THE TAILS OF COMETS.

Prof. Bredikhine, of St. Petersburg, writes Mr. Proctor in the Newcastle *Weekly Chronicle*, has made some very interesting researches into the evidence respecting the tails of comets. He shows reason for believing that these appendages may be divided into three distinct classes, according to the different relations between the attractive and dispersive power of the sun. The latter power he considers to be, in all probability, modified by the different properties of the particles of which the tail is formed. There are few subjects of inquiry more difficult and perplexing than the phenomena of comets' tails. The evidence seems unmistakably to point in some cases to a true repulsive action excited by the sun, and yet nothing seems harder to understand than the possibility that the sun should exert such a power in so energetic a manner as to produce the amazingly rapid extension of tail matter seen in certain cases. Thus the tail of Newton's comet seen after the comet had made its nearest approach to the sun, must have been thrown out in less than a day (probably in less than a few hours) to a distance of more than ninety million miles. Under the sun's gravitating power, tremendous though that power appears, the comet, with all the velocity it had already acquired, took more than four weeks in traversing the same distance. Tyndall's ingenious attempt to explain the formation of comets' tails as due to the actinic energy of rays which have passed through the comet's head, fails to account for the phenomena presented by many long-tailed comets. Prof. Tait's sea-bird analogy, by which the formation of a comet's tail is compared with the coming into view of a flock of sea-birds, as the plane of their array comes to coincide with the observer's eye, would never have been advanced by anyone familiar with the history of the most important comets, or even with the history of any one of the great comets which have been visible for more than a few days. What Sir John Herschel wrote more than forty years ago has never yet been invalidated, viz., that the phenomena of comets can only be explained by assuming the existence of an intense repulsive force, excited by the sun on the thin material raised by his heat from the surface of comets approaching him from interstellar space.

NOISELESS WARE is a novelty in china-ware introduced by Mr. Vernon, of Scotland, and which is well spoken of by the London *Pottery Gazette*. It consists in providing at the base of the article, or, in case of covers, under the rim, a groove, into which is riveted a strip of india-rubber. This strip is so formed that when run into the groove it fits tightly, and that part of it which projects beyond it effectually prevents the article from scratching any smooth substance on which it may be placed, insures the greatest quiet when the article is being moved about, and renders it less liable to that slipping from trays that now and then causes much grief at meal-time. At the Royal hotel, Glasgow, Mr. Vernon has placed on exhibition quite an elaborate selection of wares (dinner and tea services, toilet sets, etc.); and of particular interest is a display of shipping ware placed on a rolling table, the surface of which is partly plate-glass, partly finely-polished wood, and partly cloth. The table is set a-rocking, to imitate the conditions of a cabin table in a storm at sea, but the ware persistently refuses to budge. The value of this simple invention for ship crockery will be apparent.

PTERATOMUS PUTNAMII, or "Putnam's winged atom," is the very appropriate name given by Prof. Packard to a creature first described by him, and which is probably the smallest of all known insects. An individual of this species was captured last summer by Mr. J. D. Cox, who gives a full description of it in the *American Naturalist*." Its body is twelve thousandths of an inch in length, the antennæ twenty thousandths. It is probably an egg-parasite of the leaf-cutter bee.

INTERESTING TO ANTHROPOLOGISTS.

The *Grant County Herald* contains the following letter from Richmond, New Mexico, which will be of interest to antiquarians. A resident here, while excavating an old building for the purpose of making a cellar, found two skeletons, one of a grown person and the other of a child. The skeleton of the grown person was found about six feet beneath the surface of the ruins, almost intact. The skull was well shaped, except for a small protuberance about where phrenologists locate amativeness. The teeth were small and sound. Placed near the skull was found a small olla, containing what seemed to be the thigh bones of a turkey. After the skull was taken from its place, hair was discovered which on examination was found to be brown. But when exposed a short time to the air it became so much dust. The skeleton of the child was found in a niche in the east wall, securely closed by a thin rock nearly two feet square. The building had evidently been burned at some time, as all the timbers which were used in its structure were found in a charred condition. The timber used was the cedar. Who were the people who once must have been so numerous from the mouth of the Gila to its source? The whole valley at one time was thickly studded with buildings. Nowhere is there a record of any race that had the protuberance on the skull aforesaid. At first it was believed that this was malformation caused by some accident to the skull, but since it has been assured to be hereditary to the race. The protuberance was about the size of a hen's egg. This race cultivated the soil, because we find corn about the size of the small sweet pumpkin or squash seed, a seed which is the exact counterpart of hemp, and numerous kinds of seeds resembling melon varieties. They had a beast of burden, for we find the teeth of some animal which must have been very large. The first European that visited the Gila was Father Nisa, the romancing priest, in 1539. He says that the traditions of the Aztec were full of stories relative to the old civilization, and its fabulous wealth. Historians differ in opinion, but many believe that this people were extinct before the Aztec race knew anything about this country. The tradition of the Apaches is that they have been living here about 900 years, and that when they came they found the ruins about as we find them. If such is the case, it may have been several centuries previous to the arrival of the Apache, when this people abandoned the country or were destroyed.

WARTS.—The beginning of the growth of warts is due to obstruction which prevents the free action of the excretory organs. This obstruction produces a thickening of the tissue. The process is somewhat like that observable on trees. Owing to some injury, the bark becomes diseased or damaged, and the juice, or sap, by its unnatural exposure to the atmosphere, undergoes a chemical change, and a growth is produced which becomes in time a mass of hardened tissue—a kind of fibrous or cellular tumor in the tree. One frequently sees these growths; their forms are much varied, and by no means conducive to the beauty of the tree. Careful treatment with chromic acid will remove warts.

THE KEELY MOTOR.—So long a time has elapsed since anything was heard from Keely and his motor that most people had forgotten him, or concluded that he had given up in despair his attempts to "bridle" the new and powerful force which he claims to have discovered. The Philadelphia *Times*, however, says that during all these weeks and months Keely has been diligently at work building what he calls his "vibratory engine," which is to utilize the new motor power, and is now engaged in "graduating" the engine, which peculiar process, he says, will enable him to intensify the action of the vapor.

ERUPTIONS IN THE HAWAIIAN ISLANDS.—In the latter portion of March last, the volcano of Kilauea was sending forth a lava flow of unusual volume, which is described by the Hawaiian *Gazette* as follows: "There was a large lava flow just to leeward of the crater. A river of running lava of about a mile and a quarter long by three-quarters of a mile wide. Looking towards it, it was a grand sight. The lava seemed to run to sea at the rate of about half a mile an hour. There is scarcely any fire in any part of the crater, except where the lava is flowing from, and it is still running. If it runs much longer there will be danger. There was some fire on the top of Maunaloa two weeks ago, and all the people in Kau expect a lava flow down there sooner or later. They had a shock of earthquake at Kau about a week ago, and the people there are keeping a sharp lookout for what may come." From the foregoing, it would seem there are apprehensions of stirring times in the neighborhood of the crater of Kilauea and Maunaloa, and we would not be surprised to learn at any moment of volcanic action of unusual violence. It is some years since there was any great out-pouring at Kilauea and Maunaloa, and it is but natural that there should be a demonstration of nature at intervals, as heretofore. These things are looked for by the natives, and seems to occasion no alarm.

DIFFICULTY OF BREATHING.—In cases of difficulty of breathing, the bystanders commonly raise the sufferer to a sitting position and allow the head to bend forward, and by so doing, they increase the difficulty. Dr. B. Howard, in a communication to the Royal Medical and Chirurgical Society, points out that there is "an anatomical remedy against respiratory obstruction." This remedy is very simple, and may be described in one word—position. Raise the chest, and let the head hang back as far as may be. The effect of this position on the respiratory apparatus is described in anatomical detail by Dr. Howard; but under all the words rests the simple fact, "that complete extension backward of the head and neck should be the first and instant measure in threatened or actual apnœa, both as a remedy and as the first step toward success in artificial respiration."

THE Chinese subject the greater part of their porcelain to only one firing, first drying the pieces sufficiently in the air to prepare them for glazing. This plan they are able to pursue, because the nature of their material is such that it resists the entrance of water. Their glaze is much superior to any in use in the European potteries; but it requires the most intense degree of heat for its fusion, and considerable art is consequently required for the management of the fire, as well as in the construction of their ovens. These are built in the most substantial manner, so that when the fire is at its greatest hight the hand may be applied to the outside without any fear of burning.

BRINE FOR THE PRESERVATION OF ANIMAL AND VEGETABLE MATTER.—M. Mercier, in the *Archives de Geneve*, recommends a solution of common salt for the preservation of zoological and botanical specimens for scientific purposes. It is cheaper than alcohol, does not evaporate, does not extract or alter the colors, and is not likely to be surreptitiously drunk. The brine is boiled to expel gas, and the specimens are immersed at about 80° C., and closed up. If the brine really answers the purpose, it will save a good deal of expense and trouble in museums.

A GLASS manufactory in Hanover, Germany, makes glass which is a close imitation of marble, and tables and floor tiles which are pronounced preferable to marble on account of their extreme hardness.

IT is said that the oil that exudes from orange peel when bent between the fingers, will check the progress of carbuncles in their incipient stage. Perhaps the oil may also be useful for other cutaneous eruptio