

HUDSON'S BAY FISHERIES.

Valuable Property Which Canada Should Protect.

An Ottawa despatch says:—The Geographical Society of Quebec has sent an important communication to the Hon. T. M. Daily urging that an expedition be sent to Hudson bay during the coming summer for the geographical and geological exploration of the bay and adjacent territories. It is understood that this action is due to representations received from the Royal Geographical Society of Great Britain, the president of which, Mr. Clements Markham, a brother of Admiral Markham, has visited the bay and takes a great interest in its exploration. The Quebec society points out that Hudson bay, measuring about 825 miles in length and about 630 miles in width, is still

NOT ACCURATELY KNOWN

so far as its economic resources are concerned. The territory around the bay is a terra incognita. From the imperfect and incomplete information received it is known that the bay is possessed of fisheries fully equal to those of the gulf of St. Lawrence. These fisheries have practically been monopolized by foreigners, without let or hindrance, for nearly half a century. According to the report of the Commissioner of Fisheries for the United States, for the year 1875-6, American whalers, hailing principally from the states of Massachusetts and Connecticut, have made not less than 50 round trips to Hudson bay and have taken thence cargoes of fish and fish products valued at \$1,370,000 at least, or an average of \$27,420 per trip per vessel, during a period of 11 years preceding 1874. The total value of the fish oils exported from the Hudson bay territory by the Hudson Bay Company and American fishermen in 1853 is estimated at \$150,000 per annum, or \$11,500,000 during the previous decade. It is well known that American whaling vessels are trading in furs with the Indians and Esquimaux, without paying duty, while the Newfoundland Government is said to be enforcing and collecting duties on merchandise or provisions at Fort Chimo, in Ungava bay, Hudson straits, or on articles sold to the aborigines of the interior of Labrador, although this region lies

WITHIN CANADIAN TERRITORY.

According to reports of geological surveyors, the region adjacent to the bay and straits abounds in economic minerals, such as iron, manganese, copper, lead, zinc, gold, silver, gypsum, pyrites, soapstone, lignite, anthracite, limestone, petroleum, mica, asbestos, building stone, etc. Fur-bearing animals are in great variety and their skins of considerable value. To ascertain the existence in the bay of certain species of staple fish, to learn the geographical features, the fauna and flora, and the mineral resources of the country, and to give an impetus to commercial enterprise and to the prolongation of lines of railway towards Hudson bay, the petitioners strongly represent that an expedition be organized by the Government this summer.

A WONDERFUL STAR.

You Must Look Quick If You Would See It in the Sunset Sky.

Low in the west, half hidden in the evening twilight, there may be seen just now a star that 300 years ago earned for itself the name of "Mira, the Wonderful." And its behavior at present seems to justify its name. It is in the constellation of the Whale, and is known to astronomers as Omicron Ceti. It is only visible now for a brief period after sundown, when it may be seen hanging just above the verge of the horizon, under Jupiter and the Pleiades. Its red color distinguishes it, although higher up there is another reddish star in the same constellation. Last winter the spot which this star occupies was absolutely vacant to the naked eye. But a telescope showed that

A FAINT STAR

was glimmering there. Since then that star has blazed up a thousandfold in brightness. Now it shines with a ruddy hue, suggestive of a vast and fierce conflagration. In a few weeks, probably, it will have faded, but in the meantime the progress of the seasons will have buried it in the sun's rays, and when it emerges in the east next summer no eye will be able to see it again without telescopic aid. For a few days yet "the Marvel of the Whale," may be discerned between 7 and 7:30 o'clock in the evening. An opera glass may be needed to show it clearly in the bright twilight.

What renders this wonderful variable star particularly interesting at present is the fact that it is now brighter than it usually is at its maximum, and that the period of maximum has been delayed for several weeks. According to the calculations of the astronomers, it should have been at its brightest on Feb. 11. But it has continued to grow more brilliant since that time, until it has become several times as bright as it was then.

Yet these facts would possess but a small degree of interest outside the observatories if we did not know something of the dimensions of the star Mira and of the significance of the changes which we behold in it. Mira is a sun, and when it blazes up, as it is now doing, it must suddenly pour forth a quantity of heat that if concentrated upon the earth at close quarters would melt it and turn it into a hot cloud. When Mira is faintest it is of less than the ninth magnitude; when brightest it has been known to equal a star of the first magnitude. This happened in 1779, when it was as

BRIGHTER AN ALDREARAN.

At such a time it emits 2,000 times as much light as it does when at a minimum; 2,000 times as much heat, too, probably. Now, when it is near the third magnitude it is 300 times as bright as it was two or three months ago. The complete cycle of change that this wonderful sun runs through averages about eleven months. But for more than two-thirds of that period it remains faint and invisible to the naked eye. Its brightening begins suddenly, and it usually gains light faster than it subsequently fades. As it brightens, the blood-red color characteristic of its light when at a minimum changes to an orange red. Its spectrum then reveals the tremendous nature of the change that Mira is undergoing; it becomes filled with vivid lines that indicate that the vaporous envelope of the star has caught fire so to speak, and is burning with inconceivable intensity, hydrogen in particular flaring high above the other elements. According to Mr. Lockyer's hypothesis

THESE PHENOMENA

are produced by the repeated collisions of

warms of meteors revolving around one another in elliptical orbits. But a more probable view of the matter would seem to be that Mira is an expiring sun, surrounded with a partially cooled envelope of metallic vapors whose absorption almost extinguishes its light, except at intervals when there comes an outbreak of the sun-up forces within, or a heat eruption, which bursts the shell and fires the surrounding gases to a dazzling incandescence.

If we know not how far away Mira is we could not know how it compares in size with our sun. We do know, however, that it is probably a larger sun than ours. We may fairly assume that its parallax is not more than one-third of a second, which would make its distance from the earth over 550,000 times greater than the distance of the sun. If it really is as far off as that, then, when it flames with the brightness of a first magnitude star, it must be pouring out eight times as much light as the sun gives forth. But when it is at its minimum its light can be only one two-hundred-and-fiftieth of the sun's light. And in either case the intensity of its heat probably accords with that of its light.

Surely we cannot suppose that there are inhabited worlds revolving around such a sun as that. But worlds may be there that were once inhabited. Did any prophet forewarn them of a time when their day-making sun would become a destroying furnace, and their elements would dissolve with fervent heat?—[Garrett P. Serviss.

Foreign Manners.

When the British Association met at Montreal a few years ago, there was a swarm of accompanying tourists, and the resources of the hotels were heavily taxed, especially at the dining hour. A scene was witnessed one day at the largest hotel which illustrated the boorish manners and selfishness of a cockney traveller.

The great dining-room was crowded as soon as its doors were opened. Each table accommodated eight persons, and was under the charge of one waiter.

A burly Englishman, as he took his seat, seized the waiter's sleeve and placed a large fee in his hand. "I want my dinner without a moment's delay," he said, as he gave his order.

The waiter bustled out without taking the orders of the seven other guests at the table. When he returned with soup and fish, the Englishman sent him back for Worcestershire sauce, and afterward for wine. When these were brought, the waiter was sent for the next course, and was then required to change it as the meat was overdone.

This byplay went on for half an hour, the waiter receiving fresh instructions as soon as he had filled an order, and not being allowed a moment for looking after the other guests at the table, five of whom were ladies. Seven people looked on while this unmannerly Englishman asserted his selfishness, in utter disregard of the disgust and annoyance he was causing.

A venerable scientist finally undertook to remonstrate with him.

"You have no right," he said, "to monopolize wholly the time of the waiter when seven people as hungry as yourself are not served."

"I paid for service in advance," the cockney replied. "I can't help it if the hotel does not provide a waiter for every guest. Everybody has to look out for himself in this world."

The scientist was about to reply when one of the ladies interrupted him. "As a Canadian," she said, "I have been deeply interested in this object lesson in English manners. I beg that you will allow us to have the full benefit of so instructive an exhibition."

The lady's sarcasm was deserved, but it was unjust to the boor's country. He did not represent the English people, but himself only.

The French have the reputation of being the politest people in the world, but there are times when they forget their good manners.

Ampere, the famous physicist, in a letter to his wife records a slight put upon him in a fashionable house. His hands happened to be stained by a drug with which he had been experimenting, and he had been unable to remove the blemishes.

A great lady caught sight of his hands, and expressed her disgust. Explanations were of no avail. She retired from the table, declaring that she could not eat in his presence. Ampere was mortified beyond endurance.

Current criticism of foreign manners is largely based on isolated instances of vulgarity. It does not prove that all foreigners are ill-bred, but only that some of them are supremely selfish.

Eighty-Six Years a Sailor.

The grand old man of the British navy has completed his ninety-fourth year, and a very wonderful career has Admiral Sir Lewis Tobias Jones, G.C.B., a son of Stingo, had. He was born in 1799, and entered the service when he was just turned eight years of age, that is to say, on New Year's day, 1808. Nor was this one of the formal entries so common at the period. Before he was ten years old he was present during that disastrous undertaking which we call the Welchman expedition; he was still a shipboarder when he took part in the bombardment of Algiers in 1816, and he saw no more fighting till he was commander of the line of battle ship Princess Charlotte at the bombardment of St. Jean d'Acre in 1841. He, however, saw some severe work in putting down the slave trade besides assisting at the capture of Levos, then a slave depot, which was turned into a refuge for slaves under the British flag. In the same ship—the old paddle wheel Sampson—he commanded the steam squadron at our naval attack on Odessa in 1854; then helped to reduce Soukhoum Kaleb on the Circassian coast; then brought his ship safely through the great Eugene storm of November, 1854, by cutting away her masts and letting the seas sweep over her as she steamed hard to wind, and as a reward for this he was promoted to the charge of the line of battleship London, in which he assisted at the capture of Kinburn. He was second in command in China, and in operations that led to the capture of Peking in 1860, but his only post as an admiral, for he had no great friends to back him up, and was even fifty-one years in the navy before he got his flag, was at Queenstown. He holds the post of visitor and governor of Greenwich hospital.

HOW FAR OFF IS THE SUN?

Some New Data on the Question, But the Problem Not Yet Solved.

A little new light has recently been thrown on the problem of the distance of the sun. This is the great yardstick of effort has been made to measure every distance as accurately as possible. Methods direct and indirect have been employed. Considering the fact that the knowledge thus sedulously pursued can serve no utilitarian purpose, the generous expenditure in the pursuit does credit to the intellectual aspirations of the human race. From the time of Capt. Cook's expedition to the Society Islands to observe the transit of Venus in 1769 until the present day, millions of dollars have been spent in this effort to drop a sounding line to the sun.

Copernicus believed that the sun was not more than 5,000,000 miles away. There were philosophers before the Christian era who knew as much as that. For several years past we have been assured that the distance could not be far from 92,800,000 miles. But almost

A CENTURY AGO.

Laplace assumed a parallax for the sun which gave almost exactly that distance. Since his time various astronomers have attacked the problem, and their results have varied from 91,000,000 to 95,250,000 miles, the difference between these extreme estimates being nearly as great as the entire distance was believed to be by the founders of astronomy. Yet these facts carry no challenge to the soundness of modern astronomical methods, or the substantial correctness of the results attained by them. The distance of the sun is not yet known with absolute accuracy, for the same reason that the height of Mount St. Elias or of Mount Everest has not yet been exactly ascertained. But the limits of error are known, and in the future we shall not see estimates of the sun's distance varying by millions of miles. It is a series of wires should be out, each agreeing in length with one of the recent measures of the solar parallax, and all should then be stretched from the earth toward the sun, every one of them would end in the sun, though none might stop precisely at its centre.

As to the recent light upon the problem, it is furnished by the result of observations by officials of the United States Coast Survey at the Sandwich Islands, to determine the constant of aberration of the stars. By this is meant the amount of displacement that the stars undergo in consequence of the fact that we are looking at them from a globe which is not standing still, but is moving in an orbit around the sun at the rate of 18 1/2 miles in a second. Light travels 186,330 miles in a second. The ratio of the velocity of

THE FLYING EARTH

to that of light measures the displacement in the position of the stars that is called their aberration. But, manifestly if we can learn precisely how far the earth travels in a second, we shall know just how long its orbit is. We know that the earth takes one year, or, more exactly, 31,558,150 seconds to go once round that orbit. If, then, we can find out with rigorous accuracy how far it goes in a second, we can at once calculate not only the length of the orbit, but the distance of the sun, which depends directly upon the size of the orbit. Of course, allowance must be made for the fact that the orbit, instead of being a circle, is an ellipse, and that consequently the earth's rate of travelling varies a little. But mathematics take care of that.

Now, we have seen that the displacement or aberration of the stars furnishes a means of determining the ratio of the earth's velocity in its orbit to the known velocity of light. If that aberration is accurately measured, it must give, by a simple calculation, the velocity of the earth and the distance of the sun. The aberration as ascertained at the Sandwich Islands is slightly smaller than previous measurements had made it. It amounts to 20.433 seconds of arc. This gives for the average

VELOCITY OF THE EARTH

in its orbit 18.4582 miles in a second, and for the distance of the sun, 92,709,000 miles. The distance derived from the observation of the transit of Venus in 1874 was about 62,100 miles less than this, while that calculated from the transit of 1882 was about 190,000 miles greater. But Laplace's value of the solar parallax, adopted by him in 1799, gives a distance differing by only 80,000 or 90,000 miles from that shown by the calculation based on the new constant of aberration; so Laplace was probably nearer to the truth than many of the later astronomers have been.

It is evident that the final solution of the great problem has not, even yet, been obtained. There is an uncertainty of perhaps as much as 100,000 miles still remaining. Since the distance of the sun forms a base-line for calculating the distance of stars, an error of 100,000 miles in that base-line would make a difference of nearly thirty thousand million miles in the calculated distance of the nearest fixed star in the sky. It is for the astronomers of the future, then, to determine the real dimensions of the universe, if they can. For our part, we must be content to know that they are great almost beyond the power of mathematics to express, and curiously beyond the power of imagination to conceive.

KNOWLEDGE IS POWER.

In the Vicious It May do Society Vast Harm in the Future.

If the spirit of Anarchism spreads, and the recipes for making safe bombs become a little more widely known, says the London Spectator, we may yet be able to set the discovery of high explosives against the discovery of chloroform, and to doubt whether her scientific research does, on the whole, more evil or more good. In truth, it does neither, knowledge being neither more or less than a force which produces good or evil, according to the character which is not material—of the man who possesses it. The modern notion that knowledge has in itself something divine is as false as the ancient notion that it has in itself something diabolic. You can rob by the aid of chloroform as well as relieve pain. There are whole branches of knowledge, the diffusion of which would almost certainly produce pure evil.

Household murder, for instance, would be far more common if all men and women knew what a few physicians know about

the really dangerous poisons—were aware, for instance, that there is a drug procurable in almost every field which simulates the effect of every common variety of heart disease, the suspension of vitality through anaemia. And suicide, which, whether it is a crime or not, is certainly a great evil, would be multiplied tenfold if every one knew how it is possible to terminate instantaneously and painlessly through every touch, and which is procurable on every street. There are no means of existence of keeping such facts, when once generally known, from the knowledge of the bad, and it is they, and not the good, who will want to use them.

The world indeed may one day, and at no very distant period, have awful evidence of the truth of the theory that knowledge is only a weapon, neither bad nor good. It is most probable, it is nearly certain, that means of destroying life on a vast scale, either by the multiplication of existing forces—the Maxim-gun carried to the tenth power—or by the use of asphyxiating shells, or as half a dozen novelists have already suggested, by explosives directed from aerial machines, will be discovered and eagerly utilized by the able men who in every country are striving to "improve" material of war.

No possible precaution would keep such processes secret for long, and they may all go to the hands of the Chinese, the Arabs or of the Anarchists, with, as result, either the subjugation of the world or its partial depopulation. It would be an awful illustration of that irony of fate which sometimes seems to preside over the destinies of men if science killed civilization; but that is by no means one of the impossible occurrences.

GOLD MINING IN MADAGASCAR.

Unscrupulous Owners Violating the Treaties as to Slave Holding.

Mr. Charles H. Allen, secretary of the British and Foreign Anti-Slavery Society, has, by permission, published certain correspondence between a German merchant at Zanzibar and the acting administrator of the Imperial British East Africa Company, which tends to show that immunities claimed by Germans under

TREATY WITH ZANZIBAR

are being used to serve the ends of a private individual. The letter that opens the correspondence, as published, is dated December 8, 1893, and refers to a telegram sent three months previously to the Acting Administrator asking permission to export about 500 men for the Congo Free State, and stating that the writer had got those men on the German coast. He adds that he wants about 1,000 men for the gold mines of Madagascar, and that if he were allowed to have them he would pay an export duty of £1 apiece, and also take them from tribes troublesome to the company. As an alternative, he proposes, having (he says) the right as a German subject, to buy slaves and free them, to be allowed to free 1,000 slaves on the company's territory, if they agree to work for two-thirds of their wages for a contract of three years. The Acting Administrator replied (December 12) that he could not agree to

THE MERCHANT'S PROPOSALS

as to the export of men from the company's territories to Madagascar or elsewhere, and informed him that he would send a copy of his letter to the company's directors. It is probable that the latter approved of his course, as they handed the correspondence to Mr. Allen, doubtless, to let the British public know the stand they had taken in the matter. In his letter to the directors the Administrator expressed a fear lest the men, if given to the merchant, should be ill-treated or defrauded. Mr. Allen says that the mining districts of Madagascar are most unhealthy, as his attention had already been called to that fact. The Administrator also believed that if the request were granted, men like Mbarik ben Rasheed would probably begin or rather boldly continue

STEALING NATIVES

in their districts and shipping them to Madagascar. Mr. Allen hopes the publication of the correspondence will awaken the German Government to the reality of the situation and the use to which existing treaties are being put by unscrupulous individuals. It is not long since Capt. Lugard charged both Germans and British with open defiance of the sentiment of civilization touching slavery. Mr. Allen's letter refutes his statement as to the British company.

DEPOPULATION OF FRANCE.

Statistics Show that Deaths Far Exceed Births in the Republic.

Statistics are very dull, and dullness is a thing to be shunned by all well-regulated persons; but an article has just appeared in the Journal Officiel which is quite long, quite bristles with figures, but is not quite uninteresting to France and the French. During the year 1892 the deaths in France exceeded the births by over 20,000. Hitherto the population has been about stationary, but this national deficit is serious. The French, from the highest to the lowest, do not care for large families, alleging, justly enough, that children are expensive articles. Did not a cook the other day lay her woes over the death of her first-born open to her sympathizing mistress? "That baby cos me first an' last not less than \$2 0," quoth the bereaved mother, "and after all that expense it only lived three weeks!"

The birth-rate is about as usual in France, at the ratio of twenty-two births for every thousand inhabitants; but the increase in mortality is frightful, and is attributed by the medical authorities entirely to la grippe, which they state has made more victims than the great cholera epidemics ever killed in one year.

It is also solemnly set forth that the children who were born at the time of the war of 1870 were adding to the mortality by expiring now, but as these great medical lights state that the children born during the siege generally died in their infancy, owing to their privations, it is difficult to see why the mortality among the "war babies," as they are called, should have ceased for twenty whole years to spring up again suddenly.

However, there is the unpleasant fact that the population of France, if something is not done, will speedily resemble, in this large and pleasant land, the relative proportions preserved by a single huckleberry gravelly valley in a very large bowl of milk

SHOOTING IN THE ROYAL RESERVE.

Great Quantities of Game Killed by the Prince of Wales and His Friends Every Year, Much of It Being Sent to the Poor.

There is no better shooting in England than is to be found in Norfolk County, in which lies Sandringham, the estate and palace of the Prince of Wales, in the parish of Sandringham in the County of Norfolk, and the shooting is the only one in the Kingdom, and the only one in which the Prince of Wales, who to his other accomplishments adds that of being a capital shot. The prince used to rent the shooting on Castle Rising estate, but lately his son-in-law, the Duke of Fife, has relieved the heir apparent of that expense by renting the place every year. The duke's royal father-in-law lost nothing by this change, for he never misses being present at any one of the shooting weeks in November, December and January. Game is tolerably plentiful on the Sandringham estate, but the game larder at the castle is of enormous dimensions, and the shooting on Castle Rising is a valuable aid in making up the vast supply of game necessary. Just as soon as the shooting is over in January preparations are begun for next season's sport. The whole preceding year on the estate is a preparation for these shoots. The eggs of the pheasants are gathered from their nests in the dense undergrowth of the covers in the spring and put to hatch under ordinary barnyard fowl. They are then disposed in clusters of coops in the several covers near the keepers' cottages. Great care is exercised in feeding the young birds, which are reared chiefly on grain. The pheasants roam over the whole county, and a month or so before shooting commences the beautiful creatures may be seen in thousands all around Castle Rising and Sandringham.

In addition to pheasants there is a plentiful supply of partridges, the shooting of which begins in September, although a day for that sport is always set aside at the big shoots. Partridges are entirely wild, no attempt being made to rear them, and, if all one hears in Norfolk be true, many a partridge egg goes to enrich the breakfast table of the Sandringham laborer. Scattered over the estate are big rabbit warrens, and just on the border of Castle Rising is an extensive moor devoted to rabbit-breeding. In this neighborhood stray dogs and cats are regarded with great disfavour by the prince's gamekeepers, who never overlook an opportunity of discouraging the presence of these animals. It is said that some of the laborers who have pet cats are forced to keep them on chains in order to preserve them from danger at the hands of zealous keepers. Farmers and others who are licensed to carry guns can shoot rabbits in their own fields, but knocking over a pheasant by such persons is only permitted at the day's shooting which the farmers have after the great shoots are passed.

The Duke of Fife's shooting party usually numbers ten, always including the Prince of Wales. Each of the party is accompanied by a man to load and carry his guns and by a boy, whose duty it is to carry cartridges. His royal highness has for years been a heavy weight, and on this account is accompanied by another boy, who carries a small round seat on which the prince frequently rests. Dressed in shooting costume, he looks very stout and just like what a stout country squire. To our eyes the sport looks murderous, although a certain amount of excitement is aroused by the skill with which the birds are brought down. As many as 2,400 birds have been shot in a single day during the big shoots, and although as has been said, a great deal of the game is needed for the Sandringham larder, almost as much is given away much of it to poor people on the estate.

On big shooting days the Princess of Wales drives over to the daily lunch, bringing with her the ladies who may be staying at Sandringham. The keepers tell an interesting anecdote of the princess. The waiters serve at lunch in full dress, and, of course, with uncovered heads. But at one lunch, some years ago, the day cancelled to be exceedingly wintry, and the princess observed their pinched and cold appearance, whereupon she desired them to put on their hats. They hesitated to commit such a breach of decorum even at the desire—which amounts to a command—of their royal mistress. She, observing this, laid down her knife and fork, saying that she should not go on with her lunch until they had done as she wished. The servants, of course, at once obeyed, and since that time none of them has been allowed to wait with head uncovered.

The Monarch of Poisonous Snakes. A monarch among poisonous snakes is the enormous hamadryas, which grows to be as fierce as fourteen feet in length, and is so fierce that it will sometimes attack and even chase any one who ventures near its nest. Native snake-charmers, who will handle the fiercest cobras fearlessly, are usually loath to touch a hamadryas, though I have occasionally seen a large specimen of this venomous reptile in their bags. It lays its eggs in a heap of decaying leaves, which it collects for the purpose, and sits upon the top to keep off intruders. A rod through the jungle will sometimes be closed against all comers by a pair of these snakes, and we betide the unfortunate traveller who stumbles unawares upon the nest. The hamadryas feed largely upon other snakes, but it is fortunately somewhat rare. Curiously enough, it is not always aggressive. Indeed, it sometimes happens that it is quite unwilling to strike. Superficially it is not unlike a harmless rock snake; and not very long ago, in Burma, a man brought one in from the jungle and kept it loose in his house for some days, under the impression that it was one of these creatures. During the whole of its captivity it never attempted to bite any one, and its captor, who had been familiarly pulling it about by the tail, was only apprised of his mistake by a forest officer who happened to turn up and who knew a good deal about snakes. It is easy to imagine the haste with which the amateur snake-charmer proceeded to dispose of his captive.—[McClure's Magazine.

The Monarch of Poisonous Snakes.

The Russian Minister of the Interior has issued an order that foreign Jews, having in their possession proper passports, must not be interfered with by the police or other authorities.