Correspondence.

The Editors are not responsible for the opinions expressed by their Correspondents.

The Vienna Exposition.

To the Editor of the Scientific American:

The epidemic of personal abuse which has pervaded the country for the past few months seems, at last, to have reached the office of your journal.

From an article under the above heading, in your issue of November 16, I extract the following: "Then there is General Van Buren, the United States Commissioner for this show, who will also come in for emolument. At present his office is purely honorary; he draws no pay and knew this when he accepted its functions. But of late, he has been very arduously engaged in his exhibition duties, stumping eloquently around the country to urge the election of General Grant, and the administration will of course be expected to provide for his trip to Europe." But once before has any personal assault been made upon me in connection with my official duties, and that was in a communication to one of our daily papers, from a person to whom I had refused the appointment of assistant commissioner. I am not aware of having similarly disappointed any gentleman connected with the SCIENTIFIC AMERICAN, and am therefore at some loss to know to what to attribute the paragraph I have quoted.

While glancing at your article, my eye was caught by certain prominent figures at the head of your editorial columns, which advise the public that your journal is furnished to subscribers at three dollars per year. And, upon turning the page, I find, as the frontispiece, a very excellent representation of a weaving loom attended by an attractive young woman. I might perhaps; be considered personal if I should suggest that your paper was a "show paper," notwithstanding its high sounding title, and that you published it for "pay" and not in the interests of science. And if further I should say that, in your opposition to the International Exhibition at Vienna, you had been moved by a desire to commend your paper to American inventors as the especial champion of their interests, with a view to increasing your circulation and drawing to your net applicants for patents, and thus add to your incoming wealth, I should doubtless find many who would credit the assertion, whatever might be said of my taste in making it. If, in addition, I should announce that you had labored zealously to secure the election of Mr. Greeley to the Presidency, your judgment would probably, in many quarters, be criticized, but your right as a citizen to do even this would not be questioned.

Now, with these comments, let me at once admit the truth of your statement that my office is without pay, and that I knew this fact when I "accepted its functions;" but permit me to add that I did not seek the position, and I only assumed its duties when made to believe that I could thus render some service to the country. And, further, let me say that I have no intention of going to Vienna and giving a year more of my time and exertion at my own expense, and, in addition, pay out of my own pocket the expenses of the Government. If you have any disinterested individual connected with your editorial department who is anxious to do all this, send him along, and he can take the position at once. Neither can I well see why I should thus devote myself to public interests by taking charge of, what you are pleased to term, "a show" at Vienna, where American inventions are exhibited and their superiority established before the whole world, while you demand hard cash for publishing what *I* may please to call a *show paper* to a limited number of subscribers. Your assertion also that I have been "stumping eloquently" for the election of General Grant I will not deny, but when you say that I have in that way "been arduously engaged in my exhibition duties," thus insinuating that I have neglected my official duties and taken to the stump with a view of having a claim for compensation as commissioner, you invent a foul calumny which I respectively insist even newspaper editors have no patent right to do.

Ever since the formation of the Republican party, I have taken an active part in its contests, and, while I believe in its principles, I shall continue to do so. While doing this I have never neglected more important duties, nor have I ever been the hired advocate of any committee or clique, for I have uniformly refused compensation and paid my own expenses. As commissioner to the International Exhibition at Vienna, I have labored zealously for the past four months to make the American Department a success. I have done this to the entire exclusion of my own personal business, and without reference to my own interests, or as to whether I should continue in the commission and go to Vienna or not. While thus engaged, I have earnestly striven to secure a convention and treaty in the interests of our inventors. The Governments of Austria and the United States have ratified a treaty upon trade marks which goes far to secure the rights of our citizens, but I have desired farther to procure an abrogation of certain obnoxious requirements of the Austrian patent laws, and I have caused to be prepared and sent to Washington a draft of a treaty to that end; such a treaty the SCIENTIFIC AMERICAN has professed to be strongly in favor of. If its assistance is to be of the character of the articles thus far published in its columns upon the subject, I may be pardoned for saying it will not prove valuable.

I take pride, in this connection, in stating that all my applicants for space thus far have expressed their determination to send their goods to the exhibition if they have to do it at their own expense; and that in no instance have they asked that their board bills be paid by Uncle Sam.

It may be witty to call the International Exhibition "a show," and to insist that exhibitors are only so many advertisers who ought to pay for their advertisements. "This world is all a fleeting show;" and yet there are many people who are foolish enough to be exceedingly interested in its affairs; and I fully believe that our country will see something more in the grand collection of the industries of all nations at the Austrian capital than a great advertising agency.

I regret that one of our leading scientific journals should take so narrow a view of it, and would fain believe that the editorial in question was the offspring of a bad dyspepsia, or an election bet lost on the late "tidal wave."

I will not do you the injustice to express a doubt of your giving this communication a place in your columns.

THOMAS B. VAN BUREN.

United States Commissioner for the Vienna Exposition of 1873.

The Bursting Strain on Cylindrical Boilers.

To the Editor of the Scientific American:

The SCIENTIFIC AMERICAN holds the position of the leading scientific and mechanical paper of the most influential nation on the face of the globe. By constantly reading it, more practical and useful knowledge can be obtained with less effort than from all other periodicals and books combined. As such, I have time and again recommended it to young men generally, and to mechanics particularly. As one holding these views, I wish to offer a suggestion.

Every paragraph appearing in your paper, although it be a correspondence for which the paper is "not responsible," bears a *quasi* endorsement as having been found worthy to enter your columns, being selected from among a number, the majority of which are rejected.

In your issue of October 19, 1872, page 244, is an article on "Cylindrical Boilers," which I supposed to have been inserted for the purpose of being refuted. The error it contains is made plausible, and stands endorsed therein by Fairbairn, "so extensively known in scientific engineering." A mere expression of difference of opinion was likely to go unheeded as against such endorsement. Therefore, in my communication to you on the subject, I used ridicule to show more strikingly the absurdity of the position taken. This went into the "basket," and the error asserted by Bakewell still stands in your columns unrefuted, teaching to my young friends, whom I have advised to examine the SCIENTIFIC AMERICAN for knowledge, that which is totally erroneous.

Imagine my surprise when to-day, in your answers to correspondents, I perceived that my communication, intended to ridicule Bakewell's proposition by showing its absurdity, could have been understood as expressing my own belief, you putting down your "constant reader" for so many years as a believer in perpetual motion—"the unkindest cut of all."

The pressure in any vessel cannot be greater in one direction than in the opposite direction. Hence, I chose, as strikingly illustrating the error, the semi-circular shape on one side, and a diameter or flat side on the other. On the latter, Mr. Bakewell will hardly contend, unless he irretrievably belongs to the perpetual motion school, that the pressure is greater than at the diameter. How, therefore, can he claim that on the semi-circular portion it can be any greater? His mode of reasoning by "resolution of the radial forces into horizontal and vertical," and again, "of vertical forces so obtained into horizontal," etc., at once points out the error in his mode of reasoning.

Believing that with your great experience and knowledge you always admit an oversight, and set your columns right, I continue your appreciating and constant reader,

ROBERT CREUZBAUR.

[We printed Mr. Creuzbaur's answer on page 298, and called his attention to Mr. Bakewell's letter, which did not state that there was a greater pressure on the convex part of a boiler than on the flat. His assertion was that the bursting strains of boilers vary as the semi-circumferences, and not as the diameters. We shall publish next week a letter, which is to the point in Mr. Bakewell's theory.—EDS.]

Transmission of Motion.

To the Editor of the Scientific American:

I have read the criticisms by Mr. James Garland on a lecture delivered by Mr. Coleman Sellers on the above subject, and I am surprised to find even a comparative advocate of the plate coupling.

When, two years ago, I first became acquainted with American mechanical engineering, there appeared to me nothing in this country more strikingly superior to English mechanical engineering than the American or specially Sellers' way, here generally adopted, of constructing shafting, coupling, hangers and all appliances connected with the transmission of motion.

Mr. Garland is perfectly correct in saying that, in England and elsewhere, the way to keep shafts in the plate coupling in line is to let one shaft enter the opposite part of the coupling a short distance, but I have also known engineers in England who advocate and practice the mode described by Mr. Sellers, of true-fitting bolts in preference to fitting the end of a shaft in the coupling of a shaft of different diameter.

There is no doubt that a worse contrivance than a true-fitting plate coupling, or the one Mr. Garland saw fifteen years ago, may be invented; but the advantages of the double cone coupling, as compared with the former, appear to me to allow of no dispute. If Mr. Garland is correct that it is not considered good practice in England to enlarge the shafts for the reception of couplings, then there is certainly a great amount of bad practice in England. I have seen not only the ends of the shafts for the reception of the couplings, but also the seats for the pulleys, enlarged, and this I would call good practice, if it were not for its costliness. I have had for years the best opportunity to become acquainted with English and Scotch engineering, through personal visits to the engineering establishments in those countries; but to give Mr. Garland other authority, I refer him to any of the English publications on engineering practice.

Philadelphia, Pa. L. SCHUTTE.

Shifting Belts on Pulleys.

To the Editor of the Scientific American:

S. W., in the article on the transmission of motion, page 292 of the present volume, suggests an idea that may be a valuable one. The same idea occurred to me long ago, but without trying it, I had not thought it practicable to shift a belt from a pulley not in motion. Will J. W. please inform us if he has seen an actual trial of it?

A plan that I have tried somewhat, and which works well, is to make the loose pulley smaller than the tight one, so as to relieve the strain of the belt and the pressure on the bearing when the belt is on the loose pulley. Where the tight pulley is of wood, so that the edge can be beveled, a difference of an inch in the diameters is no hindrance to the shifting of the belt.

Good authorities say that the adhesion of a belt is as the square of the amount of circumference enveloped by it. Then it seems to me that it is a good policy to cross belts where it is possible, for the gain in adhesion must, in most cases, be more than the extra wear by crossing.

Buchanan, Mich. W. G. BLISH.

An Invention wanted for Dressing Ramie.

To the Editor of the Scientific American:

A machine is now wanted by the agricultural industry which will largely pay the trouble of inventing it. That fine plant called ramie or China grass (*Urtica tenacissima*), is being cultivated in Louisiana, Texas, California, Mexico and Cuba, but the planters find that the way to a large production is obstructed by the want of an efficient and substantial machine for extracting the valuable fiber, and what is most desirable, for extracting it in large quantities.

I wonder that this machine has not been invented in the true land of useful inventions, although Mr. Lefranc, of Louisiana, has tried and succeeded to a certain extent, in extracting the fiber, but only at the rate of 250 to 300 pounds a day. I am sure that the man who should make such a gift to the pioneers of the ramie culture in those States would be amply remunerated by the selling of hundreds, if not of thousands, of such machines.

Havana. A PLANTER OF RAMIE.

The Stow Pavement.

To the Editor of the Scientific American:

In the SCIENTIFIC AMERICAN of October 19, in an article on wood pavements, you state that the Stow pavement on Sixth or Seventh avenue is wearing out. I will inform you that there never has been a single foot of the Stow foundation pavement laid down on either of those avenues in the city of New York. Will you please correct your statement in the next issue of your valuable paper?

Buffalo, N. Y. HENRY M. STOW.

[The pavement alluded to should, we believe, have been mentioned as Stafford's.—EDS.]

The August Shower of Meteors as seen in Texas.

To the Editor of the Scientific American:

In regard to the shower of meteors of August 10, I would state to you that on the morning of the 11th, between 12 and 1 o'clock A. M., I beheld the finest display of meteors that I ever saw in my life. They were in the west, at about an angle of 45° from where I stood, and were of many sizes, from the smallest speck up to the largest sized star, and very thick.

Bryan, Texas. P.

[For the SCIENTIFIC AMERICAN.]

ABSURD COSMICAL THEORIES.

BY W. T. ROBINSON, A. M.

Dr. Carpenter is not in advance of the SCIENTIFIC AMERICAN in ascribing great importance to common sense as a test for scientific theories. This rule, when applied to certain cosmical hypotheses, shows them to be too thin for any practical purposes.

For instance, Dr. Hickok, in his late work on "Creation," claims that matter results from three forces: antagonistic, diremptive and revolving." Antagonistic forces collide, neutralize and form lumps of matter. But what is this force that he freezes into matter? Heat, light, electricity and sound are examples of it. What is sound? It is nothing more than a jarring or vibration of the air or other substance. The "force" or vibration jars the auditory nerve, and produces the sensation of hearing. In like manner, the waves of light impinge on the optic nerve and produce vision. Heat acts in a similar way. But heat is not an entity in itself; it is merely an abstract name for molecular motion. A ball lying still represents no force; start it down hill and it has force proportioned to its velocity; when it strikes at the bottom, its mass motion is converted into molecular motion, or heat; hence, heat and motion are convertible terms. But this motion is not anything in itself; it is simply an abstract name for the process of a substance changing position; and, as all the forces of Nature are merely varieties of motion, it follows that without matter there can be no force, because motion is nothing more than the action of matter. Force is therefore really nothing in itself. Now, common sense rebels at the idea of the learned Doctor bringing two nothings into collision and begetting something, for every effect must have an adequate cause, every bairn a dad!

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