

Correspondence.

Tregaron Bogs.

To the Editor of the SCIENTIFIC AMERICAN :

Some years ago I saw in the SCIENTIFIC AMERICAN articles on the working of peat bogs in Germany, I believe ten or twelve years ago, and since then I have been endeavoring to bring these bogs of several thousand acres before the commercial world, and lately some German chemists have been here experimenting, with very satisfactory results. One of them, Mr. Sprayborn, has obtained a patent on his process. His mode of working it is by distilling the wet peat. A certain weight is put in a retort, some chemicals being previously mixed with the wet peat, about 5 ounces to every 112 pounds, and the different oils are abstracted, leaving nearly pure carbon in the retort, which is then put into a mould and compressed and comes out a solid briquette; and they maintain that these briquettes will burn equal to coal with very little smoke and only two or three per cent of ashes, and which they can sell at 6 shillings per ton. They reckon that they can obtain from 40 to 50 gallons of refined oils from each ton of wet peat. On one trial at which I was present they put 70 pounds of peat in retort, obtained over 6 gallons of crude oils, some of the light oils escaping, and there was only 8 pounds of carbon left. The oils obtained are lubricating oils, naphtha, camphor, ammonia, paraffin wax and tar. The proportions of each I do not know, and there are one or two by-products, besides the peat, which is from 25 to 30 feet deep. There is fine clay from 15 to 18 feet thick, which will make good earthenware and bricks, and both can be baked by the turf briquettes, the ashes being used for mixing with the clay for the coarser bricks. T. W. JONES.

Tregaron, South Wales.

A Chinese Typewriter.

To the Editor of the SCIENTIFIC AMERICAN :

The interesting article on typewriters in your number of August 13 would have been more complete had the writer known that there was a machine for writing Chinese. He was correct in assuming that the entire bulk of the written language, some 14,000 characters more or less, is too large a dose for any machine with which we are acquainted, but, as the most of these are rarely used, one can get on with a much smaller number; in fact, about 4,000 make a very comfortable vocabulary, and can express quite a range of ideas.

A machine writing about this number of characters has been invented by Rev. D. J. Sheffield D.D., president of the North China College, A. B. C. F. M.

The only specimen as yet existing is the one made to his order, by an American firm, and in constant use at the college at Tungehow, near Peking.

The mechanism is peculiar; the characters defy analysis in any way to make possible building them up piecemeal, so a keyboard is out of the question. They are arranged on the face of a stereotyped wheel, about 2 feet in diameter, in radii of the circle. The wheel is mounted horizontally, type face downward, while homologous printed characters on the upper surface serve to locate them. The radius carrying the desired character must be brought into the printing line. A simple link motion finder brings the paper to the right place, and a lever below presses it up against the type.

The machine is marvelously compact and simple, considering the large number of ideographs which it must carry. One fairly expert with it can write four or five times as fast as a very rapid writer with the brush pen.

In the ordinary course of Chinese business, either governmental or mercantile, this dispatch would not commend itself particularly, and, in fact, would arouse strong opposition, as depriving a very worthy class of people of employment, but the impact of the occidental has a tendency to "hustle" the East. And in the railroad business, which is beginning to assume tangible proportions, there is a call for celerity which is likely to demand more of these ingenious typewriters. You, sir, have doubtless followed somewhat the course of political events in China, during the last few exciting months, and know how the young Emperor Kwang Hsi, after developing a wonderful eagerness for the improvement of his country, through the introduction of western learning and methods, has been dethroned by a coup d'etat, imprisoned by the Empress Dowager, who was regent during his minority, and compelled to petition her to assume the prerogatives of sovereign, which she has done, while he is held in durance at her palace in Eho Park. His trusted advisers, who were working for enlightenment and progress, are beheaded, banished, or fled, and almost all his reform measures are reversed. Among them was the establishment of a bureau for the encouragement and protection of inventors, and he began a system which practically initiated a patent law for the empire, giving a monopoly of the manufacture of worthy inventions.

This has gone with the rest, and recently a local mechanic at Foo Chow, who had invented a spinning machine, which, before the coup d'etat, had been recogniz-

ed by the viceroy of his province, and for which he had been given the privilege of sole manufacture and sale, applied for a passport to the provincial judge, that he might exhibit his invention in the interior of the province. To his great surprise, however, the judge refused the petition, describing inventions as a fraud and patents as a means of tempting deluded people to desert the good old ancestral ways.

A. P. PECK, M.A., M.D.

Pang Chang, North China, November 7, 1898.

Miscellaneous Notes and Receipts.

The first international exposition in Japan is planned for the year 1902. The Japanese government is already getting ready to take the first preliminary steps, and a suitable site for the exhibition is being chosen. A notification of the exhibition project is likely to be sent to the European and other governments as early as next spring.—Internationaler Technischer Courier.

An Old Receipt for Violin Varnish.—In 1696 there appeared at Nuremberg a book entitled "Kunst und Werkschule," published by one Johann Ziegers. This book, which is very rare, gives in the first chapter two hundred and four receipts for the production of different lacquers and varnishes. The following is a translation of one of them, bearing the pompous caption, "Exceedingly handsome violin and lute varnish of a famous violin maker at H."

This, to be made right, should be prepared in three glass vessels at the same time. In the first glass place good gum lac, 8 ounces; sandarac, 3 or 4 ounces; powder all very finely and pour on 4 "fingers" of the best and strongest spirit of wine, allow to dissolve, strain it through a linen cloth, and leave it stand in a quiet place until the clear varnish is on top, when it is poured into another glass. In a second glass resolve or extract cleanly dragon's blood, 1 ounce; "rother Beern-Wurzel" (red bear's wort), 3 ounces. In the third glass dissolve colophony, 8 ounces; aloes succolini, 2 ounces; orlean (annatto, a yellow vegetable pigment), 3 ounces; and when everything has been sufficiently extracted and colored, pour together the contents of the vessels, put up the glass in a good manner, allow to stand undisturbed for eight days, pour off what is clear, and strain through a clean cloth. If the varnish is too thin, let some of the spirit of wine evaporate, until it is of the proper consistency, and keep in a good place. This will give a handsome red varnish, which can also be employed for gilding zinc.

Solubility of Certain Sulphides in Glass.—It is known that sulphides of the heavy metals, and especially cadmium sulphide, are dissolved unaltered by melted glass, which enables one to obtain a number of coloring substances for glass. In the production of glass colored with cadmium sulphide, certain difficulties had formerly to be surmounted; to-day, fancy glass, colored with cadmium sulphide, under the denomination of "Kaiserjgelb," is manufactured on a large scale, which is distinguished from the brownish-yellow silver glass by its brilliant deep yellow color, with a faint tinge of green.

As regards the solubility of other sulphides, we would mention the following mixtures:

A. Sand, 65 decigrammes; potash, 15 decigrammes; soda, 5 decigrammes; lime, 9 decigrammes; molybdenum glance, 3 decigrammes; sodium sulphide, 2 decigrammes. From this results a handsome, dark red-brown, ruby color. In thin layers the glass appears light brown-yellow; flashed on opal, it turns a dirty black-brown, which appearance is, by the way, also observed with other sulphides, and may be traced back to the fact that the sulphide precipitates from the rather concentrated solution on repeated heating.

B. Sand, 50 decigrammes; potash, 15 decigrammes; soda, 5 decigrammes; lime, 9 decigrammes; molybdenum glance, 1 decigramme; sodium sulphide, 2 decigrammes. This gives a yellow which strongly tarnishes glass.

C. Sand, 10 parts; potash, 3.3 parts; soda, 0.27 part; lime, 1.64 parts; molybdenum glance, 0.03 part. This gives a reddish-yellow glass with a very handsome tinge of red.

D. Sand, 100 parts; potash, 26 parts; soda, 1.8 parts; lime, 12 parts; cupric sulphide, 1.7 parts; sodium sulphide, 13 parts. This yields a sepia to sienna colored glass, dark brown, no longer transparent in a tolerably thick layer, but clear and undimmed. By heating, it turns dirty dark brown and dim; thinned with cutting-glass and flashed on opal, agreeably warm sepia shades are produced which, obtainable in any desired intensity, resemble the natural paper of the painters, and are especially suited as a background for designs or glass painting.

Experience has shown, however, that glass colored with sulphides is not so easy of production as that colored with silicates.

This is for the most part owing to the nature of the sulphides, to their ready oxidability, their comparatively greater volatility, and to the fact that metallic sulphides are entirely different from the substance of glass and cannot, therefore, be melted together with it in any desired quantity.—Diamant.

Science Notes.

A Galvani celebration took place at Bologna, Sunday, December 4, 1898. This was the centenary celebration of his death, which occurred December 4, 1798. Luigi Galvani was a great anatomist of the Bolognese school and is best known by his discovery of animal electricity. The celebration was very interesting and a committee of Italian telegraphers is now organizing a similar commemoration for Alessandro Volta.

It would appear that the Electrolytical Marine Salts Company dies a hard death. A committee was appointed last August to investigate its affairs and a report was made against the receivership, recommending that a committee of citizens would take the company's business in hand with ample authority to test the Jernegan process for getting gold from sea water and to disentangle, if possible, the legal snarl into which the affairs have drifted. It is extraordinary that people, in the closing years of the nineteenth century, should be so deluded by such an ignis fatuus.

An interesting discovery has just been made in the Library of the Vatican. The assistant librarian has just found the original manuscript treatise of Galileo Galilei on the tides. The manuscript is entirely in Galileo's handwriting and ends with the words "written in the Medici Gardens, June 8, 1616." His Holiness Pope Leo XIII. has taken great interest in the discovery, and the manuscript is to be published in sumptuous form at the expense of the Vatican. It has always been considered that the original of this work was lost; so it is all the more valuable, as it differs considerably from the text hitherto accepted as Galileo's, which is now in process of publication, together with Galileo's complete works, by a learned Italian society, the Accademia della Crusca.

Sir Edward Cecil Guinness, now Baron Iveagh and head of the great brewing firm in Dublin, has presented \$1,250,000 to the Jenner Institute of Preventive Medicine, in Great Britain. The purpose of this munificent gift is to promote researches in bacteriology and other forms of biology as bearing on the causes, nature, treatment, and the prevention of disease. Heretofore, there have not been adequate facilities in the United Kingdom in carrying on investigations of this nature, as there should be, but now by this princely gift the opportunities for research will compare favorably with any similar establishment in the world. The gift comes at an opportune time, as many of the misguided inhabitants of England refuse to have anything to do with vaccination, and the time is almost ripe for an epidemic which will bring them to their senses.

A colored person called William King, of New Bedford, Mass., has enjoyed the uninterrupted possession of two hearts for a century, as he is one hundred years old, and is still so hale and literally hearty as to be able to bend bars of iron across his arm. According to The New York Herald, which records this remarkable freak of nature, Dr. Munroe B. Long, of the Muhlenberg Hospital staff, a physician of high repute, after visiting King, said: "King has one heart on the right and one on the left side of the chest, whose separate beats in unison could plainly be determined. By a certain muscular contraction King let one heart drop to the left iliac region, where I clearly heard the beating; then let the other heart drop to the right iliac region, where its beating was also plainly heard, both beating in the lower part of the abdomen in unison. Next, King threw over the interior of the abdomen a wall of bone from the neck down, giving every evidence of having two sternums, or breastbones, one of which is movable at his will and seems to lie behind the regular breastbone when in repose."

Experiments in the use of kites for meteorological purposes recently tried by A. L. Rotch, of the Blue Hill Observatory, Boston, Dr. Hergesell, of the Meteorologisches Landesinstitut, Alsace-Lorraine, and others, have given such very satisfactory results as to arouse the greatest interest in all scientific circles. The experiments with this kite, which was 26 feet long and 13 feet wide, weighed 16.5 pounds, and had a surface covering an area of 129 square feet, were made last August at Kreszowice, near Krakow, and were remarkably successful. The kite rose with a rush, and the entire length of the string, 1,115 feet, was let out by using a windlass with a band brake. With a wind of about 20 feet the kite carried a load of about 66 pounds, which is more than even the heavy instruments weigh. The motion of the kite was quiet and uniform, only a slight tacking indicating a change of wind. At a height varying from 190 feet to 330 feet the only effect of a change in the pressure of the wind was to cause a moderate ascension when the force of the wind increased, and a slow descent when the wind pressure decreased. The use of a tail or landing-line, such as is generally attached to a balloon, proved most satisfactory. The line was 33 feet long, and hung from the neck of the rudder. The experiment of securing a dynamite cartridge to the landing-line and exploding it at a considerable height was tried, and the result showed that the kite could, if desired, be used for the purpose of producing rain by explosions.—Illustrirte Zeitung.