

**A NEW OPPORTUNITY TO SECURE FOREIGN TRADE.—
SCIENTIFIC AMERICAN EXPORT EDITION.**

The interest which is now everywhere manifested abroad in American productions and inventions, the constantly augmenting desire which is evinced for knowledge concerning the latest outcome of American ingenuity or progress, has reached a remarkable degree of intensity, perfectly comprehensible from one point of view, yet really anomalous when differently regarded. The enterprise of our people is proverbial. With a pertinacity and vigor wholly unrivaled, our manufacturers and inventors have gone on improving, and originating, and extending, with a celerity and a success which have drawn upon us the attention of all the civilized world. To merely say that a device is American abroad carries with it the inference that it is the latest novelty of its kind; and not only this, but that it is probably something original, different, and better than anything of Old World production. The legitimate result of this is, as we have stated, the concentration of the world's gaze upon our mechanical and industrial advancement, and the production of a demand for the output of our abilities. The demand, though now assuming immense proportions, is of spontaneous growth; it is the natural sequence of the energy and the striving for higher development which have been characteristic of our inventors; but it is not due to any of that business sagacity and push evinced abroad by our manufacturers which they exhibit at home. And just here is the apparent anomaly, though only apparent. In a generation we build 80,000 miles of railroad, and maintain it in successful operation; and, naturally, all mankind seeks our means of accomplishing such grand results. We make magnificent extensions in the telegraph, and the world seeks our means for doing likewise.

Of late our foreign trade has fairly come of itself to our doors, and not waited for the enterprise of our manufacturers to seek it out. Russia orders forty locomotives at once of us for her railways. Russian and Turkish officials have come to our factories to buy their war material. Foreign engineers contract here for the deepening of their harbors and water-ways. The foreign farmer buys his reaper in the United States; and in event of a great European conflict, such as seems imminent, this country would become the great source of supplies of the civilized world. The leading foreign technical periodicals surrender large proportions of their space to minute details concerning our railways, our iron and steel works, and our mining resources, and systematically republish every new American invention of merit which appears in these columns. All these signs would be unmistakable, even if the demand were not already enriching those enterprising manufacturers who, unlike the great majority of their brethren, have bestowed special attention to the forwarding of their foreign trade.

For some months past we have been perfecting arrangements to enable manufacturers and exporters to avail themselves of the foreign markets, and to build up their business abroad in a manner that is at the same time most efficacious and least expensive. We are now in a position to announce that we shall begin in June next the publication of an Export Edition of the SCIENTIFIC AMERICAN, which from the outset will have a larger foreign circulation than any other periodical of like nature which leaves this country. Instead of a merely commercial sheet to be glanced over and thrown aside, the SCIENTIFIC AMERICAN EXPORT EDITION will be a large and splendidly illustrated periodical, published once a month. Each number will contain nearly one hundred large quarto pages, comprising the four preceding weekly numbers of the SCIENTIFIC AMERICAN, with which will be incorporated a number of pages devoted especially to business announcements intended for foreign buyers. It is well known to every one accustomed to advertising abroad that to be effective an announcement must be large, striking, and kept constantly before the class to be influenced; and that the few lines often so valuable here because of the close attention given to the advertising columns by wide awake American readers, are not so efficient elsewhere. Accordingly we have placed the rate of charges for space in our Export Edition so low that a large and finely displayed announcement can be regularly maintained, embodying a handsome engraving of the invention or product, at an expense not more than that which an advertisement of a few lines would cost in an ordinary newspaper.

Commencing with the first number and regularly thereafter, we are able to guarantee for the SCIENTIFIC AMERICAN EXPORT EDITION a wide circulation in all the commercial cities and marts of the world.

The SCIENTIFIC AMERICAN is now generally regarded as the exponent and representative of American inventing and manufacturing genius and interests. Those who read it are in general men of intelligence, whose advice is constantly sought for the selection and purchase of improved supplies of all kinds; hence they are those beyond all others with whom the American manufacturer needs to come in contact. The SCIENTIFIC AMERICAN forms the source of knowledge of the nation's progress in industry and invention to influential readers all over the globe. Inventions and products are there presented to the world in a manner such as no private means of introducing them abroad can begin to rival, either in point of cheapness or efficacy, and the fact of being represented in our columns is apt to be everywhere considered proof of utility, novelty, and superior value.

Those who desire to have their announcements published in the first number of the SCIENTIFIC AMERICAN EXPORT

EDITION are requested to send us their copy and engravings therefor without delay.

Among the influential manufacturing firms who have already availed themselves of the advantages of our Export Edition are the following:

Fairbanks & Co., 311 Broadway, New York, and St. Johnsbury, Vt., Manufacturers of the celebrated Fairbanks Scales, the Standard Scales of the World.

H. W. Collender, 788 Broadway, New York city, Makers of celebrated Billiard Tables.

H. L. Judd, 87 Chambers street, New York city, Manufacturer of Hardware for Upholsterers, Builders, House Furnishing, Stationers, Fancy Hardware, etc.

Wilkinson Brothers & Co., Manufacturers of Papers for Covers, Wrapping, etc., 72 Duane street, New York.

Photo Engraving Co., 67 Park Place, New York, Relief Plates for Printing, Engravings, etc.

Macgowan & Slipper, 30 Beekman street, New York, Printers of Books, Newspapers, Drafts, Checks, Commercial Printing of every kind.

Volney W. Mason & Co., Providence, R. I., Makers of the Celebrated Elevator Hoisting Machinery.

Alexander Brothers, Philadelphia, Pa., Manufacturers of Pure Oak Tanned Leather Belting.

The Baldwin Locomotive Works, Philadelphia, Pa., Manufacturers of Locomotives of every description.

Messrs. Carr & Hobson, New York city, and Clintonville, Conn., Manufacturers of Agricultural Implements.

Messrs. Simpson, Hall, Miller & Co., New York city, and Wallingford, Conn., Manufacturers of Fine Electro Silver Plated Wares.

Messrs. C. B. Rogers & Co., 109 Liberty street, New York city, extensive Manufacturers of Woodworking Machinery.

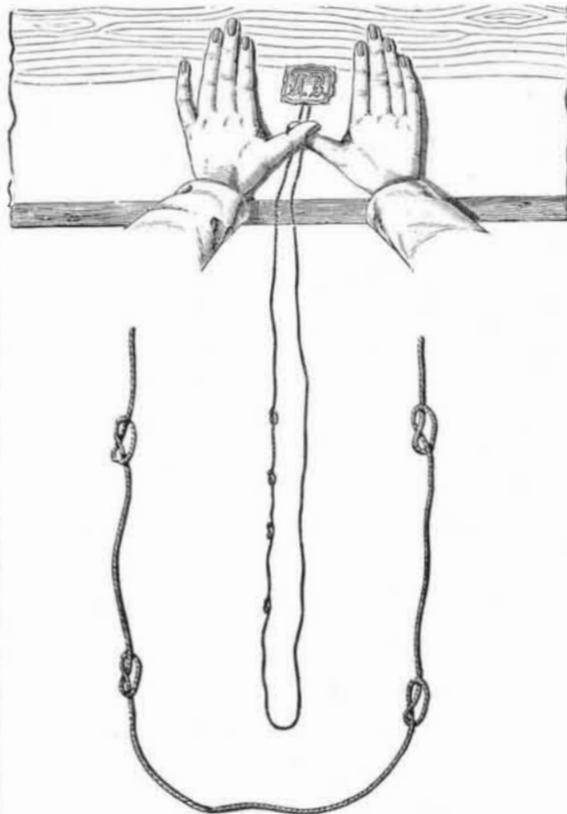
The Rue Manufacturing Co., 523 Cherry street, Philadelphia, Pa., Manufacturers of Rue's Little Giant Injector for Feeding Boilers.

Stout, Mills & Temple, Dayton, Ohio, Manufacturers of the American Turbine, the Standard Water Wheel of the World.

The Reading Iron Works, 261 South Fourth street, Philadelphia, Pa., Manufacturers of Wrought Iron Pipes, for Steam, Gas, Water, Oil Wells, Forgings, Presses, etc.

SPIRIT STRINGS AND MORBID MINDS.

Mr. Henry Slade will be remembered as the medium through whom spirits of the departed, in consideration of five dollars, paid to him in advance, communicate with beloved dwellers on the lower sphere by means of a slate. Two years ago Slade and his slate went to England, and contrived, during a session of the British Association, to have his performances called to the notice of that body, which, much to his disgust, declined to investigate him. Drs. Lankester and Donkin, however, undertook that task, and with reckless disregard of the probable anger of the spirits, they



grabbed Slade's slate at an inopportune moment during the *séance* and discovered an already written reply to a question, the former nicely prepared before the slate was held under the table. The result was that Slade was brought before a police magistrate, and given ample opportunity to prove his tricks to be supernatural, in open court, which he declined, preferring to let unbelieving witnesses go through the same performances and explain the jugglery. He was consequently convicted as a cheat and impostor, and sentenced, but a technical flaw in the proceedings required their review. Before this could be done Slade ran away from England, and lately he has turned up on the Continent, this time with a string, wherewith he has entangled the wits of sundry learned professors, one of whom has written an essay, not merely explaining how Slade deceived him, but evolving a profoundly metaphysical theory, substantially Professor Zöllner, the essayist in question, occupies the

chair of Physical Astronomy in the University of Leipsic. He is a scientist of great ability, an original investigator in the domain of physics, and the inventor of the wonderfully ingenious horizontal pendulum, whereby the most minute measurements possible may be made. For such a man to be deceived by the jugglery of a professional cheat is always a matter for regret, inasmuch as it leads others to give credence to statements which otherwise their common sense would force them to reject. Still there is nothing anomalous in the occurrence, except perhaps in the circumstance that the elaborate hypothesis presented by the professor setting forth the lucid proposition that it is quite possible that that which he cannot understand is directly owing to a condition which no finite intellect is capable of conceiving, shows an unusual intellectual fog. It only affords new evidence of a curious mental condition, to which we shall allude after explaining Slade's new *modus operandi*, which will be easily understood from the annexed engraving, which accompanies a translation of Professor Zöllner's paper in the *Quarterly Journal of Science*.

The professor, previous to attending the *séance*, sealed together the ends of a piece of hempen cord, using his own seal. Four strings were thus prepared. "I myself," he says, "selected one of the four sealed cords, and, in order never to lose sight of it, before we sat down to the table I hung it around my neck, the seal in front always in sight." The engraving shows the position of the cord as well as that of the professor's hands, to which Mr. Slade's left hand and that of another gentleman were joined. "The unknotted cord was firmly pressed," he goes on to say, "by my two thumbs against the table's surface, and the remainder of the cord hung down in my lap." Although Slade's hands "always remained visible," yet by "his presence, without visible contact, and in a room illuminated by bright daylight," four overhand knots, such as shown in the illustration, were formed in the cord. Not only was Professor Zöllner "perfectly convinced," but Professors Fechner, Weber, and Scherbiner, well known German scientists, were equally satisfied of the reality of the observed facts.

We cannot give space to the long essay wherein Professor Zöllner sets forth his hypothesis; but the sum and substance of it is, that, given an overhand knot, we, being "three dimensional beings, can only untie or tie such a knot by moving one end of the cord through 360°, in a plane which is inclined toward that other plane containing the two dimensional part of the knot," that is, the half hitch only. "But if there were beings among us who were able to produce, by their will, four dimensional movements of material substances, they could tie and untie such knots in a much simpler manner by an operation analogous to that described in relation to a two dimensional knot." The two dimensional knot is the half hitch or kink in the string, which a two dimensional being, the professor thinks, could undo only by carrying one end of the latter over a circle of 360°, while a three dimensional person simply gives the kink a twist and out it comes. The little difficulty, however, is to conceive of four dimensional space—length, breadth, thickness, and—what? Still, this does not trouble the professor; the hypothesis, somehow, enables him to reach the conclusion that either Slade's tricks must be accounted for by this "enlarged conception of space," or—somebody is a humbug. To proving the first, the essay is devoted; to disproving the second, we have ten lines in the concluding paragraph, wherein, referring to the unfeeling British magistrate again, Professor Zöllner says that Slade "was innocently condemned—a victim of his accusers and his judge's limited knowledge."

"Every one," says an old Scotch saw, "has a bee in his bonnet." The morbid mental conditions are confined to no particular class of people, and that they are not taken into greater account in determining the why and wherefore of apparently anomalous human action is due simply to lack of general appreciation of their extent. Between that feeling which impels a cultivated, well educated man to believe in the possibility of perpetual motion and that overwhelming influence which irresistibly impels such actions as those of the kleptomaniac, or those of a person who, like the Boston boy-murderer, kills for the love of killing, a connection is traceable. Investigations, and notably those of Dr. Hammond or Professor Huxley, have been directed mainly to the extreme apparently most dangerous to society; and that "unconscious cerebration" or "morbid impulse" drives people to abnormal actions or to the commission of crime, is demonstrated beyond reasonable doubt. It is questionable, however, whether those who show these grosser manifestations of the disorder really are the most dangerous to society. A man with a tendency to steal can be put under restraint, and his influence to a certain extent nullified; but when the disease affects leaders of thought, in other regards brilliantly sane, then, through them, its baleful influence reaches thousands. Without that positive proof which is only to be determined by much needed direct research—a most delicate and most difficult undertaking—the cause of the ailment can only be surmised. It may be due to over brain work, to a too close habit of laborious theoretical speculation, to impairment of the faculties by age, all tending to produce impairment of brain substance. Professor Zöllner adds but one more instance to the many which constantly come under our notice. The Keely gulls were conspicuous examples, and almost any one's experience will suggest others. We simply regard these people as mentally ill. We believe that their brains, carefully examined, would exhibit mechanical lesions, and the statements or actions governed by the injured part of the organ are therefore fit subjects for the study of the physician, not of the physicist.