Correspondence.

Antiquity of the Solar Cautery.

To the Editor of the Scientific American:

In the SCIENTIFIC AMERICAN for December 9, 1893, is an article entitled "Solar Cautery as a Remedial Agent," also the statement that "the use of the solar cautery was the discovery of Augustus Barnes, of Southington, Conn., was patented by him May 28, 1867," etc. The sun's rays, concentrated by means of lenses, *i. e.*, "burning glasses," have been employed in surgery from the most remote ages of which we have trustworthy accounts to the present. Scattered through the history of surgery are many cases where the sun's rays have been used as a cautery.

The oldest medical work in my library is the "Dictionnaire de Medecine," published at Paris in 1834. In vol. 7, page 57, we read:

"Cauterization by the solar rays in a single focus, by means of a single or several lenses, is excessively painful and almost insupportable and ought to be abandoned. One of us, Mr. Marjoleu, saw at the Salpetriere a young girl who had been brought there as incurable. Her nose was nearly eaten off by a ringworm ulcer, which extended to both cheeks. This malady commenced with a small ringworm that some one had tried at different times to destroy by this manner of cauterization."

Here we have the solar cautery employed in one of the most noted hospitals on earth, and the case published in a well known medical work thirty-three years before the date of Barnes' patent and sixty-seven years before the publication of Dr. Thayer's paper. Further, the bibliography of this subject published extends back to Costiro's work, printed at Venice in 1595.

JOHN W. KALES, M.D.

Franklinville, N. Y., December 11, 1893.

Brief History of Petroleum.

BY A. C. BENEDICT, ASSISTANT STATE GEOLOGIST OF INDIANA.

A variety of liquids, variously known as coal oil, crude petroleum, earth oil, maltha, mineral tar, naphtha, steinoll, bitumen liquid, etc., and corresponding in the characters of inflammability and insolubility in water with the animal and vegetable oils, have long been known to occur in many parts of the earth.

The countries most famous for the occurrence of mineral oils are the United States, Russia, Burma, and the West Indies. They also occur in China, India, Italy, Germany, Switzerland, and in limited quantity in France and England.

Chemically, all the various products known as naphtha, petroleum, etc., are closely allied, as they consist mainly of oils of different density and volatility.

The earlier analyses of oils were crude, inasmuch as no further attempt at separating the substances they contained was made than merely heating the oil, cooling the vapors of distillation, and treating the product with sulphuric acid. This sufficed to show that the constituents of petroleum are compounds of hydrogen and carbon. It was not until a comparatively recent date that any advance was made in the chemistry of the hydrocarbons, but now we have a long list of articles of the utmost importance in the arts and sciences derived from the researches of the chemists in this direction.

The earliest analysis of petroleum I have been able to find a record of is that of Winterl, made in 1788, of a black, heavy-bodied petroleum from Hungary, which yielded a colorless oil, a yellow oil, and a buttery mass. The last was probably an impure paraffine. In 1817 the native naphtha of Miano, in the duchy of Parma, Italy, was used for lighting the streets of Genoa. This is probably the earliest use by a city of crude petroleum for lighting purposes. In an account published at that time it is described as being a transparent thin yellow liquid, lighter than water, with a strong, persistent smell.

Bitumens are found of all degrees of consistency and of many shades of color. The naphtha of Georgia, on the Caspian Sea, is as colorless as pure water, while the asphaltum from the island of Trinidad is a black semi-solid body called the "bitumen lake." The light, clear oils consist almost wholly of carbon and hydrogen, while the heavier, darker and more solid varieties usually contain oxygen, and frequently sulphur and its compounds, carbon and bituminized carbonaceous matter.

The well known odor of crude petroleum is nearly always due to bituminous matter, spoken of above, or to sulphur compounds, as sulphureted hydrogen. To the last is due the odor noticeable in the waters of many of the artesian wells.

From the colorless varieties we pass by imperceptible gradations through the heavier and darker varieties of petroleum to mineral tar or pitch, that is generally considered petroleum, in which there is enough bituminous matter either dissolved or suspended to render it black and of a semi-fluid consistence. This mineral tar is intermediate between the light-bodied oils and the solid asphaltum.—*Clay Jour.*

Mummied Animals.

Not only did the ancient Egyptians embalm the bodies of the human dead, they performed a like operation upon the remains of the sacred animals, though in general less expense and trouble were taken over them, animals being chiefly prepared by soaking in natron. The list of sacred animals is a long one, though the very ones that were most highly esteemed in some places were most abhorred in others. The list includes dogs, cats, monkeys, lions, wolves, jackals, foxes, hyenas, bears, ichneumons, shrew mice, bulls, deer, goats, sheep, hippopotami, vultures, eagles, falcons, hawks, owls, ibis, geese, swallows, crocodiles, toads, lizards, serpents, fish of various kinds, rats, mice, beetles and even insects and flies. As a rule, with the large animals, the head only was mummied, the body being represented by pieces of wood. The birds are squeezed together and lose their shape, except the ibis, which, according to Belzoni, is formed like a fowl ready to be cooked. The ibis and the hawk appear to have had the most care bestowed upon them, for resin and asphalt are frequently found within their envelopes. Birds in general, having been wrapped in their bandages, were then placed in an earthen urn and deposited in the tomb. No mummies of animals are to be met with in the tombs of the higher class persons; most of them had their own proper sepulchers consecrated and appropriated to their species only, but they were occasionally found mixed.

The catacomb of birds is distinct from the catacomb of human mummies. One bird only is inclosed in each earthen pot, and an infinite number of pots were found in good order, whole and sealed; the hot nature of the materials with which they had been embalmed had, however, dried up the greater number to powder. Upon the possession of Egypt by the French, upward of five hundred mummies of the ibis alone were discovered in the catacomb of birds. Certain animals were maintained at the public expense in sacred parks, and persons were appointed to nourish them with the greatest care. Bread, milk, honey, meat, birds, fish, etc., were all supplied, according to the nature of the animals. No expense was spared: the keepers bore upon their persons the resemblance of the species to which their care was devoted, and people paid marks of respect to them as they passed along. The greatest sorrow was manifested at the death of any of them; they were embalmed and interred with great pomp and splendor. So great was the veneration in which these animals were held, that though when a famine afflicted Egypt the people were driven to eat human flesh, yet the sacred beasts, birds, reptiles or fishes were always respected; they would rather eat their own species than lay sacrilegious hands upon what might be gods in disguise. Animals of the lowest character, even noxious insects, were fostered in their temples, nourished by their priests, embalmed after death, entombed with pomp and received all kinds of honors. Those who, either by accident or design, occasioned the death of any of these animals, paid the forfeit of their lives as the penalty of the offense. Diodorus Siculus says: "He who has voluntarily killed a consecrated animal is punished with death; but if any one has even involuntarily killed a cat or an ibis, it is impossible for him to escape capital punishment; the mob drags him to it, treating him with every cruelty and sometimes without waiting for judgment to be passed."

If a cat died, the owner of the house shaved off his eyebrows; but if a dog died, he shaved his whole head, which would appear to denote that dogs were held in greater veneration than cats. In either case the greatest grief was shown, the people beating themselves on the breast and uttering doleful cries. The animal was then delivered to the embalmer to be prepared and deposited in the proper tomb. The cat was principally worshiped at Bubastis. Most of the cats that died in Egypt were embalmed and buried there. In the desert valley near to Beni-Hassan is a small temple excavated in a rock and dedicated to the goddess Bubastis, surrounded by different tombs for sacred cats, some cut in the rock. Before the temple, under the sand, there was found a large mound of mummies of cats folded in mats and mixed with those of dogs; and further on in the desert plain were two large collections of mummies of cats in packets and covered with ten feet of sand. One tomb was filled with cats carefully folded in red and white linen, the heads covered by masks representing the cat, and made of the same linen.

There have been more mummies of the ibis found in Egypt than of any other bird or animal, but very few in a perfect state. At Memphis there are thousands of them in pots of common stone or blue ware, or of hard polished stone of a lengthened conical figure; even the eggs of the ibis have been found preserved. Hardly ever have mummied animals been discovered in the human tombs, and never by any chance were amulets put with animals. Crocodiles were embalmed and deposited in catacombs purposely excavated for them. The small ones were bandaged entire, but when they attained any size only the head was embalmed, the remainder of the animal being represented by stalks of palm trees, bandages, etc. In the caves of Maabdeh, however, entire mummied crocodiles of the largest size have been found perfectly preserved. Generally five or six serpents were inclosed in one envelope. In some instances the bandaging was very carefully done, and the cloth was of a red color in addition to the usual yellow-stained linen. In addition to these, numerous small fishes have been discovered, and yet smaller insects, all carefully embalmed and deposited in the several tombs prepared to receive them. In many cases the animals were placed in mummy pots, in others simply bandaged and laid in the pits, and in only a few instances have they been put in cases like the human mummies. These latter receptacles are of different kinds and shapes. The first, or cartonnage case, is composed of folds of linen cemented together and plastered with lime on the inside. They are as firm as a board, and required to be sawed through in order to get at the body. The shape corresponds to that of the human frame. On the head is represented a face, either male or female, and the features are often depicted in gold and colors. Some of these cases are very handsome, the colors with which they are decorated having retained their freshness and beauty in a most surprising manner. Red, blue, yellow, green, white and black are the colors to be found on the cases and on the walls of the tombs.—*London Society.*

Cure for Naupathia or Sea Sickness.

In a recent issue of the N. Y. *Medical Journal*, Dr. W. W. Skinner, who has had long experience as a ship's surgeon, describes a method of treating sea sickness which he has found, in most cases, to be reliable and successful.

The dose by subcutaneous injection in a well developed case of naupathia should be for adults from a half to one milligramme of atropine and one milligramme of strychnine dissolved in mint water. The following is the formula:

Atropin. sulphat.	0·02 gramme.
Strychnin. sulphat.	0·04 gramme.
Aquæ menth. pip.	40·00 grammes.

One gramme, or one cubic centimeter, of this solution contains half a milligramme of atropine and one milligramme of strychnine.

Dr. Skinner says:

The effects of this medication are often surprising. In the majority of simple cases of sea sickness the patients cease vomiting at once after having received a single injection of one cubic centimeter of the above solution. Soon afterward they feel no more nausea, cephalalgia, or distress. Only a few minutes are required for this result to be obtained. Occasionally two injections are necessary to produce complete euphoria.

Everybody knows what a pitiful spectacle a really very sea sick person presents. He is painfully seated near the ship's rail or a basin or is lying down, caring not how or where, so long as he can vomit easily; he is pale, apathetic, vomiting, and suffering from headache and vertigo. But the injection of these alkaloids transforms this person in a little while. He ceases to groan, the vomiting stops, color returns to his cheek, and he affirms that he is "much better," or that he does not suffer any more at all. If the injection is given during the day time, he almost always falls asleep for half an hour or longer; if given in the evening, when the patient has retired for the night, the sleep is calm, prolonged, and restoring—so much so that when the physician visits his patients on the following morning he hears them assert with satisfaction that "the night was passed very well." This means a great deal to a person who has been kept awake a night or more by sea sickness.

What is it that we mean by the cure of sea sickness? Do we mean that as soon as the remedies are given the vomiting patient gets right out of bed and promenades the deck as gayly as if in a ball room? By no means. There is no power in the universe that could produce that result while the sea is still rolling high. But we do mean that the vomiting and even the nausea stop, that the splitting headache stops, that the patient is comfortable, that he or she generally falls asleep a little while, and that soon afterward food is relished and retained. The patient may still remain in bed, but he is not sea sick, and it is not necessary to wait for still water before this result can be obtained. Can more than this, or as much as this be said of any other method of treatment of sea sickness?

Let it suffice to say, in conclusion, that the judicious employment of this method never does any serious harm; that it may very rarely be inoperative, owing to some cardiac, vascular, or nervous lesion; but that in simple naupathia it always produces amelioration and generally a cure of this affection.

FACSIMILES of types used in writing in the various foreign languages on the improved Hall Typewriter constitute a neat little double leaflet just published by the National Typewriter Company, of Boston, Mass. It includes several styles of type for correspondence in German, Russian, French and Spanish, besides Italian, Portuguese, Bulgarian, Servian, Bohemian, Danish, Swedish, Armenian, Hungarian, Roumanian and Hebrew, etc.