

Scientific Memoranda.

GROTTO DEL CANE.—Prof. B. Silliman, Jr., in his European correspondence, thus speaks of the Grotto del Cane, or Dog Grotto, which has so long been famous for its stratum of carbonic acid gas covering the floor:—

"Unfortunately, like some other grottoes, its enchantment disappears on a near view. It is a little hole dug artificially into the foot of a hill facing Lake Agnano. The aperture is closed by a door, and the space within is barely sufficient for one man to stand erect. Into this narrow cell a poor little dog is very unwillingly dragged and placed in a depression of the floor, where he is soon narcotised by the carbonic acid. The earth is warm to the hand, and the volume of gas given out is very constant. Such is the world renowned Grotto del Cane, which, if it did not equal our expectation, at least afforded us the opportunity of some merriment."

NEW PORTABLE HYDRO-ELECTRIC CHAIN BATTERY.—This is a new invention, by a gentleman in Vienna, consisting of a galvanic battery in the form of a chain, which is contained in a morocco box, the ordinary size of a pocket-book. It contains the metallic combination of a voltaic pile, being composed of copper and zinc wire, wound round grooved pieces of wood, requiring only its immersion for a moment in acetic acid to produce most powerful galvanic action for two or three hours; a re-immersion at the termination of that period continues its power. There is connected with it a small clock-work, which makes and breaks contact in a most perfect manner.

The advantages from an instrument in so small a compass as to be carried in one's pocket, will render it of much importance to the medical practitioner. The instruments are manufactured in London, but have not yet reached this country.—[Ex.]

Such an instrument will not keep long in order; it will be a fine thing as a toy and that is all.

EXPERIMENTS IN NAVIGATION.—Mr. Watson, a gentleman of fortune, residing in Manchester, England, has lately patented a plan for a revolving sailship, a model of which has been exhibited on the Mersey. The prominent feature of the invention consists in the introduction of a set of sixteen revolving sails similar in shape to the fans of a windmill. These sails are elevated on a wheel and attached to a spindle. As soon as the wind touches the sails they instantly set the spindle in motion, when, by a simple piece of machinery, a couple of paddles are propelled. The objects attained by the contrivance are, increased speed and the advantage of sailing against a head-wind. Of another invention in which submerged paddles are used, the discovery being due to Mr. Vint, of Colchester, an account has previously been given. Both are claimed to be entirely successful.—[New York Times.]

[The first invention described in this extract is something like using a steam engine to pump up water to let it fall on a water wheel. Why not apply the wind to the sails at once? And besides it is not new. We published an engraving of such a method of propulsion on page 113, Vol. 3 Sci. Am. For illustration in respect to the second invention in the above, which is also old, see our history of propellers, Vol. 5 Sci. Am.]

SUBMARINE TELEGRAPH.—A submarine wire has been again laid down upon a better plan between France and England.

The great cable which was intended to reach the whole distance proved too short by half a mile, owing to the irregularity of the line in which it was laid down. It was pieced out with a coil of wire coated with gutta percha. This will, however, have to be taken up and supplied with cable. The connection is complete with France, and messages are sent across with perfect success.

AUSTRALIA GOLD.—It turns out that the reported discoveries of gold in Australia are entitled to credit.

BRITISH CLIPPER BUILT SHIPS.—The Chrysolite, a clipper ship, built at Aberdeen, Scotland, by the Messrs. Hall, for the Liverpool and China Trade, has just made the voyage from Liverpool to Anjeer in 80 days. This is the quickest voyage on record. The Oriental made the same passage out in 89 days, and

that was without precedent; but, for the present, the Chrysolite has the palm. This ship was built expressly to contest the voyage with the Oriental, and no expense was spared. But the Oriental is now behind the American age, as the Flying Cloud has beaten her far and away.

FRENCH EXPEDITION TO THE DEAD SEA.—At the late annual meeting of the French Academy of Belles-Lettres, M. de Saulcy read an account of an expedition to the Dead Sea, accomplished by him during the early part of this year. The danger and difficulty of traveling in that region is proved to be no greater than in other parts of Arabia Petraea. The first thing that struck M. de Saulcy's travelling party, on reaching the dreaded shore, was a luxurious vegetation. A forest of reeds 38 feet high was thickly populated with birds which skimmed along, and even swam upon the lake. They also found some dead fish upon the banks, which led them for a moment to suppose that the common opinion, that there were no fish in the Dead Sea was erroneous. It is however quite true that no fish can exist in the water, and those found by the travellers must have been washed down by some of the rivers, and have died the instant they touched the salt bitter lake. The deadly emanations commonly believed to exhale from the lake, M. de Saulcy completely contradicts. He found the air delicious. He speaks of numerous interesting ruins, and among them, as he confidently thinks, he was able to identify the sites of Sodom and Gomorrah.

Sacred Geography.

At a recent meeting of the Royal Geographical Society, London, Col. Rawlinson read a very interesting paper on the Identification of the Biblical Cities of Assyria, and on the Geography of the lower Tigris. He explained from the Cuneiform Inscriptions, that the city of Nineveh had occupied a large tract of country on the Tigris opposite Mosul; the tumuli and ruins at Koyunjik, Nebbi Yunis, Karakales, and Khursabad, marking the sites of suburbs and palaces belonging to that capital. Nimrud, named in the inscription *Rebekha*, he identified with Reheboth, and showed it to have been a suburb of a neighboring large city of Resen or Alassar (called by Xenophon Lorissa), as Koyunjik and Khursabad had been suburbs of Nineveh. After describing the ruins of Sekherieh, which on various grounds he identified with the Apania of Mesene of the Greeks, he went on to notice the bifurcation of the Tigris. This curious natural feature had been very accurately described both by Pliny and Stephen, and the Arab writers enabled us to connect those notices with the modern geography of the country. The Cauchian plains of Pliny were shown to be the Coche of the Syrians, and Jukha of the Arabs, while the Delos of Stephen was still preserved in the name of Dieleh (quite distinct from Dileh) which the Bedouins of the present day apply to the dry bed of the Tigris running by the ruins of Wasit. The Tigris had changed its course several times. At the time of the Christian era it was divided into two streams. Under the Sassanians the left hand or eastern branch was alone navigable. In the seventh year of the Hijrah, the right hand, or western branch, was re-opened, while in the fifteenth century of our era, the river took the form which it retains to the present day. The tract of country between the two arms owing to its natural depression, had been always more or less subject to inundations, and boats had passed from Wasit to the Euphrates, along tracts artificially formed for them in the marshes. The character of the country was the same at the present day, and the Tigris, from the tomb of Abdallah Ibu Ali to Kurna, now ran into a channel which was formerly named the Abul Assad canal, and which had been cleared out under the Caliph Mansur, for the purpose of navigation.

Below the confluence of the Tigris and Euphrates, Col. Rawlinson showed that four cities had been successively built, as the sea had retired before the deposit of alluvium, to serve as commercial emporia. These cities were the Havileh of Genesis, Beth Yakina, of the Assyrian inscriptions, Teredon of Nebuchadnezzar, and Obillan of the Sassanians. The increment of land about the Delta could be chronologically traced, and was found,

since the commencement of the Christian era, to have taken place at the extraordinary rate of a mile in thirty years. Some account was then given of a famous city, named Taha Dunig, in the Assyrian inscriptions, which was thought to be Susa itself, and the paper closed with a notice of the two cities on the Haffar canal, which had often been confounded, but which were in reality distinct places.

Sir Roderick Murchinson having been called upon by the president to give an opinion concerning the geological allusions in the memoir of Colonel Rawlinson, said that the elevation of the land along parts of the course of the Tigris, might very probably, as suggested, have deflected that river partially, and have also augmented the rapid increase of the delta of the Euphrates. The continual accession from the remotest historical periods to that delta, as proved by comparing the sacred writings, the Greek, Latin, and Mahomedan historians, and the British surveys of the last and present century, was, he thought of very great importance to geological science, inasmuch as the rate of increase of a mile in thirty years, as deduced by the author, was probably about double the growth of any other delta, including that of the Mississippi. This phenomenon he attributed in part to the circumstance of the mud and sand carried down by the Euphrates and its associated streams, being derived in immense volume from the slightly coherent tertiary formations through which these rivers flow for such enormous distances; and specially to this detrimental matter being deposited in so land-locked a body of water as the Persian Gulf, in which, aided by the inset of the tide, the sediment is poured back instead of being swept out by a boistrous open sea. At the rate of increase calculated, the Persian Gulf must be entirely filled up within a period which might be roughly estimated. In reference to any oscillation of land within the historic era, whereby the Tigris and Euphrates may have partially changed their courses, Sir Roderick considered that a very small amount of unequal elevation would occasion a deflection like those alluded to, just as a small rise of land at the south-eastern end of the Caspian Sea had deflected the Oxus, and turned that great river into the Aral Sea. But though these operations seem mighty in the eye of man, they are as nothing in intensity of cause when compared with the great down-cast of land by which that great chasm was produced, in which the Dead Sea lies at 1,500 feet beneath the adjacent Mediterranean Sea a feature which he attributed not to any gradual depression, but to a sudden, violent, and extensive collapse of that portion of the earth's crust.

In thanking Colonel Rawlinson for so valuable a communication, on which he added that men of learning rather than geologists should speak, Sir Roderick reminded the meeting how the author formerly indicated that the Havilah of Genesis (Ovillah of the present day), which is now 50 miles from the sea, was the seaport to which the gold was brought in the early days of sacred history, probably from the Malayan Chersonesus.

For the Scientific American.
Cold Water and Burns.

When about 15 years of age, a woman told me if I ever got burned, to plunge the part into cold water. Since that time I have frequently been benefited by her advice. When burned with a hot iron, I at once immerse the burned part in cold water. A few days since, when forging a small article, I cut a small piece from its end, while red hot, and by mistake, when looking in a contrary direction, I took hold of the anvil cutter with my right-hand thumb and finger, when the small piece of iron I had cut off stuck to the end of my finger; I shook it off, and at once dipped my hand in water and held it there for about one minute, after which I dipped it in spirits of turpentine and put on a cloth; no blister arose, nor was it sore.

I believe that cold water prevents the heat from penetrating into the system, and if it were possible for a person to be sent ten feet through boiling water into cold, as fast as a bullet travels from a rifle, not a blister would be raised. Heat does not travel faster than sound.

I once went to a distant shop to construct a

steam gun, and it so happened, the third night afterwards, the shop caught fire. Having some money and valuable tools in a trunk I burst open the door while the flames were rolling high in the room and the heat was so intense that I was forced back to get breath, I again made the attempt and dashing through the flames secured my trunk. When I came out, all the garments I had on were in flames, but fortunately two men were about thirty feet distant, with pails of water, to whom I ran, and requested them to throw their water upon me: this they did, and the result was only a few blisters. If an attempt had been made to tear off my clothes, I might have lost my eyes and perhaps my life. While relating this circumstance to a man a short time since, he said it reminded him of an incident which took place recently over the mountain:—"A mother left her little daughter in the house to go some distance for two pails of water, and before she got back the little girl came running out of the house with her clothes on fire. The mother dropped her pails, when she saw her, and tried to pull off her clothes, and by so doing her own caught fire, and then she ran back to her pails of water. It was too late for her daughter, who died from the injuries, and she herself suffered much. Either of the pails of water, if used at once, I believe, would have saved the child's life.

Incidents of this kind are not unfrequent:—some years since a Member of Congress, at Baltimore, was severely burned, while trying to extinguish his wife's clothes, and I believe she died. In Portland, Maine, a Member of Congress burned his hands so severely as to unfit him for business, by endeavoring to extinguish the flames of the clothes of a girl. Not long since a gentleman of some distinction, in Boston, had his hands burned by a similar accident. Now I believe that in ninety-nine cases out of a hundred, there is water within thirty feet of persons whose clothes take fire (and such cases will always be occurring), and if used at once to extinguish the fire, and to mollify the parts burned, it would prevent serious consequences, and believing this, is the reason why I have made the above statements. ELIAS HALL.

Petition for Extension of a Patent.

United States Patent Office.—On the petition of Nathaniel J. Wyeth, of Cambridge, Massachusetts, praying for the extension of a patent, granted to him for an improvement in preparing ice for shipping, for seven years from the expiration of said patent, which takes place on the first day of December, 1851:

It is ordered that said petition be heard at the Patent Office on Monday, the 10th of November, 1851, at 12 o'clock M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted.

Persons opposing the extension are required to file in the Patent Office their objections, specifically set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

THOS. EWENK, Com. of Patents.

Barnum's Equipage.

Mr. P. T. Barnum, at the Bridgeport Fair, showed a new carriage which attracted no small share of attention. It was built somewhat like a chaise, with two wheels, an open top, a single pair of shafts for one horse, with a whiffle-tree on the left side of them, to which a second horse is attached to be rode by a postillion. It is very long, very awkward and very elegantly painted. Its principle recommendations were said to be that it was very heavy and very odd. It had a Spanish name which nobody could pronounce and nobody knew how to spell.

About two millions in gold dust was received from California on last Sunday, per Illinois steamship. We still require great remittances to pay for what has been exported; but there is plenty of gold to dig yet.

The value of the articles exhibited at the Crystal Palace is estimated at five hundred millions of dollars.