TWO BEAUTIFUL PALMS.

Although the palm tribe, as a whole, is indigenous to the tropics, some wandering members of the family may be found as far from the equator as the south of France; and one is a native of Asia, and grows wild in the region north of the Himalayas, up to latitude 44° N. The latter, of which we give an engraving, is the hardy palm (*chamærops excelsa*); and the palmetta, of which four species are native to this country, is nearly related to it, as will be seen on an inspection of its foliage. The pure dark hue of its leaves, and the sturdy vigor of its general appearance, make it a highly ornamental tree in the shrubbery and plantation. Heat and abundant moisture are needed for its growth, and, like most other palms, it is capable of extensive utilization; its growth in tropical regions is enormous, and some fine specimens may be found in conservatories in our northern homes.

Another exquisite specimen of the palm genus is the *Pritchardia filifera*, of which we also give a representation; it is one of the most beautiful of the handsome family to which it belongs. All who have seen it will remember its remarkably fine appearance and the admiration which it excites. It is a native of this country, and grows farther north than any other of the palm tribe, its native habitat being the banks of the Colorado, in Arizona and New Mexico, where it bears the winter frosts without injury. It is excessively graceful in appearance, long white filaments falling from its palmate leaves, giving them the appearance of being furnished with plumes.

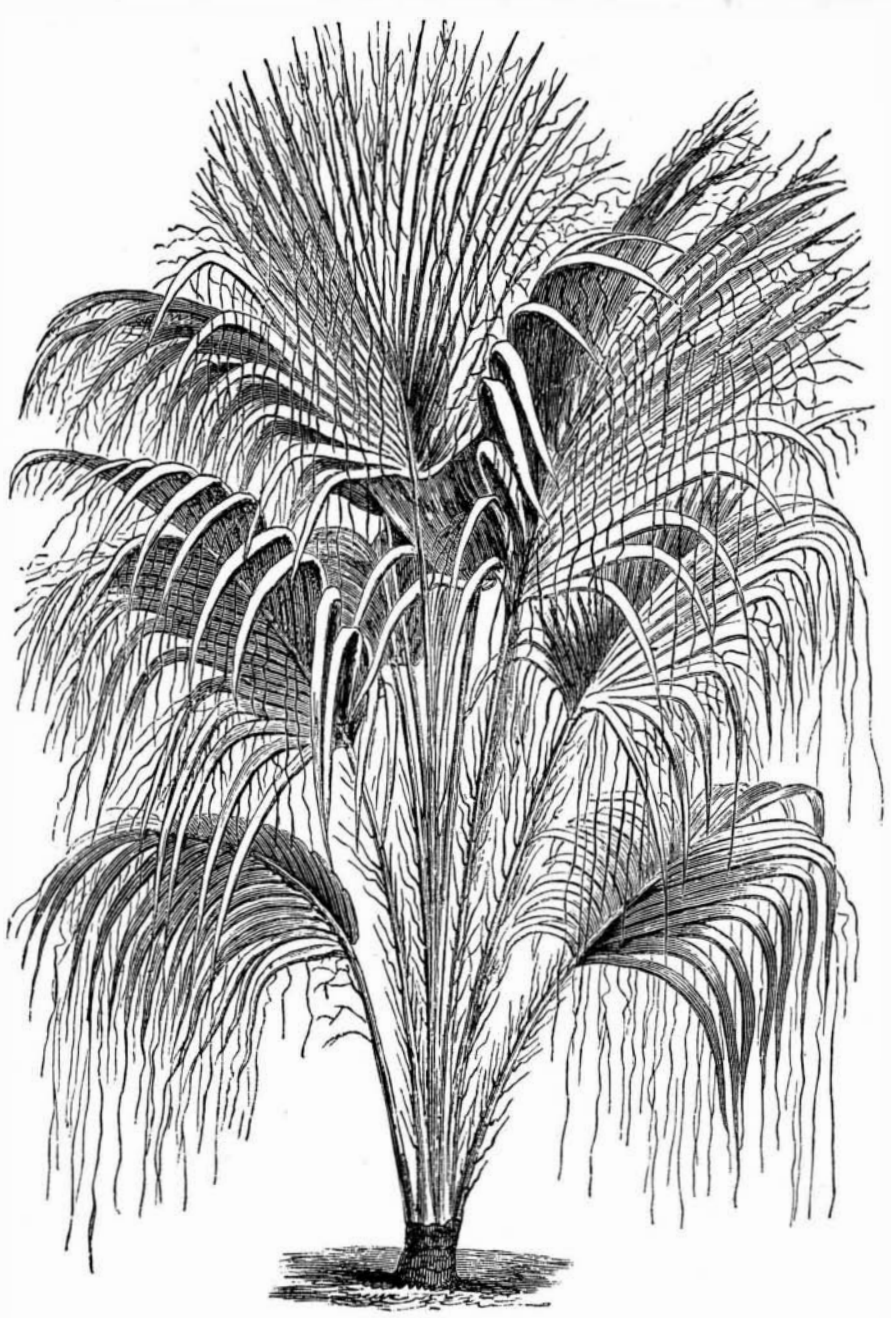
This beautiful variety of palm ought to occupy a conspicuous position, not only in private collections but also in those of public gardens. It will be found to form a good substitute for latanias, phœnixes, and similar palms, of which amateurs are rapidly beginning to get tired. In the south of Europe, says a correspondent of the English *Garden*, from the pages of which we select the engraving, it is perfectly hardy; but in more northerly climates it will succeed best under the protection of an ordinary conservatory or greenhouse.

The palm family is perhaps the most widely diversified of any botanical tribe that has distinct family characteristics; and the useful products obtainable from its members are very numerous. Houses are built of the wood, and roofed with the leaves; the fibers are used for all textile purposes; very many edible fruits are yielded by the trees; oil is extracted in prodigious quantities from one palm tree, and wine from another; and a tanning material resembling catechu is extracted from palm nuts. A common kind of sugar, called jaggery in the East Indies, is the product of a palm; and the betel nut, chewed by the natives of the Indian archipelago and elsewhere, is the fruit of a palm tree.

THE HARDY PALM (CHAMÆROPS EXCELSA

New Treatment for Cholera.

Asiatic cholera is so well known to be such a terribly fatal disease that any plan of treatment that gives promise of success must excite general interest. A method has lately been introduced by Surgeon Major A. R. Hall, of the British Army Medical Department, which, it is hoped, will lessen the mortality caused by this fearful maladay. It consists in putting sedatives under the skin, by means of a small syringe (hypodermic injection), instead of giving stimulants by the stomach. Surgeon Major Hall has served nearly twelve years in Bengal, and has suffered from the disease himself. In most accounts of the state of the patient in the cold stage, or collapse of cholera, the heart is described as being very weak, and the whole nervous system very much exhausted. Stimulants have, therefore, almost always been administered; but experience has shown that they do more harm than good. Surgeon Major Hall observed, in his own case, while his skin was blue and cold, and when he could not feel the pulse at his wrist, that his heart was beating more forcibly than usual! He therefore concluded that the want of pulse at the wrist could not depend upon want of power in the heart. A study of the works of a distinguished physiologist, Dr. Brown-Séquard, with some observations of his own, suggested the idea that the whole nervous system is intensely irritated, instead of being exhausted; and that the heart and all the arteries in the body are in a state of spasmodic contraction. The muscular walls of the heart, therefore, work violently, and squeeze the cavities, so that the whole organ is smaller than it ought to be; but it cannot dilate as usual, and so cannot receive much blood to pump to the wrist. Surgeon Major Hall looks upon the vomiting and purging as of secondary importance, but directs special attention to the spasmodic condition of the heart and lungs. The frequent vomiting causes anything that is given by the mouth to be immediately rejected; so it occurred to him, as the nervous system appeared to want soothing instead of stimulating, that powerful sedatives, put under the skin, would prove beneficial. A solution of chloral hydrate (which has a very depressing action on the heart) was employed in twenty cases where the patients were either in collapse or approaching it, and eighteen of these recovered. They were natives of Bengal. It is probable that, among Europeans, in severe cases, more powerful depressents may be required; and Surgeon Major Hall recommends the employment of solutions of prussic acid, Calabar bean, bromide of potassium, and other sedatives. Opium (which is not really a sedative, but a stimulating narcotic) and all alcoholic stimulants are to be avoided, and nothing given to the patient to drink, in collapse, except cold water, of which he may have as much as he likes. It is to be hoped that this sedative treatment may have an extended trial, and that before long we may have further favorable reports concerning it.—*Chambers' Journal.*



PRITCHARDIA FILIFERA-

Ozone.---What is it?

A certain seaside town has been considerably puffed into notoriety as a suitable resort for persons seeking health, on account of the quantity of ozone in the atmosphere. We will not dispute the fact, but it may be doubted whether one seaside town more than another naturally possesses any specially large amount of ozone. What, however, is ozone? That is a question more easily asked than answered. It appears to be a highly concentrated condition of the oxygen which forms the peculiarly vital part of the atmosphere, and is produced through electrical agency. The mechanical action of pure air over vegetation is productive of ozone, but still more manifestly is this subtle quality produced by the dashing of waves and spray against the air. These lashings of air and sea mixed are, electrically speaking, in the nature of one substance rubbing on another. They evoke ozone, which, being inhaled in breathing, gives a stimulus to the constitution. Hence the benefit to health from a sea voyage, or a residence at a pleasant sea side resort. Mr. Binney stated, at a recent meeting of the Manchester (England) Literary and Philosophical Society, that the atmosphere of towns may be sensibly ozonized, and of course improved in quality by the action of public fountains. He says: "A water fountain may be regarded as a hydro-electric machine, the friction of the water issuing through the jets developing electric action, materially assisted by the conversion of the spray into aqueous vapor. I would suggest that this fact should be prominently brought before municipal bodies, to induce them to erect fountains in all available places in large cities, as sanitary agents. They might prove highly beneficial in crowded localities." It need only be added that the delicate and wholesome freshness of the air after a rattling thunder shower in summer is very much due to the development of ozone. The subject of ozone, in its various phases, is at present engaging the attention of scientific inquirers, and we may soon hear more about it.

METEORITES.

BY PROFESSOR C. A. YOUNG.

In the present article we propose to consider the so-called detonating meteors, or *bolides*, which from time to time fall upon the earth as masses of stone or metal. It may indeed be a question whether these bodies really differ from the ordinary meteors in any thing but size; many of the highest authorities think they do not. Still the fact that even during the most remarkable meteoric showers no sound has been heard, and not a single fragment has been known to reach the ground, seems to warrant us in classing the bodies by themselves, at least provisionally. They appear to bear much the same relation to the shooting stars which planets do towards comets.

As late as 1800 men of science in general were disposed to be very skeptical as to accounts of stones and iron falling from the sky, and those who admitted the fact had recourse to most curious and absurd hypotheses to account for it: some, for instance, thought the stones were formed in the air by lightning, while others maintained that they came from volcanoes on the earth or moon. Chladni, however, in 1794 published a paper upon the origin of a remarkable mass of native iron found by Pallas, the Russian explorer in Siberia, maintaining it to be meteoric, as is now universally admitted; and to strengthen his position, he went into a careful criticism of various accounts of the fall of such bodies, compiling a catalogue of some 300, and affirming their credibility. His reasoning made an impression, but still failed to enforce general assent, until in 1803 an event occurred which put an end to all skepticism. On the 26th of April in that year, a meteor exploded over the village of L'Aigle in Normandy, within 85 miles of Paris; and more than 2,000 fragments, of weights ranging from 20 pounds to a fraction of an ounce, were scattered over a region of several miles. The Academy of Sciences sent a special committee to investigate the matter. They collected specimens, took the sworn depositions of those who had witnessed the phenomena, and in their report put the reality of the occurrence beyond all possible doubt.

The phenomena which accompany the fall of these bodies are much the same as those of the shooting stars, except that they are ordinarily far more brilliant; and observers who are near the path of the meteor usually hear a rushing roar, like that of a heavy railroad train, accentuated by several cannon-like reports which are sometimes heard at a distance of a hundred miles. At each of these explosions, whose cause is only doubtfully explained the meteor changes its course or breaks into fragments. In a few instances, when the fall took place in the daytime, no luminous phenomena were seen, and in one or two cases the fall of very small aerolites has been unaccompanied by noise. Thus, in March 1859, there was a shower of little stones in Harrison county, Indiana, one of which, about as large as a marble, fell within a few feet of a man and his wife who were standing in their cabin, with no other warning than the tearing of

the missile through the leaves of the trees. The character of the stone, and of several others which fell at the same time, removes all doubt as to their meteoric origin.

There are several instances on record of mischief done by meteors. In 1511 a monk was killed by one at Crema; in 1650 another monk at Milan; and in 1674 two sailors on a ship in the Baltic. One of the aerolites which fell at Barbotan in 1790 broke through the roof of a house and killed a peasant and a bullock.

When these bodies have fallen among the ignorant and superstitious, they have usually been regarded with great reverence, and become objects of worship. The Palladium of ancient Troy, which by some writers is described as a shapeless mass, is supposed to have been an aerolite; so also the image of Diana of Ephesus that fell down from Jupiter; and the mysterious black stone of the Kaaba at Mecca. The stone which fell at Parnallee in Southern India, in 1857, was for some time worshipped by the natives.

The number of meteoric falls is very considerable, our cabinets now containing specimens derived from nearly 300 different localities; and if we added the specimens which are supposed to be of meteoric origin, though the date of their fall is unknown, we must at least double the number. Recalling now how small a portion of all that reach the earth would ever be found, because so much of her surface is covered with water, or forest, or desert, it becomes evident that the total number of such events is to be counted by the thousand in every century. In fact, the scientific journals usually contain the notices of some five or six on the average every year.

Meteorites differ greatly in size. They seldom fall singly; but the mass which enters the atmosphere, chilled to the temperature of interplanetary space, breaks up, under the action of the sudden and intense heat generated by the resistance of the air, into fragments which, as a rule, seldom exceed 150 lbs. in weight, while the majority are much smaller, say from 20 lbs. to a few ounces. Since, however, the number of fragments is often very great, the total weight of a single meteoric mass sometimes amounts to tuns. This seems to have been the case with the shower of stones which fell at Weston, Conn., in 1807, and the more recent fall at New Concord, Ohio, in 1860.

The different specimens from the same fall of course always closely resemble each other, being merely fragments of a single mass; but aerolites from different falls differ widely in almost every respect, with however a few marked features of resemblance. They are always coated with a thin, black, highly magnetic crust formed by superficial fusion, and they invariably contain a considerable amount of iron, ranging from 20 or 25 per cent to more than 90. They may, according to Maskelyne, be broadly classified into three divisions: The iron meteorites or siderites; the stony meteorites, or aerolites (air stones); and an intermediate class, represented by exceedingly rare specimens, which consist of a honeycombed mass of iron filled in with stony matter, and are known as siderolites (steel stones.)

SIDERITES.

Compared with the aerolites, the siderites are very rare. As yet only five cases are on record in which meteoric iron has been seen to fall: at Agram in Bohemia, 1751; Dickson county, North Carolina, 1835; Braunau, Austria, 1847; Victoria, South Africa, 1862; and Maysville, California, 1873. A recent fall in Nevada is reported to have consisted of meteoric iron, but the report needs confirmation. While, however, the instances are so few in which the actual fall of iron masses has been observed, we have in our cabinets some 200 specimens of native iron, which from the circumstances under which they were found, and their resemblance to the Agram meteorite in chemical constitution and crystal structure, are pretty certainly concluded to be of meteoric origin. Such are the great masses from Orange river in the British Museum, the Red River iron from Texas in the Cabinet of Yale College, and the Ainsa iron in the Smithsonian rooms at Washington. A marked peculiarity of all meteoric iron is its alloy with a considerable quantity of nickel, varying from 5 to 15 per cent. A second characteristic consists in a peculiar crystaline structure, which is best brought out by polishing a cut surface and acting upon it with a weak acid. Quite recently, also, Graham and others have found that a large quantity of hydrogen, and smaller amounts of carbon oxide and other gases, chiefly hydrocarbons, are occluded in the pores of meteoric iron, and can be liberated by heat.

AEROLITES.

The aerolites, or stony meteorites, which form the vast majority of all that have been seen to fall, differ very widely among themselves. Some are hard and compact, while others are as friable as rottenstone. The aerolite of Bishopsville, S. C., though covered with the invariable black crust, is internally almost as white as chalk, and as light as pumice; that of Kold Bokkeveld, South Africa, on the other hand, resembles a piece of anthracite coal more than anything else; and that of Orgueil, a mass of rather coherent garden soil. The majority, however, are heavy grayish rocks, something like sandstone, made up of crystals or minute spheres of various peculiar minerals (many of which are never found in terrestrial rocks), interspersed with nodules of nickeliferous iron and cemented together by compounds of the oxides of iron. If exposed to atmospheric influence for a few years only, the mass disintegrates and falls to pieces, and this probably explains why so few aerolites have ever been found except in immediate connection with their fall. The siderites, on the other hand, remain for centuries but slightly altered.

According to Maskelyne the following 24 elements have been detected in aerolites, namely, *hydrogen, lithium, sodium, potassium, magnesium, calcium, aluminum, titanium, chromium, manganese, iron, nickel, cobalt, copper,* tin, antimony, arsenic, vanadium, phosphorus, *sulphur,* oxygen, silicon, carbon, and chlorine. Those italicized are also shown by the spectroscope to exist in the sun, together with zinc, strontium, and cadmium, which thus far have not been found in meteorites.

ORIGIN OF METEORITES.

The origin of these bodies is as yet a matter of speculation. They enter our atmosphere, however, with a velocity so great (often exceeding 20 miles per second) as to make it certain that they do not come from any terrestrial source, or even from the moon. And for the same reason, they cannot well be, as some have thought, "the minute outriders of the great family of the asteroids," for then the velocity with which they would reach us would be only the difference between their velocity and ours. It seems impossible to avoid the conclusion that their orbits must be unplanetary, not approximately circular, but very eccentric, like those of comets and the ordinary shooting stars. It may be, as Mr. Proctor has suggested, that some of them, the siderites especially, have been ejected from our own or some other sun, by some of those tremendous outbursts of solar energy which we occasionally observe with our spectroscopes; or they may have originated, as Moigno argues, in the cracking to pieces of some old and used-up world.

At present, all we know is that they come to us from the outer darkness of interstellar space. As Humboldt has said: "They present to us the solitary instance of a material connection with something which is foreign to our planet. We are astonished at being able to touch, weigh, and chemically decompose metallic and earthy masses which belong to the outer world—to celestial space—and to find in them the elements of our native earth, making it probable, as the great Newton conjectured, that the materials which belong to our group of cosmical bodies are, for the most part, the same."—*Boston Journal of Chemistry.*

Disinfectants.

A report of the medical officers of the British Privy Council and Local Government Board throws discredit upon popular notions of disinfection. The conclusion reached is that aerial disinfection, as commonly practised in the sick room, "is either useless or positively objectionable, owing to the false sense of security it is calculated to produce. To make the air of a room smell strongly of carbolic acid by scattering carbolic powder about the floor, or of chlorine by placing a tray of chloride of lime in a corner, is, so far as the destruction of specific contagia is concerned, an utterly futile proceeding. The practical result of experiments goes to prove that dry heat, when it can be applied, is the most efficient of all disinfectants; that the old plan of stopping up crevices, and fumigating with sulphur and charcoal, is more efficacious than any other proceeding with more modern disinfectants; and that the use of carbolic vavor for disinfecting purposes should be abandoned, owing to the relative feebleness and uncertainty of its action." To these medical conclusions the experience of wise nurses adds the suggestions: That no patient, who can possibly be removed, should spend night and day in the same apartment. One room may be thoroughly ventilated while the other is occupied. Many napkins, handkerchiefs, and other articles which are sent to the wash tub should go into the fire. Every particle of foul matter should be instantly removed from the sick room. All scraps of food should be at once taken away, when the patient has finished his meal. The nurses and attendants should take especial care of their own health, and strength, and cheerfulness; and above all, no fussiness should annoy the patient. Simply let the room be kept neat and comfortable, and in that mode infection is guarded against before it becomes dangerous.

Varnish for Glass.

Terquem prepares a varnish for glass on which drawings can be made, either with India ink or with ordinary ink. Four parts of gum mastic and 8 parts sandarac are placed in a well closed bottle with 8 parts of 95 per cent alcohol, and warmed on a water bath, then filtered. When used, the glass is heated to 122° to 140° and the varnish flowed over it. After the drawing is done, it is flowed with a weak solution of gum. The varnish is very hard, and on warm glass it is brilliant and transparent; but when cold it is opaque and absorbs the ink. It can be employed for putting labels on glass bottles, etc

A thin solution of gelatin applied to a plate of glass, which is supported horizontally until dry, makes a good surface for pen and ink drawings for transparencies.

Kaolin.

Kaolin is now supposed to be produced by the mechanical decomposition of mica, some recent microscopical and chemical examinations having afforded evidence all tending in that direction. Several samples also were washed and so separated into large and small particles, but in no case could any chemical difference be discerned.

Nitro-Cumic Acid.

A new photographic agent. Exposed to light, it rapidly alters to a deep red color. A solution of the substance exposed to light, deposited red amorphous flocks of an acid nature, soluble to a beautiful rich red liquid in alkaline solutions. By the action of reducing agents it yields a yellowish brown powder, which readily decomposes, while oxidising agents convert the red acid into a yellow powder.

The Probabilities of Sickness.

The business of life insurance is largely based on purely mathematical calculation, involving the laws of probabilities, the object of which is to determine, by careful comparison of extended statistical returns, and like information, the probable duration of a person's life at every year of his existence. On the tabulated results is founded the scale of premium charges, proportionate to the risk assumed. While everyone is, of course, interested in knowing how long he is likely to live, he has a more immediate and vital interest in learning how often he is likely to be sick, and for how many days per year he will probably, by ill health, be incapacitated for work.

Dr. Reginald Southey has recently been delivering a course of valuable lectures on "Individual Hygiene" in London, and in one he introduced a table of "Expectation of Sickness," which he had prepared, and which is as follows:

At 20 years of age, calculate on 4 sick days yearly.
At 20 to 30, 5 or 6 days.
At 45, 7 days.
At 50, 9 or 10 days.
At 55, 12 or 13 days.
At 60, 16 days.
At 65, 31 days.
At 70, 74 days.

Of course this refers to people of average good health, and not to those who may be afflicted with any ineradicable or chronic ailment.

The Most Useful Drugs.

According to the London *Medical Times and Gazette,* a party of ten medical men were dining together not long since, and one of them, during dessert, started the question that, supposing all present were limited in their practice to a selection of six pharmacopœial remedies, which would be chosen as being most useful, compound drugs to be excepted. Each of the party wrote the names of the six drugs he should select, and handed them to the doctor who started the enquiry. On examining the lists it was found a majority of votes were given in favor of opium, quinine, and iron; between mercury and iodide of potassium the votes were equally divided, as as they were also between ammonia and chloroform.

New Method of Testing Milk.

The *Country Gentleman* advises its readers to test their milk by pouring a given quantity into a small cup, arranged to be heated in a water bath. When the temperature of 90° is reached, the smell of garlic, putridity, fever, or udder disease will unmistakably manifest itself. If the milk is suspected of being diluted or skimmed, the sample in the cup is coagulated by rennet. the curd is compressed to expel the whey, and the curd is then weighed. By knowing the standard weight of the curd of a given quantity of milk and comparing it with the sample tested, the variation shows the amount of water that has been added, or to what extent it has been skimmed.

The Cause of Coughs.

An Italian (according to *Les Mondes*) attributes cough to the presence of a parasitic fungus in the air passages. In grave cases, this parasite multiplies, and reaches into the lung cells. Quinine has the property of stopping the development of microscopic fungi, and is therefore adapted as a remedy in the present case. Dr. L. has used with success the following powder: Chlorhydrate of quinine, 1 part; bicarbonate of soda, 1 part; gum arabic, 20 parts. The bicarbonate of soda is meant to dissolve the mucus, the gum arabic to increase the adherence of the powder on the bronchial passages. The insufflation (blowing in) of the powder should take place during a deep inspiration of the patient, so as to facilitate its penetration into the windpipe, which is the principal seat of the microscopic fungus.

A Gigantic Kitchen.

The German government has recently built a kitchen, a thousand feet long and wholly of stone and iron. It is to be used to supply food to the army during war. Its machinery is driven by two 1,800 horse power engines, and is capable of boiling down and condensing 170 oxen, grinding 350 tuns of flour, and making 300,000 loaves of bread daily. It is also able to supply enough preserved oats for a day's feeding of the horses belonging to an army corps of 280,000 men.

Arsenic from Curtains.

An English physician discovered in a lady symptoms of arsenicism. His attention was drawn to the calico lining of the chintz bed curtains. This material was of a delicate green color, and, on examination, proved to contain a very large quantity of arsenic. This lady's husband used frequently to wake in the morning suffering from nausea, with a feeling of weight and oppression about the chest and his eyes became inflamed. These symptoms all subsided on removing the curtains.

Naval Items.

It is understood that, to reduce expenses, all officers whose services are not absolutely required on duty will be placed on waiting orders.

July 26. The following officers were ordered to the U. S. steamer Essex, now fitting out at Boston: Chief Engineer P. A. Rearick, Assistant Engineer G. B. Ransom, and Cadet Engineers Reid, Dunning, and Stivers.

July 29. Assistant Engineer J. Diamond was dismissed the service, in pursuance of the sentence of a court martial.