

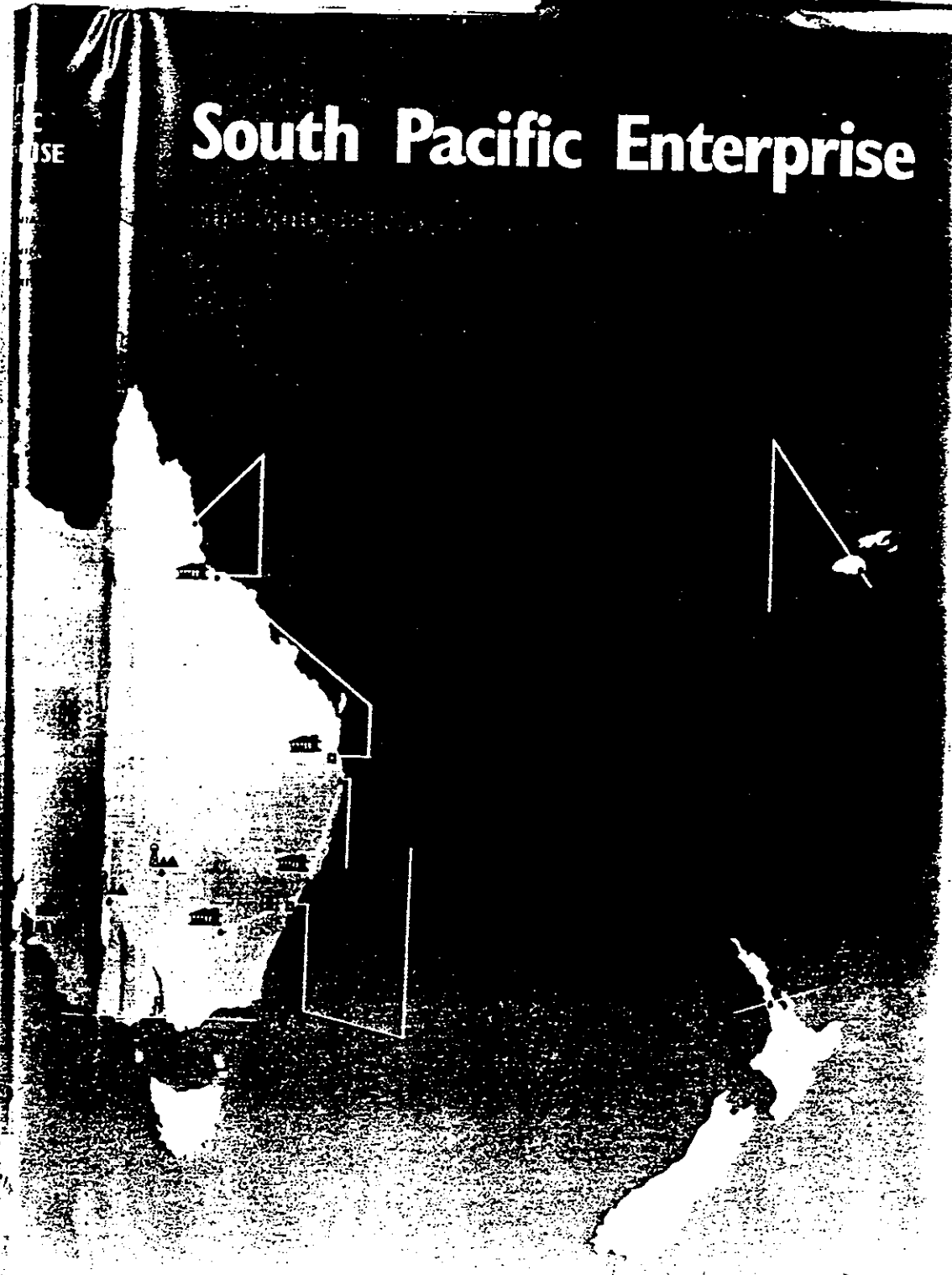
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South Pacific Enterprise



SOUTH PACIFIC ENTERPRISE

*THE COLONIAL SUGAR REFINING
COMPANY LIMITED*

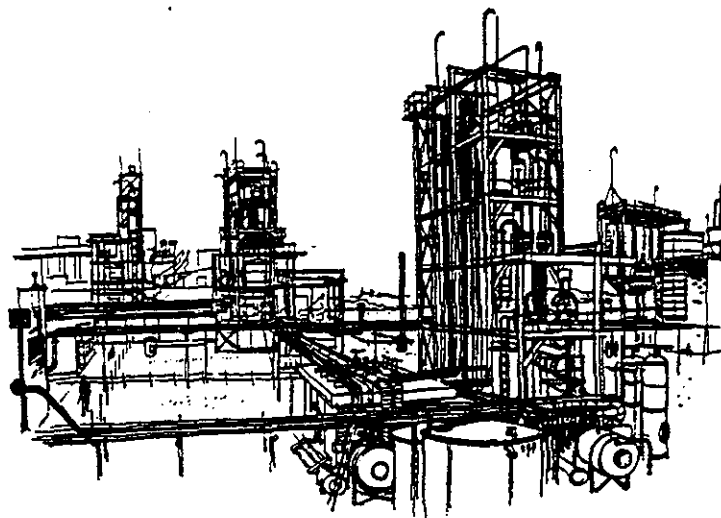


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CHAPTER II

Widening the Field

CLIVE TURNBULL

The survey of C.S.R. activities in the production and marketing of sugar is now complete. But there is a major group of activities yet to be described in the chemical and building materials industries. These are relatively new fields of production for the company and their relation to the sugar industry is not obvious. They have grown to an extent and with a speed which are striking and of significance for the future. This chapter examines the motives which guided the expansion into these wider fields, the organic connection of these developments with the sugar interests, the problems encountered (some of which still have to be overcome), and the magnitude of the achievements.

Mr Clive Turnbull was invited to report on these newer ventures. He is a well-known, independent writer from Melbourne, one of whose interests has been to study and describe the growth and operation of Australian industries.

September 1955

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supported by the Allied Works Council the company decided upon the construction of a plant at Concord, a suburb of Sydney.

The company had, in fact, decided some years earlier that when the time was ripe it would manufacture gypsum board in Australia and as a beginning had concentrated on obtaining the raw material, gypsum, needed to manufacture plaster. Leases were taken up throughout New South Wales. A plaster mill was erected in 1941 and the gypsum was processed for the manufacture of plaster of Paris for sale to the building trade and for other special purposes; thus plaster was already being manufactured and marketed while the wallboard factory was being designed and erected. Although plant and equipment for a gypsum wallboard factory could normally have been obtained from the United States it was Commonwealth policy during the war to import as little plant as possible. The company therefore designed and built the whole of the necessary equipment itself.

By making "Gyprock" the company has helped to develop Australian raw materials—gypsum for the inside of the board, wood pulp for the paper surfaces. To date, however, "Gyprock" has not been in such keen demand as have some other building boards—a contrast to experience overseas where similar gypsum wallboards are the most popular of all, partly because of their strength, rigidity and flame-proof qualities and particularly because of their low cost. The cost in Australia will decrease with the increased production which will follow demand as the building trade becomes more accustomed to the use of the product. Meantime the plaster side of the business has been successful and sales have steadily increased. A successful plaster business has also been built up in Victoria.

About the time that the company began to take an active interest in gypsum wallboard it also became interested in other types of fire-proof board and so turned its attention to asbestos cement products. On this occasion a small asbestos cement plant was bought as a going concern and developed by the company's engineers.

The heart of the manufacturing problem in this case is the supply of asbestos, for the other materials are readily available in Australia. When the company first became interested in the project Australia imported all her requirements of asbestos, 15,000 tons per annum, from Canada and South Africa. Concerned that such an essential raw material had to be imported, the company set out to see whether a suitable fibre could be obtained locally. In making asbestos cement, the asbestos fibre is mixed with Portland cement and water and later the water must be drained and pressed from the mixture. The fibre used must, therefore, drain easily. Three main kinds of asbestos are

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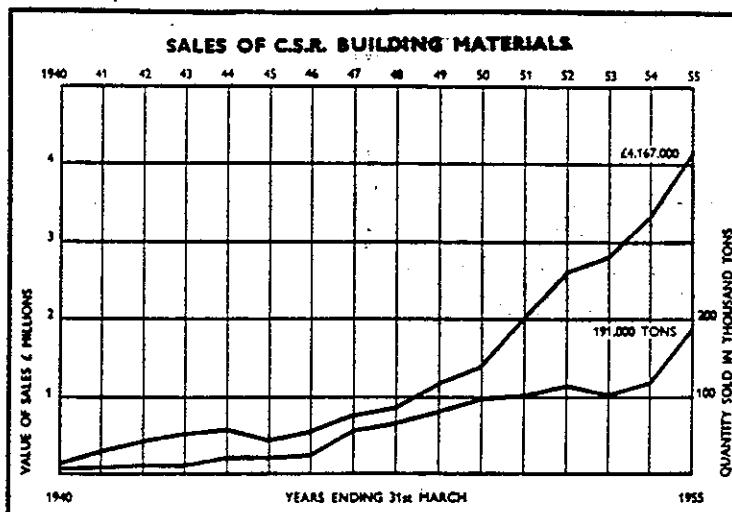
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used in Australia: blue crocidolite asbestos, which is long-fibred, drains readily in the manufacturing process, and is very strong; white asbestos, which is short-fibred, drains poorly and is slightly weaker; and amosite asbestos, which is short-fibred, drains well but is weak and is the cheapest of all asbestos fibres.

The company's inquiries led first to Tasmania and there it took leases of asbestos deposits. In these leases it mined a short-fibred white asbestos. But production ceased after the war as the deposits were not extensive—indeed, there are no known large deposits of white asbestos in Australia (though there are a considerable number of quite small deposits) and there are no known amosite deposits at all. There remains blue asbestos or crocidolite which occurs in the Hamersley Ranges in Western Australia and, in particular, at Wittenoom Gorge, 700 miles north-east of Perth and 100 miles south-west of Marble Bar, a place legendary in Australia for its extreme heat and its isolation from the rest of the continent. It was to this forbidding area, with mere tracks leading to it, that the company turned. The

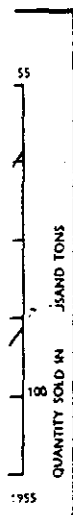


Sales of the company's building materials have steadily risen since the company entered this field. The increase in value of sales has been substantially influenced by monetary inflation. But total sales expressed in tons (arrived at by adding together tonnages of the several kinds of building materials) show a steady overall increase in physical quantity of products sold.

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development of the area is one of the romantic stories of industrial enterprise and, incidentally, a very considerable contribution to national wealth in strategic minerals.

The story of Wittenoom asbestos deposits begins with early prospectors, the lone and hardy pioneers of many mineral fields, picking at outcrops of asbestos. The method of occurrence itself is odd. The asbestos occurs in horizontal veins averaging half an inch in width, though sometimes measuring as much as two inches. Several of these veins occur over a total seam height of two feet. The economic mining of such a narrow horizontal seam in extremely hard rock was a new problem for Australia.

Here, then, was the first problem to be solved. Company officers in a world-wide search for a suitable mining technique visited iron mines in Alabama, silver-lead mines in Canada, asbestos mines in Rhodesia and diamond mines in South Africa. They adapted to Wittenoom conditions the various techniques examined. The company brought mining consultants from America. It brought Canadian and American shift bosses on a short-term basis to instruct the miners in the details of the methods to be used. The company could not get sufficient Australian miners to go to this isolated spot and, when the war was over, miners were brought from Italy, Holland, Austria and other countries to make up the numbers needed.

In the beginning there was no town. Transport and communication facilities were poor. Much of the early equipment had to be flown from Perth, 700 miles away. Even today transport is not easy. Stores normally come from Perth by sea to Point Samson, the port of Roebourne. Thence trucks take the stores 200 miles south-east to Wittenoom. Dry weather roads connect to Roebourne, Port Hedland, 150 miles north, Marble Bar, 100 miles north-east and Meekatharra, a railhead 300 miles south. There is an airmail to Perth three times a week and urgent messages may be radioed to Port Hedland for relay by telegraph to Perth.

The original settlement was in a narrow gorge near the mine and the mill. Later it was replaced by a second settlement, seven miles away on the tableland outside the mouth of the gorge. Today this is the town of Wittenoom, largest inland town in the north-west and completely dependent on the blue asbestos industry. Largely built by the Commonwealth and Western Australian Governments, which recognized the importance of the industry and sponsored its early development, its present population is about 750, of whom about 200 are children. The people of Wittenoom have all the facilities of civilization—electric light, running water and septic installations for their homes, a large

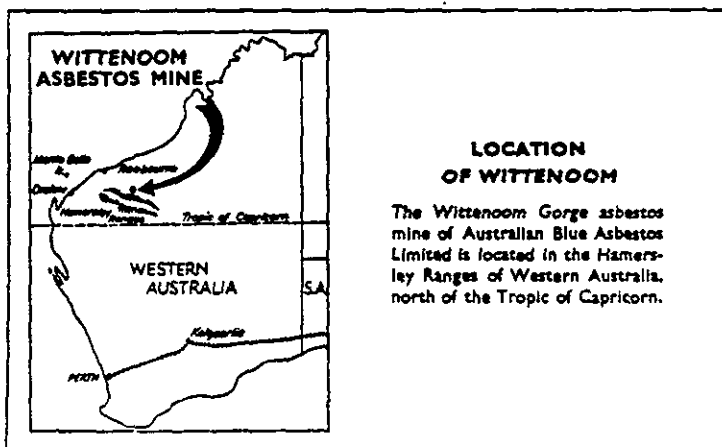
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general store, a cinema, cafe, hotel and school. There are tennis courts equipped for night tennis, a recreation room, a racecourse and sports ground, a modern hospital, a bus service to the mine and a regular air service to Perth. Such is life in the outback today when large national development makes necessary the provision of such naturally expensive amenities.

The Wittenoom ore is processed in a mill near the mine and blue asbestos is separated by blowing processes. The product is a strong, free-filtering fibre used by asbestos cement manufacturers to mix with white asbestos fibre. Certain industries use it for its chemical resistance. Thus the battery case in a car may be made from short blue asbestos fibres held together with plastic resin.

The operating company, Australian Blue Asbestos Limited, in which C.S.R. has a 97 per cent shareholding, is increasing the output of the mine and developing a market in competition with such countries as South Africa, which produces 30,000 tons of blue asbestos per annum largely with coloured labour, and Canada, which produces 1,000,000 tons of white asbestos. With steady progress at Wittenoom the cost per ton of the Australian fibre has been halved and additional increase in production will reduce the cost still further. The present aim is an output of 8,000 tons per annum but the deposits are of such extent that, once the industry is firmly established, output could be increased to 30,000 tons per annum or more if necessary.

The situation is not without difficulty, however. The use of Australian



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blue fibre has not yet been accepted by the older-established asbestos cement manufacturers in Australia and the industry has had to depend largely on sales to overseas markets developed during the visits of company officers abroad. The local blue fibre is at present dearer than the particular grades of imported fibre used in Australia and the asbestos cement industry generally does not consider that it should use the Wittenoom product at higher cost although, with the increased production made possible by such use, the price could be reduced to that of comparable imported fibre. After all other means of encouraging local use of Australian blue fibre had been tried, application was made to the Tariff Board in June 1954 for protection by a duty on imported fibre. The company proposed that as long as consumers in Australia used local blue fibre to the extent of 15 per cent of their total usage of asbestos no duty be applied on any asbestos fibre imported, but that, failing this, a protective duty of 40 per cent should be applied. As Australia now obtains from abroad slightly more than 30,000 tons of fibre per annum this proposal would mean that Australia would use about 4,000 tons of blue fibre per annum. It is estimated that the protection requested would increase the cost of asbestos cement products by about 3 per cent only.

The Tariff Board Report tabled in Parliament in September 1955 recommended, however, that no assistance be granted to the industry as it considered the extra cost to Australian industry unjustified and considered protection by the method suggested to be "coercive". It appeared that the Tariff Board made its recommendation without taking account of such matters as the development of a remote area of Australia, the strategic and defence value of the industry, and the benefit to the overseas trade balance given by export of blue fibre and by the saving in imports if local blue asbestos fibre is used in Australia. During the calendar year 1955 sales of blue asbestos fibre to Europe and the United States will amount to 8,000 tons and the credit to the overseas trade balance will be £800,000, almost half of this being in dollar currency.

Irrespective of dollar-earning and contributions to the national stocks of raw materials, all industry, of whatever size, in Australia's north is strategically important. Thus the portion of Western Australia north of the 26th parallel, usually referred to as the North-West, has an area of 527,000 square miles and a total white population of only 8,400. Of this total 2,700 are in the coastal town of Carnarvon on the 25th parallel, leaving only 5,700 in the main north-west area. Wittenoom has become the largest inland town in this area with a population of 750. The asbestos fibre industry has also re-established

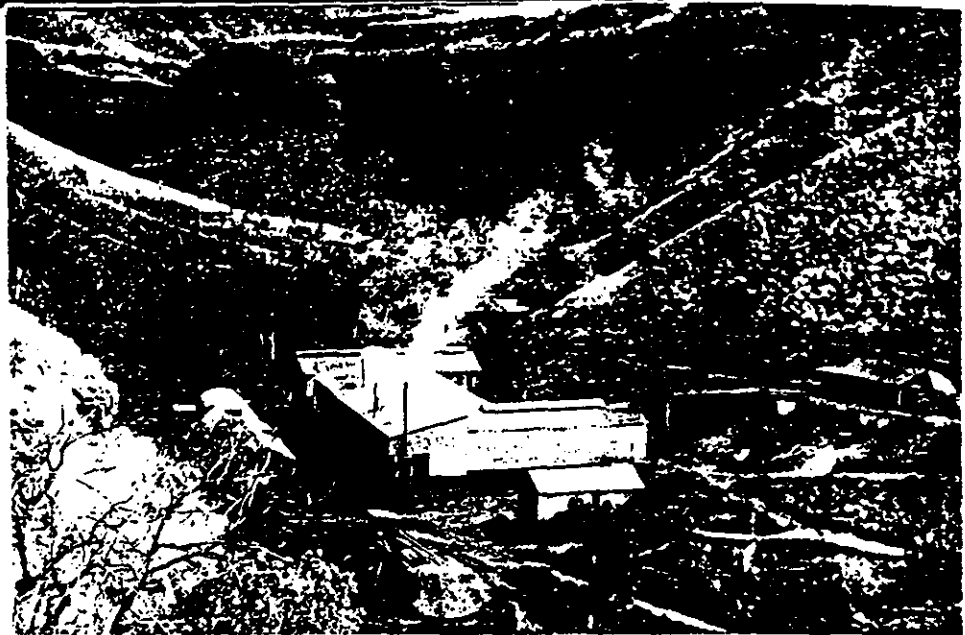
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the important but lately moribund centre of Roebourne with its port at Point Samson. Shipping services and air services have derived increased revenue. Asbestos production—even at its present stage of development—is directly responsible for 900 additional residents, an increase of about 17 per cent in the population of the main north-west area. Though the figures are small in themselves, these are significant contributions towards solving a national problem. Perhaps it is appropriate that the sugar industry, on which the integrity of north-eastern Australia depends, should have done its share towards the development of the north-west area. By the decision of the Tariff Board, however, continuation of this industry in the North-West will be dependent on finding adequate export markets for the blue fibre produced, while Australia continues to import fibre from abroad to a total value of £3 million per annum.

The company's own present use of asbestos is in a wide range of asbestos cement products ("Fibroek" sheeting, sidings and roofing) and in various types of floor tiles including "Vinylflex", a vinyl floor covering previously almost unknown in Australia though popular in the United States and England for a number of years. These tiles, manufactured at Concord, Sydney, are used in shops, offices, factories, hallways, vestibules, theatre entrances, restaurants and homes. In developing their manufacture, C.S.R. leaned heavily for "know-how" on one of the largest manufacturers of building materials in the United States, the Johns-Manville Corporation, with which the company has long had friendly associations.

While the asbestos mining venture makes a colourful story and has interesting and important national implications, it forms only a small part of the company's overall operations in the building materials field. The hardboard manufacturing venture, for instance, has grown to be a big business in itself and has proved an outstanding commercial success. The product, "Timbrock", is a strong high-density hardboard, the natural accompaniment of "Cane-ite", a light low-density board.

As "Cane-ite" is made largely from megass, so "Timbrock" is made from low-grade eucalypt timber, useless for other purposes. Peculiarly suited to the needs and to the resources of the building industry, hardboard has already achieved in Australia a per capita consumption three times that in the United States. It is in itself a lesson in the results of mass production. When hardboard was introduced to the Australian market after the depression plywood was cheap and hardboard comparatively dear. But with the mass production of hardboard in the war years its price fell, in contrast to the rising prices of the vast majority of products, including its old rival, plywood.

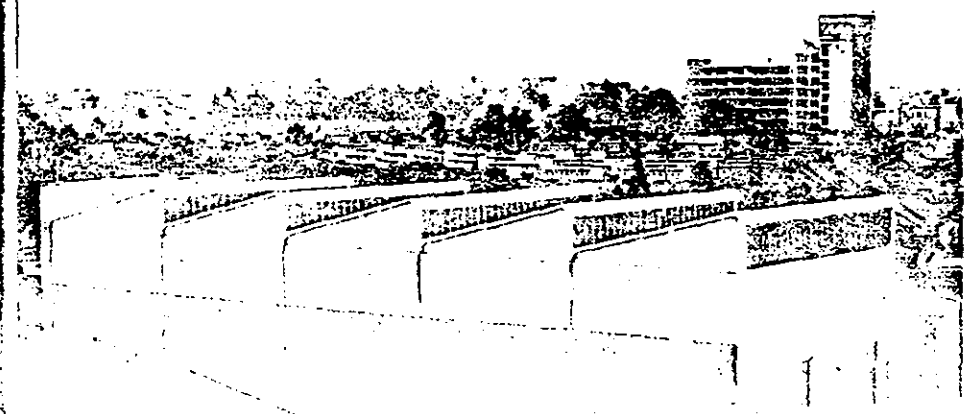


Asbestos Mining

The mine buildings of Australian Blue Asbestos Ltd. at Wittenoom Gorge, Western Australia. The mine produces high-grade blue asbestos.

Blue asbestos is a long-fibred mineral. This sample of asbestos ore from Wittenoom shows the length of the fibres.

A factory building constructed from C.S.R. Fibrock corrugated asbestos cement wall and roof sheets. Down pipes, corner strips and curved roof ridges are also made of asbestos cement.



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made in Australia, however, and as supplies of P.A.S. became freely available from overseas at lower prices the local material was priced out of the market.

Other sugar-derived chemicals, such as sorbitol and mannitol, are exported, as well as ascorbic acid. They not only provide new uses for Australian raw materials and new services for the Australian people but they prove that, given the right economic background, the most complex processes can be exploited as successfully in Australia as in countries with a long experience in organic chemicals.

The benefits are both specific to the company and general to the nation. Expansion into the new fields has created many opportunities for staff advancement. The new sections, of necessity, have had to lean heavily on the parent body for key staff and with notable exceptions the managers, accountants, chief chemists and chief engineers of the new factories are people who were trained from an early age in the sugar operations of the company. In recent years there has been a slight reversal of the flow of staff and some senior officers have been brought back into the sugar side; so the varied techniques and skills of sundry industries are finding their way back into the general stream of knowledge in the company.

The new ventures of C.S.R. are economically and strategically important to Australia. An Australian driving past the green fields of cane in the warm, lush Queensland littoral may well take pride in realizing that upon the foundation of this primary product has been raised a whole series of industries, some of them among the most technologically complex in the world. This is the full exploitation of national resources, and if it be the duty and the need of a nation so to exploit its resources then here, it may be claimed, the job is being well done. This is not to imply that all the possible uses of sugar have been found and developed. It is reasonable to assume that in years to come there will be many more. The potentialities of organic chemistry in juggling the atoms of hydrogen, carbon and oxygen to produce a new world of synthetic products are almost limitless.

EDITOR'S NOTE

Since Mr Clive Turnbull completed this chapter in September 1955 several developments have taken place in C.S.R.'s newer activities. Greatly increased market outlets have been secured overseas for blue asbestos from the Wittenoom mine, and governmental approval for the industry has been forthcoming in the form of a small and temporary subsidy from the Western Australian and Commonwealth Governments. In the chemical field, cellulose acetate manufacture has

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also been granted temporary assistance in the form of a bounty on local production.

The greatly improved prospects for the Wittenoom blue asbestos project are mainly the result of steadily increasing efficiency and lower costs and, above all, active and persistent efforts to find and enlarge markets. 8,000 tons of blue asbestos were sold overseas in 1955 at about £100 per ton. Sales negotiated in the United States, together with other markets which have been established in Europe, are expected to lead to total export sales of 12,000 tons, worth £1,200,000, in 1957 with exports rising further in subsequent years. The industry's value as an earner of overseas funds has been recognized by the Commonwealth Government which has granted a subsidy of £5 per ton up to 6,000 tons for the year ending September 1956. This matches a similar subsidy granted by the Western Australian Government. While the assistance of the two governments is temporary it is especially valuable as a definite indication of both Federal and State approval for the venture.

The importance of local production of cellulose acetate rayon yarn has also been recognized by the Commonwealth Government which, acting on the recommendations of the Tariff Board, has decided to pay a bounty of 10d per lb. on cellulose acetate flake sold for the purpose of manufacture into cellulose acetate rayon yarn. This assistance is limited to a three-year period and to a total of £142,000 in any one year and was recommended by the Tariff Board as preferable to the imposition of a tariff on the imported product. The Tariff Board, in recommending this assistance to the industry, took into consideration C.S.R. Chemicals' "strenuous and rewarding efforts to reduce the cost of this product" and noted that "on the basis of production by C.S.R. Chemicals Pty Ltd of 3,400,000 lb. of rayon grade cellulose acetate flake per annum, the saving to Australia of overseas funds would be of the order of £340,000 per annum". The future of cellulose acetate manufacture is still dependent on efficient production and also on the possibility of reducing costs still further through an increased market for fabrics made from acetate rayon yarn.