ern portal sufficient to make a good mill privilege. Some Yankee will utilize this power, no doubt, when the work is completed.

"Altogether, the mountain has been penetrated, at all the workings, about one and three fourths miles. The entire length of the tunnel being four and three fourths, there are yet three miles to penetrate. It will be too bad if the work is ever given up after so much has been accomplished. The trouble now seems to be in satisfactorily adjusting the contracts for completing the work with the $5,000,000 appropriation. The friends of the project very sensibly desire to divide the work into small contracts, and the Commissioners have advertised for proposals under this plan The opponents of the tunnel argue for one contractor, believing, no doubt, that no one man can be found who will take so large a risk, and be able to give satisfactory security for the completion of the work. They hope the $5,000,000 appropriation will fall by its own weight. But Massachusetts cannot afford to turn back from this great enterprise."

THE ORIGIN OF PETROLEUM.

Denton, in his popular lectures on Geology, entitled, "Our Planet, its Past and Future," after making some remarks upon ancient sources of rock-oil, etc., thus speaks of the original causes of these deposits:

"This is, then, no new thing; but whence comes it? And in answer to this question we have many theories, some of them sufficiently ludicrous. One suggests that, since the earth is a huge animal, the rocks its bones, the water circulation in them its blood, the grass and trees its hair, the hills pimples upon its face, and Ætna and Vesuvius eruptive boils, all that is necessary to obtain oil is to bore through the skin into the blubber of the monster, and oil very naturally flows from it. Another supposes, that, during the time of the flood, the great whales were buried deep under accumulations of mud, in those places where the oil most abounds; and hence petroleum is merely antediluvian whale oil. It has been suggested, that, since the earth is at some period to be destroyed by fire, the oil was probably prepared against that terrible day when the match will be applied, and the world burned up.

"Apart from these ludicrous explanations, however, men of science have considered this question, and rendered their verdict. Professor Silliman says that 'petroleum is uniformly regarded as a product of vegetable decomposition.' Professor Dana says, 'Petroleum is a bituminous liquid resulting from the decomposition of marine or land plants (mainly the latter), and perhaps, also, of some non-nitrogenous animal tissues' By many, it is supposed to be a product of coal; and hence the name of 'coal oil,' so frequently applied to it. Some suppose that the coal, being subjected to the enormous pressure of the overlying beds, has yielded oil, as a linseed-cake does under an hydraulic press; and I have seen the theory advanced, that the coal, heated (as it evidently has been in the coal regions of Eastern Pennsylvania), gave off oily vapors which, rising to the cold region of the upper air, condensed, and subsequently fell in oily showers, making its way as best it could to the hollows of the earth's interior, where the oil-borer finds it to-day.

"Facts play sad havoc with these various theories. If the oil comes from coal, it seems strange that it is so rarely met with in a coal district. I have visited coal mines in England, Wales, Nova Scotia, Cape Breton, and not less than ten of the United States, but never saw petroleum in a coal mine, or even smelt it; and this is an article that never waits for an introduction, but salutes the olfactories at once. Of course, if this came from coal, coal mines would be the places in which to discover it; coal neighborhoods should abound with it, coal miners be familiar with it; and it should never be found in rocks older than the coal measures. The contrary of all this is true. When it is found in the coal measures, it has been forced up from underlying beds in which it was originally contained.

"In this country, nearly all the oil hitherto obtained has been from beds that lie below the coal measures, and sometimes at a great depth below them. On Oil Creek, in Pennsylvania, it is found by boring in shales and sandstones, sometimes to a depth of a thousand feet; these beds belonging to the Chemung group of the Devonian formation, and many hundred feet below the coal measures. At Enniskillen, in Canada West, where the oil has at one time come up in springs, and overflowed, leaving a thick bed of asphaltum covering the ground for an acre, the limestone in which borings are made contains characteristic fossils of the Hamilton group of the Devonian formation. The oil wells in Western Kentucky, and in some parts of Tennessee, are in the Trenton limestone,—that is, in the lower Silurian formation; and I have seen oil even at the base of this. The same oil floats on the surface of a limestone quarry near Chicago, the limestone belonging to the Niagara group of the Silurian formation; showing conclusively that it has no necessary connection with coal.

"But may it not have been produced from sea plants, as coal has been from land plants, as several eminent geologists have supposed? The quantity of free oil existing in the earth seems to forbid this. I saw a well in Western Virginia which produced twenty-eight thousand barrels in ten months. From three wells near Oil Creek, one thousand barrels spouted in twenty-four hours; and from one, three thousand seven hundred and forty. The 'Big Phillips' Well struck oil in October, 1861, at a depth of four hundred and eighty feet. It yielded about three thousand barrels a day. The oil rushed out with such violence, that the well could not be tubed for several days; and it has been calculated that forty thousand barrels of oil were lost in the creek before it could be collected.

"The 'Noble' Well struck oil in April, 1863. Its daily yield was about fifteen hundred barrels, at which rate it flowed for six months.

"There must be lakes of petroleum to render such flows possible. Where are the bodies of fucoids or sea weeds from which this oil could flow? The sea weeds of the Silurian and Devonian times (in whose beds the greatest quantity of petroleum is found) were so loose in structure, and contained so little bituminous matter, that their impressions do not even darken the light colored shales in which they are found embedded. Had these plants been as oily as fish, their bodies would have left dark impressions on the shales, as the bodies of fish do; and if they were not as oily as fish, or as bituminous as land plants, by what possibility could they produce lakes of oil? If the plants had, indeed, been oily, no oil could have been collected from them, unless preserved from contact with the air and water. Each plant being separated from its companions, on being buried in mud, the oil, supposing any to exist, would have been absorbed by it, and thus lost.

"Has the oil been distilled from bituminous shales, as some suppose? I think not. It requires a strong heat to distil oil from shales; and generally, where petroleum is found in the greatest abundance, there is the least appearance of igneous action.

"How was it produced, then? It is a *coral* oil, and not a *coal* oil. I have in my possession numerous specimens of fossil coral, obtained from Devonian and Silurian rocks belonging to the family of *favosites*, or honeycomb stone, as the name means the cells of which very much resemble those of the honeycomb; and, as the cells of the honeycomb are filled with honey, these cells are filled with oil. I have found oil in some specimens nearly as limpid as water; and, by heating the coral, oil runs out readily. I have seen these oil-bearing corals at Smokes Creek, where there are coral reefs full of it; in the Silurian limestones of Middle Tennessee; at Williamsville, near Buffalo; and in rocks near Penn Yan, in New York. In the State Collection of Fossils at Albany, and in the Montreal Geological Cabinet, there are numerous specimens. Professor Dana informs us, that it flows in drops from a fossil coral at Montmorenci, Can., and at Watertown, N. Y. It might be supposed that this oil filled the cavities of the corals, as it might any other cavity in the rocks; but I have found it repeatedly in these corals, and in no other part of the rock, invariably accompanying the corals, and never connected with any other fossil; these corals frequently in the center of solid limestone blocks. Reefs of such coral would furnish oil in quantities sufficient to account for the immense deposits that have been discovered. Preserved by them in compact bodies, the oil taking up at least half the space of the coral reef, we can readily suppose, that when the cells were crushed by the superincumbent weight of rock, or during uphevals and subsidences, cavities and crevices in the earth's interior would be filled by it.

"It is, then, an animal production, and not a vegetable one It is a product of the ocean, and not of the land; being almost invariably associated with salt water from the bottoms of seas that then covered a large portion of Western New York, Pennsylvania, Virginia, Eastern Ohio, Kentucky, and Tennessee. It is not formed from the bodies of the coral polyps, as some have supposed,—for, when dry, they are a mere film, that could be blown away by a child's breath,—but secreted from the impure waters, principally, though not exclusively, of the Devonian times; the coral polyps performing the same office for the water that the carboniferous plants did for the air."

ELECTRICAL NOVELTIES.

Electricity is a wizard's power. With it and little mechanical skill a man may turn his house into a magician's castle. The late ingenious Mr. Appold—of centrifugal pump notoriety—indeed, did this without it; his room doors opened as you approached them, and shut behind you; his stable gates did the same; upon touching a spring, the window shutters closed, and the gas was turned on; his apartments maintained themselves at a uniform temperature, and at a proper hygrometric state, by regulating thermometric and atmospheric damping apparatus; in short, his house was full or surprising devices, created and worked out by his wonderful inventive and executive skill. Had he pressed the subtle fluid into his service, there is no saying into what a palace of enchantment his dwelling would have been transformed But what he did not do has been done by the famous Robert Houdin, who has made electricity do the work of a retinue of servants and a watchman to boot, a full description of which will be found on page 178, Vol., XVIII SCIENTIFIC AMERICAN.

Such are a few of the domestic functions of the most ubiquitous slave that science has entrapped for man. Of its public services we need hardly speak; telegraphs have become too familiar to be longer regarded as curiosities, even those that send the message in fac simile of the hand in which it is written, or reproduce a drawing a hundred miles away. Electric lights, too, have ceased to be surprising, though they are far from having been used to their full powers. There have been difficulties in the way of getting a good and cheap source of electricity, which have barred the way to their extensive introduction; but some of these are removed and we may entertain better hopes for the future. One of the great doctrines, perhaps the greatest, of the present era of science, is that of the convertibility of forces one into another. Heat is turned into mechanical force, and mechanical force is turned into electricity, and *vice versa*; and heat and electricity are similarly interconverted. A celebrated London photographer has erected a magneto-electric machine for conducting some of his operations which require an intensely bright illumination, and has thus apparently become independent of the sun; in reality, he is using the solar rays which came to our planet thousands of years ago, for what is coal but "bottled sunshine?" A Birmingham electro-plating firm also set up a similar machine for depositing their precious metals, and a sugar refinery another for generating ozone to bleach sugar. But the principal use of such an apparatus is for lighthouse illumination. A French company bought the patent for France to this end, and the light was to be tried at Cape Grisnez. It was not only to illuminate the Channel "a giorno," but to shed a mild twilight over our own southern counties. We have not heard of the trial—perhaps it has yet to come off.

From lighthouses, the transition to buoys and beacons is easy. These an ingenious inventor has proposed to illuminate by electricity. Those who attend scientific lectures, or look into instrument-makers' shops, will have come to know something of coils called "induction coils," for producing in effect a very powerful current of electricity from a very weak one, and of certain glass tubes and globes for exhibiting the passage of the electric spark through a partial vacuum. Well, the inventor aforesaid proposes to place a battery and a coil in the hollow body of a buoy, and to lead the current to one or more of these vacuum tubes inclosed in a lantern on the top. A steady light, glimmering like a glow-worm on the sea, would thus be secured, and neither wind nor wave could readily extinguish it. Some one else invented a lamp for miners on the same principle: a knapsack was to hold the battery and coil, and wires were to lead to a lamp composed of a vacuum tube carried in the hand. There could be no doubt of the safety of this light—in this respect it would rival the immortal Davy's invention; but portability is a rather necessary feature in any tool a pitman has to use, and the knapsack and entangling wires might prove rather worse than an inconvenience to him, especially when, as happens occasionally, he has to pick and wriggle his way, worm fashion, through a one foot seam.

Perhaps, after all, the most curious application of the electric light was that attempted lately at one of the Paris theaters. The actors were decked with glittering crowns, and, to add to their brilliancy, they were so made that a chaplet of electric sparks encircled the wearer's head; the necessary current being supplied and led to the coronet from a concealed battery. But the "sensation," pleasing enough doubtless to spectators, painfully verified the truth of the Shakespearian maxim touching the uneasiness of the head that wears a crown, for one of the performers was grievously injured by the passage of the current through his or her head, instead of through the star-spangled ornament Not quite so striking, but still curious, are the electrical jewels made by MM. Trouvé and Cadet-Picard. These consist chiefly of scarf pins and brooches, representing heads of men and animals, which roll their eyes and work their jaws. Some are in the shape of tiny soldiers which beat drums, rabbits that play on tambors, and birds that flap their wings and fan their tails. They are worked by tiny electro-magnets concealed within them, and connected by fine wires with little batteries carried in the pocket or elsewhere about the dress. Fashionable Paris was charmed with these trifles for a season; doubtless they are forgotten by this time. Electricity is an agent peculiarly suited to French ideas, and has been turned to more droll uses by that people than by all the rest of the nations of the world put together. When rifles were the talk of the governments of Europe a few months ago, the emperor was shown one to be fired by electricity; the stock of the gun enclosed a battery, from whence wires passed to the breech and into connection with a platinum wire passing through the cartridge. The pull of the trigger closed the electric circuit, and in an instant the platinum wire became red hot and ignited the powder. The cartridge carried no fulminate, so it was a very safe one. The emperor, it was said, greatly admired the gun; he preferred to adopt the Chassepot, however.

From killing to curing. While one man is using his ingenuity to throw bullets into his fellow man, another is devising schemes to take them out. Probing the body for these missiles is a tedious and painful operation, and its difficulty chiefly lies in discovering the bullet amongst the fragments of shattered bone by which it may be surrounded.

Electricity affords the means of doing this. The probe is made with two points, from each of which a wire passes; and in the circuit is placed a battery and a signal bell. So long as the two points are not metallically connected, no current passes and the bell is silent; but, when they are joined by any piece of metal, it rings. When, then, the surgeon thrusts the probe against bone or muscle, there is no effect, but when the points come against the metal bullet, the bell announces the fact: the forceps for extracting the lead behave in the same manner. That electricity exercises an exciting influence over sluggish nerves is a fact insisted upon by medical galvanists, but it likewise appears to possess a deadening power over such as are excited, for a dentist in Bordeaux has applied it to dull the pain of tooth extraction. Report has spoken well of the application, but details of the *modus operandi* are wanting. For this one painful operation, at all events, chloroform has possibly been superseded by electricity; but the latter has joined issue with the former in another way, for two French electricians have very recently announced, as the result of experiments tried upon animals, that a powerful shock or strong galvanic current will restore animation in cases of over-stupefaction by the sedative.

These actions are inscrutable enough, but some recently announced influences of the fluid upon vegetable organisms are more puzzling still. In the beginning of the century a learned Abbé wrote a treatise on the applicability of atmos-

pheric electricity to the curing of diseases in plants, and encouraging their development, and he described his means of drawing currents from the clouds and air and distributing them among his cabbages and lettuces. Very surprising effects were produced, but little notice seems to have been taken of them; probably, because there is a natural tendency to ignore phenomena of the rationale of which no clear ideas can be formed. But quite recently M. Blondeau brought before the French Academy of Sciences the results of some experiments quite as startling as those of the worthy Abbé. He says that the current ripens fruits; of this he has assured himself by electrifying some apples, pears, and peaches, all of which ripened under the influence of the fluid, whilst the other fruit on the same trees remained far from ripe. Then he electrified seeds and grains, by steeping them in water and submitting them to the action of a powerful current. Peas, beans, and wheat, were so treated and sown in good soil. By the side of them were sown similar seeds not electrified. The former sprouted sooner than the latter; the development of the young plants was more rapid, and the stems and leaves were more vigorous than those not subjected to electrical influence. But, most mysterious of all, some beans that had been electrified grew upside down, with the roots in the air and the cotyledons in the soil.

For the mechanical and engineering arts, electricity has done much already; but it promises to do more. We have had an electric loom to dispense with the complications of the Jacquard cards, and some of our great iron-clads have been furnished with electrical call-boys for enabling the captain on the bridge to communicate his orders to the engineer below, and to the steersman at the wheel. Now, the engineer has the prospect of relief from his bugbear—boiler incrustation. It is asserted that the placing of a bundle of metallic spikes in the path of the steam as it issues from a boiler, has the effect of generating a stream of electricity, and that if this be led to the metal of the boiler, it sets up an action at the surface which prevents the deposit of saline matter. The question is a disputed one at present.

The phenomenon is unexplained, and therefore, in some quarters, discredited; and as yet, sufficiently crucial tests have not been applied to settle it indisputably as a matter of fact. So we pass on to another, and perhaps better established, application of the twin elements, electricity and magnetism. We allude to their use in the manufacturing and testing of iron. This metal, in its crude state, is full of impurities, such as carbon, sulphur, phosphorus, and silicious bodies. These are electro-negative in relation to iron, which is electro-positive. When, then, a powerful current is directed through the fluid metal in the melting furnace, the foreign matters are expelled with some boiling and commotion, and a very pure metal is produced and drawn off to the casting molds. This method of purification has been tested at Sheffield with remarkable success, and it foreshadows improvements in the manufacture of iron second only to those that have followed from the revolution effected by Bessemer in the making of steel. The author of the process in its present form is Mr. Robinson, of London; but a somewhat similar plan was suggested and tried five-and-twenty years ago, to the proof of the adage that there is nothing new, "except," as cynics say, "that which has been forgotten and re-discovered." The testing of iron castings and forgings by magnetism is an ingenious idea, the credit of which belongs to Mr. Saxby, R. N., one of our dockyard naval instructors. When a bar of iron is placed at a certain inclination to the vertical, it becomes temporarily a magnet, and behaves as such to a compass needle brought into its vicinity. If the bar be perfectly sound, free from cracks or cavities, the compass needle, when passed around it, goes through methodical evolutions, always directing its north point to particular regions of the bar, and otherwise behaving in an orderly manner. But if the iron be cracked or flawed internally, there will be breaks in the continuity of its magnetism corresponding with the mechanical interruptions, and these the compass needle will point out by behaving vagariously when when it passes over them. This is the principle of Mr. Saxby's tests; he has tried them practically at the Chatham and Sheerness dockyards, and with a success that gives great hopes of removing one of the greatest difficulties engineers have to cope with.

We have known an instance in which a large and valuable forging, the paddle shaft of one of our great steamships, was discovered to be defective only when, after weeks of labor, a cutting tool revealed the hitherto invisible flaw. The loss involved amounted to several thousand pounds, of which a part at least, might have been spared had some effective means been known for testing the soundness of the mass of metal.

The latest novelty is an electric organ. One of the most important and valuable properties of the galvanic current is that of transmitting power without motion. If we want to ring a bell at a distance, we must move the whole length of an intervening wire, and this motion takes strength and time. Similarly, to open the valve of an organ pipe by touching a clavier requires the intervention of complicated rods and levers Strength is necessary to press down the key to work these levers, and time to communicate the motion to the pipe's orifice. Electricity requires neither; it instantly transmits force enough to open the valves without demanding more than a gentle pressure upon the clavier. Another advantage is, that the keyboards may be at any distance from the organ pipes. We heard this application suggested long ago; the credit of working it out now belongs to an English organ builder residing in Paris, who has made several instruments on the plan. One has already been erected at the Crystal Palace. Blown by steam—played by electricity—what is the king of instruments coming to?—*English paper.*

THE INFLUENCE OF SCIENTIFIC CONVENTIONS.

Prof. S. D Tillman, in his address at the Autumnal Opening of the Polytechnic, on Thursday, the 10th inst., after alluding to the success of the late Scientific Congress at Chicago, said: "Nothing more was needed to confirm the general opinion as to the benefits arising from these annual gatherings. They accomplish for science what conventions do for religious, political, and commercial objects, by securing unity of purpose, concentrated effort, and expeditious action. Indeed, they do much more in dispelling illusions, which are often palmed off as truth among those who are only captivated by novelty. While discovery is constantly extending her domain, opening new paths of progress, and erecting new beacons, to direct those who are to follow, it is the special duty of advanced men to see that no false lights are shown which would lead to the propagation of unsound doctrine. Every new hypothesis or induction should be subjected to the keenest scrutiny of those who are competent to pass upon its merits. A scientist, who reads a paper before his peers, reaches at once the appreciative audience he most desires. If he describes new experiments, they, more than all others, are interested in the results; if he advances new views, they are ever ready to question the correctness of his conclusions. Thus, it frequently happens, that the discussion immediately following the reading of a paper, will dispose of objections, and establish positions which could not be reached in a long time through the medium of printed dissertations. Moreover, the suggestions often thrown out during the free exchange of ideas in a verbal debate, are of great service in exciting that enthusiasm in the votary of science which prompts him to higher efforts in the pursuit of truth.

"The beneficial influence of these scientific associations is not so obvious here as in Europe, where they are older and more firmly established. Of late, the British Association for the Advancement of Science has accomplished much; yet it will be remembered that, even after its formation, Sir John F. W. Herschel, in a note appended to his able treatise 'On Sound,' in the *Encyclopædia Metropolitana*, acknowledged his indebtedness to foreign journals for a portion of the information he then presented and expressed his regret that so little attention was paid in his own country to what was being done by scientific men abroad. 'Here,' said he, 'whole branches of continental discovery are unstudied, and indeed almost unknown, even by name. It is in vain to conceal the melancholy truth. We are fast dropping behind. In mathematics we have long since drawn the rein, and given over a hopeless race. In chemistry the case is not much better.' These, and other words of regret and reproof then written, doubtless hastened the great and favorable change which has since taken place in his country. Certain it is, that the formation of the British Association has led to the happiest results; for to-day it may boast of many distinguished names in almost every branch of science.

"If there is any hindrance at present to the progress of truth, both here and abroad, it arises chiefly from the spirit of exclusiveness sometimes evinced by those who have devoted their lives to the study of physical laws. This should not excite surprise, because the tendency of abstract science is essentially aristocratic. The man who knows, stands on a higher plane than the one who does not know. Hence, the position of the scientist is impregnable. He has riches and power, of which he cannot be robbed. Should he find his chief enjoyment, however, in the reputation he has acquired, he may well fear rivalry. On the other hand, if he pursued truth for the love of it, he will welcome all who labor in the same spirit, and extend to those below him a helping hand.

"The study of natural laws, in the abstract, undoubtedly affords pure enjoyment; yet this feeling is vastly intensified by witnessing their successful application for the accomplishment of new and important results in the useful arts. Such results are often brought about by the artisan who, although he may know but few of these laws, understands most thoroughly all the conditions peculiar to his art, under which they can be effectually applied. Our great inventors have not, generally, had the advantage of a liberal education By ingenuity alone they take the lead, and, of course, counteract to a certain extent the haughtiness sometimes engendered by learning.

"Scientific associations will be entirely successful when they fully recognize the fact that Science in these modern times has a double mission. From serene hights she beckons on the student who longs for clearer views of the divine plan of the universe; yet often she descends to the humblest abodes of men, and watches while Invention weaves some new device. Thus, we find her potent influence in those improvements which lessen manual labor, supply corporal wants, and add to the material resources of our race. We, of the Polytechnic, welcome her in both offices, as revealer of long hidden links in the endless chain of sequences, and as prompter to new combinations of some of those links by which the surplus powers of nature are successfully applied to ingenious mechanism, and by which even new forces are generated, and made obedient to the will of man."

An Alarm.

We have in our house a little invention which we have several times noticed in other dwellings, but having no direct interest in its operation we have not paid much attention to its working. It is a little thing, and stands upon a little shelf in our sleeping room; but in an emergency it is capable of making a good deal of noise, and imparting useful information. It is an electric alarm, with wires entirely concealed from the eye, and which run from it to the doors and windows and scuttle of the house; and should any of these be disturbed, the alarm is at once sounded. By means of a "tell-tale" it can be ascertained at once in what part of the house to look for the disturbance.

The other night, before retiring to bed, we had the assurance of the servant that everything was close and secure. We set the alarm, but instantly it set to ringing, and we knew that something was wrong, and upon examining the "tell-tale, we found out where to look for the cause. The laundry window was dropped about an inch, and the little machine would not keep still until the matter was made right.

By the use of this little apparatus, thousands of dollars worth of property have been saved from burglars.

The Geysers of California.

A correspondent of the New York *Journal of Commerce*, writing from Sonora county, California, thus describes the Geysers of that state: After ranging through a considerable part of the State of California, seeing that which is most grand and beautiful, I am constrained to tarry here and in common with travelers who have peeked into the crater of Vesuvius and witnessed other strange spectacles in the Old World, to declare that the most strange and wonderful of all has been reserved for the last, when we gaze upon the extraordinary phenomena known as "The Geysers." Few objects in nature are more deserving of attention from those who delight in scientific investigation or desire to merely to gratify a love for the marvelous.

A deep serpentine canon or ravine about a quarter of a mile in length is flanked by walls of denuded rock, precipitous and rugged, full one hundred feet in hight, and through their entire extent strong jets of sulphurous vapor spring from every crevice, while along the base streams of water hot, hissing, gurgling, contribute to swell the volume of the torrent that sweeps down into the valley of the Russian river, its course marked by clouds of steam. The substances held in solution by these waters coat every boulder with mineral incrustations, and above the water line the disintegrating rocks bristle with crystalline sprays of sulphur, borax, alum, etc. Indeed that must be a desperate case which could not be cured by medicines found in that great laboratory; if no cure be effected, they would certainly do the other thing. Yellow, green, and gray colors predominate, with a large admixture of oxide of iron. The place where you thread is almost too hot for endurance. If you sit awhile to contemplate the extraordinary scene a sensation of discomfort suggests an immediate change of base. If a longer stay prove admissible, the probability is that clothing thus brought in contact with strong alkalies and acids would quickly be destroyed. This singular gorge is therefore not inappropriately named "Devil's Canon." In fact every object here is suggestive of something Satanic. The visitor is shown "The Witch's Cauldron," "The Devil's Smoke Pipe," "The Devil's Tea Kettle," etc. The roar of boiling water and the rush of steam commingle, rendering the human voice inaudible, except at short distances. The one is deep, profound, sepulchral, suggestive of spectral shapes, with horns and other diabolical appendages. The other is sprightly babbling, as if in mockery. A cane thrust into the yielding embankment is withdrawn, smeared through its entire length with a sticky pigment representing colors of every hue. Large masses are readily detached, rolling to the bottom, where they dissolve and float away. Seventeen varieties of mineral substances have been found here. In truth, if the contents of a huge drug store were multiplied one hundred times, then mixed promiscuously, and the whole villainous compound thrown into a chasm heated by subterranean fires the product might bear a faint comparison with the geysers of Sonora county. In one place a pool of water, black as Erebus, and about ten feet in diameter, is seen boiling furiously. To fall in would be instant death. Elsewhere the stream escapes from fissures in the rock with a power sufficient to hurl stones from the opening with great violence.

These phenomena have been variously explained, some ascribing their origin to a volcanic agency, as scoria and lava are found plentifully. Others suggest that the mixture of acids, and alkalies taking place causes a combustion, the effects of which are apparent. The last theory advanced receives support from the fact, that the geysers manifest much greater activity after a season of heavy rain; erudite professors must settle this question.

More Vandalism.

One of the peculiar faculties of the late Prof Faraday consisted in his great mechanical ingenuity and constructiveness, as evidenced in the apparatus for conducting the original and elaborate experiments by which he arrived at such great results. Their main character was simplicity, which is indeed the perfection of ingenuity, and the distinguishing feature of the work of genius. As has lately been remarked by a good judge, "the practical powers were never perhaps more strikingly displayed by man than in the various contrivances he adopted while conducting his researches—some of them being almost equivalent in ingenuity to the compilation of a steam engine." We regret to have to record the fate of the greater portion of these contrivances. Shortly after Mr. Faraday's death they were given by his wife to the porter of the Royal Institution, who, we need not say, could scarcely appreciate them. He accordingly sold them piecemeal, and even parts of the same apparatus to different buyers, thus breaking up combinations that probably were understood by few except their gifted inventor Thus it is probable that all this splendid collection is destined to be scattered and distributed among those to whom their only value will be as souvenirs of departed greatness.

A CURIOUS accident recently happened at Almond, Mich. The jack wheel of a threshing machine burst and killed Albert Tucker, who was in charge of the machine.