.

The coal-output for 1908 was 16,337 tons more than in the year 1907, and the output of briquettes from the State Coal-mine was 8,781 tons more in 1908 than in 1907, the total increase for the year 1908 over 1907 being 25,118 tons.

The volume of shipping for the year 1908 was as follows:—

					Steamers.	Sailers.	Registered Tonnage.
Inwards	..	..	..	..	1,115	18	591,714
Outwards	..	..	..	..	1,113	18	591,366
Total	..	..	..	..	..	..	1,183,080

The port is now capable of easily dealing with shipments of coal up to 26,000 tons per week.

Our coal-export has very gradually and systematically grown, as shown below:—

				Yearly Output. Tons.				Yearly Output. Tons.
1885	..	..	..	78,094	1900	..	..	379,917
1890	..	..	..	160,214	1905	..	..	547,280
1895	..	..	..	222,928	1908	..	..	670,266

The Harbour Board's revenue for the year 1908 amounted to £85,970 13s.

The average depths of water on bar and in river-fairway at high water for the year 1908 were as follows: Bar, 22 ft. 7 in.; river-fairway, 23 ft. 4 in. The depths of water on bar during the year 1908 as recorded were—18 ft. to 20 ft., 12 days; 20 ft. to 22 ft., 110 days; 22 ft. to 24 ft., 172 days; 24 ft. to 26 ft., 72 days.

The rainfall for the year 1908 was 73.63 in.

Greymouth.

The following are the official returns from the Port of Greymouth, from whence is shipped the product of the Grey Coalfield. A small increase in the registered tonnage of the vessels entering the port is recorded.

Average depth of water on the bar at high water, 21 ft. 7 in.; average depth of water in river at high water, 19 ft. 8 in.

Number of days bar was navigable, 343.

Tonnage of vessels entering port: 686 steamers, 338,820 tons register; 41 sailing-vessels, 8,652 tons register: total, 347,472 tons register.

Exports: Timber, 50,531,029 sup. ft.; coal, 329,107 tons; bricks, 1,150 tons; coke, 2,344 tons; flax, 1,058 bales; wool, 767 bales; gold, 72,926 oz.

Berthage accommodation, 2,770 ft. A tidal dock in Kororo Lagoon, giving an additional berthage accommodation of 2,000 ft., is now being constructed, 700 ft. having been completed.

I have, &c.,

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