The monopoly of the Anthracite coal fields by some seven corporations, which, according to the accompanying tables, now control about two-thirds of the whole, and the best coal area, must prove, under economic management, a profitable investment for their stockholders. Mining, selling and transporting their own coal, as they do, individual enterprise cannot hope to compete with them, and must vanish from the ground, and their only rivalry will be with each other, and with the Bituminous trade. Fortunately for the public, this rivalry will always be keen enough to keep the price of coal at a fair low rate of cost and profit.

The coal resources of Great Britain are all developed now, and in process of depletion; while in this country when our 470 square miles of Anthracite are exhausted, we have more than 400 times that area, or 200,000 square miles of Bituminous, from which to supply ourselves and the rest of mankind with fuel. The coal product of the world is about 300,000,000 tons annually. The North American continent could supply it all for 200 years. With an annual production of 50,000,000 tons, it would require twelve centuries to exhaust the supply. But with a uniform product of 100,000,000 tons per annum, the end of the Bituminous supply would be reached in 800 years. What the annual consumption will be when this continent supports a teeming population of 400,000,000 souls, as will be the case some day, must be left to conjecture. But with half that population, as energetic, restless, and inventive as our people in this stimulating climate have always been, under the hopes of success, such a country as this constantly holds out much to tempt ambition and reward enterprise.

If it be true, as Baron Liebig asserts, that civilization is the economy of power, we have it in our immense areas of Bituminous coal. There is no known agent that can answer as a substitute for the vast power and almost limitless usefulness of coal in its general adaptation to the wants of man; and that nation will maintain the foremost rank in enlightened modern civilization which controls, to the fullest extent, while it lasts, this wonderful combination of light and heat and force. We are wiser than our fathers; and from the modest but sublime altitude to which we are lifted by physicial science, and the far extended range of mental vision which it opens up to us, we can see farther into the plans of Providence than those who went before us, and can conjecture the early, if not the remote, future of the human race in our land and in other lands.

Happy that people whose legislators study the best mode of developing the natural resources of their country, and whose great men become great by improving the condition and promoting the welfare of the human race. The greatest of England's five Georges was not either of those who wore the crown, but plain George Stephenson, of Manchester, who rolled the world farther along the path of progress than all the others; and none of the royal Jameses did half so much for the civilization of his country as James Watt, whose boyish study of the steaming tea-kettle developed the giant power that does the world's work with an energy that is tireless and irresistible.

ETHNOLOGY.*

FRAGMENTARY NOTES ON THE ESKIMO OF CUMBERLAND SOUND.

By Ludwig Kumlien.

II.

They have an interesting custom or superstition, namely, the killing of the *evil spirit* of the deer; some time during the Winter or early in Spring, at any rate before they can go deer-hunting, they congregate together and dispose of this imaginary evil. The chief *ancoot*, *angekok*, or medicine-man, is the main performer. He goes through a number of gyrations and contortions, constantly hallooing and calling, till suddenly the imaginary deer is among them. Now begins a lively time. Every one is screaming, running, jumping, spearing, and stabbing at the imaginary deer, till one would think a whole mad-house was let loose. Often this deer proves very agile, and must be hard to kill, for I have known them to keep this performance up for days; in fact, till they were completely exhausted.

During one of these performances an old man speared the deer, another knocked out an eye, a third stabbed him, and so on till he was dead. Those who are able or fortunate enough to inflict some injury on this bad deer, especially he who inflicts the death-blow, is considered extremely lucky, as he will have no difficulty in procuring as many deer as he wants, for there is no longer an evil spirit to turn his bullets or arrows from their course.

They seldom kill a deer after the regular hunting season is over, till this performance has been gone through with, even though a very good opportunity presents itself.

Salmo salar, and one other species of *Salmo* that I could not procure enough of to identify, are caught to some extent in June and September in some of the larger fjords; they are mostly caught with a spear, but sometimes with a hook. (For description *vide* under hunting-gear, etc.)

When these fish are caught, they are put into a seal-skin bag, and it remains tied up till the whole becomes a mass of putrid and fermenting fish, about as repulsive to taste, sight and smell as can be imagined. *Cottus scorpius*, which contributes so largely towards the Greenlander's larder, is not utilized by the Cumberland Eskimo, except in cases of a scarcity of other food supplies; the fish is abundant in their waters, however, and fully as good eating as they are on the Greenland coast.

Birds and their eggs also contribute towards their sustenance in season; they are extremely fond of eggs, and devour them in astonishing quantities.

The "black skin" of the whale, called by them *muktuk*, is esteemed the greatest delicacy. When they first procure a supply of this food, they almost invariably eat themselves sick, especially the children. We found this black skin not unpleasant tasting when boiled and then pickled in strong vinegar and eaten cold; but the first attempts at masticating it will remind one of chewing India rubber. When eaten to excess, especially when raw, it acts as a powerful laxative. It is generally eaten with about half an inch of blubber adhering.

* Bulletin (15) of the United States National Museum. Contributed to the Natural History of Arctic America, made in connection with the Howgate Polar expedition, 1877-78.

The greater portion of their food is eaten raw, especially in Winter. When they cook at all, they only "simmer" it over their lamps in a pot of soapstone. These pots are from eight to twenty inches in length, usually about sixteen inches, and though of variable patterns, the length is generally three times the width or depth. Among such Eskimo as are able to procure old cast-away meat-cans from around the ships, tin has superseded the soapstone both for lamps and boiling-pots.

In Summer, especially when on hunting excursions, they very often "fry" meat by making a little fireplace of stones, and laying a flat piece of stone on the top. The opening to receive the fuel supply is to windward. For fuel at such times they use *Cassiope tetragona* and *Ledum palustre;* these shrubs make a quick and very hot fire. It would be comparatively an easy task for these people to gather enough *Cassiope tetragona* during the Summer to burn during the coldest weather, and not rely wholly upon blubber.

When the Eskimo have been simmering meat, especially seal, in their boiling-pots, they pour off the liquor and mix it with about an equal quantity of blood; this makes a thick and rather greasy soup that must be quite nourishing; the children are very fond of it. It seems possible that from this dish has originated the popular error that these people *drink oil*, a notion that is simply preposterous.

I found among some of these people a little spoon, or rather a miniature scoop, made of ivory, which they used to drink the soup with; it appears to be an old utensil, now going fast out of use, for they can now procure tin mugs. A reindeer's rib, pointed at one end, is used to fish up the meat with, and sometimes to convey it to the mouth. These instruments are found in the graves, but seem to be little used at the present day.

When a seal is brought to the encampment, especially if they have not been plenty for some days, all the villagers are invited to the hut of the lucky hunter, and the seal is soon dispatched. A couple of the younger men skin the animal and distribute the pieces to the assembled company as fast as needed. The testicles, being considered as the choicest titbit, are usually handed over to the hostess; the spinal cord is also rated as one of the choicest portions of the animal. During these feasts they gorge themselves to their utmost capacity, and are in good humor and hilarious. Though there may be ever so poor prospects to procure more food for the morrow, this does not deter them from gluttonously devouring the last morsel, and then go on allowance till they can get a fresh supply. I have seen them thus gorge themselves, and then lie down to sleep with a piece of seal meat by their side, which they attacked every time they awoke.

The intestines of birds, notably *Lagopus* and *Somateria*, are looked upon as choice parts, and birds brought to the encampment are generally "drawn" by the hunters. The fatty excrescence at the base of the upper mandible of the male *Som. spectabilis* is too great a temptation for them. It was with great difficulty that we could induce them to bring these birds to camp without having them thus mutilated.

[*Continued.*]

LETTERS TO THE EDITOR.

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. No notice is taken of anonymous communications.*]

A Spark from Menlo Park.

To the Editor of Science:

My note book is so full of observations made during a recent visit to Edison's laboratory, that I feel on looking it over as if I had struck an intellectual gold mine. The genius of Menlo Park is so exuberant, and his frankness—we may say *naiveté*—so unbounded, that we came into possession of many facts which we might almost commit a breach of confidence in exposing. I found him reserved, however, when the conversation was turned to the subject of the arc electric light, and avoiding criticism of the operations and machines of those inventors who have devoted themselves to its improvement and utilization. But he made quite merry over the opinions expressed to him by many of the sight seers who swarm to the laboratory. "Would you believe it possible," said Mr. Edison, "that in spite of the general and interesting descriptions I have seen in various publications of this and other countries, few of the visitors really know what they come to see when they ask to be shown the electric light? Many are disappointed, because we do not have a kind of inland light house with a 300 or 400 candle-power light in each pane of glass in the buildings. Others think it a 'poor show' when they examine an incandescent thread of 14 to 16 candle-power in bright sunlight."

There was one suggestion thrown off by him, while conversing about the arc electric light, which I think should not be suffered to remai nundeveloped; Mr. Edison is so devoted to 'his light' that he only has time to give an occasional thought in the other direction, and his power of concentration prevents the dispersion of his genius through a different medium. So I repeat, I do not think I am committing any breach of confidence in describing a sketch which grew up under my eye, drawn by his rapid and luminous pencil; for Edison possesses that peculiar quality of pictorial illustration which we have never seen, except in the sketches of that inventor-artist, the great Leonardo da Vinci.

"Our dynamo-machines," said he, "as we now build them, are especially constructed for the purpose of furnishing current for the incandescent lamp; but they are, of course, as easily adapted to the arc light as to other purposes. You see our lamp factory and electric railroad are run by them. A very simple addition to a machine would allow of its use in illumination where the production of reverse currents is necessary. Imagine the wire of a Gramme helix cut half way through the solenoid, the four ends joined two and two to a commutating wheel, and pairs of conductors leading to an arc light, say Jablochkoff's candles. Now, by intermittently joining the ends of the separated helices, by an appropriate arrangement on the ordinary commutator blocks, you will be able to use your main current for the small incandescent lamps, and the surplus for the arc lamp; thus supplying continuous and reverse currents from the same machine."

I hope this chance scintilla from the mind of the great inventor will be allowed to sink through the pages of my note book into your columns, without any violation of the proprieties. If it incite Mr. Edison, *en revanche*, to a development of the idea, we will bear the brunt of a, perhaps, just resentment.

F. T. Waters.