Correspondence.

The Fastest American Horses.

To the Editor of the Scientific American:

The gray stallion Alabaster *trotted* a mile at Independence, Iowa, August 29, in 2:15—fastest four-year-old stallion record. The bay stallion Roy Wilkes *paced* a mile at same place and time in 2:08¼—fastest *stallion* pacing record. Maud S. holds the world's record trotting—2:08¾. Johnston (gelding) holds the world's pacing record—2:06¼. W. R. ALLEN.

Pittsfield, Mass., Sept. 26, 1890.

Blue Writing Paper—a Device Wanted.

To the Editor of the Scientific American:

Ruled black lines will not show through *blue* paper. Is there any contrivance that you or any of your multitude of readers know of as a guide for writing in perfectly horizontal and equidistant lines on unruled *blue* paper? As yet, I know of none such. If there is nothing of the kind, do you not know of a Yankee or other genius who could invent an apparatus or something, or devise a way, manner, and means for writing in straight and parallel lines on unruled *blue* paper? CHARLES MARSEILLES.

Exeter, N. H.

Filling Glass Jars with Hot Preserves.

To the Editor of the Scientific American:

Query No. 2435, F. S. M., asks the best way to keep glass jars from breaking when filling with hot preserves.

My wife puts up a great deal of preserves, and never broke one glass since she adopted the following plan, which seems very ridiculous at first:

"Rinse in cold water, inside and outside, and at once, while cold, pour in the boiling 'stuff.'"

You may think this unreliable; but all my neighbors and relatives do it just the same.

St. Cloud, Minn. J. B. ROSENBERGER.

Aluminum as a Battery Plate.

To the Editor of the Scientific American:

In your issue No. 17 of the last volume you ask your readers to give their experience as to the fitness of aluminum plates for battery use. I have used one of my own construction, with bichromate of potash and sulphuric acid fluid. I was at the time experimenting to find a solder for aluminum, but failed. Making much use in my practice of electric and galvanic apparatus, when one day, using a one-cup Faradic battery, the carbon broke, and it occurred to me to try an aluminum plate, and it worked quite well, and I used it for about two years off and on. This was in the year 1874. The aluminum plate did show wear. May be it was not quite pure, as at that time I had to pay a high price for every ounce I bought.

New York, N. Y. ERNST F. HOFMANN.

Work of Amateur Electricians.

To the Editor of the Scientific American:

Seeing that you would like to hear from amateur electricians, I thought that I would take up some of your valuable space to record the doings of four or five boys in this city.

We have organized a little "Electrical Club," purchased a back-geared engine lathe, and have set up quite a laboratory in a vacant room, which is lighted by electricity from sixteen 6 c. p. lamps, run by storage battery. We have meetings once every two weeks, at which members report the progress of the intervening time.

All members have free access to the laboratory and tools during spare hours, the tools having almost all been furnished by the parents of the boys.

Between us we have made an 8 light dynamo, with compound winding; but I cannot give correct figures about it.

A Thompson mirror galvanometer, with a mirror of the radius of 4 feet 6 inches, and a milliamperemeter are among the other products of the shop.

We want the data for a storage battery to light three 6 c. p. lamps which we can charge by 12 cells of gravity battery.

Please give us the required figures as to method of connecting primary battery, etc.

THE SPRINGFIELD ELECTRICAL CLUB,
By JOHN S. STEWART, *Secretary*.

Springfield, Ill., Sept. 16.

[The information sought will be found in "Experimental Science." See advertisement in another column. —ED.]

The Kerosene Lamp and its Defects—a New Invention Greatly Needed.

To the Editor of the Scientific American:

Another of those frequent kerosene oil tragedies has just occurred in West Ringe, N. H., where a woman and child have been burned to death.

Being in the lamp and oil stove business, I think it advisable to furnish a few hints in connection with the immediate cause of such disasters. Before proceeding further, I must remark that the present system of burning oil both in lamps and oil stoves seems like a satire upon this progressive age.

A flame oxygenated by air currents to the fiercest heat is placed directly in contact with a brass tube through which all the oil consumed has to pass. Of course, this tube being always made of brass, is one of the most rapid conductors of heat, and soon becomes excessively hot. A better device for generating explosive gas could hardly be conceived.

The worst of it is that the gas thus rapidly generated falls into the oil fount and is all ready for an explosion the moment that the smallest part of it comes in contact with fire. A slight current of air will often convey some of this gas to the flame, when a conflagration or explosion is almost sure to follow.

If the numerous inventors who read your instructive journal could substitute some device for the present mechanical and scientific outrage, something not too complicated and expensive, I risk nothing in asserting that such a device, if brought before the public in a business way, would become universal.

The horrors just referred to have now become so frequent that they receive only a brief and passing notice in the daily papers. KEROSENE.

Charlestown, Mass.

The London Metropolitan Railway Fire.

The fire on the Metropolitan Railway September 15 may certainly take rank as one of the most extraordinary occurrences that ever engaged the attention of Captain Shaw and his brigade. It is not the magnitude of the fire so much as its character, and the circumstances that led to it, which claim consideration. The scene of the disaster was a road bridge crossing the railway, about 300 yards to the north of the Farringdon Street station, and leading from Clerkenwell Road to Clerkenwell Green. Underneath the bridge were two double lines of railway, one pair serving for the Great Northern, the Midland, and the London, Chatham, and Dover traffic, while the other carried the Metropolitan trains. The two systems of traffic were separated by a brick pier, supporting the center of the bridge. In contact with this pier was a timber shed, as long as the bridge was wide, and containing about twenty barrels of naphtha, the property of the Metropolitan Railway Company. Overhead was the bridge, massively constructed of brickwork and iron girders, the latter of considerable size. It was a strong bridge, and in among the girders were two immense gas mains, the largest being the rectangular equivalent of the 48 inch main running from Beckton to Fulham—a distance of fifteen miles. The other was equal to a circle with a diameter of 36 inches. These were both trunk mains, having no service pipes, and carrying gas at high pressure.

It will be seen that everything was admirably arranged for a species of volcanic outburst at some time or other; and so it came to pass. There was all the greater risk of an explosion from the circumstance that the naphtha store was in a confined situation, where ventilation would be difficult. The weather was warm, the shed was shut up for forty hours, and in the meantime became filled with inflammable vapor from the volatile naphtha or "spirit." The custodian of the stores opened the shed on Monday morning, and, perfectly unsuspicious of danger, struck a match. In an instant the vapor took fire, the naphtha blazed up and exploded, and the tremendous flame, accompanied by enormous volumes of smoke, speedily roused the whole neighborhood. The fire brigade were quickly on the spot, but water was of little use against so inflammable a liquid. The iron girders of the bridge became distorted by the terrific heat, the two great pipes were fractured, and torrents of burning gas added to the fury of the conflagration. The roadway sank, and the traffic of an important thoroughfare was stopped, while the railway trains were also interfered with. Fortunately the central depot of the gas company was near at hand, and from this spot the chief distributing engineer, Mr. Foulger, was able to send messages along the private wires of the company in all directions, so as to summon help, and control the working of the valves connected with the various mains.

A strong body of men, employed by Messrs. Aird & Sons, contractors to the company, was promptly set to work by Mr. Foulger to cut off the flow of gas. The task was a heavy one, and fraught with some danger; but it was bravely and successfully accomplished. The roadway at each end of the bridge was laid open, so as to expose the mains where their form was circular. A hole was then bored in each of the four portions, and through each of these apertures an India rubber bladder was introduced in a state of collapse. The bladders being inflated by the action of powerful bellows, the passage through the mains was completely blocked. Gas no longer escaped from the eastern section, neither could air enter the mains on the western side of the bridge. So well did Mr. Foulger govern the valve arrangements in different localities, that the pressure was kept up in the mains running from the bridge westward, and all danger of an explosive mixture with atmospheric air was prevented. The gas being thus effectually dealt with, it only remained for the naphtha to burn itself out, leaving a shattered bridge and an intercepted roadway.—*The Engineer, London.*

Miss M. North.

The death is announced of Miss Marianne North, the accomplished artist, botanist, and traveler. She was born at Hastings in 1830, the eldest daughter of the late Mr. Frederick North, M.P. Miss North early developed a strong taste for natural history and a desire for travel, and in 1865 she went with her father to the East. For two years they resided in Egypt, Syria, and Palestine, and after Mr. North's death, in 1869, his daughter devoted herself to painting as a profession. In 1869–70 she executed a large number of landscapes in Sicily, and in 1870 visited Canada, the United States, and Jamaica. Her sketches made in these places were the foundation of the present collection at Kew. She next went to Brazil to paint the flora of the country, and she was received with much distinction by the Emperor. Teneriffe, India, and Ceylon were then visited, the result being a splendid collection of studies. A selection from them was exhibited before the Royal Society.

In November, 1877, Miss North went to India, and on her return, two years later, she offered her entire collection of pictures to the authorities of Kew, in trust for the nation, and she engaged to build at her own cost a gallery for their reception. The offer was accepted, the hanging of the paintings was superintended by the artist herself, and on July 8, 1882, the gallery was thrown open to the public. There are upward of 700 paintings, and, according to the testimony of Sir J. D. Hooker, it would be impossible to overrate their usefulness and scientific importance.

On August 4, 1882, Miss North left for the Cape, to study the vegetation of South Africa. Early in 1883 sixty new paintings were sent to Kew, and in June the collection had so increased that a new room was added to the building. On September 24, 1883, Miss North left London for Mahe, the principal island of the Seychelles group, where trees and flowers flourish which are unknown elsewhere. Here also she made many valuable sketches. She subsequently visited, in pursuit of her artistic and scientific objects, California, Borneo, Java, Australia, and New Zealand. A final journey undertaken to South America brought on a long and painful illness, from which Miss North never recovered, and she died a few days ago at her home in Gloucestershire, leaving a work which few can surpass.

The American Orthopedic Association.

At the recent meeting, the president, Dr. De Forest Willard, of Philadelphia, after welcoming the members, narrated his experiences in the observation of orthopedics in Europe during the past summer. He congratulated American orthopedic surgeons upon their decided superiority as regarded the application of general and surgical knowledge and the benefit to be derived from operative measures in the correction and relief of deformities. The safety, rapidity, and ease with which many bodily defects could be rectified by the knife and chisel, and the great advances made in the practice of antiseptic surgery, were, as a means of relief, more fully appreciated by Americans than by others. He would, however, give all credit to Macewen for his advocacy of osteotomy, while to Lister belonged the honor of securing that advance which in surgery in its varying applications had revolutionized surgical practice. In regard to mechanical advances, the invention and application of mechanical measures for the correction of deformities, for securing rest, for traction, for immobilization, and for the proper treatment of joint diseases, Americans could justly maintain that they were in the first rank. He then alluded to the orthopedic section of international medical congress, which had been established through American efforts. The most novel idea associated with this particular branch of the work shown at the exhibition of Berlin was the ivory joints of Gluck, by which he proposed to replace the excised portions of bone. These joints were intended to remain permanently in position, and to maintain the proper functions of the limb. While the subject was only yet in its experimental stage, in both theory and practice, yet he deemed it worthy of consideration. Dr. Bely's apparatus for the correction of deformities of the chest arising from lateral curvature of the spine by weight pressure exercised upon the individual in a stooping posture was highly commended. The president closed his remarks by referring regretfully to the death of two of the members, Dr. Lewis Hall Sayre, of New York, and Dr. David Prince, of Illinois.—*N. Y. Med. Jour.*

IT is said a good cement for joining parts of apparatuses, etc., permanently solid and waterproof, and which resists heat, oils, and acids, is made by mixing concentrated sirupous glycerine with finely powdered litharge to a thick, viscid paste, which is applied like gypsum. Glass, metal and wood can be cemented together by it.