

Correspondence.

How the "Maine" was Destroyed.

To the Editor of the SCIENTIFIC AMERICAN :

I was very much impressed and stirred by your illustrations of the "Maine" report, as well as by the admirable editorial. I have just been writing to the leading English engineering papers, calling the attention of their readers to your issue of this date and to the fact that you give in those illustrations proof, absolute and unchallengeable, of the major fact that that unfortunate crew was murdered. Can you not send marked copies to all your foreign exchanges? I think it supremely important that every engineer, the world around, should understand this matter; for the engineers, more than any other class, will guide the opinion of the rest of the world.

If you care to have me do so, also, I will distribute a few copies to prominent men of my acquaintance abroad. We cannot too promptly and too fully expose this evidence before all nations; for we want the intelligent backing of the world in what we are about undertaking as a nation.

Yours very truly,

R. H. THURSTON, Director.

Sibley College, Cornell University, Ithaca, N. Y.

April 9, 1898.

[In view of the general interest that has been taken in the "Maine" report, and especially in the official drawings, which we believe were first opened to public inspection through the columns of the SCIENTIFIC AMERICAN, it has been decided to publish the history of the ill-fated vessel from the time of its launching to the terrible disaster in Havana Harbor, and a full account will be found in the current issue of the SUPPLEMENT.—ED.]

New Discoveries in Africa.

It was reported recently that a young man named H. S. H. Cavendish, who has titled relations, a fortune, and proclivities as a sportsman, had been murdered in Somaliland. The story of the tragedy was spoiled the other day, when Mr. Cavendish turned up in London with an account of his extensive travels in East Africa and the interesting discoveries he had made. He was away only a little over a year, and he and the eighty men in his caravan had exciting adventures with the natives, who gave him some hard fights. Of course, the Gallas got the worst of these encounters, and Cavendish did not lose a man during the year's journey, which is a remarkable record.

He says he found coal both east and west of Lake Rudolf that burned well, and there was a good deal of it. If his report is accurate, this news is interesting, for coal has not been found hitherto in any part of tropical Africa, except for some distance along the Zambesi River.

Most of the region around the two lakes, Stefanie and Rudolf, is pitted with ancient craters, and Cavendish found the most remarkable crater that has yet been discovered in the district. The natives call it Sodigo Vo, and it is about a mile and a half wide and 1,300 feet deep.

His predecessors in this lake region were Teleki, Donaldson Smith and Bottego, none of whom have given the world any idea of the country to the west of Lake Rudolf. It may be, however, that the records of the Bottego expedition, a part of which were recovered after the massacre of his party, will contain information about the west side of the lake, for it is said that Bottego visited that district. Cavendish supplies the first information of that region.

He ascended a mountain 5,000 feet high, at the north end of Lake Rudolf, from which he had an extensive view of the country to the west. He says it is a mass of mountains, entirely uninhabited and exceedingly difficult to traverse. He journeyed west of the lake and traced the whole of the west shore, hitherto unplotted on our maps. For a width of about fifty miles it is quite flat, when the land rises suddenly into the mountains. It is subject to very great variations, often flooding the country all around.

Count Teleki found at the south end of Lake Rudolf the only active volcano then known in Africa. Two years ago Dr. Donaldson Smith found this volcano still in a state of eruption, but Cavendish now reports that it has been shattered by a great convulsion, and where it stood there is now a plain of lava. He discovered another lake south of Rudolf in which was a volcano that had also been shattered, killing the fish in the lake, whose bodies covered the shores.

Round the shores of Lake Stefanie the explorer had some excellent sport, and it was here that he was caught by a wounded elephant. "My escape," said Mr. Cavendish, "was nothing less than miraculous. The great beast, mad with rage, was charging me, when at the critical moment my gun failed, and I had to turn and run. But the elephant soon caught me, and going on his knees tried to pin me to the ground with his tusks. Failing in this, he caught me with his trunk and flung me round under his body, with the idea of crushing me to death. How I escaped I do not know, as I was in this situation for half an hour.

At the end of that time the great brute got up, and kicking a piece of wood which he doubtless took to be my dead body, made off to his retreat. Curiously enough, I had no bones broken, but I was covered with blood."

Mr. Cavendish is only 21 years old. He has certainly had some remarkable experiences, and has brought home information of value, says The New York Sun.

The Manufacture of Lime Juice.

When limes are freshly squeezed, the juice is always very turbid, owing to the presence of mucilage and extractive matter derived from the fleshy part of the fruit. This is what makes it necessary to clarify it. The same difficulty occurs in lemons, but the yield of juice from lemons is much greater than that from limes, indeed, the yield from limes is very small, and the freshly expressed juice always contains a large amount of pulp. This, however, on standing for a few weeks, separates out, and a clear, sherry-colored liquid (the true lime juice) is obtained, and can either be siphoned or decanted off. If time is no object, then the process of natural settling may be observed economically, but even then it is probable that upon storage the clear, sherry-colored juice will get turbid, owing to the decomposition of mucilaginous matters which may still be in suspension. There are two courses open; either treat the juice in the manner which we are about to describe, or else allow it to stand for a few weeks, and then treat the clear liquid which is obtained, using the same process in this case also. This process is very simple, and simply amounts to heating the juice to a temperature not lower than 150° or higher than 160° F. If the temperature is carried above this point, alteration will take place, and a noticeable flavor will be communicated to the juice. While the juice is still hot, it should be filtered, and almost any filtering medium will do. On the whole, we recommend crushed quartz, graded and arranged in the filtering vessel in such a way that the larger pieces are at the bottom of the vessel, while the smallest fragments are at the top. If this process is performed shortly after the harvesting of the fruit, the juice will, under ordinary conditions, keep good for twelve months. But if the juice is intended for exportation, then it may be prevented from decomposition, and rendered fit for transit, by mixing it with one-tenth of proof spirit. This is Schweitzer's recommendation. If the flavor, however, is not objected to, there is a cheaper method of preserving the juice after it has been heated and filtered, and this simply consists in adding one per cent of bisulphite of calcium. When ready for the market, the specific gravity should be 1.044-18, the percentage of citric acid should attain 8.66, and that of the ash obtained by evaporation and incineration, 0.401.—M. W. Trade Review.

Berlin Educational Institution Excludes Foreigners.

A decree has been issued by the government at Berlin which greatly interests American students. The decree forbids the further attendance of foreigners in the machinery and engineering department of the Berlin High School. It is thought that this is the forerunner of other decrees excluding foreigners from other similar institutions in Germany. One of the conservative papers has the following, from which it may be judged that the German people as a whole are rather in favor of the illiberal policy of the Prussian authorities at Berlin. The Deutsche Zeitung remarks: "At the non-Prussian high schools at Munich, Dresden, Stuttgart, Karlsruhe, Darmstadt and Brunswick there are 1,200 foreigners out of 8,682 students. We hope that, as the foreigners use their knowledge to the detriment of German industry, the non-Prussian governments will forthwith exclude them." It is learned that for some time past there has been an exchange of views between Prussia and the other German governments on this subject, and there is no telling how soon the policy may become general throughout Germany. The following expression by a high German official indicates the feeling on the subject: "There is no question that the German technological schools and industrial and scientific institutions will soon be forced to adopt a less liberal policy with foreigners. The tricks of trade we have been teaching them so long are now being used against us to the great injury of our industry."

Dr. Nordenskjöld's Journey.

Dr. Nordenskjöld, of Stockholm, has arrived at Ottawa on his way to the Yukon, where he will conduct certain scientific observations in behalf of the University of Upsala. He is not going to limit his observations to the gold fields proper, but will make an extensive journey through the sub-Arctic regions of the Dominion. He will also endeavor to learn something of the fate of Herr Andrée who started last July in a balloon to cross the Polar region. Dr. Nordenskjöld has not lost hope that Andrée is still alive and thinks it is possible he has crossed the Arctic Sea and landed on the northern coast of Alaska or in the Mackenzie River basin.

Science Notes.

The United States government has sent Mr. B. E. Fernow, chief of the Division of Forestry, to Hawaii to make preliminary explorations and a report on desirable forestry legislation.

The extra consumption of illuminating gas due to fog is well illustrated by some figures given out by London, England, gas companies. These figures reveal the fact that the excess of gas used due to a fog lasting an entire day would be sufficient to supply a town of from 10,000 to 20,000 inhabitants for a year. The total consumption on such a day is about 150,000,000 cubic feet, costing about \$120,000, of which amount \$40,000 was necessary to pay for the excess due to fog.

According to a French writer named Petrie, whose conclusions are quoted in The Medical News, twenty per cent of all cannibals eat the dead in order to glorify them; nineteen per cent eat great warriors in order that they may inherit their courage, and eat dead children in order to renew their youth; ten per cent partake of their near relatives from religious motives, either in connection with initiatory rites or to glorify deities, and five per cent feast for hatred in order to avenge themselves upon their enemies. Those who devour human flesh because of famine are reckoned as eighteen per cent. In short, deducting all these, there remains only a proportion of twenty-four per cent who partake of human flesh because they prefer it to other means of alimentation.

There is a Jew, a native of Litsk, Russia, living in the East End of London, who has fasted for twenty years, his sole daily diet during that time consisting of six pints of milk, three pints of beer and a half pound of Demerara sugar. His name is Morris Fox. He is an excellent Talmudical scholar, and in spite of his frugal meals, he is the most healthy, intelligent and wideawake person in his quarter. He is now over forty. At the age of seventeen, it appears, he caught some lingering fever, which shattered his constitution and entirely destroyed his digestive organs. He took many kinds of treatment from many physicians, until his stomach became inured to all medicine. At the Kieff Hospital they vainly tried to cure him by sponging and electrolysis; at Vienna his physicians included the well-known Drs. Albert and Northagel. His treatment at Carlsbad was a failure; then he traveled to Königsberg, when the physicians decided that he must live on sugar, milk and beer. He adopted their prescription, and soon regained normal health. For twenty years no solid food has passed his mouth.

Medical authorities are generally agreed as to the value of olive oil medicinally, finding it also a potent agent for any defects of the excretory ducts, especially the skin; eczema has rapidly disappeared upon a discontinuance of starch foods and the substitution of a diet of fresh and dried fruits, milk, eggs and olive oil. The beneficial effects of the latter, when thus taken in conjunction with a fruit diet, have frequently been remarked in respect to the hair, nails and scalp, quickly cleaning the latter of scurf, and supplying to the sebaceous glands the oily substance which they secrete when in a healthy condition, and the absence of which is the cause of debility of the hair, frequently ending in baldness. It has long been observed that those who treat olive oil as a common article of food, and use it as such, are generally healthier and in better condition than those who do not, and its therapeutic and prophylactic properties are very favorably regarded by medical men. It is known to be destructive to certain forms of micro-organic life, and for the eradication of such from the system its internal use has been successfully resorted to.

Among important results of investigations of food as affected by sewage is the statement that animals fed on sewage farms are, under certain conditions, liable to have their flesh and secretions changed by the herbs and grasses—produced by the sewage—upon which they feed. If the sewage on a given farm be so managed that no more of it be put into the soil than any given crop can adequately deal with, it is asserted that the crop will, under these conditions, be sweet and natural, and that the cattle or other animals fed on it will also be sweet and natural. On the other hand, if the soil be gorged to repletion with sewage, then the crops will be surcharged with sewage elements and unfit for food; the meat and milk of animals derived from such crops will also be like the crops, and unpleasant to the taste as well as dangerous to the health. The consistency of these hospital statements is made evident by the well-known fact that, if a cow is fed on turnips, her milk will within twenty-four hours taste of turnips, the intensity of the turnip flavor being the measure of the quantity of turnips taken. In the case of hens and their eggs a like result follows. If hens are fed on decaying matter, which they will eat greedily, both their eggs and flesh will be disagreeable and unwholesome eating. In respect to ducks the facts are much more striking, for, being unclean feeders, an abundance of garbage will lead them to refuse corn and similar food, so that their flesh is most pungent to the taste and, to many persons, a source of disorder.