

SOUTHERN VANCOUVER ISLAND

The area described in a report to the department of mines, Ottawa, by Mr. C. H. Clapp, includes that part of Vancouver Island which is south of the Alberni-Nanaimo road, and east of the Alberni canal and Barkley Sound; and also includes Saltspring Island, and several smaller islands off the east coast of Vancouver Island, in Haro Straits. This area is approximately 4,000 square miles.

Much of the southeastern and eastern part of the region is accessible by road. In the vicinity of Victoria, on the Saanich Peninsula, and along the east coast north of Cowichan Bay, the country is well settled, and there are many good roads. Main roads extend from Victoria west to East Sooke and Jordan River, and northwest by way of Sooke and Shawinigan Lakes to Duncan. There is a stage road from Duncan to Cowichan Lake, and another from Nanaimo to Alberni. There are two railroads in the area, the Victoria and Sydney, and the Esquimalt and Nanaimo. The former is located on the Saanich Peninsula, while the latter follows the east coast as far north as Nanoose. At the present time an extension is being built across the island to Alberni. Other extensions and new railroads and tramways are projected, to open up the interior of the island.

At present the inlets and lakes, a few of the rivers, and the Cowichan Lake and Alberni roads furnish ready access to the interior of the island, and no very long packing trips need be made. Such trips at the present time must be made without the aid of pack animals, as the trails are not numerous, and with two or three exceptions are suitable only for men. Even these trails, when well located and cleared of brush, are of the greatest assistance, for on them seven or eight miles may be readily travelled in a day by one carrying a heavy pack; while without a trail three miles is often the limit which it is possible to travel in a day, with the hardest sort of muscular work. The establishment of more trails is, therefore, of the greatest importance, and would fill a most urgent need.

A large part of the shore may be safely traversed in a small boat. Coasting steamers run between Victoria and ports on both the east and west coasts.

The mineral resources of southern Vancouver Island include deposits valuable, or possibly valuable, for gold, copper iron, fuels, fluxes, lime, cement pigment, clay, sand and gravel and stone. Coal has been the chief source of mineral wealth, and copper and some gold have been commercially produced. Lime, cement, clay, sand, gravel, and crushed stone as well as coal are being produced at present.

Gold occurs in the gravels of a large number of the streams of southern Vancouver Island, but with two or three exceptions, the principal deposits all occur in the streams which drain the area underlain by the Leech River slates and have been derived from very low grade quartz veins in that formation. The gold-bearing gravels are usually of a fair grade, but are not very abundant. A large accumulation of gravel at the old mouth of Lost River and near the mouth of the present Sombrio River is being exploited at present. Mineralized shear zones occur throughout the rocks of the Vancouver group, and although they are usually more important as possible sources of copper, they also carry small amounts of gold.

The copper deposits of southern Vancouver Island are all more or less closely connected with the igneous rocks erupted during the upper Jurassic period of batholithic and dyke intrusion. They may be subdivided into three main types,—contact deposits, impregnated and replaced shear zones with accompanying quartz veins, under which is the special Sooke type, occurring in the shear zones of the Sooke gabbro, and lastly the Tyee type, a large lens of ore which was formed in a syncline in the Sicker schists of Mount

Sicker. The contact deposits, which are developed chiefly in metamorphic limestones near their contacts with intrusive igneous rocks, are the more numerous. They are, as a rule, small, irregular, and of low grade, but some of them are of considerable economic interest. The deposits occurring in shear zones are of little importance, with the exception of the special Sooke type, which is of great prospective interest. The Tyee deposit, now largely worked out, is the only deposit from which there has been a commercial production.

The iron ore deposits are of four types, contact deposits, impregnated schists, replacement or segregation deposits in the Sooke gabbro, and bog ore deposits. The contact deposits are by far the most important; and consist of bodies of magnetite, which have been formed in the metamorphosed Nitinat limestones, near the intrusive Beale diorite. The bodies are large, and low in phosphorus, but high in sulphur. The chief deposits occur in the valleys of Gordan River and its tributary, Bugaboo Creek. The impregnated schists occur in the Sicker series. The mineral-bearing rocks are dark red, jaspery schists, with 10 to 15 per cent. of magnetite. Since the magnetite can be easily concentrated they are of prospective importance. The other two types are apparently of no value.

Coal is the source of a very important industry on the east coast; the coal being obtained near the base of the Nanaimo formation in the Comox basin, and in the northern part of the Nanaimo basin, from 600 to 1,500 feet above the base. These coal deposits have not been examined during the present investigation. Coal of commercial value is apparently absent from the other basins of the Cowichan group, and is almost certainly absent from the Tertiary sediments of the west coast. These sediments have also been prospected for oil, but the conditions for the accumulation of oil do not seem to be favorable.

The crystalline limestones of the Nitinat and Sutton formations furnish excellent and ample material for flux, and for the manufacture of lime and cement. Cement is manufactured in the southeastern part of the island by the Vancouver Portland Cement Company, and lime is burned by several manufacturers also in the southeastern portion of the island.

A bog deposit of yellow ochreous clay in the Sooke district is a possible source of material for a base for colored paints.

There are two types of clay deposits in southern Vancouver Island, the shales of the Nanaimo formation and the clays of the stratified superficial deposits. The greater part of the shales of the Nanaimo formation are sandy and impure, but associated with the coal in the Nanaimo and Comox basins are thin, lens-like beds of clay-shale. This shale is mined by the coal companies and used by the British Columbia Pottery Company at Victoria, where it is mixed with the clays of the superficial deposits, for the manufacturer chiefly of sewer pipe. The clays of the stratified superficial deposits are used for the manufacture of common bricks and drain tiles, at Victoria, Sidney, Sidney Island, and Somenos.

Sand and gravel are also obtained from the stratified, superficial deposits of southeastern Vancouver Island.

The fractured and sheared character of the rocks renders most of them unfit for building stones. In rare instances the marbles may be of value, and some of the dark granites (granodiorites) exposed near Alberni canal would doubtless make good building stone. The sandstones of the Cowichan group, especially of the Nanaimo and Comox basins, offer excellent material for stone of that kind.

The traps, especially those of the Metchosin volcanics, offer abundant material for an excellent quality of crushed stone. The Metchosin volcanics are quarried at Albert head, in Esquimalt district, by the British Columbia Trap Rock Company.