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Breckenridge Coal.

We have received a sample of the Breckenridge (Ky.) cannel coal (shale,) with the injunction to examine it, and judge whether it is not equal, if not superior, to the Torbane Hill mineral of Scotland, to which we directed attention on page 64, this Vol. SCIENTIFIC AMERICAN, in the following words: "We invite the attention of our geologists to search for minerals of the same character and quality in our own country." This sample has been sent to us as being a like mineral, and such a discovery as the one to which we invited attention. We of course cannot personally testify as to the quality of the seam of this coal, whether it is uniform in quality, or is of great extent. Of the sample we have received, however, we have no hesitation in asserting that it is a very superior cannel coal. It is asserted that it is equal if not superior to the Torbane Hill mineral, which is the richest hydro-carbon mineral in Europe. It must yield a great amount of gas.

The Torbane Hill mineral is believed by many to be a rich bituminous shale; that is the opinion entertained respecting it in Germany by the chemists there. It is transported from Scotland to Frankfort for making gas, and found to be cheaper than the old cannel coal. The Breckenridge cannel coal is blacker than the Torbane Hill mineral, which is of a brownish color, and somewhat softer.

We have before us two reports of this coal, one by John Clowes and F. Headley, and the other by Prof. Benj. Silliman, Jr., Geo. D. Prentice, and Bryan R. Young—acting as commissioners under oath. From the latter report, we learn that the bed of this cannel coal has been opened at fifteen places; that it underlies at least 4000 acres, and is about three feet thick. "In this thickness," the report states, "we do not include about eight or ten inches of a bituminous shale under the coal, which is full of impressions of coal plants, and burns freely." This shale in itself would scarcely be worth working, owing to the seam being so thin, but the cannel seam is of very good thickness. The analysis of it makes it inferior to the Torbane Hill mineral, which produces 75 per cent. of volatile matter, but yields no coke; the Breckenridge cannel 63.52 per cent. of volatile matter, but 27 of coke, which makes it very excellent for manufacturing gas. We do not know whether it has been tried by any of our gas works or not; if not, we really think they stand in their own light, in not experimenting with it.

Lunar Influences.

The last number of the *New York Quarterly* contains an article on the much-mooted point of lunar influence,—that is, the effect of the moon's rays upon objects on this earth. From the information presented, it appears some scientific men have come to the conclusion that the moon exercises no influence whatever on the weather, crops, or anything else on the earth, while others as positively affirm that it does. The opinions or popular belief of different nations—savage and civilized—with respect to the moon's influence, is something very remarkable. Almost every nation believes that the moon affects the weather, the crops, the cutting of timber, the decay of fish, and the health of man. In many places in England it is a common belief that persons never die of sickness when the tide is running in. In South America the natives pay strict attention to the lunations in sowing their crops. It is pretty well settled now, we believe, that fish and flesh decay more rapidly when exposed to the moon's rays than when covered. The Indians always cover their fish from such influences. In Brazil, the opinion prevails, that the moon's rays falling upon infants will produce sickness. In Siberia, the hunters are careful to secure their prey, containing musk bags, at full moon; they declare they are good for nothing at new moon. But the most astounding influence attributed to the moon, in our day,

is that of causing earthquakes. M. Alexis Perry, of Paris, asserts that the moon is the cause of earthquakes, by its varying gravitation acting on the interior fluid. Thus it is assumed that the interior of the earth is now in a fluid state, and the consequent action of the moon's pressure on the outer thin crust sometimes breaks it, and at other times violently agitates the sea of lava within. Volcanoes, it is asserted, are also subject to this influence. We have but little confidence in the theory of the moon's producing waves in the interior of the earth. If this were a fact, all parts of the earth would be subject to earthquakes. Now it is well known that this is not the case, but that they are local—confined to certain districts, hence the reasonable conclusion is, that the cause is local also—perhaps it is magnetic.

What effect the moon has upon crops—the time when planted or cut down—we cannot tell, but many of our farmers firmly believe that the times of planting and sowing must be in accordance with the moon's phases. It is also a common belief that timber cut down at full moon is more subject to rot, and the attacks of worms, than that cut during the first and last quarters. There must be some foundation for such general and wide-spread opinions; but their truthfulness we have heard denied over and over again. The question is not yet settled; there is still room for closer observation and investigation.

Form of Propellers of Ships.

We find a long article in the *National Intelligencer*, of the 20th April, by Thomas Ewbank, Ex Commissioner of Patents, on the above named subject. It is addressed in the form of a letter to the Secretary of the Navy. When Mr. Ewbank was Commissioner of Patents, his first Report was illustrated with figures of different forms of propellers, showing those of the fastest and slowest kinds of birds and fishes; and the best form which he had discovered in making some experiments. His experiments, he states, developed the fact that the best form for propelling vessels, harmonizes with that which nature has provided for the swiftest of flying and swimming creatures. For the paddles of steamships, therefore, he recommends that the propelling blades, instead of being thick rectangular pieces of timber, as they now are, should be made of some strong thin material, like steel, and should be tapering so as to act with the same area of surface in the depth of the water, that they now have in acting near the surface. To adopt his suggestions for paddle wheels, these should be made narrower, and the blades of a half diamond shape, the points projecting and dipping deep in the water. Unless paddles are so constructed he believes it is in vain to look for any great increase of speed in steamships. We should really like to see his suggestions carried out.

Queries for the Patent Office.

Among the numerous employees of large governmental establishments there are generally to be found a proportion of black sheep—loafers—individuals who spend the time for which they are paid in neglect of their duties, whose hardest labor consists in calling at the Treasury Office once a month to receive an unearned salary. We are fearful that too large a number of such worthies are sucking pap in the U. S. Patent Office. Either such is the case, or else the copyists of that department are grievously overworked; we should ourselves be filled with grief if the latter were the fact. Will they be good enough to tell us why it takes from two to three weeks to engross a patent after it is ordered to issue, when, in most cases, the document could be copied in three hours? Will they think us too inquisitive if we respectfully inquire, why official letters of not more than a dozen lines, which a boy could copy in ten minutes, are not mailed sometimes for one and two weeks after the original was written? The number of copyists is not limited by law, and we, as well as the public, are anxious to know what is the real trouble.

Henry M. Paine again before the Public.

The Worcester (Mass.) *Palladium* states that H. M. Paine gave a free lecture in that city on the evening of the 19th ult., "to illustrate a development made by him of electro-magnetism applied as a motive power." We do not know what the *Palladium* means by this development of Mr. Paine's. Will the Editor of the *Palladium* enlighten us?

It also states that previous to the exhibition of his machine, Mr. Paine gave an interesting exposition of his personal history, "which occupied an hour and a half." Mr. Paine, we should think, could scarcely do justice to the subject in this brief space of time. The *Palladium* also states, "it was manifest from the recital, that Mr. Paine had suffered injustice from the hands of individuals and the public, because of the peculiar circumstances in which he was sometimes placed." It blames Mr. Paine for permitting his character to be handled as it had been, when "he had power to modify public opinion by the exposition he had given," in that lecture. It also states, that "he has too often found himself the victim of men who took advantage of his necessities to plunder him of the fruits of his genius."

We have not been able to learn of a single case wherein Mr. Paine has suffered injustice from the hands of the public; nor have we been able to learn the names of any party who has plundered him of the fruits of his genius. If there are any such parties or individuals, they should be pointed out. Mr. Paine is the only person we know who has done and said anything to injure his own character, and it looks as if he were accusing the public, and particular individuals, whose names are withheld, with the injustice which should rest upon his own shoulders. Who can enlighten us further in regard to this matter? Surely we cannot wait much longer for Mr. Paine to do it, as he has promised us for years, that shortly an exposé should be made through the columns of the SCIENTIFIC AMERICAN, prepared by himself. Now let some one else speak for him.

Illustrating Patent Office Reports.

The *New York Tribune* of the 26th ult., recommends that the Patent Office reports be illustrated by the publication of printed specifications of all the patents illustrated by steel plate engravings. It considers that this would be far cheaper for inventors than wood engravings. We would really like to see good illustrated reports of the Patent Office; but no person except one profoundly ignorant of the drawings which accompany patents, would ever have suggested the illustrating of them by steel engravings. It would require the Patent Office to have a revenue ten times larger than it now has, to illustrate all the patents correctly by steel plate engravings, and this would require a rise of patent fees from \$30 to \$300. If such a system were adopted, the great majority of American inventors would be completely disabled from securing patents. Our inventors and men of most ingenuity are not men of the longest purses, by any means. This would be an act of high injustice to them, and our country would feel the effect of such a measure. It would tend to discourage useful improvements, and thus retard the progress of invention and discovery.

Gallery of Inventors' Portraits.

We learn by the last number of the *Glasgow Practical Mechanics' Magazine*, that Bennet Woodcroft, Esq., has commenced a Portrait Gallery of Inventors, in the London Patent Office. He has already collected quite a number of portraits of distinguished inventors of all nations, among which figures old Roger Bacon, the reputed inventor of the air pump and the camera obscura. This Gallery will be a famous place of resort for American inventors, who may visit London—as all inventors "the world around," are brothers. Such a gallery should be connected with every National Patent Office. We would like to see one established in Washington, and we recommend this to the attention of the Commissioner of Patents; we have no doubt but the proposition, will meet with favor from him. A Gallery of In-

ventors' Portraits should be set off in the New Wing of the Patent Office.

Reported Resignation of the Commissioner of Patents.

A correspondent of the *New York Tribune*, writing from Washington on the 25th ult., stated that Hon. Charles Mason had resigned his office of Commissioner of Patents. The same statement has since appeared in several other journals.

This announcement, we believe, is rather premature, for up to the time this week's issue went to press, Judge Mason had not resigned. He has several times, however, of late, indicated such an intention, owing to the pressure of extensive private business operations; but we still hope that he will not feel compelled to do so. His resignation would be received with profound regret by the public at large, by all inventors, and by all who have been in any way connected with the Patent Office during his administration. It is universally conceded that a more honest, able, energetic, and faithful officer than Mr. Mason never filled the important post of Chief Commissioner. He has but just succeeded in establishing the Office on a systematic and effective working basis—has just completed the renovations and reforms which the neglect and incompetence of predecessors for years previous had rendered imperative, and now he proposes to abandon his position, and allow the Department to run back again to weeds.

As Chief of the Patent Office he is discharging a public trust of high importance, which few others in the land are so well qualified to fill. We trust he will allow nothing save affairs of the gravest importance to interfere with his existing official relations. The country has a right to expect that he will not leave her in the lurch—that he will not resign, at any rate, until he makes sure of seeing the station he leaves occupied by an equally competent successor. We will ask nothing more than this, for we feel satisfied, that under such circumstances, his stay in office would be considerably prolonged.

Renton's Process for Manufacturing Iron Direct from the Ore.

Professor Wilson, who was one of the Commissioners appointed by the British Government to the New York Exhibition, and to report to his Government on the iron manufacture of our country, lately read a paper on this subject before the London Society of Arts, in which he spoke flatteringly of Renton's process for making iron direct from the ore, which was illustrated on page 169, Vol. 9, SCIENTIFIC AMERICAN. It was also stated that the process was about to be introduced into England. Respecting it, David Mushet—the son of the well known discoverer of the famous black band iron ore, takes occasion to make some remarks in the *London Mechanics' Magazine* of the 7th ult., to the effect that the same thing had been attempted before in England, and is well known. He however does not seem to know the improvements claimed by Mr. Renton, who makes no pretence to be the first who has made iron direct from the ore. He claims however, to have invented a furnace that does this, with a considerable saving, in the manufacture of iron, and Mr. Mushet confesses that all such attempts made in England had proved abortive. A hundred previous unsuccessful attempts to accomplish a useful object instead of detracting from the merit of the successful inventor, confers upon him the greater honor, however small the improvement may be which led to the successful result.

Loughridge's Brake.

The railroad brake of Wm. Loughridge, of Weverton, Md., noticed on page 250, SCIENTIFIC AMERICAN, Vol. 10, and for which a patent was granted on the 11th ult., has been applied to car No. 36, on the Third Avenue railroad, this city, where it can be seen in operation. Mr. Loughridge can be seen at the Howard Hotel, Broadway, and he will give all the necessary information desired, to any party, respecting it.