Correspondence.

A Market for Kerosene Engines.

To the Editor of the SCIENTIFIC AMERICAN:

The people of this country are boycotting all German manufacturers. They do not as yet import American goods, on account of high custom duties. One of the engine works here wishes to buy the right of manufacturing in this country an American kerosene engine, for small trade, of 1 to 8 horse power. They would either purchase the patent of such machine for this country, or they would, if preferred, go into a partnership with an American manufacturer to build such engine here on royalty.

Offers will be acceptable only for the best and latest improved kerosene engines.

Any offers can be addressed directly to me and I shall mediate between the parties on both sides, on account of language.

BATESLAW HORODYNSKI, Vice U. S. Consul.

Warsaw, Poland, March 15, 1902.

A Letter from India.

To the Editor of the SCIENTIFIC AMERICAN:

I am extremely obliged to you for your letter of November 23, 1901, and for the pretty calendar inclosed therein, and I must apologize to you for not having acknowledged them ere this. The calendar is a splendid work of art and has been admired by all to whom I showed it.

The SCIENTIFIC AMERICAN supplies in India the much-needed want of a really scientific journal, and it is needless for me to add that it is read with the greatest interest by me and my several friends. I don't think we will ever give up subscribing to this paper, replete as it is every week with fresh and latest intelligence of progress made in the world of science and art.

There are all sorts of things and latest works of art advertised in the advertising columns of the paper, but the difficulty for us Indians is how to get them. I tried value payable parcel for something I wanted two years ago and remitted the money, but it was after eighteen months or more and a great deal of correspondence that I succeeded in obtaining it.

I know the distance between us is nearly 9,000 miles, but I am sure the fertile brain of Americans can devise means by which the obtainment of what we want, whether in the shape of machinery, books or some such things, might be assured, the money being paid to a representative or representatives in Bombay or any other station in India. There are several American missionaries doing a lot of excellent work among the Indians, and some of them might establish agencies with the United States. We cannot but admire the self-imposed but noble task of the missionaries. They are working among the lowest classes and have succeeded in elevating them both morally and socially.

DINSHAW D. KHAMBETTA.

Iubilu Cottage, Poona, India, February 22, 1902.

Musical Flames.

To the Editor of the SCIENTIFIC AMERICAN:

I have read Tyndall's and other explanations and theories as to the effect of certain sounds on gas jets, but the said explanations do not appear to cover a case that we have here in the office of this estate. For testing purposes we have five attachments on one arm, the gas for all of which previously passes through a gas gage. One of the five attachments is a Kern No. 0 burner, which the manufacturer grades as burning 8 to 10 feet of gas per hour; and when lighted gives say 15 candle power light; but if I jingle or rattle my bunch of office keys, will increase the light to as much as double, *so long as I keep on rattling the keys*, and which may be done as much as 15 or 20 feet away and behind a screen; but the farther we are away from the gas jet the less effect the rattling of the keys has. There are other noises which seem to have about the same effect, such as rattling stiffish writing paper. Sometimes the increase in light is only about 25 or more per cent, and there never is any apparent tendency of the jet to sing or whistle, *simply an increase of light*. I cannot say whether any more gas is being used when keys are being rattled or not, but the whole apparatus is here and open to inspection by anyone interested in the subject.

It appears to me that we do not yet thoroughly understand the action of sound waves on gas jets; and without assuming to know anything about it myself, I believe that vibrations other than those of light have an effect on light vibrations. The reported invention of a form of "arc light" which will give off musical sounds performed considerable distances away may possibly be based on the same principles which appear to affect our Kern burner.

The increase in light when keys are rattled is certainly *not* caused by increased air circulation, as I carefully tried the experiment of waving fans and creating more or less air circulation, but without any effect whatever on the gas jet I mention.

WILLIAM LITCHFIELD.

Winnipeg, Man., March 13, 1902.

Automobile News.

Two Frenchmen have found that if acetylene be dissolved in acetone, the danger of explosion is very considerably decreased. Since 1896, Messrs. Claude and Hesse have been trying to dissolve acetylene in some liquid in order to obtain an accumulation of the gas in portable receivers at a pressure considerably below that required for liquefaction. As a result of many experiments acetone was the liquid finally selected as the solvent.

An electric delivery wagon that has been in use for about a year now, is one of the important adjuncts to the new Congressional Library at Washington. By its use the Library is able to make two deliveries daily at any point within reasonable limits. The present vehicle, motorman, and four attendants are kept extremely busy every week day, and it would not be surprising if, before long, a second delivery wagon were found necessary.

The Cocks Automobile Speed bill passed the New York Senate on March 6. The bill provides that a chauffeur who drives his vehicle faster than 8 miles an hour within a city or village where local ordinances do not otherwise provide, and faster than 20 miles an hour outside a city or village limit, or faster than 4 miles, and in which it is anticipated, automoblists first offense not exceeding $50, and for the second offense not exceeding $50, or by imprisonment for a term of six months or both.

Some ninety cabs and broughams and thirty delivery wagons belonging to the now defunct New England Electric Vehicle Transportation Co., of Boston, were purchased by New York gentlemen who, it is said, intend equipping them with gasoline motors in place of electric, and then putting them into service again. Should this feat actually be accomplished, it will be interesting to note how the transformed vehicles compare with their former selves in expense of operation and up-keep, if the residents of asthetic Boston can stand the turning of their city into a miniature Paris —from an automobile point of view—long enough for results of this nature to be noted.

The Paris-Vienna race is to be the great automobile event of the season, and the Automobile Club of France and the Austrian Club are now busily engaged in arranging the details of the race and receiving the applications. As in the Paris-Berlin, there will be two distinct classes, one for the regular speed race and the other a touring excursion in which the main points to be noted are the endurance and general good performance of the machines. The main regulations for both races have lately been issued. For the speed race, the automobiles will start so as to reach Vienna on the 29th of June. The total route, of which the details will be given later, will be divided into three or four stages. The automobiles will be arranged in five classes: motor bicycles, moto-cycles, voiturettes, light and heavy machines. At each stage will be placed a commission which will note the arrivals and departures. Some parts of the route, especially across cities and towns, will be "neutralized," that is will not be counted in the race proper, and the automobiles will be given a certain time to cross these places. In order to indicate the route to be followed a series of signals are to be placed at convenient intervals; these consist of an orange triangle with the point turned in the proper direction. A yellow flag indicates an obligatory stop, blue a slow-up for danger or in the case of crowded districts which are not neutralized; these latter are placed 300 feet in advance. A white-and-blue flag means to go on again at full speed. After the race an exposition is to be held at Vienna, and all the machines which have made the run are to be on exhibition. The tourists' race is to be no less interesting. In this case the vehicle must be of a standard type such as is built for sale, and must seat the passengers comfortably. The power of the motor is to be declared; it must be in proportion to the class and weight of the vehicle. The machines are to carry in front a large sign bearing the inscription "Paris-Vienna," with the insignia of the clubs and the regulation numbers. The excursion is to take place from the 17th to the 28th of June. The drivers will be furnished with a detailed guide indicating the route. Special attention is to be given this time to the proper conduct of the automobiles along the route and especially in the crowded districts. The drivers are obliged to go at slow speed through towns and villages, not to frighten animals, and in general to take various precautions to avoid accidents. At the controlling stations the arrival and departure of each vehicle will be officially registered. A diploma and a souvenir medal will be given to the owners of the successful machines, and there will probably be especial prizes given by associations or individuals for the best all-around vehicles. The government of Bosnia-Herzegovina has officially invited the tourists to visit that country after their arrival at Vienna. The invitation has been accepted by the clubs, and this excursion will no doubt be one of the interesting features of the tour.

Engineering Notes.

A process has been introduced in France for making briquettes of garbage. The refuse of the abattoirs, fish markets, etc., straw, paper and the like is cut fine and mixed with tar and naphtha. The mass after being kneaded is dried and pressed into briquettes, which it is claimed will burn brightly, giving off a slight odor of gas, and engender heat slowly.

News come from Germany that American coal is not looked upon with favor by housekeepers and consumers in general. The reason is to be found not in the poor quality of the coal, but in the lack of knowledge of the Germans. The coal is so hard, and the stoves so poorly constructed, that the condemnation is not to be wondered at. Despite these obstacles, Germany must now depend largely upon the United States for her supply of anthracite. Great Britain scarcely produces enough for her own consumption.

Very large installations of a water purifying and softening system, known as the Desrumaux, are now being made on the Continent and in England, which system is said to involve the use of lime only. A railway installation aggregates one million gallons daily, or enough for a good-sized city, and is to be used for steam and household purposes as well. Water from rivers, canals and commercial waterways of all kinds is rendered bright, clear and potable, and is so entirely free from foreign matter in suspension or in solution that it is found to be excellent for deep-water shipping.

The longest voyage on record under liquid fuel was recently completed by the steamship "Murex." The course lay from Singapore to London, via Cape Town, and covered a distance of 11,830 miles. The total consumption of liquid fuel for all purposes was from seventeen to eighteen and one-half tons per day. Had coal been used instead the consumption would have been from twenty-four to twenty-five tons of Welsh, or with Japanese from thirty to thirty-two tons daily. Aside from actual saving in cost, one must consider the economy in labor and the increase in the available cargo-carrying capacity.

The writer of the series of articles on American engineering competition which appeared in the London Times in 1900, and which attracted world-wide attention, has written for that paper an account of the British Westinghouse Company's Works at Trafford Park, Manchester. As might be expected, the writer considers the erection of these works a veritable boon for British industry. The new works, in his opinion, will do much to redeem the lost glory of England in the field of electrical engineering. The writer in the Times points out that the confidence reposed by American business men in the British engineering industry is shown by the fact that they are willing to wait until six per cent profit has been realized on the manufacturing operations before they receive any returns. At present only the buildings have been completed; but the installation of machinery is progressing rapidly.

Some eighteen months ago the British government appointed a special committee to investigate the explosive qualities of cordite for military and naval purposes. Cordite has been the British service explosive since 1889. The committee was formed in response to the numerous complaints that had been received from South Africa regarding the extensive corrosion of the barrels of the guns, and the uncertainty of the explosive's detonation. The committee had for its chairman the distinguished chemist Lord Rayleigh, and among its members were Sir Andrew Nobel, of the Armstrong works; Sir William Crookes, and Sir Roberts-Austen, a great authority on steel. The committee made an exhaustive inquiry as to the corrosive effect of cordite on guns, the immense cost entailed by repairs, and the difficulty of preserving the explosive in varying climates. The cordite used in the English army and navy consists largely of nitroglycerine, although its exact composition is a secret maintained by the government. The results of the exhaustive investigations have been the emphatic condemnation of cordite for service purposes. The committee, however, recommended a new powerful explosive, which is to be adopted, and the most salient characteristics of which are that it is immune from the disadvantages incidental to cordite. The exact nature of this new explosive is maintained a secret, and so highly is it valued that, contrary to usual custom, the committee's report upon cordite and the new explosive will never be published or issued in any form whatever. The government is also experimenting with a new smokeless and flameless explosive. The attainment of the latter will be an invaluable discovery, since it will then be impossible to locate the whereabouts of the gun firing such an explosive. This end can be achieved by obtaining such an excess of oxygen as will completely convert the carbon, not merely into carbon-monoxide, but into carbon-dioxide, at once. The committee which has condemned cordite is to be constituted into a permanent body for the purposce of investigating the question of explosives.