

more or less uniformly. Some excellent copper values are obtained in this camp.

LONG LAKE CAMP.

Long Lake camp contains chiefly gold-quartz ores in which tellurides of gold occur. The Jewel and Denero Grande are adjoining claims, operated by the same company, which has done the most development work in this camp. The Jewel shaft is down 348 feet. This mine is equipped with two boilers, together 75-horse power, a 4-drill straight line air compressor, three machine drills, steam hoist, pumps, etc. A stamp mill and cyaniding plant will probably be installed during the present year. Both the Jewel group and the Ethiopia have been acquired by English companies.

OTHER CAMPS.

Seven miles north of Greenwood, up Boundary creek, is Kimberley camp. Numerous claims have been located here, but as yet not much development has been done. The surface showings are good, but values appear to be low, so capital has not been attracted to these claims. The ore is heavy sulphides, both copper and iron. In Graham's camp, near Midway, there are outcrops of as nice looking copper ore as has been found on the surface anywhere in the district. Some 500 to 600 feet of tunnelling have been done, but this work has not proved sufficient to determine whether or not the ore goes down. In West Copper camp, nine miles northwest of Greenwood, among many claims located are some that with development should prove valuable. The ores are reported to be arsenical iron pyrites, giving assays in gold up to \$30 per ton.

WEST FORK OF KETTLE RIVER.

The Carmi, Sally, Washington and Idaho are the best known of the numbers of locations made on the West Fork of Kettle river and its tributary creeks. Of these the Carmi is the only one that has sent out much ore. Last winter a quantity, variously stated at from 550 to 1,100 tons, was hauled nearly twenty miles over a rough sleigh road and thence some 30 miles farther by wagon to Midway, whence it was sent by rail to the Greenwood smelter. A trial carload was taken out at the Sally as well. Two shafts, the deeper 110 feet, have been sunk on the Carmi and 220 feet of drifting and crosscutting have also been done. The plant at this claim, taken in under difficulties, consists of a small upright boiler, a 60-horse power horizontal return tubular boiler, a 6x8 link-motion hoist, a sinking pump and a machine drill. On the Washington and Idaho are a 12-horse power upright sectional boiler, and a 5x5 hoist, which was months on the way before it reached its outlying destination. The only underground development work done on this group is a shaft sunk 100 feet, whilst 250 feet of tunnelling have been done on the Sally.

UPPER MAIN KETTLE RIVER.

There are several camps on creeks running into the main Kettle river above Rock creek, but practically no work other than assessments is being done in them at present. These include Douglas and Atwood's Oro Fino group, near Rock creek; the Crown Point and Barrett's groups, on James creek; Perkins' group near Westbridge—a townsite at the confluence of the West Fork with the main river—and camps on Canyon and other creeks above it. On the Montana, Colorado, and Fourth of July claims, on Canyon creek, good showings of copper gold ore occur. About \$2,000 have been spent here in development. On the Silver Dollar, and Barnato claims, on Horseshoe mountain, are big bodies of quartz and arsenical iron carrying gold. The O. K. and Fletcher's groups have large ironcap showings with streaks of high-grade quartz and traces of telluride. A lot of surface prospecting has been done on the Mogul, Riverside, Hackla and other claims, but in no instance sufficient to prove permanence.

NORTH FORK OF KETTLE RIVER.

On the North Fork of Kettle river there are several groups of claims distant 10 to 15 miles from Grand Forks. The best known of these are the Earthquake, Golden Eagle, Volcanic, Pathfinder, and Little Bertha, on the eastern side of the river, and the Seattle, Humming Bird and Strawberry, on the western side of the river. The Humming Bird is reported to have shipped 300 tons of ore to the smelter, the Golden Eagle has sent about 120 tons and the Little Bertha and Straw-

berry a carload each. The Humming Bird has 400 to 500 feet of crosscutting and drifting. On the Pathfinder there are two shafts, 135 and 125 feet in depth respectively, and about 700 feet of crosscutting and drifting. It is stated that there are three main ore bodies on the Pathfinder of a somewhat irregular character, partially developed by these workings, and that these ore bodies are large masses of low grade pyrrhotite, carrying gold, silver and copper. The power plant on this property consists of a 50-horse power boiler, 6x8 hoisting engine, pumps, etc. There is, besides, a small power plant on the Golden Eagle.

Up the East Fork of the North Fork there is a very promising country, known as Franklin camp, which for size of ore bodies, so far as shown by the very limited amount of work done, and specimen assay values compares very favorably with what was known of the older camps at a similarly early stage. A trail was cut out last year to connect with the wagon road from Grand Forks, but the construction of a wagon road is an urgent necessity for the getting in of mine supplies and machinery, otherwise the mineral resources of this camp must remain undeveloped. A sum of money has been placed on the estimates for this road. Numerous mineral claims have been located here, and of these the best known at the present time are the Banner, McKinley, Gloster and Polard.

SUMMARY.

A summary of the number of lineal feet of work done in development in the several camps gives a total of 75,694, as under.

Camp.	Feet of Work.
Greenwood.....	24,449
Deadwood.....	15,102
Summit.....	9,997
Central.....	7,139
Wellington.....	6,581
Long Lake.....	3,176
Skyark and Providence.....	2,000
Smith's.....	1,570
Prospecting and other work.....	5,500
Total.....	75,694

ORE SHIPMENTS.

The tonnage of ore sent out by Boundary district mines to April 30, 1901, is as under.

	Tons.
Old Ironsides and Knob Hill group.....	138,057
B. C.....	34,356
Mother Lode.....	24,684
City of Paris.....	2,000
Golden Crown.....	1,800
Athelstan.....	1,450
Winnipeg.....	1,100
Carmi.....	1,000
Sundry small shipments.....	2,900
Totals.....	207,147

Of this quantity more than half is the output of the current year and the greater part of the remainder was sent out during the latter part of last year.

THE SMELTERS.

Last August, at Grand Forks, the Granby company started its first furnace and in October its second furnace was "blown in." The quantity of ore treated at the smelter to April 30th is 136,443 tons. The British Columbia Copper company commenced smelting at Greenwood on February 18th and in a little more than ten weeks, to April 30th, smelted 24,857 tons of ore.

MEN EMPLOYED.

The approximate number of men employed in the Boundary district in connection with mining and smelting is as follows.

Camp.	Men.
Greenwood.....	400
Deadwood.....	200
Summit.....	130
Wellington.....	30
Central.....	25
Other camps.....	60
Smelters.....	120
Total.....	955

The Future of the World's Lumber Supply.

In the monthly summary of commerce and finance of the United States, issued by the bureau of statistics, treasury department, an interesting and full account is given of the lumber trade of the States, one of the most important industries of the country. In the United States the wooded area is estimated at 1,004,400 square miles, or 37 per cent. of the total land area. The monograph concludes with the following observations on the future of the world's lumber supply:

It has become the practice, in this

age of rapid economic development, to make enquiries into the probability of exhausting natural resources, such as the mines, the oil-fields, and the forests, at the present rate of exploitation by extractive industries. For 20 years or less there has been considerable apprehension of an impending timber famine. Industries whose dependence upon timber resources is direct have looked upon the disappearance of our fine forests and original timber growths of the country with no slight fear for the future. Forestry has long since forwarned the country of the tendency to undermine wood industries, so far as industrial success was conditioned on a domestic supply of raw materials. Among lumbermen, also, there has appeared an awakening of discussion as to the best policy to be followed in the face of the shrinkage of the country's timbered acreage.

This discussion on the subject has taken various forms in different places but the general character of the newer policy is marked by the substitution of a more far-sighted system of management of timbered properties, and the consolidation of such properties into vast tracts organized as large estates or as corporations. They are all based on the belief that lumber production must, in the near future, be conducted on a level of enhanced prices compared with those of the past. Therefore estates, corporations and individuals are seeking timbered properties as a permanent investment whose capital value is destined to increase with the growth of the demand and the reduction of the supply of lumber. This policy has found place in the management of timber lands owned by some of the railway corporations in the southwestern and northwestern states.

A recent volume by A. Melard, a French official on the lumber situation in the world's trade, sounds a note of alarm at the astonishing rate at which consumption is proceeding in the leading countries of the world. This is indicated by the small proportion of forested area to the total land area, and by the vast difference between imports and exports. France, it is estimated, consumes about 20,000,000 cubic metres for firewood and about 6,000,000 metres of lumber, nearly half of which latter requirement has to be imported. England, Germany and Belgium are in a similar position, as in all these countries the industries requiring lumber as materials of development are in a most flourishing condition. For the present these deficiencies in lumber supply are made up from Austria-Hungary, from Sweden and Norway, from Finland, from Russia, from Roumania, from Bosnia-Herzegovina, and from the United States and Canada. These deficiencies, according to M. Melard, are made good by the continuous destruction of forests. The world as a whole, especially the European and North American world in the north temperate zone, is rapidly exhausting its capital investment, instead of living on its yearly interest, in the lumber resources of these nations, taken collectively.

According to this view, the people of the north temperate zone, in which most of the existing supply of commercial timber lies, have every reason to face resolutely the question of a future supply. That question can be answered in only two ways. Either the increase in lumber-values must reduce the rate of timber exhaustion, or the exhaustion of the now available lumber supply must drive those industrial nations to seek new supplies elsewhere. Then, if the uses of lumber are to continue, there will be three sources available, namely: Northern Russia, Argentina, and Australasia, for a non-tropical timber supply.

Russia, though not a well-wooded country, has two regions on which Europe will rely more and more for lumber as the American supply is restricted or rises in value. These are in the extreme north and the Ural region, the former of which has 57 per cent. of its area wooded, and the latter 45 per cent. In 1881 fifty provinces of European Russia contained 39 per cent. of forest land, 26 per cent. of arable land, 10 per cent. of meadow and pasture land, and 19 per cent. unfit for use. The provinces of White Russia, the Moscow district, Poland, the Ukraine, and trans-Caucasus are not so well wooded as Germany (20 to 24 per cent.); the Baltic provinces are as well wooded as France (17 per cent.), and the steppe lands of south-eastern Russia are as deficient as North Dakota (1 per cent.). From the sub-Arctic

and Ural provinces we must look for the rising of an enormous trade, once the difficulties of transportation to Europe by way of the northern rivers and the White sea are overcome. Four of these provinces, lying in the north-east between the Ural mountains and the White Sea, largely within the basin of the Dwina river, contain 62 per cent. of the timbered area of Russia proper, excluding the Caucasus and Siberia.

When we turn to the south temperate zone we find the same backwardness in transportation facilities for marketing lumber. Argentina's forest resources are among the richest in the world, but they are remote from the ocean, and thus expensively reached, if reached at all. The forests of the interior of Argentina, throughout the north and the northwest, on the eastern mountain slopes and in the valleys of the Uruguay and Perena rivers, are famed for their richness in timber resources. In that country there are fully 500 varieties of woods, with no less than 100 of high utility in commerce. But the richer timbered areas lie remote from the seaboard and away from the centres of consumption. Hence there, as in Brazil, it is often cheaper to import lumber than to cut it at home. Brazil has a tropical profusion of useful woods. In the province of Amazonas alone there are thirty kinds of building lumber and thirteen kinds available for cabinet purposes. But labor is scarce, and the means of transportation are so imperfect that the production goes little beyond the demands of local consumption. Commercial lumber is largely imported, primarily from the United States and secondarily from Sweden, though England and Germany import cabinet woods into Brazil quite extensively. As to Argentina, the exports, mostly to Europe, are of growing importance. The exports of lumber from the republic for the first quarter of 1900 exceeded the average yearly export for the three years 1897-99. Most of this lumber goes to the cabinet-makers of France and Germany. But here, too, there is a reckless disregard of the future. "It is sufficient to say that the damage and destruction under the present system are greater to the country than the profits," declares the Buenos Aires Nation.

Australasia is well supplied with varieties of wood, both hardwoods and pines, and with Eastern Siberia and the interior of China, the Far East will not be wanting in much that is now supplied from the Pacific coast. The hard woods of New South Wales are remarkable for the length of the trunk and for the strength and durability of the wood. The absence of branches for the greater portion of the height, rarely less than 100 feet being clear, makes these timber suitable to the value of £20,000,000, in round numbers, annually; and to this market the Australian trade has been giving special attention, with slow but sure encouragement. A different tariff in favor of colonial imports might prove decisive in transferring the main portion of this timber trade to Canada and Australia, and away from the United States.

About Spruce Gum.

"Picking spruce gum and selling it to chewing gum manufacturers is a source of income for a great many men in the Adirondacks and other northern forests—guides and small farmers—while others make it a business the year through," says Country Gentleman. "The gum appears on the tree trunks like drops of wax. The gatherer, armed with a long pole, on the end of which is fastened a can and a sharp chisel, cuts loose the chunks of gum, which fall into the can and are transferred to a basket or bag. The gatherers in winter will travel on snowshoes ten or fifteen miles through the forest, sleeping at night in some old hunter's deserted shack. There are three kinds of spruce in the Adirondacks—red, black and white. The best gum is gathered from the sapwood of the white spruce. The rarest of the gum is the "blister," which is translucent, and turns blue after being chewed. After being scraped, washed and brightened it sells for \$1.50 a pound. There is a coarser grade, composed of blister scrapings, mixed with particles of bark. Placed on trays of cotton cloth in a steam tank, the gum is drawn out and yields the producer 50 cents a pound, forming the ordinary chewing gum of commerce. Some manufacturers adulterate the gum with paraffin, rosin and chicle."