

Correspondence.

"What is the Natural Age of a Cat?"

To the Editor of the Scientific American:

I had a cat that died last June whose age was a month or more over twenty-five years. This is the same cat that was mentioned in a great many papers last winter, and was called twenty-three years old, whereas, according to correct reckoning, she was twenty-five years, instead. She had one kitten two years old at the time of her death. About the time she had the last kitten she renewed her teeth. She never shed her hair for the last two or three years, which became very coarse and stiff. She died with lung disease. She always lived at the barn and outdoors.

C. V. SWARTWOUT.

St. Lawrence, N. Y., November 5, 1883.

The Brandy Bread Co.

To the Editor of the Scientific American:

In your paper of Sept. 1, 1883, in the article upon "Fermentation in Bread," you finish by asking, "Will not some American repeat this experiment?" that is, make alcohol from the fumes from oven while baking bread.

About 1836 the writer saw a very large bakehouse erected somewhere in Tipton, Staffordshire, called the Brandy Bread Company. I can just recollect that the doors were made steam tight, and that the bread was insipid, or tasteless, and that some thousands of pounds sterling were lost, and the company went bankrupt.

I should be sorry if this account should prevent the trial you suggest, for in forty-three years immense strides have been made in chemistry.

THO. BOOTH.

Gayam Sugar Mill, Pasvervevan, Java, Oct. 20, 1883.

The Sunset Colors.

To the Editor of the Scientific American:

I see in your paper of the 8th inst. you seem to attribute our recent fiery sunsets to the supposed presence of a stratum of meteoric dust. Would it not be more reasonable to consider it volcanic dust thrown up by the late terrific outburst in Java?

The forces there in operation—unparalleled I believe in all human history—were evidently adequate to such an effect, and the fact that immense quantities of something were thrown into the air is attested by the greenness of the sun as seen in India. Besides, the time since the Java earthquake has been just about what we might suppose sufficient for the dust to diffuse itself to this distance.

Sixty-one tons of impalpable dust thrown into the air would allow about one ounce to each tract of ten miles square over all the earth's surface. This, I think, would be quite sufficient, when viewed at an oblique angle with the stratum containing it, and nearly in the direction of the sun, to be plainly visible. Having thus an adequate and probable cause, there seems to be no need of ascribing the phenomenon to any mysterious extramundane cause, of which we can know comparatively nothing, but of which we may imagine everything.

S. S.

December 10.

Storing Wind Power for Small Motors.

To the Editor of the Scientific American:

Your correspondent A, on page 353, proposes to drive a boat 14 feet long for 5 consecutive hours with air compressed to 200 atmospheres, in a 2 inch pipe placed along the gunwale of the boat, the owner, at his choice, using a screw or paddles to drive the boat.

I have a very light boat built of 3/8 inch pine, somewhat longer than A's theoretical one, but I fancy just as easily propelled, driven by a 3 x 3 inch cylinder, screw 18 inches in diameter. The time occupied in driving this boat two miles averages 18 minutes, carrying 100 pounds to the square inch on the boiler, the wheel turning an average of 400 revolutions per minute, making in all 7,200 revolutions to complete the two miles. Comparing A's air engine with mine, I think his theory will not be borne out in practice. I suppose his theoretical pipe or receiver runs under both gunwales. This would make it 28 feet. My steam engine may not be as economical in its consumption of steam as it might be, as it cuts off only at 3/4 stroke. A's air engine will doubtless be arranged to work more expansively, say his cylinder is to be 2 inches in diameter, 3 inches stroke, cutting off at 2/3, then expanding into another cylinder 4 inches in diameter, same stroke. Throttle down his air supply until it passes into the first cylinder at 100 pounds, and probably, if his engine is well made, he may obtain as good results as I do with my 3 x 3 cutting off at 3/4. If he used the same wheel that I do (my foundrymen tell me it is the best obtainable, his engine must necessarily make the same number of revolutions to run the same distance. Four inches, therefore, of the supply in his air pipe would be exhausted at every revolution of the engine if the pipe were charged at 100 pounds; but as it is supposed to contain 3,000 pounds, the 4 inches, if the pressure were constant, would accomplish 30 revolutions. The receiver being 28 feet long the sum would stand thus: 28 x 30 = 2,520 revolutions his wheel would make on his receiver's becoming exhausted, if, as before said, the pressure was constant, which unfortunately it is not.

In my opinion, therefore, his theoretical little boat would prove a failure. It would only run for a few minutes, and would need a second "placing to the windmill" before she ran a mile.

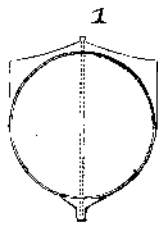
ALIA TENTANDA VIA EST.

Plan of Fast Steamers.

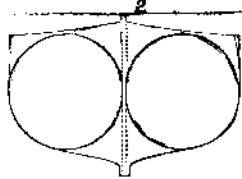
To the Editor of the Scientific American:

The official assertion of Mr. Fawcett, Postmaster General of England, "that after the expiration of the present contract for carrying the mail across the Atlantic to the United States shall have expired, he shall cause to be paid to the fastest mail steamer for carrying the letters three shillings per pound, and for the newspapers only three pence per pound." Now, as the fastest steamers only shall have the contract, the question arises, Who will own the fastest steamers—the English or the Americans? And who will adopt on scientific principles the plan of building the fastest boats?

The present transatlantic steamers can with propriety be called floating palaces, but they are all built on "the one log section," they are as deep as they are wide, and built without any regard to the metacenter of a floating body.



(Fig. 1.) In floating bodies the stability depends on the form of that body, and this form is the most improper or the most unstable, as it would require but a little force to set it rotating, unless ballast as a principle were applied to obviate this rotating tendency in this "one log form;" and the more ballast to carry out the principle of stability the deeper the boat sinks into the water, hence greater the resistance the boat has to overcome. These boats are all built with a "nice, clean run" fore and aft; this too is detrimental to their forward motion in a heavy sea, as far as their "forerun" is concerned. The bow of a boat should be wedge-shaped, and the knuckle on a line from the "fore foot" to as far back on the planks as the length of the wedge-shaped bows extends back, with a long "run" aft, so that when the boat sets on a sea it will have a tendency to slide forward at each such downward motion. You may imagine a slate sinking in water to illustrate this principle. And in place of the "one log section" we would adopt the "two log plan," as illustrated in Fig. 2. This obviously is a stable floating body, and to enhance its stability we would suggest that the keel be a boiler iron tube filled with molten metal, care to be taken that the keel tube is not too large, and the long "clean run" aft to be furnished with a "screw" in place of the "fan" in use; and the single surface measurement to be fully equal to the resistance offered by the water at the bows of the boat, so that a screw ten feet long (say) having the required surface would move the boat (say, all things considered) nine feet at each revolution with a motive power to drive the screw three hundred revolutions a minute, which would move the boat seven hundred and twenty-five miles in twenty-four hours.



Now as to the construction of the screw, which should be made of four separate flanges, each flange to pass once around the screw shaft in its length of ten feet, and of such diameter as to measure on their single surface the same as the resistance offered to the bow of the boat, or the screw may have more hold of the water than the resistance offered by the water at the bow of the boat; the more the difference the greater the speed. One flange to pass around the screw shaft several times to have the required measurement would be a violation of the principle. Since the Daphne disaster the Clyde ship builders have turned their attention to the subject of stability tests in the Clyde shipyards. The Glasgow and Londonderry Steamboat Co., who are owners of the Daphne, have ordered a steamer to replace the Iris, that has been recently lost on the Irish coast. They stipulate that the stability in every respect should be perfect, and the builder must satisfy himself with designs to attain that end.

—Being myself an American by adoption, I would prefer that the fastest boat in the world should sail from New York or some other American port for this coast. Tube compartments would be the safest in transatlantic steamers, and the machinery could be tube inclosed. Should these suggestions be of any value, be pleased to use them to the best possible advantage.

Yours respectfully,
WILLIAM GRIFFITHS.
Ala Nursery, Pionbelli, North Wales,
Great Britain, Oct. 30, 1883.

Enterprise in Dakota.

To the Editor of the Scientific American:

My attention was attracted by a short article in your issue of December 1, describing the rapid growth of the town of Woonsocket, Dakota.

It so happened that I was at the aforesaid town twice a few weeks since, and can vouch for the truth of the story of its wonderful growth. The first time I passed through, the place was just ten days' old, and contained sixty-five

buildings in process of erection, only two of which had progressed far enough to be painted. Five days later I was there again; there were then a number of other buildings under way (the exact number I do not know), and about a dozen or fifteen of the older ones were not only painted, but occupied. The depot was finished and in use, and the town contained the usual number of saloons, eight or ten stores, one or two law offices, several of the inevitable "land and loan" offices, two hotels (unfinished), and, if I mistake not, a newspaper. Nearly every one of the buildings mentioned above was a bona fide store or dwelling; for in the "booming" places the out-buildings are left until the last thing.

At the time referred to Woonsocket was, and presumably is now, an ideal "boomingtown." Mechanics were getting fabulous prices and were in great demand. Whole trains of freight cars, loaded with building material, stood upon the tracks, waiting to be used. Building lots which sold originally for one hundred dollars had brought three hundred a little later on, and were now selling for six hundred. Large numbers of lithographic "plats" of the town had been struck off, and were being forced upon every stranger who happened to set foot in the place. The envious inhabitants of the neighboring towns have changed the name Woonsocket into "Boom-struck-it," which certainly correctly expresses the state of affairs.

CHARLES T. BEARDSLEY, JR.

Birmingham, Conn., December 4.

J. A. asks (1) how "opodeldoc" is made. A. Take of shavings of Castile soap 4 ounces, of gum camphor 2 ounces, of oil of rosemary 1/2 fluid ounce, of water 6 fluid ounces, and of alcohol 1 quart. Digest the soap in the water until it is dissolved; dissolve the camphor and oil in the alcohol; then mix the two solutions, and filter. (2) What is a good recipe for rheumatism? A. The following has been highly recommended: Take of gum guaiac 2 ounces, of nitrate of potassa 1 ounce, of sulphuret of antimony 2 drachms, of gum camphor 2 drachms, of gum opium 1 drachm, of saffron 20 grains, and of gin 1 pint. Mix. Dose, one teaspoonful three times a day in a little sweetened water. In a complaint like rheumatism it is better to consult a good physician than to rely upon published recipes, which, although they may have proved efficacious with some persons, may not be adapted to the cases of others.

Wire Fences in Georgia.

A lawful wire fence in Georgia is described by legislative enactment as composed of not less than six horizontal strands of barbed wire tightly stretched from post to post. The first wire no more than four and a half nor less than three and a half inches from the ground; the second wire not more than nine and a half nor less than eight and a half inches from the ground; the third wire not more than fifteen and a half nor less than fourteen and a half inches from the ground; the fourth wire not more than twenty-two and a half nor less than twenty-one and a half inches from the ground; the fifth wire not more than thirty-two nor less than thirty-one inches from the ground; the sixth wire not over fifty-five nor less than fifty-three inches from the ground. Posts to be not over ten feet apart, and every alternate post to be securely set in the ground. Provided, a plank not less than ten inches wide shall be used instead of two strands of wire at bottom of fence. It is also required that a railing shall be placed equal distance between the two top wires, which shall answer the same purpose as a wire, and to extend from post to post in like manner.

Am I a Scot, or am I Not?

If I should bring a wagon o'er
From Scotland to Columbia's shore,
And by successive wear and tear
The wagon soon should need repair:
Thus, when the tires are worn through,
Columbia's iron doth renew;
Likewise the felines, hubs, and spokes
Should be replaced by Western caks;
In course of time down goes the bed,
But here's one like it in its stead.
So bit by bit, in seven years,
All things are changed in bed and gears,
And still it seems as though it ought
To be the one from Scotland brought;
But when I think the matter o'er,
It ne'er was on a foreign shore,
And all that came across the sea
Is only its identity.

I came, a Scotchman, understand,
By choice, to live in this free land,
Wherein I've dwelt, from day to day,
'Till sixteen years have passed away.
If physiology be true,
My body has been changing too;
And though at first it did seem strange,
Yet Science doth confirm the change;
And since I have the truth been taught,
I wonder if I'm now a Scot?
Since all that came across the sea
Is only my identity.

WILLIAM TAYLOR.

Aurora, Ind.