

**THE DAILY NEWS**  
PRINCE RUPERT - BRITISH COLUMBIA

Published Every Afternoon, Except Sunday, by Prince Rupert Daily News, Limited, Third Avenue  
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**SUBSCRIPTION RATES**

By mail to all other parts of British Columbia, the British Empire and United States, paid in advance, per year	6.00
By mail to all other countries, per year	7.50
By mail to all parts of Northern and Central British Columbia, paid in advance for yearly period	3.00
Or four months for	1.00
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City delivery, by mail or carrier, yearly period, paid in advance	\$5.00
Transient advertising on front page, per inch	2.80
Local readers, per insertion, per line	.25

Contract rates on application.  
Advertising and Circulation Telephone . . . . .98  
Editor and Reporters' Telephone . . . . .86  
Member of Audit Bureau of Circulations

DAILY EDITION Tuesday, May 6, 1930

**NEW MAGAZINE**

The Canadian Geographic Journal is the latest publication of Canadian origin to be offered to the public and it is by far the finest yet to appear. It deals with mostly Canadian subjects and is very profusely illustrated.

The feature of the first number is the fine set of colored pictures of Canadian birds by Major Allan Brooks, the Canadian artist, whose work is so well known to school teachers because of his illustrations in the most recent nature book published for the department of education.

The Canadian Geographical Society in a foreword says first the object of the publication is to make the resources of Canada, economic as well as esthetic, better known both at home and abroad.

"The society expects to publish from time to time many articles devoted to various phases of exploration or travel or economic geography in other parts of the world by writers competent to speak with authority on their particular subjects. It is feeling its way toward a difficult ideal—a magazine that will combine an accurate authoritative and readable text with the best obtainable illustrations; that is a text that will be authentic but not stodgy, popular without being puerile, and with illustrations that will tell their own story and not be merely pretty pictures."

We congratulate the society on its first number and hope it will find it possible to continue and keep the publication up to its present standard. It will cost money but if it can be done it will be worth every dollar expended.

**EPIDEMIC OF HEALTH**

It would seem as if New York City has been exercising an unusual period of health and the Christian Science Monitor, commenting on it says in part:

"Seriously, though, why should not New York City and every other city and section of the world enjoy an epidemic of health? Would not such a state of affairs really be more normal than that there should be periodic and terrifying epidemics of disease? Is not health the natural state of the individual? Too many health examinations and publicity campaigns do little more than impress on thought the apparent necessity of disease. Let New York City and any other city that chooses to do so turn its attention away from too much introspective and analytical examination of its so-called health problems, and the probabilities are that the hospitals really would notice a perceptible decrease in business—and it wouldn't be temporary either."

**Of Interest to Gardeners**

**The Making of Better Bouquets**

Some flowers often cause much annoyance by refusing to freshen up after they are cut and placed in water in the house, especially if some little time elapses from the time they are cut until they are placed in a vase. This condition may be remedied by cutting the stems under water after they have been taken into the house and not exposing the cut end again to the air.

When the stem is cut in the open air the normal functioning of the plant draws air into the cut stem, forming tiny bubbles. This prevents the circulation of water through the stem and wilt follows. Cutting off a portion of the stem allows the water to circulate and the bloom will freshen up. The receptacle in which the bouquet is to be placed should have sufficient room for water to cover the stems well and at night it is an excellent idea to place the flowers in some container where the stems can be deeply submerged if it is desired to prolong the life of the bouquet.

Another device is to seal the stems over the flame of a gas stove before putting the flowers in water. This is excellent treatment for many kinds of flowers. The stem should be cut just before the searing. Searing closes the passages in the stem and prevents the escape of sap. Poppies need treating by this method to make them stand up well.

It is always better to cut flowers

with a sharp knife, making a clean cut instead of the usual methods of scissors which crush the stem. A



sharp cut after they are taken in the house is advisable when they have been cut with scissors.

At this season of the year branches of many early blooming shrubs may be cut and brought into the house and placed in vases to open their blooms. The forsythia and pussy willows are much used in this manner. They give a fine example of the effectiveness of simplicity in flower arrangements as a few stems of the straight growing willow and one branch of forsythia will prove much more effective than a thick cluster of tangled branches.

**Graham Island Black Sands May Prove Commercial Producers of Gold, Mining Investigator Says**

Numerous reports have been received by the Department of Mines of gold and platinum-bearing black sands on Queen Charlotte Islands, and recently a machine was mentioned as having been more successful in the recovery of the precious metals than some of the former appliances, says a special report by Herbert Carmichael of the Department of Mines. I started my examination of these deposits with a considerable amount of scepticism as to a favorable report. When I investigated the Graham Island deposits I was forced to change my views both as to the deposits and the machine used for saving the gold. The black-sand deposits are much more extensive than any I have seen on Vancouver Island. It is probable that they cover all that part of Graham Island on which glacial drift has been deposited to any extent; this approximates an area of 800 square miles.

**Test-Pits Sunk**

It is probable that these black sands have become concentrated by three different methods. First, by the action of glacial rivers when the sands were first laid down; secondly, by wave-action; thirdly, the concentration of present-day streams.

The only work now being done on the black sands is on the beach of the east coast of Graham Island by the Queen Charlotte Syndicate, of Vancouver. The workings are reached by motor road from Massett to Tow Hill, a distance of 15 miles, thence by wagon road to the east coast, a distance of 7 or 8 miles. From the end of this road the beach has to be traversed a distance of 9 miles. If the operations are successful a road can be put in from Watun River, which would shorten the entire distance to 13 miles.

This point on the beach was selected on account of the concentration of the sands by a small stream known as Martell Creek, where the high bank of the beach has been cut through by the stream. On reaching the beach all these streams meander about, first taking one channel, and then another, thus making the area concentrated larger than would at first be expected; this is further aided by wave-action.

**Geological Data**

The bank above high water is about 25 feet high, composed of sand, with 4 feet of peat on the top; farther south this peat has in places a layer of 10 feet of sand on the top of it which has been blown in by the fierce gales from the southeast up Hecate Strait. This sand bank lies unconformably on clay and cemented gravel beds, some of the clay beds being quite thick; one measured 225 feet. They have a dip of 15 degrees to the north, striking each and west. The cemented layers of ferruginous gravel are only a foot or two thick and lie both above and below the clay beds.

The upper layers of sand near Martell Creek are concentrated so that they contain 50% black sand and colors of gold can be found at any point by panning. The management states that values as high as \$11 to the cubic yard have been obtained. The writer panned the black sands of this creek in a number of places and got colors in nearly every pan. As nearly an average as possible was taken of the same sands amounting to about 5 pounds; this was carefully quartered in the assay office but the resulting assay did not show any of the precious metals, though four half as-

say tons were put through. I am of the opinion that ordinary quartering cannot be relied on for this material, but that several pounds must be concentrated and the whole of the concentrate run down and the resulting metals calculated back to the amount of sand taken.

The concentrating action of the waves is curious. Hecate Strait is subject to violent south easterly gales which beat upon the eastern shore driving northward. After a gale the entire aspect of the beach may be changed. What before showed black sand may be covered by a foot of white sand or the white sand may be removed leaving black sand. One striking peculiarity is that the black sand does not of necessity lie on any particularly impervious bed such as the clay or ferruginous gravel referred to, but may lie in a layer of distinct concentration on the top of white sand, mixing very little with it.

**Hanssen Separator**

These concentrated layers may be from an inch to several feet thick; this variation in thickness and changes of location of the black sands is one of the factors which has to be taken into consideration in turning any black sand venture into profitable enterprise. Where concentration is great, such as at Martell Creek, expensive methods of handling the sands may pay, but there are other places there it would not, but which might be quite attractive if worked on a larger scale.

The Queen Charlotte Syndicate proposes saving all the precious metals by the Hanssen precious metal separator, a simple but ingenious application of centrifugal force, particularly well adapted for separating the very fine gold or flour gold and platinum from the dirt of heavy black sand concentrates found on the east coast of Graham Island.

The machine consists of a bowl mounted in a casing, the bowl rotating at any desired speed. In the operation of the machine mercury is placed in the bottom of the bowl. When the machine is rotated the mercury will be caused by centrifugal force to flow upwardly along the inner wall until it forms a cylindrical wall or lining on the inside of the bowl. The auriferous and platinumiferous sands are then fed into the feedpipe with water. Special devices direct the pulp from the bottom outwards and upwards, and also give it an angular velocity equal to that of the bowl, causing it to travel upwards at a predetermined speed (depending on the nature of the feed) in a thin layer over the mercury. As soon as the gold and platinum bearing material is subjected to the action of the centrifugal force a separation of this material begins, the heavier particles moving to the outside.

**Action Explained**

In order to accelerate the separation of the heavy particles of metal from the other heavy particles (as magnetite, garnet, etc.) the pulp is kept agitated by special appliances, and the gold and platinum, having greater specific gravity than the mercury, will penetrate and remain in the mercury. In the case of clean gold it is quickly amalgamated thereby. Platinum and rusty gold or greasy gold will be retained against the wall of the bowl until the machine is brought to rest. The sand, being lighter than mercury, will pass over the surface and out of the bowl.

This machine had only been installed two days before my arrival and was given a test while I was there. It seemed to work perfectly, but it is still too untried to pronounce it an unqualified success. My fear is that it may not have the capacity for a large operation, but this might be overcome in two ways, either by multiplying the number of machines or by first concentrating the sand by jiggling.

Provided careful prospecting showed that there was a sufficient body of payable sand, the follow-

ing plan would seem to lend itself to a large operation: Suitable ground having been found, the centre of this would be chosen for the gold saving plant. A portable tramway with light cars would be run to one side; these cars to be filled by a gasoline or electric small shovel and hauled to the plant by rope, carried up an incline, and dumped into a bin. From the bin the sand and gravel would pass to trommels, which would screen out all over 40-mesh as being of no value; the trommels or screens would deliver to a Hancock jig, which for this class of work should have a capacity of 400 tons a day. The concentrates from the jig would pass to the Hanssen machine, where the values would be saved. Such a plant would allow of a large daily tonnage being put through, thus very much reducing the values at which it would pay to handle the sand. Further, the plant would be of such a nature that it could easily be moved from place to place where the values proved profitable.

**Thorough Sampling Advised**

If carefully thought out, both as to method of working and finance, there is no reason why some of the

black sand deposits of Graham Island should not turn out to be paying ventures, and hold good for a number of years, but it should be clearly understood that such undertaking should be approached with caution under expert advice and a thorough sampling of the ground made before any expense is incurred for machinery.

Taking a number of samples here and there over a deposit and getting them assayed in the way that would be done in a lode mine will, in my opinion, give results which may be entirely erroneous, either too high or unduly low. The method that suggests itself would be to take a small self-contained Hanssen separator on to the ground and run through it a definite yardage of sand from representative sections of the ground, then retorting the mercury and weighing the resulting precious metals and calculating the yield.

**Black Sand on Massett Inlet**

Peter Kay has a black sand claim about 1 mile south of Massett wharf. The bank is 15 or 20 feet above high tide and some 50 feet back amongst the timber. Several test pits have been sunk 8 or 9 feet deep, showing layers of black

sand from 1 to 12 inches thick; a sample of concentrates from this claim gave 0.5 oz. gold and 2 oz. platinum to the ton, but a general sample on assay gave no values. The southern end of the claim is cut by a small stream which has concentrated the sand; here two men were able to make good wages with a sluice-box, shovelling in the sand and pumping the water from the stream. Colors of gold can be got nearly anywhere by panning and some of the colors are a fair weight, by no means what is known as fine gold. This property is over fifteen miles from where the other black sand deposit is being worked and will serve to show the wide distribution of the values.

Playing on the street not far from his home at 404 Eighth Avenue West, Oliver Santerbane, five-year old son of Mr. and Mrs. D. Santerbane, suffered a broken leg at the end of the week when he was struck by the Q. and S. Grocery delivery car. The child is now receiving treatment in the Prince Rupert General Hospital where it is expected the bone will be set tomorrow.



Recipe!

**Tasty Cheese Straws**

**for CHEESE STRAWS**

- 1 cup flour
- 1 teaspoon Magic Baking Powder
- 1 tablespoon butter
- 2 cups grated cheese
- A pinch of salt
- Cold water

Sift flour, baking powder and salt. Rub in butter and cheese. Mix with very cold water. Roll out like pie crust, cut in strips about 5 inches long. Bake in a hot oven till nicely browned.

Here's a delicacy that fairly melts in your mouth.

Tender . . . flaky . . . tempting cheese straws!

Doesn't it make your mouth water just to think about them?

For lunch . . . as a side dish with dinner . . . after the bridge game, or when entertaining, they're equally delightful.

And so easy to make, there's really no reason why you shouldn't serve them often.

But when making them, remember! to get the best results for every baking, always use

**MAGIC BAKING POWDER**

the kind that 3 out of every 4\* Canadian housewives who bake at home say they use because it gives consistently better baking results.

\*This fact was revealed in a recent Dominion-wide investigation.



Look for this mark on every tin. It is our guarantee that Magic Baking Powder does not contain alum or any harmful ingredient.

If you bake at home send for the New Magic Cook Book. It will provide you with dozens of interesting suggestions to help you with your baking. A copy will be sent free on request.

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