

matter, Mr. Bell divided his subject into the following queries, which he answered in their order:—

1. What are mineral oils made from?
2. With what are they mixed or blended for lubricants?
3. If not mixed, are they more dangerous than mixed or blended?
4. What are the flashing points of oils at present in use?
5. Are any "low flash" oils now used?
6. Will mineral oils on waste cause spontaneous combustion? If not, why?
7. State any danger of fire from "friction" in the use of these oils.
8. From what are lubricating greases made, and which kind are dangerous?

With regard to the first question, Mr. Bell stated that mineral oils are made from natural oil and shale.

2. In the preparation of lubricants for textile machinery, mineral oils are commonly blended in various proportions with animal oils, such as neatsfoot oil, lard oil, tallow oil, and occasionally sperm oil, and not unfrequently with olive oil.

3. As the "flashing points" of the leading animal and vegetable oils range from 100° to 150°F. above those of ordinary mineral lubricating oils, and as the addition of any considerable percentage of fatty oil to mineral oil produces an oil having its flash points proportionately above that of the pure mineral oil, it seems reasonable to suppose that a well-blended oil is safer than a pure mineral oil, and not only on account of its greater power in reducing friction and in preventing increase in temperature, but on account of its higher flash point.

4. The flashing points of oils in use are on an average over 350°F., and oils obtained from first-class manufacturers are from 360° to 370°, and therefore insurance companies should lay down a hard and fast rule that no lubricating oil should be used in any mill that has a lower flash point than 350°F. and that lost more than 5 per cent. in 12 hours at 140°F.

5. Very few low flash oils are now in use. From an examination of about 170 oils, only 14 per cent. flashed under 350°F.

6. Mineral oils on waste will not cause spontaneous combustion because being hydrocarbon they are not liable to oxidation; and a mixture of mineral and animal oil is also not liable to spontaneous combustion, unless the animal oil is in very great excess, and even then the danger would be very small.

7. It is difficult, if not impossible, to establish any graduated ratio of danger in relation to the flashing points of oil, but it must be evident that in the event of a journal or bearing becoming heated to a temperature approaching that of the flashing point of ordinary lubricating oils, the lower the flashing point of the oil in use on that bearing, the sooner will it produce an atmosphere of inflammable and explosive gas, ready to be ignited by any spark from the heated machinery and to communicate flame to any material in the neighborhood.

8. Lubricating greases should be made from mixtures of tallow and palm oil mixed with other oils, the flash points of which should be high; the most dangerous greases are those made from the refuse of coal tar products, such as anthracene oil, dead oils, creosote mixed with lime, stearite, plumbago, sulphur, &c. The grease in use at a cotton mill near Manchester, recently destroyed by fire, was made from tar oils and anthracene; this was highly inflammable, and the grease, once fired, was not easily put out. Such a compound should never be allowed in any mill.

A NEW ALLAN LINER.

The steamer "Mongolian," the new steamship of the Allan line which has just made her first trip across the Atlantic, is thus described by the *Halifax Chronicle*: She was launched November 13th of last year, at David & Wm. Henderson's yard, Glasgow. She is a steel screw steamer, 400 feet long, with a gross tonnage of 4,750 tons, built in excess of Lloyd's requirements for their 100 A1 class, on lines which fit her for either the cargo or the passenger trade. The fore part of the bridge is fitted up as a handsome dining saloon, tastefully decorated and panelled in solid oak, the upholstery being in fine Utrecht velvet. Off this saloon is a smaller one set apart for the use of ladies. The main saloon is lighted

from above by a well through the music saloon. In this deckhouse are the captain's and officers' rooms and the smoking room. Aft the dining saloon are large staterooms. A mahogany wash basin and chest of drawers combined, of an improved design, is fitted in each room; the passage to the staterooms is panelled in oak as in the saloons. The saloons and staterooms are lit with electricity. The vessel is steam-heated. The crew are berthed forward under the topgallant fore-castle, and the engineers in poop deck-house aft. The vessel has two pole masts, the foremast of steel, but the mainmast is of Oregon pine, to enable the carrying of a masthead compass. Muir & Caldwell's combined hand and steam steering gear is fitted in the poop with connections leading to the controlling wheel on the bridge. Napier Bros.' steam windlass is in the topgallant fore-castle. She has been filled with every modern improvement for the rapid working of the cargo. There are triple-expansion engines, with cylinders 30 inches, 50 inches and 80 inches, by 60 inch stroke. The boilers are filled with Howden's patent forced draught arrangement. A sister vessel is under construction at Meadowside, and will be ready for sea about the spring.

STOCKS IN MONTREAL.

MONTREAL, March 11th, 1891.

STOCKS.	Highest.	Lowest.	Total.	Sellers.	Buyers.	Average. 1890.
Montreal.....	225½	223	227	225½	224½	229
Ontario.....	117	114	112½	117	114	122½
People's.....	95½	95½	24	100	94½	101
Molson's.....	160	160	8	160	157½	164
Toronto.....	219	214½	219	219	214½	219
J. Cartier.....	95	95	113	95	93½	94
Merchants.....	142½	141½	85	144	142½	142½
Commerce.....	129½	127	67	129½	128½	124½
Union.....	104	103½	268	103½	103	96
Mon. Teleg. ..	56	55	313	57½	56½	56½
Rich. & Ont....	187	187	125	192	187	199
Street Ry.....	176½	176½	5	185	177	177
do. new stock	211½	211½	9	212	211½	210½
Gas.....	77½	74½	5050	76	75½	74
do. new stock	74	74	200	76	73½	83
C. Pacific.....						
do. land g. b'ds						
N. W. Land....						
Montreal 4%..						
Bell Telephone				112		

Commercial.

MONTREAL MARKETS.

MONTREAL, March 11th, 1891.

ASHES.—The market tends to easiness; stock coming forward moves freely, two days, since last writing, being marked by almost old-fashioned supplies. The demand, however, has been maintained very fairly, and we still quote \$5 for No. 1 pots; seconds \$4. No more pearls in since last writing, and we repeat \$6.25 as a nominal quotation.

BOOTS AND SHOES AND LEATHER.—Shoe factories all seem well employed, but they are buying very little leather at present, and complaints of dull trade are general in the "swamps." Indeed matters are even quieter than before the elections. Prices are not altered, but a good buyer could doubtless get concessions. The English market is steady, and a large dealer from there is now in the market here looking for consignments, and may buy any favorable lots. We quote:—Spanish sole, B.A., No. 1, 21 to 23c.; do., No. 2, B.A., 17 to 18c.; No. 1, ordinary Spanish, 19 to 20c.; No. 2, ditto, 16 to 17c.; No. 1, China, none to be had; No. 1 slaughter, 22 to 25c.; No. 2 do., 21 to 22c.; American oak sole, 39 to 43c.; British oak sole, 38 to 45c.; waxed upper, light and medium, 30 to 35c.; ditto, heavy, 28 to 33c.; grained, 32 to 34c.; Scotch grained, 32 to 37c.; splits, large, 16 to 24c.; do., small, 12 to 15c.; calf-splits, 32 to 38c.; calfskins (35 to 40 lbs.), 50 to 60c.; imitation French calfskins, 65 to 80c.; russet sheepskin linings, 30 to 40c.; harness, 23 to 29c.; buffed cow, 12 to 14c.; pebbled cow, 12 to 15c.; rough, 20 to 25c.; russet and bridle, 45 to 55c.

DRUGS AND CHEMICALS.—The trade doing in these lines is of a seasonable sorting character. Cream tartar is showing a good deal of fluctuation abroad, but local prices are not disturbed; tartaric acid is firmer, and citric acid is notably so owing to the scarcity of juice at

producing points; carbolic acid is weaker; there has been no upward turn in opium yet; glycerine is firming up after late decline, a cable announcing an advance of a shilling a cwt. We quote:—Sal soda, \$1.15 to 1.25; bicarb soda, \$2.50 to 2.60; soda ash, per 100 lbs., \$2.00; bichromate of potash, per 100 lbs., \$11.00 to 13.00; borax, refined, 8 to 10c.; cream tartar crystals, 27 to 28c.; do. ground, 29 to 31c.; tartaric acid, crystal, 46 to 48c.; do. powder, 48 to 50c.; citric acid, 60 to 65c.; caustic soda, white, \$2.50 to 2.75; sugar of lead, 10 to 12c.; bleaching powder, \$2.25 to 2.40; alum, \$1.75 to 2.00; copperas, per 100 lbs., 90c. to \$1.00; flowers sulphur, per 100 lbs., \$2.25 to 2.40; roll sulphur, \$2.10 to 2.25; sulphate of copper, \$6.00 to 6.50; epsom salts, \$1.65 to 1.75; saltpetre, \$8.25 to 8.75; American quinine, 45 to 50c.; German quinine, 40 to 45c.; Howard's quinine, 45 to 50c.; opium, \$4.50 to 4.75; morphia, \$1.90 to 2.00; gum arabic, sorts, 60 to 80c.; white, 90c. to 1.10; carbolic acid, 35 to 55c.; iodide potassium, \$3.75 to 4.00 per lb.; iodine, re-sublimed, \$4.75 to 5.00; commercial do., \$4.25 to 4.75; iodoform, \$5.75 to 6.25. Prices for essential oils are:—Oil lemon, \$2.50 to 3.00; oil bergamot, \$3.75 to 4.50; orange, \$3.00 to 3.50; oil peppermint, \$4.00 to 5.00; glycerine, 20 to 25c.; senna, 12 to 25c. for ordinary. English camphor, 70 to 75c.; American do., 65 to 70c.; insect powder, 32 to 35c.

DAY GOODS.—The millinery openings did not attract the usual number of dry goods buyers, the date conflicting with that of the elections, which absorbed by far the greater share of interest. Many travellers also came home, and matters in this line are quiet as regards sales. In values we can hear of nothing new. Payments on the 4th were hardly up to 4th February. One house reports 63 per cent., but this is exceptional. Retail business in the city is dull at the moment.

FISH.—The market is now very bare of stock of all kinds, and green cod is held as high as \$8 to 8.50 for small lots; Labrador herrings, \$4.50 to 4.75; Cape Bretons, \$5.00; N.S. salmon, \$15 for No. 1; boneless cod, 7 to 8c.; finnan haddies, 7½ to 8½c.

FURS.—Matters are still very quiet in this line, and will be till results of the London sales, commencing this week, be known. We quote:—Beaver, per lb. \$4.00 to 4.50; bear, per skin, \$10 to 15; bear cub, \$5 to 8; fisher, \$3.00 to 5; fox, red, \$1.25 to 1.50; fox, cross, \$2.50 to 5; lynx, \$1.50 to 2.50; marten, 60 to 80c.; mink, \$1.25 to 1.75; muskrat, winter, 15 and 18c.; otter, \$8 to 10; raccoon, 50 to 60c.; skunk, 25, 50, 75c. and \$1.00, according to quality and stripe.

GROCERIES.—The disturbance to business in this line attendant on the election has hardly yet passed away, and it will yet take some days apparently before trade gets into its usual swing. There has really been so little doing, that it is somewhat difficult to speak of values, there having been so few transactions to test them. Sugars are firmer, and refiners have been buying up all the small lots of raw they could lay hands on locally. Granulated at the factory is 6½c.; yellows range from 5½ to 5¾c., with only a quiet demand for brightest kinds. Raws still reported very strong at all outside points, and granulated in New York a full quarter above the local level. Concerning the future of sugars there will be a great deal of uncertainty until Parliament meets. Molasses quiet; it is said some fair sales of Barbadoes have been made at 33 to 34c. Teas hold all the firmness previously noted. Raisins and currants very dull at nominal quotations. The same is true of canned goods, &c.

HIDES.—Business lacks activity; hide dealers are still paying butchers 6½ to 6¾c. for No. 1, and quoting 6½ to 7c. to tanners, but find difficulty in getting the latter figure. Calfskins, 7c.; sheepskins, 85c. to \$1.00.

METALS AND HARDWARE.—Little effect in these lines, so far, is noticed since election day, and there is hardly any more doing than a week ago. We hear of a small sale of Carnbroe at \$21.50, the only transaction in iron reported. The home market is also dull. Warrants are cabled ten pence lower, at 46s. 6d., and Eglinton, the only brand quoted by cable, is six pence lower. Tin plates are dull, but steady, an offer of \$4.25 for 200 boxes I. C. coles being refused. Canada plates sold at \$3 in largest lots. Tin, lead and copper all dull; latter can be bought at 14c. in fair lots. We quote:—Coltness, no stock to import, \$24.00; Calder, No. 1, \$23.00; Calder, No. 3, \$21.50; Summerlee, \$23.00 to