ACTIVITY IN THE MINES.

PORCUPINE DISTRICT, ALASKA, IS YIELDING GOOD RETURNS NOW.

A Number of Nuggets Worth from $200 to $300 Found—Overproduction in the Missouri-Kansas Zinc Belt—The Great Interest in Copper Properties Continues.

SEATTLE, Wash., July 17.—Porcupine district is yielding much better returns than was anticipated in the early part of the season, and the gold is of excellent quality, heavy and easily saved. A number of nuggets have been found worth from $200 to $300. Maloney's claim, which was one of the first discovered, has averaged $400 a day, four men working. Wiley's claim, on the same creek, has yielded $300 a day, while others have averaged from $50 to $100.

Portland men, who have been prospecting on Prince of Wales Island, report good success in the discovery of gold and copper ledges of great width. On one mountain they spent several months in driving a tunnel in 100 feet in ore that assayed $10 in copper and gold. They pronounce it a mountain of ore. On the opposite side of the same mountain they uncovered a copper ledge thirty feet wide, with a pay streak two feet wide, that assayed $100 a ton. Both claims are within 1,000 feet of a fine harbor. They have prospected the island for a year, and, from their investigations, pronounce it one of the most promising districts in Alaska.

BRITISH COLUMBIA.

SEATTLE, Wash., July 17.—The Van Anda smelter was completed to-day, starting up under the most successful conditions. This is the first smelter on the western coast of the province and has a capacity of fifty tons a day. The Van Anda is a gold-copper producer that has heretofore shipped its product to Swansea, Wales, the ore being high grade and very desirable. The conditions at Van Anda for the smelting of ores are excellent, by reason of the mine and smelter plant being on tidewater, where all the fluxes and fuel are easily obtainable and can be had at comparatively nominal cost. The ovens, from which coke of splendid quality is obtained, are located at Union, about twenty miles distant, and the coke is transported from the ovens to smelter in barges in bulk. The smelter starts off with 2,000 tons of Van Anda ore that carries values of from $40 to $100 in gold, copper and silver, and if necessary the smelter can draw largely from neighboring mines.

Seattle men have recently purchased a group of copper claims on the west coast of Vancouver Island, near Clayoquot. The ore is copper, gold and silver, and carries values in all these metals to the amount of $25 to $45 a ton.

The Philadelphia Mining Company, which owns the Mountain Trail mines, is erecting a fifty-ton concentrator six miles below Rossland. This is a big property with a large amount of low-grade ore blocked out and large amounts on the dump.

The miners and mine owners are adjusting their troubles caused by the Eight-Hour law and nearly all the producing mines in Slocan and other districts in the Kootenai are resuming work. There has been a less of from one month to six weeks' work by reason of the new law.

WASHINGTON.

SEATTLE, July 17.—A company which has secured a bond on the Boston and other mines in Cascade district has been prevented from making examination by reason of the deep snow, which still covers the property to a depth of several feet. Usually miners find their claims in this district accessible by the first or middle of May. The late season is disappointing to owners and intending purchasers of Cascade mines, which are principally silver-lead producers, as the present high price of lead makes this class of property very desirable.

The drills in the Palmer Mountain tunnel, Okanogan county, have gone through the big ledge, finding it to measure forty feet, thirty feet of which was found to be pay ore, making it the largest and most desirable of the twelve veins struck in a tunnel penetrating the mountain a distance of 2,000 feet. This find has given new life to the district.

The Coney and Cleopatra mines in Miller River district have been accumulating ore on their dumps all spring and have enough to keep several pack trains busy transporting it from the mines to the railroad all season. The ore goes over $100 to the ton and some of it will net that amount after smelter charges are paid.

The 3-8 mine, situated in the same district, has also taken position among the shipping properties. The quality of ore in this mine is of the same character as in the Cleopatra and commands a ready market at the smelters.

The Golden Tunnel on Salmon Creek, five miles from the Great Northern Railway, has a large accumulation of ore sacked for shipment and the wagon road is being put in condition for the transportation of ores to the smelters on Puget Sound. It is the intention of the company to put in a plant for the reduction and concentration.

On Saturday a force was placed on the Edison group in Silver Creek district to extend present development. This group embraces twelve claims, all of which are showing good pay ore from the surface. This district is remote from transportation, but by the construction of an electric road fourteen miles long it can be connected with the Great Northern at Index. An enterprise of this character is contemplated. The values in the Edison ores run high, in some of the drifts the gold alone running into the hundreds, while copper is present in all the ores. The water power on this property is of sufficient volume to run the largest reduction and concentrating plants.

ARIZONA.

TUCSON, July 13.—The Phœnix gold mine, eighteen miles north of Phœnix, will resume operations this week. A test of the ores will be made with a ten-stamp mill and the cyanide plant. The great bodies of low-grade ore have never been properly opened up nor the real value of the mine determined.

E. J. Hands and G. Roberts have struck a silver lead in the Chiricahua Mountains.

It is reported that a Mexican has found, near Sinaqui, Sonora, in Sonora, a gold ledge about two feet wide very rich at the croppings. Thirty-five ounces of gold were pounded out of the rock in a hand mortar within a few hours.

Yuma county's mining business during the past week included the sale to Chicago people of the old Bohemia group of copper claims in Seneca district, comprising what are at present known as the Gregory, Grand Cross, Garfield, Grant, Homestake, Boston and Bay State mines. The property is extensively developed and has produced much ore. The price was $50,000.

MISSOURI—KANSAS.

JOPLIN, Mo., July 23.—Zinc ore is again accumulating in the Missouri-Kansas mining district. The two weeks' shut-down of the mines to force the zinc smelters to pay the ore producers' schedule of prices enabled the mines to get rid of all their ore at schedule prices, but as soon as the mines resumed work the ore began to accumulate, and there are now about 1,000 tons left in the bins after the week's sales. Several of the mines have taken off their night shifts to prevent an overproduction, and the Zinc Miners' Association is in a quandary as to what steps to take to keep the supply of ore down to the demand. Last week's production of ore was very large, and many new plants are being put in all over the district, which will add largely to the output.

Lead ore advanced $1.50, that product bringing $27.50 per thousand pounds. The advance was due to the strong outside demands for Missouri lead ore for fluxing purposes. Zinc ore remained at the same price as in the preceding week, $44.50 being paid for the best grade of Belleville ore, and $43 to $44 for high-grade zinc ore at other camps.

A meeting has been arranged for the zinc smelters and zinc ore producers to take place in Joplin on Aug. 1 to arrange fixed prices for zinc ore and let the price of spelter be governed by the price of ore.

CALIFORNIA.

LOS ANGELES, July 15.—The Bully Hill copper property, in Shasta county, has been bought by Capt. De Lamar for $350,000. He will build smelters and construct ten miles of railway to connect with the Southern Pacific. It is also settled that a German syndicate will erect a smelting plant twenty miles north of Redding, on the Pitt River, and will build six miles of railway to connect with the Southern Pacific.

The assessment of the Mountain Copper Company has been raised from $350,000 to $1,080,720, which is the highest valuation placed on any mining property in California, the next highest being the Idea mine in Calaveras county. The Black Diamond group of copper properties, on Stillwater Creek, twelve miles from Redding, has been sold for $30,000 to the North California Investment Company. The new company, which has just been incorporated, has a paid-in capital of $300,000.

An effort was made five years ago by a new company to work the Bay State mine, near Plymouth, Amador county, but it failed owing to the large volume of water encountered. The mine was sold to Stockton capitalists, who are now reopening the property. They will put the shaft down to 1,000 feet and cross-cut to the ledge, which is parallel with the shaft.

In El Dorado county the Jumper Gold Mining Syndicate has bought for $70,000 the Griffith Consolidated, Manzanita Queen, Manzanita King, Potosi and Cholla gold mining claims, near Diamond Springs.

A rich ore body was uncovered last week in the Marguerite mine, south of Placerville, at the 200-foot level. Rich ore has been found in the Santa Clara mine, Kelsey mining district. The ledge is twelve feet thick and was found at thirty-five feet. The Gardner Consolidated, formerly the Van Hooker mine, near Placerville, is being developed. A milling test from the surface workings yielded $18 a ton.

Samples of ore from the Copper Bell mine, a recently discovered property in the South State range of mountains in southern Inyo county, assays 16% per cent. copper, $5 gold and 8 ounces silver to the ton. The mine is owned by W. C. Ross and W. F. Patterson, who have recently located the Black Point copper claim, in the Black Mountain district, Kern county, in which there is a vein nine inches wide of 30 per cent. copper ore and one averaging six feet wide, in places widening out to forty feet, which runs from 10 to 20 per cent. copper and carries $5.40 gold and 6 ounces of silver. The same two men own the Dam-If-I-Know gold claim in the Black Mountain district, which they intend to develop at once in order to procure the means for the development of the copper properties. The ore is high grade and the assays run from $100 to $800 per ton. A milling of five tons of float netted over $70 per ton.

An important discovery of coal has just been made in the Black Mountain region by F. H. Heald, eighteen miles from Bakersfield. The coal is bituminous, is a good coking coal, and the vein near the surface is four feet thick. Mr. Heald has been working for some time on the coal prospects of the region and has made a number of discoveries of such nature, but he feels sure the coal deposits fill an area of 1,000 acres. The general formation of Black Mountain is sandstone with a capping of lava, and the coal lies at the back and east of the sandstone formation.

A miners' association has just been formed by the mining men of Southern California.

The placer mines recently discovered in Lucas cañon, Orange county, are beginning to attract attention. Nuggets of considerable size are being taken out and claims are being located. The grounds have been known to the Mexicans for a number of years, but have never been worked by them except as they found an occasional nugget.

The tailings plants at the Standard mill at Bodie, Mono county, yielded a gross value of bullion product for April and May of $15,164. The cost of treatment was $1.10 per ton of tailings treated.

In Napa county the Boston Quicksilver Mining Company has been organized with a cash capital of $100,000. Its property consists of 6,000 acres, of which eighty-four are mineral land with an outcrop of a ledge one mile in length. Three shafts have been sunk, the deepest 900 feet, and a number of levels opened. The mine has produced 107,200 flasks of quicksilver. The work of developing ore reserves has not been pushed and the amount of ore in sight is not extensive. The company expects to increase the production.

Work has begun on the smelter at the copper properties at Copper City, San Bernardino county, recently purchased by a Boston syndicate. The new owners are making every effort to get their product on the market as soon as possible.

W. E. Robinson, a director of the Ivanpah Smelting Company, whose properties are situated in the Vanderbilt district, has made application for the appointment of a receiver for the company on the ground of improper management.

The McMurry & Hupp mine, Trinity county, has yielded $17,000 for the season. A new property, located by T. Bergin, at the junction of Dutch Creek and Trinity River, has been sold for $35,000. The new owners are making many improvements preparatory to active development.

The Draper mine, near Soulsbyville, has just made a shipment of four tons of ore from a new discovery in the old workings, the first time in thirty years that the mine has produced any ore of consequence. The mine is now in the hands of a Boston company, which secured it last April, and has since been putting the workings in condition. The shaft is to be put down to 600 feet and a ten-stamp mill erected.

There has been a rich strike in the Lucas mine, at Mokelumne Hill, which has caused much excitement in that region, although the find has been kept as quiet as possible. It is said that $1,500 in gold is taken out in every car.

NEVADA.

VIRGINIA CITY, July 15.—The cyanide process is to be introduced on a large scale at Bellerville and Candelaria, where about 400 men will be put to work handling ore tailings.

The transportation and treatment of ore in the Searchlight district cost about $30 per ton, so that only rich ore can be handled. Two hundred claims are being worked in the district and every one pays, even at that high cost. The ore is all free milling.

WINNEMUCCA, July 17.—The past week has witnessed an increased activity in mining in Nevada. From all parts of the State come reports of new and important strikes and rich bodies of ore uncovered in mines that were worked in former years and abandoned in the belief that they were unproductive. Improvements in mining machinery have made possible the working of low-grade ores on a paying basis.

William McDermott of Butte, Mon., a representative of Senator W. A. Clark, has bonded the Vista Grande group and will commence development work with a force of men at once.

MEXICO.

GUAYMAS, July 15.—The Copeta copper and gold mine, in Sonora, owned by W. Melezer of Phœnix and J. J. Hardwick, has been bought by a New York syndicate for $3,000,000.

It is reported that the London Rothschilds are negotiating for the purchase of a copper mine in the district of Fronteras, Sonora, the price of which is $2,000,000.

The Cinco Senoras Mining Company of San Luis de la Paz, Guanajuato, in its report lately issued, shows that it produced last year $372,466 in precious metals, chiefly silver. The previous year its production was $1,243,500. Since 1888, when it was opened up, its total production has been $6,753,500. Its production has varied widely from year to year, but it has paid a good dividend every year from the start. Since 1888 its total dividends have been $4,234,500, of which $20,000 was paid last year. The 1,400 shares in the mine were originally issued at $300. They are now quoted at $2,000 in the City of Mexico.

LAKE SUPERIOR COPPER.

HOUGHTON, Mich., July 20.—The figures of John Stanton, secretary of the American Copper Producers' Association, show that the increase of production of Lake Superior mines for the first six months of 1899 is but 1.3 per cent. over the corresponding period of 1898. The increase for the last half of the present year will be little, if any, greater than during the first six months. For several years past the mines have been worked to their full capacity, and even the stimulus of 18-cent copper is insufficient to bring about a marked increase of output in short notice.

The Calumet and Hecla is opening what will become a large mine on the Osceola amygdaloid lode, which underlies the Calumet conglomerate, the respective outcrops being 730 feet apart. The Quincy is doing a large amount of new work, both in opening new ground and in adding to its already magnificent machinery equipment.

The Arcadian should be able to begin production within the next two or three weeks. It is only within comparatively recent days that work has been in earnest, and the developments are remarkable. At present fully 1,000 men are employed on the property, and for the past six months more ground has been opened in the Arcadian than in the Calumet and Hecla or in the Quincy and Osceola combined.

The production of copper by the Quincy for the first half of the current year is several hundred tons behind the product for the corresponding period of 1898. The decrease will probably be covered before the close of the year. Next year should show an increase of 40 to 50 per cent. in the Quincy's production. The net earnings of the Quincy, after paying for all development work and meeting heavy payments for new machinery equipment, will exceed $1,500,000 for 1899.

Pumping was begun this week in the St. Clair shaft of the Phœnix. Both copper and silver in considerable quantities are being taken out in the work of reopening the old workings on the Ontonagon range.

The Atlantic mine is stamping 1,250 tons of rock daily, and the improvement in the percentage of copper returned by the rock, which began last winter, still continues.

COLORADO.

DENVER, July 19.—As was predicted in these letters, the Supreme Court of the State has declared the eight-hour law for mines and smelters unconstitutional. Nearly all the principal mines of the State, however, adopted the eight-hour day some time ago and wages were adjusted accordingly. It is believed now that at this time no strike of a general nature will occur, though it is the evident purpose of the Western Federation of Miners to include all the camps of the State under its jurisdiction. The American Smelter Company, controlling seven smelters in the State, has not yet announced its policy as a result of the eight-hour decision. It is probable that the smelter management will eventually adopt the eight-hour day so far as it is possible, but there will be no recognition of unions if it is possible to prevent such a result.

In spite of the shut-down of smelters at Leadville that district has a list of twenty-five producing mines with an aggregate tonnage of 800 tons daily. The Arkansas Valley smelter is buying considerable ore, paying for it upon sample assay.

The Red Mountain district, Lake county, in the vicinity of Twin Lakes, is the scene of a local gold excitement. It is inaccessible for half the year and the trail is very rough. Some ore was taken out in earlier days, but the recent discovery of tellurium with high assays in the Chisholm mine has caused the present excitement.

John Sheridan of the Portland Company has purchased for $12,000 the Carrie Stanley claim on Globe Hill, Cripple Creek district. At the 400-foot level on the Morning Glory, owned by the Work Company, a four-foot vein of ore has been discovered assaying $80 per ton. It is believed to be the Preston vein, which made the Jack Pot so valuable a mine.

Another sensational strike of high-grade ore is reported in the Isabella. A parallel vein to the main vein of the El Paso has been discovered at a depth of 110 feet, showing ten inches of sylvanite of exceeding richness. The strike was made on a block of Orizaba territory being worked by a lessee. Lessees on the Burns of the Acacia Company have struck a new and very rich streak which they are sorting and sacking for shipment. They think they have a bonanza.

The reduction works handling Cripple Creek ores are running full time and have enough ore in bins to keep them busy for sixty days.

The Amygdaloid Mining and Milling Company has been formed with a capital of $1,000,000 to operate a low-grade ore field at Four Mile, Cripple Creek district, where eighty-one acres of land have been secured. Free-milling gold ore running about $5 a ton is said to exist on the tract in enormous quantities, and Chicago capital will endeavor to make of the property a second Homestake.

The famous Sylvanite mine at Gothic has been working, and about five or six carloads of high-grade ore are now ready to be shipped as soon as the tram can be used. The Sylvanite was famous in early days of mining in Colorado for the richest specimens ever discovered in the State. The Augusta, in the same neighborhood, located at an altitude of 12,500 feet, is to be reopened this year.

A Cornish pump on the Gunnell property at Central City has begun the great undertaking of unwatering the deep workings of that old mine. This is the outcome of the recent sale and incorporation of the new Gunnell Gold Mining Company.

The Blue River Excavation Company has purchased 100 acres of placer ground two miles north of Breckenridge, extending from the State bridge across the Blue to the placer grounds of the North American Gold Dredging Company on the Swan. The company has headquarters in Franklin, Pa., where a new device for working placer beds has been developed. The plan is to have a dredge, derrick and other placer working machinery operated upon a movable car instead of on a boat, as is successfully done by the North American Dredging Company. This latter company is building two more dredges. The outlook for an exceedingly busy year is bright and Summit county promises a great gold yield for the year.

The Ajax mine, adjoining the Smuggler-Union in Telluride district, has been sold to the New England Exploration Company for $150,000.

THE LAKE REGION.

DULUTH, Minn., July 20.—Some time ago mining companies were asked to submit bids for the deposit under the town site of Eveleth, belonging to Messrs. Murphy, Dorr, Robinson and Flynn, pine land owners. Neither of the three largest companies entered the competition, and the mine has become the property of P. L. Kimberley of Sharon, Pa., who will open it very soon. The mine is a large one, but Mr. Kimberley has paid a large price for it.

A tract of eighty acres in the townsite of Hibbing has been found to contain much ore. The land has been sold for $75,000 cash, the original holder retaining his ownership and receiving 25 cents a ton for all ore taken out.

New miners are arriving on the Mesaba range almost daily, and are being set at work as fast as they apply. Many men are coming from the coal fields of Pennsylvania, where they have been able to earn only a bare subsistence. Wages for ordinary miners here are from $2 a day upward.

As coal freights advance ships for the carriage of ore are growing more scarce, and there is such difficulty in getting all ore that has been sold delivered that new sales are almost unknown.

The Lake Superior Iron Company, for the Carnegie Company, has secured an option on the Hartford mine, near Ishpeming, and will explore it for a continuation of the Cambria and Lillie vein. If this vein is found the mine will be an important one. The Carnegie Company is also said to have secured a lease of the McDonald Forty, part of the famous "Section 30" on the Vermilion range, which, though it has never been absolutely known to contain a pound of ore, has been fought over by rival mining companies until the legal and other fees of the contests have amounted to more than $100,000. The section has been in the courts for the past fifteen or twenty years, and one branch of the hearing is still on in this city.

In the past ninety days the Minnesota Iron Company has secured leases and options on more than eighty desirable acres of land on the Menominee range, all of which it is to explore for ore at once. Until its control by the Federal Steel Company the Minnesota had never gone outside this State for mines.

The stream of immigration of prospectors and miners to the Rainy Lake gold country is growing steadily, and is taxing the capacity of roads and stopping places. Many mining experts for large Eastern and foreign houses have been in the country this year for the first time, attracted by the reports of gold shipments made and important sales of properties recently made in London. More of these sales have been closed in the past ninety days than during all the previous history of the region.

In stripping the vein and sinking at one of the swamp mines it has been found that what was supposed to be the footwall was not such, and that the vein, instead of being twelve feet wide, was more than thirty feet. The mine is a low-grade proposition, but there seems to be an enormous quantity of ore. It is the property of T. L. Ingham and others of Duluth.

A very large water power at Sturgeon Falls has been bought by an English syndicate and is now under survey by hydraulic engineers with a view to its utilization for many of the mines of the district.

The Ontario Government has issued an order modifying materially the methods of staking mineral claims in the Rainy Lake, Lake of the Woods and Thunder Bay districts and making the cost of services of a provincial land surveyor unnecessary for the securing of forty acres of quartz or twenty-three and a half acres of placer grounds. In discoveries distant from surveyed lands the cost of surveys has been so great as to stop much development. This will now be changed.

UTAH.

SALT LAKE, July 17.—The amount paid in dividends for the month has already reached $247,500, the latest being the Petro mine at Bingham, which came forward on Friday with another $5,000. In the creed and bullion markets settlements for the week reached a total of $326,481.

Work is being prosecuted on the Ophir at Bingham. A vein of galena has been discovered that assays 51 per cent. lead and over $50 value per ton.

For the entire holdings of the Star Consolidated Mining Company, at Tintic, an Eastern syndicate, represented by local agents, has made an offer of $500,000, or $1 a share, for the stock. The bid has been referred to the shareholders, with the prospects of an acceptance.

A big boulder of high-grade ore has been received from the Dixie Company's group, near St. George, Washington county. It has had a marked effect in stimulating prospecting in southern Utah.

A number of rich strikes are reported from the Deep Creek mines. The Midas, it is said, will soon take its place among Utah's great producers.

The sampling rooms of the Kansas City Smelting and Refining Company contained three tons of gold dust, of the value of nearly $150,000, Thursday night. Three armed men were stationed within the rooms to protect the gold. The principal contributor was the Golden Gate of Mercur, with over two tons of auro-cyanides valued at about $100,000.

Col. Theodore Burback has purchased the holdings of the Morgan Mining Company for $100,000. He denies that it has been conveyed to the Daly Company.

A strike has been made on the property of the Fissure Mining Company, located near the Susan, about two miles south of Diamond, Tintic. A large body of silver-lead ore has been encountered in the shaft at a depth of 400 feet.

IDAHO.

IDAHO CITY, July 16.—The ore coming out of the 300-foot level of the Washington mine improves with depth. A drift will be run on the vein to cut an ore chute that crops out on the apex of the mountain several hundred feet east of the shaft.

Miners and prospectors feel confident that many valuable properties will be opened up in Miller district, ten miles north of Banner, during the summer. Lew Johnson and others holding bonds on claims on large ledges are now doing development work. The veins are from twenty to forty feet wide and the quartz prospects well in free gold.

The Basic Company will in a few days launch the new boat on Grimes Creek for the third dredge constructed by it.

Track laying has commenced on the branch of the Oregon Short Line to run between Weiser and the Seven Devils mining district, which is giving much stimulus to development work in that section.

Land Offered to New Jersey Labor Unions.

The State Federation of Trade and Labor Unions of New Jersey has called a convention at Orange for Aug. 11 to consider an offer of a tract of land in Lincoln, N. J., on which to build a home for aged members. The offer has been made through Mayor Drake of Lincoln by a land corporation, and the Executive Committee of the Federation has already approved the offer.

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It Is Hoped to Produce Home-Grown Tobacco Equal in Texture and Color to That Produced in Sumatra and in Flavor and Aroma to That Produced in Cuba.

WASHINGTON, July 23.—A group of scientific men attached to the Department of Agriculture are industriously studying the question of how to improve the grade of American tobacco. Each has his special branch of the investigation, which has two objects in view. First and most important to the consumer, they desire to improve the grade of the home-grown tobacco so that it will be possible to furnish smoking material at a reasonable price which shall be equal to the expensive foreign brands, and, secondly, which is of more importance to the producer, they desire to ascertain definitely just what it is, climate, soil, or process of curing, that produces so much better tobacco in foreign countries than that produced in the United States. If they can discover wherein the subtle distinction lies and teach to the American producer the secret of toning and flavoring his tobacco they will confer upon the consumer an inestimable blessing and at the same time put millions of dollars into the pockets of American farmers which are now spent in other countries.

The work now being carried on at the Department of Agriculture is divided between the divisions of vegetable physiology and pathology and of soils. In the first division Mr. Oscar Loew, whose work in bacteria and yeasts has already attracted widespread attention, is the moving spirit, and in the division of soils Messrs. Milton Whitney and Thomas H. Means have made valuable researches. Emile Mulser and others have also contributed largely to the experiments and observations now in progress. The following will give some idea of their work and its results:

A tariff of $1.85 per pound on wrappers and 35 cents per pound on filler leaf has served to raise the price of home-grown cigar tobacco but very slightly. Sumatra wrappers bring $2.50 to $5 per pound, while Connecticut wrappers are worth 25 cents only. The preference for the Sumatra leaf can be ascribed to but one thing, its superior excellence. Care in handling has something to do with the difference in price. The Sumatra wrapper is smooth and fine and looks well in a case. It is well assorted as to length, color and shade, and a pound will cover four or five times as many cigars as the domestic product. Elasticity, pliability, size, shape, color, size of the veins, the fineness and peculiar grain of the Havana wrapper and silkiness of the Sumatra are all to be considered. To compete with these leaves the American must produce first a leaf which will resemble the others in appearance, and then one which will be equal, if not superior, in flavor and aroma. The first can be secured by careful cultivation and handling perhaps, but the essence of flavor and aroma is so subtle as to have so far eluded all efforts to discover its source. On the soil of Connecticut and Florida it is hoped a tobacco can be produced which will equal that of Havana and Cuba. Whatever is deficient in soil or climate must be supplied, but how? That is what is puzzling the scientific men. Little is known of the chemical proportions of the leaf, particularly those which contribute to the flavor and aroma. It is probable that the actual amount of nicotine is relatively unimportant, and it is certain that the excellence of the leaf and its adaptation to market demands are not dependent, except in a very general way, upon the amount of nicotine. It has long been known that certain of the potassium salts, especially potassium chloride, can not be used at all for the production of high types of cigar tobacco, as they give the leaf a poor burn. It is furthermore an old experience of tobacco growers that excessive nitrogenous manuring tends to produce a large leaf of inferior quality, containing an increased amount of nicotine. Investigations by the division of soils have shown that the light, sandy soils of the Connecticut Valley are similar in their physical properties to the tobacco lands of Florida, the Vuelta Abajo district of Cuba and to the tobacco districts of Sumatra. There is, further, no difference in the meterological data from these places that would seem to explain the difference in the character of the leaf produced. It is therefore important to ascertain, if possible, why, under similar circumstances, a superior leaf is produced to that of the Connecticut Valley. It is clearly recognized that the flavor and aroma of the cigar-tobacco leaf are developed during the fermentation, although the fermentation of these are dependent on a certain quality of the leaf which has been properly cured. Experiments have therefore been directed toward the improvement of the methods of fermenting the tobacco of Connecticut, with a view of making it as good as that of Cuba or Florida, and failing by this means, it is hoped the result can be attained through hybridization and breeding.

It is not to be supposed that for so many years the idea of producing a quality of tobacco equal to that of the natural tobacco regions had never occurred to any one before the scientists of the Department of Agriculture took it up. On the contrary, many men have studied the question exhaustively, but the solution has always eluded them. Their observations, however, gave Dr. Loew something on which to work, and after going into them thoroughly he decided that no one had yet discovered the true secret of the flavor and aroma of the tobacco. He agrees with Suchland and others that the flavor is due to oxidation, but dissents from their theory that this oxidation is due to the presence of bacteria. Dr. Loew ascribes it to the presence of an oxidizing enzym. To prove the existence of the enzym, Dr. Loew conducted a large number of experiments with tobacco in all stages of curing or fermentation. He has found that there exist on the Florida leaf two kinds of oxidizing enzyms, distinguished as tobacco oxidase and tobacco peroxidase. Comparison with the Connecticut leaf has demonstrated to his satisfaction that it is on the difference in these enzyms and on their presence or absence that the difference in flavor and aroma depends. The question is still, however, far from settled.

Having demonstrated to his satisfaction the presence of these enzyms and their effect on tobacco, Dr. Loew is now engaged in classifying them, with a view of combining them so as to produce on the Connecticut leaf the same enzym which gives the Florida leaf its flavor. There may exist great differences in the amount of tobacco oxidase and tobacco peroxidase produced in different varities of the tobacco plant and under different conditions. The quantity of each may even differ on the upper leaves fully exposed to the sun and the lower leaves growing mostly in the shade. There may also be formed compounds in certain varieties of tobaccos that will more quickly destroy the enzyms during curing or fermentation than in other varieties. Thus considerable difference was noticed in comparing a sample of tobacco from Connecticut with one from Florida. In the fermentation of the former the tobacco peroxidase was almost completely destroyed, while in that of the latter a considerable part was still intact. Moreover, neither the fermented nor the cured Connecticut leaf contained any tobacco oxidase, although it was found in a greenhouse specimen of fresh leaf. The best example of how the oxidizing enzyms are brought to the fullest action possible is in the preparation of Perique tobacco. The rolls or twists are subjected to a pressure of about 67,000 pounds to the square foot to bring the juice from the interior to the surface. After twenty-four hours the tobacco is taken out and aired a few minutes, which causes a darkening process to set in. The juice is reabsorbed into the tissues and the pressure is again applied. This process continues every day for ten days or longer, and then at intervals for several weeks until a very dark product is obtained. This tobacco is not, however, very strong, as the oxidation of the nicotine has been carried very far.

The action of oxidizing enzyms has also been noted in the preparation of Japanese lac, in the manufacture of natural indigo, and in the fermentation of the olive, practiced in certain parts of Italy.

RECIPROCITY TREATIES.

Those with British Colonies Are Signed—Decision on French Treaty To-Day.

WASHINGTON, July 23.—The reciprocity treaties recently negotiated between the United States and the British colonies of Trinidad, Barbados, Bermuda, British Guiana and Jamaica were signed last night by President McKinley on the part of the United States and by Mr. Reginald Tower on behalf of Great Britain. The details of these treaties and the articles on which the duty is changed will probably be withheld until after ratification by the Senate.

The fate of the proposed reciprocal treaty with France will be decided to-morrow, which, under the reciprocity sections of the Dingley act, is the last day for the negotiation of such treaties. A reply from the French Government in regard to the articles in controversy is expected prior to the meeting between Ambassador Cambon and Mr. Kasson. If it is not possible to conclude the treaty to-morrow the President may exercise his constitutional prerogative to make treaties and continue the negotiations from that basis.

SENDING PRISONERS BACK TO SPAIN.

Gen. Alger Says He First Suggested It and Impressed It Upon the President.

WASHINGTON, July 23.—Since the close of the war with Spain there has been much comment on the action of the United States in sending back to Spain the Spanish prisoners captured by the navy and army. The plan met with general approval the world over, but there has been considerable discussion as to who was responsible for the suggestion to send them to their own country. Secretary Alger has finally determined to tell the history of the whole matter, and to a SUN reporter and other newspaper representatives he made the following statement:

"On the night of July 9, 1898, the President asked me what, in my judgment, we should do with the Spanish prisoners of Santiago after their capture. The matter had received very much thought from the President and myself, but no definite conclusion had been reached. I then suggested to the President that Galveston, Tex., would be the best place in the United States, in my judgment, where we could send them; that it was away from the coast-line travel; a good harbor; that there would be plenty of room for camping them, and that its climate would be as nearly similar to that of Santiago as we could probably select. This seemed to meet his approval, as it was only a question of time, of course, when the capture would be effected. I went to my home, as nearly as I can remember, about 2 o'clock in the morning, and being too tired to sleep I lay awake for a while, but finally dropped off. I awoke at just daybreak, and my first thought was concerning the Spanish prisoners, and the new thought came into my mind, 'Why not send them back to Spain?' This proposition impressed me so deeply that I formulated my plan, and on the morning of July 10, instead of going to the department direct, I went to the White House and laid the new plan before the President, saying that it would be an unprecedented procedure and the most gracious act of any nation in the world; that to ship the prisoners to Galveston would be half the distance; that we should have to clothe, shelter, guard and feed them there, and no doubt have to ship them back to Spain in the end. I also stated that I believed that it would be a great inducement to the Spaniards to surrender, which Gen. Shafter afterward assured me was the effect. The President readily approved the plan, and on the same day I cabled Gen. Shafter as follows:

"WAR DEPARTMENT, July 10, 1898.

"*Gen. Shafter, Playa del Este, Santiago, Cuba:*

"Should the Spaniards surrender unconditionally and want to return to Spain they will be sent back direct at the expense of the United States Government. R. A. ALGER, Secretary of War.

"Upon receiving this on the 11th of July Gen. Shafter sent the following communication to the Commander-in-Chief of the Spanish forces:

"HEADQUARTERS FIFTH ARMY CORPS, CAMP NEAR SANTIAGO DE CUBA, July 11.

"SIR: With the largely increased forces which have come to me, and the fact that I have your line of retreat securely in my hands, the time seems fitting that I should again demand of your Excellency the surrender of Santiago and of your Excellency's army. I am authorized to state that should your Excellency so desire, the Government of the United States will transport the entire command of your Excellency to Spain. I have the honor to be, very respectfully, your obedient servant.

WM. R. SHAFTER, Major-General Commanding.

"To which the commander replied as follows:

"SANTIAGO DE CUBA, July 11, 1898.

"SIR: I have the honor to advise your eminence that your communication of this date is received, and in reply desire to confirm that which I said in my former communication; also to advise you that I have communicated your proposition to the General-in-Chief. Reiterating my sentiments, I am, very respectfully, your obedient servant,

"JOSE TORAL, Commander-in-Chief Fourth Corps, and Military Governor of Santiago.

"Immediately upon the surrender steps were taken to carry out the pledges of the United States Government to ship the Spaniards home. The Quartermaster's Department immediately advertised for bids to transport the prisoners to Spain, with the result that eight of the great ocean transportation companies—the Anchor line, Cunard Steamship Company (Limited), North German Lloyd Steamship Company, Hamburg-American Packet Company, Robert M. Sloan & Co., Frederick L. Eyland & Co. (Limited), Royal Mail Steam Packet Company, Thomas Wilson, Sons & Co. (Limited), and Wilson & Furness Leyland Line (Limited) —submitted a combined bid, which was for officers $110 and for enlisted men $55 per capita, steamers to be despatched from Santiago de Cuba within forty-eight hours of their reported arrival, or demurrage to be paid at the rate of 00 cents per capita per day, same demurrage to be paid if steamer should arrive at place of debarkation by quarantine or other cause. The Spanish Transatlantic Company's bid was $55 per capita for officers and $20 for enlisted men, with no demurrage. The Spanish company's offer was accepted. The rations for the prisoners were inspected by a United States Government official, and this Government paid for the transportation of all the prisoners, $713,896. The same number carried by the other companies under their bid would have cost the Government $1,312,915. Here was $800,000 saved to the United States, and probably as much more in demurrage. Some days after this contract was awarded the President said to me, as I entered the Cabinet room, 'Mr. Secretary, would you like to hear something favorable to you printed in the New York *Times?*' and went on to read the editorial comment, complimentary to the man whose mind originated the plan of transporting the Spaniards back to Spain."

DAIRY EXHIBITION IN RUSSIA.

Only the Exhibit of Machines, Condensed Milk, &c., Will Be International.

WASHINGTON, July 23.—The United States Department of Agriculture has received through the Department of State notice that the Imperial Free Economical Society of St. Petersburg will hold an exhibition of Russian dairy products and an international exhibition of machines, apparatus, kinds of packing and appliances for transportation of milk products at St. Petersburg during September, 1899. None but Russian products will be admitted to the exhibition of dairy products, but the exhibit of machines, &c., will be international. Preserved milk, condensed milk, milk flour, &c., will be admitted to the international exhibit. The exhibition of dairy products will consist of milk, cream, curds, cheese, koumiss, kefir, gaseous milk, milk brandy, condensed milk, &c.

The international exhibition will embrace apparatus and machines to work milk, separators, churns, butter dryers, cheese kettles, pasteurizers, elevators, apparatus for scientific and practical analysis of milk, butter and other products, dairy buildings, ice wagons, cooling rooms, &c.

The exhibition will open on Sept. 13 and continue one month. Exhibitors will be required to notify the Committee of Organization of the amount of space wanted for their articles and to pay an entrance fee of about 85 cents per square yard. All articles for exhibition must be delivered not later than five days before the opening, and all expenses for delivery and return of articles will be charged to the exhibitor.

Diplomas of honor, the highest award, gold, silver and bronze medals and certificates of honor will be given for the best exhibits. Intending exhibitors can obtain blank applications from the Bureau of Animal Industry, Department of Agriculture.

Bather Drowned at Coney Island.

The first drowning of the season at Coney Island occurred at 4 o'clock yesterday afternoon, when the body of a man, supposed to be that of Thomas Richards, was washed ashore near the old iron pier. The man was seen to enter the surf at 3:15 and swim far out from shore. A heavy fog gathered and the life guards lost sight of him. The body was removed to the Brooklyn Morgue. On the envelope in which he placed a silver watch, gold chain and locket and $11 was the name "Thomas Richards," written in lead pencil. The man was about 50 years old, 5 feet 9 inches in height and weighed 160 pounds. He was of light complexion, with gray hair and slightly bald. In the pockets of the coat were a bicycle cap and three pairs of eyeglasses.

New Course for Training Nurses.

ORANGE, N. J., July 23.—The Orange Training School for Nurses has decided to adopt a course which is new in the United States, though it is given in English schools. The pupils will receive no compensation, but will be required to pay a fee of $150 a year, the course being of two years' duration. Under its terms the women will not be required to do private nursing, which many