The Finish In Manitoba.

Victorious Conservative Leader Paying Attention to the Reserved Elections.

Greenway Preparing for Exit—Eastern Press on Hugh John's Success.

Special to the Colonist.

Winnipeg, Dec. 11.—There are no further changes to report in the returns from the Manitoba elections. A report that a ballot box was missing in Springfield is unfounded, and as the returning officer arrived at Selkirk this evening and had the return it would not affect the result in the constituency. Hugh John Macdonald and a number of followers leave for Dauphin to-morrow to take part in the election contest there. Voting takes place on Friday, and it will be a close fight. Polling in Gimli is fixed for Thursday.

Hon. Hugh John Macdonald, leader of the opposition, was interviewed to-day as to the course he intended to adopt, but he said that this would be settled by the party in conclave, which would await the development of events. The personnel of the new cabinet had not yet been considered. Mr. Macdonald said that he expected to see a number of protests on both sides, but these would result in the strengthening of the opposition.

Montreal, Dec. 9.—The Star (Conservative) says: "The signal success secured by the Hon. Hugh John Macdonald in the decidedly self-reliant province of Manitoba yesterday will bring him congratulations from all parts of the country, where his plucky fight against great odds involved in the determined and even desperate opposition of the two governments, has challenged genuine admiration. Manitoba has on more than one occasion proven itself a province with a mind of its own."

Ottawa, Dec. 9.—Le Temps (Liberal) commenting on the results of the election says it shows the loyalty of the French-Canadians in Manitoba to Mr. Greenway, with whose settlement of the school question they are perfectly satisfied. It attributes the turn-over to desertion of the government by its former friends and supporters.

Regina, Dec. 9.—Sir Charles Tupper spoke here last evening. An address was presented to him by the Conservative Assotiation attributing the result of the Manitoba elections to his influence, and declaring that he had introduced honest government and vanquished corruption.

In reply, Sir Charles said that Mr. Greenway's defeat started from the time he stooped to a gerrymander in the hope of securing victory. The importance of the Manitoba election was that Ontario would follow suit on the first opportunity. Considering that the government organs in Ottawa and Winnipeg had declared that his presence in Manitoba would ensure Greenway's victory, he was entitled to claim some credit for the result, especially as nine of the ten constituencies he had addressed had returned opposition members.

BUSINESS MEN'S EXCURSION.

Yesterday Given to Rossland—Presentations to Organizers and Congratulations to C. P. R.

Rossland, Dec. 11.—(Special)—The business men who came from Victoria, Vancouver and Nelson as guests of the C. P. R. were to-day guests of the people of Rossland. The morning was spent in inspecting the War Eagle, Centre Star and Le Roi mines, and at 3 this afternoon the visitors were entertained at luncheon by the people of Rossland, Mayor Goodeve in the chair and on either side L. G. McQuade and Fred. Buscombe, respectively vice-presidents of the Victoria and Vancouver boards of trade, Senator Reid, Thomas Earle, M. P., and ex-Lieutenant-Governor Mackintosh. After the toast to the Queen, Hon. T. Mayne Daly, on behalf of all the excursionists, presented a diamond pin to John G. Sullivan, assistant engineer of the Columbia & Western; a chafing dish to Mr. Gutelius, assistant superintendent of the Columbia & Western, and also, on behalf of the Rossland contingent a silver toilet set to A. B. Mackenzie, city agent.

On the way home a presentation was made to Allan Cameron by the Coast contingent, and to F. W. Peters by the Nelson people. During the afternoon Mr. Drewry, manager of the Sunset mine, announced that a big strike has been made, proving the richness of the south belt. The party left at 6 for Nelson, on the way home.

This evening the excursionists sent a telegram to President Shaughnessy as follows: "On behalf of the business men of the Pacific Coast and Kootenay districts, who have been enjoying the hospitality of the C. P. R., we desire to express our sincere thanks for the very great kindness and attention shown us by all officials. The opening of the rich Boundary district marks an era in the commercial advancement of British Columbia, and we are satisfied that this excursion will be productive of much good to all concerned."

VANCOUVER NEWS NOTES.

The Reduction in Fire Insurance—Another Trading Stamp Company—Serious Runaway Accident.

From Our Own Correspondent.

Vancouver, Dec. 11.—Mr. Davenport, an insurance expert, has finished an inspection of the fire apparatus here and proceeded to New Westminster. Besides a 10 to 20 per cent. reduction on dwellings, the inspector is preparing for a reduction on frame stores.

The People's Trading Stamp Co. is being organized and will be the third in the field here.

W. Stannard, a member of No. 3 Company, aged 50, died to-day. He will have a military funeral.

From the effects of a serious runaway George Dalton may die.

THE DIFFERENCE.

Maj. North—"I understand that you were raised in Kentucky, sir."

Col. South—"Ah wasn't raised, suh; ah was descended, suh!"—Brooklyn Life.

BEARDING THE COURT.

Witnesses Before the French Senate Make Uproar and Get Off Lightly.

Paris, Dec. 11.—The Senate, sitting as a high court, to-day resumed the hearing of witnesses in the case of the Anteuil disturbances. The Count de Dion insisted upon making a speech before taking oath, to which M. Faillieres, president of the court, objected. The Count was finally ejected amidst an uproar. MM. Cailly and Derie, two of the prisoners, were particularly noisy and vituperative. M. Faillieres, the public prosecutor, demanded their expulsion, and the sitting was suspended. On resuming the hearing, Mr. Faillieres read a decision sentencing M. Cailly to three months' imprisonment and excluding him from the court for a week, and excluding M. Derie for two days.

The Canadians Back Methuen.

Ottawa, Dec. 11.—There is now good reason to believe that the Canadian special service battalion is intact once more. A, B, C and D companies first went forward from Orange River, but a telegram from Col. Otter received at the militia department to-day states that the regiment had reached Belmont "all well," implying that the other four companies had gone north.

Toronto, Dec. 11.—The Globe's war correspondent with the Canadians, Frederick Hamilton, wires from Orange River under date December 7:

"Canadians arrived from De Aar at Orange River to-day, Thursday."

The Globe editorially suggests that in view of Gatacre's disaster the Dominion government should renew their offer to send forward a second thousand men, which might now be more acceptable than when previously made, not so much owing to the numerical losses of Gatacre as for the moral effect on the Dutch residents of Cape Colony.

NOTES FROM CAPITAL.

Manitoba Catholics Must Rely on Private Teaching—Contract for Cavalry Saddles.

From Our Own Correspondent.

Ottawa, Dec. 11.—Requiem mass was chanted at St. Joseph's church yesterday for the repose of the soul of the late Private Deslauriers of the Canadian contingent, who died on the Sardinian.

Archbishop Langevin preaching here yesterday to a large congregation said the educational system of Manitoba is unsatisfactory and dependence must be placed on religious institutions to educate the Catholic children in the faith.

Militia officials say the placing of an order for 600 saddles for cavalry with a Toronto firm has no special significance.

TARTE'S WHOPPER.

Far Fetched Excuse for Defeat of His Friends in Manitoba.

Montreal, Dec. 11.—La Patrie, Mr. Tarte's organ, attributes the defeat of the Greenway government largely to the action of Joseph Martin, who was originator of the Manitoba school law, which furnished the Tory party with capital to make a religious issue at the recent elections.

THE PEOPLE'S JIMMY.

Montreal, Dec. 11.—Hon. James McShane, popularly called "the people's Jimmy," who has filled the mayoralty on two previous occasions, is mentioned as a likely candidate to oppose Mayor Prefontaine at the next civic election on February 12.

LIGHT FROM THE CAR AXLE.

A New System of Train Lighting for Which Much Is Claimed.

A new style of train lighting shows an enormous advance on all previous methods. It embodies the old idea of generating electric current by the revolution of the car axle, but with an effectiveness never before attained. Where, as in early systems, the current for lighting has been generated by a dynamo in the baggage car, run by power from the locomotive, the car would lose its light as soon as it was detached from the train; but now every car carries its own light-creating plant, being fitted with a dynamo and a storage battery. When the train is standing still the car is lighted from the storage battery.

As soon as the train attains a speed of twelve miles an hour, the dynamo is automatically connected with the mechanism, which transmits the power of the revolving axle, and the lights are then fed directly from it. This does not in any way lessen the speed of the train or call for any additional power from the engine. A whole car full of lights can thus be kept burning all night, if need be, at a merely nominal cost, and the ordinary expenses of maintenance are saved, as no electrician is needed, the dynamo and storage battery both being regulated automatically. A five minutes' inspection of the storage battery every six weeks meets every requirement. This battery will keep seventeen lights burning for twelve hours if the car is at rest.

The objection has been raised that if the train were snowed in the battery would quickly become exhausted and the cars would be left in darkness. It is pointed out that this objection loses its force from the fact that the number of lights burning could be reduced and the cars would be lighted from the battery alone for over a week much more brightly than they now are by lamps or even gas.

The brilliancy of the lighting by the new method is strikingly seen when a car equipped with it runs into a station alongside of the best lighted Pullman fitted with gas. The light, in fact, fills the car, and as it is reflected and diffused by opal shades, it gives a soft and restful illumination, which is absolutely perfect for reading. The new system immeasurably advances the luxury of railway travelling, and it is more than probable that it will hasten the day when railway passengers will no longer be parboiled in stifling and foul-smelling cars, but, free from the caprice of conductors, will enjoy the civilized blessings of automatic electric heating and electric ventilation.—St. Louis Globe-Democrat.

The D. & L. Emulsion of Cod Liver Oil will build you up, will make you fat and healthy. Especially beneficial to those who are "all in run down." Manufactured by the Davis & Lawrence Co., Ltd.

Vancouver's News Budget.

A Friend of the Workingman Who Dissents From Course of Its Champions.

Cannot Endorse Trades Council's Wild Demands Even for Mayoralty Votes.

From Our Own Correspondent.

Vancouver, Dec. 9.—The Trades and Labor Council resolved last night "under the circumstances" not to name for the present a labor candidate for the mayoralty. The Colonist correspondent having heard it rumored that the action of the Labor Council in deferring the nomination of a candidate for mayor was due to the possibility of Ald. Brown transforming himself from a bitter opponent to a champion of the cause of the local labor council, called upon that gentleman and asked him to elucidate the situation.

Ald. Brown stated that some of the Labor Council's requests were tyrannical. For instance they have "demanded" that the city council have the patient named Ross, recently committed to the insane asylum, re-examined as to his sanity. Then, again, there is the union label question. "If I consented," he said, "to hand over the city's business to incompentent parties because their goods had a union label upon them, I would not be doing my duty by my constituents. Besides, the city charter will not permit it.

"I understand that I am to be asked by a delegation—should I decide to comply with the request of my friends to run for mayor—to support the labor cause in exchange for their vote. I can promise nothing of the kind, provided their cause remains on the lines I have suggested. I am more anxious to serve the city, as I think honestly and in the best interests of the citizens, than I am to become mayor of Vancouver.

"I suppose the labor people will place a candidate in the field, for I do not believe Mayor Garden can comply with the demands which will be made by the Labor Council any more than I can.

"Should I run I will come out solid on the Deadman's Island question. It is a live issue, and will be in the municipal as well as provincial elections."

Ald. Brown in further conversation intimated that in all such healthy labor questions he was with the unions, being a staunch friend of the workingman, but he would not make any promises which he believed detrimental to the city's interests or unfair to a man or class of men.

"As for the Deadman's Island question," he continued, "if Ludgate does not come back others will be glad to secure the site. Besides there is a principle involved in the question."

Ald. Brown is a strong Liberal and supporter of the present government, and concluded by saying that the next provincial election would not be fought altogether on straight party lines. He thought the Liberals were pretty well united on the party line question, but the vote would be more or less involved with local issues. It was his opinion that the chance of the provincial government pulling through another session is pretty scaly.

As to the case of disputed insanity referred to by Ald. Brown in this interview, inquiry shows that at a recent meeting of the Trades and Labor Council a member made the bold assertion that this man, W. B. Ross, was perfectly sane, and sent to the asylum to get him out of the way, and on the strength of this assertion a resolution was passed demanding that the city council have him re-examined by specialists.

Vancouver, Dec. 12.—Alex. Clark was instantly killed at Steveston at 9:30 this morning. While helping to kill a cow belonging to Mr. Webber, butcher, Clarke held the cow by a rope while J. Jones, another employee of Webber's, took careful aim at the cow's head with his rifle. Just at the instant the rifle was discharged the cow turned its head slightly and the bullet glanced from the cow's forehead, penetrating Clarke's temple and killing him instantly. Clarke was an Englishman aged 30 and unmarried. Coroner McGuigan has been notified and an inquest will be held.

McLean Bros informed the Colonist correspondent this evening that their plant to be used in circling Chilliwack with dykes arrived last night. It includes a locomotive, 24 flat cars, a 54-ton steam engine and six miles of steel rails. The huge dyking scheme will take fifteen months to complete and involves the expenditure of an enormous amount of money, but will absolutely do away with all possibility of damage to British Columbia's garden city from high tides.

George Dalton who while driving with T. F. Robinson and C. Lewis was thrown from a buggy, because of the horse running away, is still lying in a precarious condition at the city hospital. His skull is fractured.

The death of Private Stannard of No. 3 company is particularly sad. He was formerly employed on the steamer Robert Dunsmuir and though but two years a resident in the province he had made many friends. He died of typhoid fever. A battalion order issued yesterday called for a parade on Wednesday for a military funeral. The firing party will be composed of his nearest friends in his company.

D. G. Macdonell is applying for foreshore rights on Coal Harbor for the Pacific Coast Lumber Company, who wish to build a saw mill almost opposite the notorious Deadman's Island at the foot of Bidwell street. The company have for years been doing business at New Westminster but find the facilities there not sufficient to enlarge their premises. If the company are successful it would appear that the Ludgate scheme might never be resurrected.

Some time ago the chief of police thought he had Tascott—the murder of millionaire Snell of Chicago many years ago—in the police cells. It now transpires that the chief's prisoner is not Tascott but a young man who looks remarkably like him and who has been shadowed for Tascott off and on many times in the past ten years. He is Tascott's double even to the gold filling in the front teeth.

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Oceanography Explained.

Recent Explorations in the Ocean Depths and Their Interesting Results.

British Navy the Leader in This New Study of Wonders of the Deep.

"Oceanography" was the expressive title of a paper read before the Natural History Society here at its meeting on Monday last, by Lieut. Dannreuther, R. N., F.R.A.S., F.R.G.S. The first part was as follows:

It was the desire to establish telegraphic communication between Europe and America that gave the first direct impulse to the scientific explorations of the great ocean-basins.

The study of maritime phenomena had hitherto been almost entirely limited to the surface and shallow waters of the ocean. The ancients in fact regarded the deep sea with a not unnatural dread. Their imaginations pictured the ocean as full of marine monsters waiting to devour any who were daring enough to cross its waters. As far as science is concerned the ocean was a sealed book to them.

The recognition of oceanography as a distinct branch of science may be said to date from H.M.S. Challenger's voyage of exploration; and since the last of the reports of that famous expedition was only published in 1895, you can easily understand that the work is still in its infancy. So much so that even that great book of reference for all the arts and sciences, the "Encyclopaedia Britannica," does not treat the subject at all under that head.

Since the voyage of H.M.S. Challenger so much has already been brought to light, that the historian of our times will in all probability point to the oceanic discoveries of the past forty years as the most important addition to the natural knowledge of our world since the discovery of America. Our knowledge of the ocean is still very incomplete. To-night I propose to lay before you a brief summary of what has been achieved in the hope that it will stimulate members of this society to continue the great work locally. Among all civilized peoples the economic importance of many of the problems that await solution is clearly recognized. In this respect we may note with satisfaction that our own navy has always been the pioneer and leader in oceanic research. In fact the greater part of the soundings which have been collected by the leading scientists as a base for their theories are the result of our own nation's labors.

The great authority at the present day on the subject of oceanography is probably Sir John Murray, F.R.S., although a great deal of our knowledge of the flora and fauna of the oceans are due to the private enterprise of Albert, Prince of Monaco; and it is particularly from the writings of these two eminent men of science together with the published reports of the voyages of explorations carried out under the auspices of foreign governments that I have based this paper.

BATHYMETRY (DEEP SEA SOUNDING).

Everyone is acquainted with the work of our surveying vessels in shallow waters—how they sound and sound over every portion of our coasts to portray the bottom of the sea, so that one can picture in one's mind all the hills and dales which lie immersed when studying their charts. They diligently search out the submarine mountain tops to warn us of the hidden rocks and shoals that are dangerous, or of use to navigation. But the study of the deep except for the purpose of laying telegraph cables is of no direct use to the navigator, and has therefore been practically speaking neglected. It cannot be said that the hydrographical survey of the shoal waters of the world is even approaching completion, and yet, what a small portion of the vast oceans is contained in that work. Out of the 130 to 140 million square miles which comprise the floor of the oceans, only seven per cent. lie between the beach and the 100 fathom line. A tank to contain the ocean would have to hold over four hundred cubic miles of water.

BATHYMETRICAL CHARTS.

One of the first results of the consideration of the many thousand deep sea soundings that have now been recorded and collected, has been the construction of bathymetrical charts showing the contour lines of the depths of the ocean.

A new set of names has been devised for all the great depths of over 4,000 fathoms. These great inverted continents, with four miles of water over their floors, have been called after their original explorers, such as Nares Deep, Ross Deep, etc. It appears that considerably more than half the ocean floor is covered by over two miles of water. It is also curious to note, that whilst the Pacific ocean is undoubtedly the deepest yet the greatest depths which have been measured with certainty always lie close to land; 5,000 fathoms may be regarded as the probable maximum depth to be found anywhere.

CURRENTS.

Throughout the whole of these enormous areas there is constant circulation in the shape of currents. Some are due to the effects of the winds and tides, change of temperature, change of density, and others are due to a constant exchange of oxygen from above with the carbonic acid gas of the deep.

The surface currents are studied in the ocean by noting the drift from observations on board ship, and also by means of "current bottles," the latest and improved pattern of which consists of a pear-shaped vessel, so weighted in the stem as just to keep its top above water. Inside it contains a glass bottle into which is placed a notice stating when and where the bottle is dropped and asking the finder to either return it to its owner or note the place and date when it was found, and replace it in the ocean.

The current system of the world has by this means been exhaustively examined, and may be said to be one of the most advanced branches of oceanography.

In the intermediate depths the motions of the waters are not as well understood on account of the difficulty of observation.

In the great deeps the movement of the waters, if any at all, is certainly either very close or slight, as is shown by the similarity of its benthonic fauna with those found in the quiet districts above.

TEMPERATURE.

Turning to the temperature of the ocean depths, the records collected up to date by specially constructed deep sea thermometers which are sent down the sounding wires, have furnished us with some interesting tables and maps showing the temperatures on the floor, intermediate depths and surface of the waters.

The floor temperature observations are corroborated by the electric resistances noted in the telegraph cables. In short the result of observations shows that at a depth of only 100 fathoms all seasonal variations of temperature disappear.

At greater depths the temperature is much colder and more uniform in each body of water, although a latteral shifting of the water takes place occasionally and makes an apparent fluctuation in a definite locality. In other words nine-tenths of the entire ocean has a constant temperature at all times of the year at any one spot. On the ocean floor the isothermal lines appear to run on the whole in a north and south direction, following the general trend of the continents. Whereas, on the surface the latitude and currents regulate the lines whether they be maximum or minimum. The coldest water in the world as far as has been ascertained, lies in latitude 60 degrees to 63 degrees south. Here the surface temperature is colder than the intermediate depths, and gives a minimum reading of 28 degrees F. (28.9 degrees F. has also been recorded in the the deep Faroe-Iceland ridge. At a depth of over 100 fathoms there is only three and a half per cent of the ocean floor which can boast of a temperature above 40 degrees, and even that amount would be considerably reduced if we left out such practically enclosed seas as the Persian Gulf and the Red Sea. As regards the shallow waters with less than 100 fathoms, the distribution varies very much; some layers being as hot as 90 degrees F. It may be worthy of note that only 3 per cent. of the floor of the ocean presents conditions favorable for the vigorous growth of coral reefs, and those benthonic organisms which require a temperature of 60 degrees F. all the year round. The fact that such a large area of the ocean has a temperature below the freezing point of fresh water, may appear strange, but it must be remembered that the salinity of the ocean reduces the freezing point considerably.

DENSITY.

Similarly it must not be supposed that the temperature of the maximum density of the sea water is the same as that of fresh water (40 degrees). It is very much lower and the "greatest density temperature" varies not only with the pressure, but also with the degree of salinity, which is not by any means a constant.

SALINITY.

The composition of sea water is of considerable interest in connection with the study of life in the sea, for it governs the respiratory functions of the marine animals. It varies in different parts much more than the composition of our atmosphere, and the degrees of salinity present such variations, that the distribution of species is largely dependent upon them.

The proportion of the salts in sea water varies, according as the seas are open or closed, the distance from coasts where rivers debouche, according to the evaporation and rainfall, the distance from influence of melting icebergs, and according to the depth.

GASES.

Experiments show that in the depths of the sea the amount of dissolved gas is independent of the pressure, and is only slightly in excess of solubility due to the fall of temperature.

SUBMARINE RIVERS.

By means of a special apparatus for testing specimens of sea water at different depths, it has been discovered that there are many rivers which do not pour their waters into the sea by running down hill into it, but by percolation through the bottom, and sometimes even by jets of fresh water or submarine springs. Paddles of canoes of a class which are only used by natives in the Peruvian lakes have been found in the sea some distance from land, evidently carried there by a submarine river whose source lies in the lakes of the Andes. These submarine rivers are a great source of trouble to telegraph cable companies, for in a submarine freshet boulders and sands are displaced and cover the cables which are eventually torn to pieces and cannot be repaired by grappling and inserting new pieces, or the same faults will be experienced the next season.

To return to the sea water and its constituents, it has been found to contain three gases, nitrogen, carbonic acid gas and oxygen, as well as the gases of fresh water. The oxygen decreases and the carbonic acid increases with increasing depths, two facts well known to have an important bearing on the abundance of scarcity of life in the various regions of the ocean. In 1895 Argon was found in the swim bladder of certain deep sea fishes. Plant life becomes scarce at the 50-fathom line, and in consequence one would expect that in course of time the carbonic gas set free by the respiratory organs of the deep sea fauna would render life in the great depths impossible. Nature has, however, instituted a true respiratory process in the ocean itself for even without the aid of the ordinary oceanic current circulation, the carbonic acid set free in the depths ascends by diffusion right up to the surface, while at the same time oxygen is carried down to the depths, principally by means of the wind-born dust which falls upon the sea, each grain of which, as it sinks, drags down small adherent bubbles of air. Thus it is the predominance of animal and vegetable life in all parts of the sea which causes the variation in the amount of contained oxygen or carbonic acid gas.

PRESSURE.

Just picture in your minds the enormous pressures there must be in the great ocean depths. Here in the air we experience a pressure of about 15 pounds to the square inch, and even a rise of an inch in the barometer makes quite a difference to us. Think then what pressure must be produced at 3,000 to 4,000 fathoms from the weight of water overhead. It means an extra pressure of 15 pounds to the square inch for every five and a half fathoms of depth. In other the deep water fauna live under a pressure of a ton to the square inch for every 1,000 fathoms of depth; so great is this pressure that we cannot conceive the tissues of the deep sea fauna being the same as those of the surface to enable their organs to be functional under such conditions.

LIGHT.

The deep sea, as well as being a great cold, tranquil, populated wilderness, is also, as far as our eyes are concerned, a region of absolute darkness. Chemical experiments, such as the exposure of very sensitive photographic plates for long periods, prove that the suns rays cease to penetrate entirely to a depth of more than 220 fathoms—a quite insignificant depth compared with the four-mile depths. Plant life of all kinds is in consequence quite absent over 93 per cent. of the ocean floor, or for that matter over two-thirds of the whole surface of the globe. The abundant deep sea fauna is therefore ultimately dependent for food upon the muds of the bottom and organic matter assimilated by plants near the surface—whilst all the larger forms are carnivorous—and for an animal to be carnivorous it must be able to see to enable it to catch its food, or else possess some means of luring its prey within its reach. It cannot be doubted that some marine animals which inhabit the deep have far more penetrating sight than others. The eyes in some deep sea species are particularly large and well developed, and some are of such a form as to allow vertical vision as well as horizontal. Many forms which have no eyes, properly speaking, such as jelly-fish and sponges, when subjected to a light of varying intensity, give evidence of this sense of sight, to which the name of "dermascopic sensations" has been applied. The imperfection of the images which it presents to its possessor must make this vision a strange one, but it doubtless corresponds to the poor quality of the intelligence which it has to serve. It seems certain that if those rays of the sun's light which we do not perceive with our eyes do not penetrate to great depths, or even if we do not allow that the deep sea animals are possibly able to see by some class of light with which we are at present unacquainted in the direction of cathode or X rays, yet may many animals possess the power of storing up light by means of special organs which serve as lanterns, and transport light, as it were, throughout the sea within reasonable limits as to depth. Sometimes the number of minute pelagic animals, each emitting a phosphorescent glow, is so great as to light up the water in which they live. Bright objects and difference of color in selecting the bates for traps appear to have some effect in luring the deep-water fish, as they undoubtedly do, near the surface. The whole question of light and vision in the depths of the ocean is as yet but little understood, and presents a vast field of interesting research for the future. We can, however, assert that animals with well developed eyes, independently of other organs to assist sight, do exist at depths to which sunlight does not penetrate, and modern science teaches us that an organ always atrophies or disappears when the conditions are such as to prevent its use.

OCEAN FLOOR.

Before touching on the animals which inhabit the vast oceans, let us consider the bottom of the ocean itself. The whole floor of the deep water basins of the ocean must be regarded as a huge burying ground. More than half the surface of the ocean has a temperature which never falls below 60 degrees at any time of the year, and in these surface waters of high temperature there is an abundant secretion of carbonate of lime by pelagic molluscs, pelagic forminifera, and of silica by radiolaria and diatoms, as Mr. Hastings has told us. The cast-off shells and skeletons of these surface organisms fall to the bottom of the ocean, and there make up the major portion of the deep sea oozes, as well as a very considerable part of the mud deposits which cover the floor of the ocean. Thus the remains of these surface animals which spent their lives in a temperature of 70 to 90 degrees, lie mingled with the remains of those which lived nearer the bottom in a constant temperature only a few degrees from the freezing point of fresh water. The bearing of this on a study of the conditions under which many fossiliferous marine rocks have been formed is evident.

DECOMPOSITION.

Organic decomposition does not appear under the enormous pressures of the great depths, or present the same phenomenon as it does under atmospheric conditions. It has been found by experiment that even eggs and meat resist decomposition for an indefinite time when subjected to a pressure of hundreds of atmospheres, corresponding to the depths of thousands of fathoms. I do not mean to assert that putrification does not exist, but that the microbes which cause it on the surface when sinking down to the depths in decomposing matter, must become paralyzed or killed by the pressure, and that a body lying on the bottom at these depths certainly does escape putrifaction for a long time. The result is that that part of the matter falling from above which is not made use of as food by the deep sea fauna lies embedded in the clays and muds which cover the ocean floor. Bones of marine animals, some of which are extinct as far as is known, are frequently found in this manner. The deposits vary very much with the depth, and may be divided into two main categories, namely "terrigenous" and "pelagic" deposits, each of which merges insensibly into the other.

The lecturer next dealt with the flora and fauna of the great deep, and this highly interesting portion of the paper will be published in another issue.

A Sudden Chill often means sudden illness. Pain-Killer is all that is needed to ward it off. Unequalled for cramps and diarrhoea. Avoid substitutes, there is but one Pain-Killer, Perry Davis'. 25c. and 50c.

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NOTICE.

The Arrowhead and Kootenay Railway Company (incorporated by an Act of the Legislature of British Columbia, 61 Victoria, Chapter 47) will apply to the Parliament of Canada at its next session for an act declaring the works which the Company is by its act of incorporation authorized to construct to be works for the general advantage of Canada; extending until the end of the year 1905, the period within which the Company may complete its works, and giving such powers to the Company as to the maintaining and operating or disposing of its railway and works as are usually given to railway companies incorporated by the Parliament of Canada.

By order of the Provincial Directors.

CHARLES DRINKWATER, Secretary.

Montreal, 20th November, 1899.

LAND REGISTRY ACT.

IN THE MATTER of the "Land Registry Act," and in the matter of the application of Marion Henrietta Baker, of the City of Victoria, Province of British Columbia, for a Certificate of Indefeasible Title to all that piece or parcel of land situate in the City of Victoria, and being Lot Sixty-five (65) and part of Lot Sixty-six (66), Yates Estate, forming part of Section Ten (10) Victoria District, and containing twelve acres (12) more or less.

NOTICE is hereby given that it is my intention to issue a Certificate of Indefeasible Title to the above lands to Marion Henrietta Baker on the 27th day of January, 1900, unless in the meantime a valid objection thereto be made to me in writing by some person having an estate or interest therein, or in some part thereof.

S. Y. WOOTTON, Registrar General.

Land Registry Office, Victoria, B. C., 25th October, 1899.

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