CURIOUS AND SCIENTIFIC.

An expedition is being fitted out for an exploration of the Arctic Seas. Capt. Wigans Sunderland has engaged Mr. Lammond's splendid steam yatch Diana, and will proceed via Nova Zambla, sailing from Dundee on June 1. Capt. Brown Peterhead will command the Diana.—*Nature.*

The German Society of Anthropology is industriously collecting material for the Prehistoric map, which it was resolved, at the meeting of April, 1870, to prepare for publication. Among other points to be indicated on this map will be the position of the most notable prehistoric settlements, fortifications, lake dwellings, cave dwellings, burial mounds, and other places of sepulture. By judicious use of color, the various periods—stone, bronze and iron—will be indicated, and altogether the map will be one of great value to the student of archaeology and ethnology.

Barking Trees, for Tan, With Steam.—An apparatus patented by Maitre, for the employment of steam in perling bark for tan (described in Dingler's Journal for 1867), in regard to which very contradictory opinions were expressed, has been tested at Wiesbaden under supervision of the government, with the following results: The quality of the leather corresponds to the amount of tannin in the bark. The variation of the amount of tannin in the bark at different seasons of the year is too small to be regarded in tanning. The amount of tannin in bark removed by the aid of steam in the spring, from trees felled in winter, showed no loss either by chemical analysis or by actual experiments in tanning. The process, therefore, on these points, is not objectionable.

The Magnetization of Glass.—An interesting paper in Poggendorf's Annalen, by Prof. Villari, treats of the time that flint glass takes to be magnetized, demagnetized and to turn the plane of polarization. He rotated a glass cylinder between the poles of an electro-magnet, where it acted like a cylindrical lens with polarized light passing through the poles. When not magnetized, the cylinder, whether in motion or at rest, was neutral to the light; but when magnetized its plane-rotating power diminished considerably with increasing velocity of rotation, each diameter remained too short a time in the axial direction to acquire all the magnetism it would otherwise have. To give flint glass such diamagnetic intensity as became observable by rotation of the plane required at least 1-800 of a second of time, while to give it all the diamagnetism it is capable of taking under a strong magnet at least 1-400 of a second was needed.

The Commerce of the World.—Les Mondes says that eleven principal nations of the world, Great Britain, United States, France, Prussia, Germany, Belgium, Austria, Russia, Italy, Spain, Holland and Sweden, have more than doubled their aggregate commerce in less than twenty years. The foreign trade of these countries amounted, in 1855, to $4,251,700,000, and in 1872 to $9,272,000,000, showing, in seventeen years, an increase of $5,034,300,000, or 118 5 per cent. The increase in population during the above period is 40,177,000 souls, or 14 8 per cent.; and during the first-mentioned year the commerce *per capita* was $15.62, in the last year, $29.76, or an increase of $14 14 to each person. Mr. Gladstone, we notice, recently stated that during the last half century Great Britain had accumulated more wealth than during the entire period of her history. The figures above given would seem to prove this view.

A Simple Leveling Instrument.—M. Goulier proposes for the above a pendulum hung by a double point, which carries, rigidly attached, a collimeter formed of a small tube hermetically closed at one extremity by a piece of ground glass. At the other end is a converging lens, eighteen inches in diameter and fifty-four-inch focus. The radius of the exterior face of the lens should be six or seven times less than that of the interior face. At the principal focus is a diaphragm pierced with a hole 0.6-inch in diameter, across which is a thread of black cotton. By suitable construction, the pendulum being at rest, the plane passing through the thread and the optical center of the lens is horizontal. On looking through the lens the observer sees the thread as a horizontal line which marks on the field the intersection of horizontal plane through the instrument. By placing the eye in proper position, the thread and exterior objects may be seen at the same time, and the mark on a leveling rod may be adjusted to coincide with the thread, so obtaining a level.

The Relationship Between Electricity, Heat and Molecular Forces. Professor Barrett, of Dublin, calls attention to certain remarkable molecular changes occurring in iron wire at a low red heat. Mr. Gore, in 1869, published the important fact that when an iron wire is heated to bright incandescence and then allowed to cool, a momentary elongation occurs just after it has begun to contract by cooling. Mr. Barrett having undertaken to investigate this subject, finds that during the preliminary heating of the wire a slight and momentary retrogression in the otherwise regular expansion was noticed at a temperature corresponding to the powerful jerk that occurred on cooling; and, again, it was evident that the anomalous deportment of the iron occurred at approximately the same temperature at which iron undergoes magnetic change. All kinds of iron do not exhibit this behavior, some showing it in a more or less marked degree. Barrett was not able to detect any change in heating or cooling in certain specimens of good, soft iron wire; but in hard iron wire, and notably in steel wire, it is very apparent.

Getting Out of Bed.—Dr. Hall does not approve of the old doctrine which was formerly instilled into the minds of children—that they should spring out of bed the instant they awaken in the morning. He says up to eighteen years old every child should be allowed to rest in bed after the sleep is over until they feel as if they would rather get up than not. It is a very great mistake for persons, old or young, especially children or sedentary persons, to bounce out of bed the moment they wake up; all the instincts shrink from it and fiercely kick against it. Fifteen or twenty minutes spent in gradually waking up after the eyes are opened, and in turning over and stretching the limbs, do as much good as sound sleep, because the operation sets the blood in motion by degrees, tending to equalize the circulation; for during sleep the bloods tends to stagnation, the heart beats feebly and slowly, and to shock the system by bouncing up in an instant and sending the blood in overwhelming quantities to the heart, causing it to assume a gallop, where the instant before it was a cr ep, is the greatest absurdity. This instantaneous bouncing out of bed as soon as the eyes are open will be followed by a weariness long before noon.

Sleep at Will.—A Mr. Gardner, hypnologist, professed to produce sleep at will, and it was added that his system of producing it was lost with his death. Major-General Sir J. E. Alexander, C. B., K. C. L. S., states that Mr. Gardner imparted his secret to him. Mr. G. said to him: "I had a complaint which prevented my sleeping, and I tried all the usual means to induce sleep, but all failed. I had no sleep for many days, and was worn out. At last I discovered that something of a monotonous nature would produce sleep. While we live we must breathe, and it, after composing our limbs in bed, we try to divest our thoughts of all else except the act of breathing, and attend to the heaving of the chest, and fancy we see the air passing in and out of the nostrils, this becomes so monotonous that it sensibly mesmerizes us, and we fall asleep. This is my secret." Gen. Alexander adds: "On one occasion, while on service in India, I met with a serious accident; was blown up with gunpowder, and got no sleep till my servant shampooed my feet. Finally, it was found that sleep will be promoted by walking about the room for ten minutes or a quarter of an hour before going to bed, and exercising with a pair of ligh dumb-bells. The extremities will be warmth, and good circulation induced; few can sleep with cold feet."

Hydrophobia.—Contemplating the horrors of hydrophobia one madly grasps at any prevention of their occurrence, and therefore readily listens to any suggestions concerning the best means to adopt to protect the community from its ravages. A celebrated veterinary surgeon says: The means of preserving from rabies consists in taking off the edge of the dog's teeth by the aid of nippers and files. The surgeon tried the operation upon three dogs when they were raging mad, and, notwithstanding the evident danger to which he was subjected, succeeded. Six dogs were then let loose to the mad curs and were bitten furiously, but without breaking the skin of any of them. The bitten dogs were watched for six months, during which time none of them ran mad, or exhibited the slightest sign of rabies. The surgeon was so convinced that the blunted teeth of the dog could not penetrate through clothing that he gave his hand, covered with a glove, to one of the mad dogs. He mouthed it vicionsly, but when the hand was relieved the glove was intact, the bite having only made a deep impression, and, of course, no abrasion. The conclusion, of course, is that animals in danger of going mad should have their teeth blunted instead of their mouths muzzled. It would probably be the more humane proceeding, as a muzzled dog in midsummer suffers miseries of an awful kind.

The Warmth of Clothing.—In a careful study of the subject of the warmth of clothing, recently published, Dr. Max Von Pettenkofer has pointed out that the permeability of stuffs to air is a condition of their warmth. The London Medical Record gives the following abstract: Of equal surfaces of the following materials, he found that they were permeated by the following relative quantities of air, the most porous, flannel such as is used ordinarily for clothing, being taken at 100: Flannel, 100; linen of medium fineness, 58; silk, 40; buckskin, 58; tanned leather, 1; chamois leather, 51. Hence if the warmth of cloth depends upon the degree in which it keeps out the air from our bodies, then glove-kid must be one hundred times warmer than flannel, which every one knows is not the fact. The whole question, then, is resolved into that of ventilation. If several layers of the same material be placed together, and the air be allowed to permeate through them, the ventilation through the second layer is not much less than through the first, since the meshes of the two form a system of continuous tubes of uniform diameter, and the rapidity of the movement of the air through these is effected merely by the resulting friction. Through our clothing, then, passes a stream of air, the amount of which, as in ventilation, depends upon the size of the meshes, upon the difference of the temperature between the external and internal atmosphere, and upon the velocity of the surrounding air. Our clothing, then, is required not to prevent the admission of the air, but to regulate the same so that our nervous system shall be sensible of no movement in the air. Further, our clothes, at the same time, regulate the temperature of the incoming air, as it passes through them, so that the temperature of the air between the clothing and the surface of our bodies averages 84 to 86 degrees Fah. The hygroscopic property of different materials used for clothing essentially modifies their functions. This property varies with the different materials; wool, for instance, takes up more water than linen, while the latter takes up and gives off its watery contents more rapidly than the former. The more air is displaced by water from the clothes, the less will be their power of retaining the heat; in other words, they conduct the heat more readily, and hence we are quickly chilled by wet garments.

The Lengthening Years of Man.

In an interesting paper by Dr. Edward Jarvis, in the fifth annual report of the Massachusetts board of health, the following vital statistics, past and present, of various countries, strikingly show how the advance of civilization has prolonged life: In ancient Rome, in the period 200 to 500 years after the christian era, the average duration of life in the most favored class was 30 years. In the present century the average longevity of persons of the same class in Geneva, in the eighteenth century the average longevity in Geneva was 21.21 years; between 1814 and 1833 it was 40.68, and as large a portion now live to 70, as lived to 43, 300 years ago. In 1693 the British government borrowed money by selling annuities on lives from infancy upward, on the basis of the average longevity. The treasurer received the price and paid the annuitiers regularly during the life of the annuitants lived. The contract was mutually satisfactory and profitable. Ninety-seven years later, Mr. Pitt issued another tontine or scale of annuities, on the basis of the same expectation of life as in the previous century. These latter annuitants, however, lived so much longer than their predecessors, that it proved to be a very costly loan for the government. It was found that while 10,000 of each sex in the first tontine died under the age of 28, only 5,772 males, and 9,416 females in the second tontine died at the same age of 100 years later. The average life of the annuitants of 1693 was 26.5 years, while those of 1790 lived 33 years and 9 months after they were 80 years old. From these facts, says Dr. Jarvis, it is plain that life, in many forms and manifestations, and probably in all, can be expanded in vigor, intensity and duration, under favorable circumstances amid which, and the conditions in which, any form of life is placed, should be brought into harmony with the law appointed for its being.

Looking for the Comet.

A policeman found a man lying flat on his back on the esplanade at a late hour the other night calmly studying the heavens. Upon raising him to a sitting posture and asking him what he was doing there, he replied that he was "tryin' to find the (hic) comet." He had a copy of a newspaper in his hand containing a diagram of the heavens. "You see," said this flagstone astronomer, spreading the paper out on his knees and blinking gravely, "this ere comet's 'tractin' tention 'f best 'stronomers. It's 'tracted mine. I'm lookin' for it. I read in paper 'taint visible without a glass, so I (hic) took one. For fear one glass wasn't 'nough I (hic) took 'nother. Paper says comet's between little dipper and great dipper. Drank llitle dipper of beer, then tried a great dipper. Wife made a fuss 'bout it. Told wife I'd (hic) dip her, too, if she interfered. Then I started out to find pole star, 'cause comet's in that neighborhood. Ran 'gainst telegraph pole, stumbled over pole to a wagon, but couldn't find 'er pole star. Step'd in s'loon and treated myself to 'nother little dipper. And yet I couldn't (hic) comet. Read in paper comet's on line with nose of the bear. Asked a man what he knows of the bear. Man told me to bear off. Been watchin' for that comet mos' all night. Heavens full of dippers, bears and (hic) pole stars. No comet."

"Well, com' mit me," said the watchman, "I'll show you the pole star," and he led him where the Ninth street station light is softly beaming.—*Cincinnati Saturday Night.*

Fattening Calves.

A sensible, practical farmer says that he has often noticed that calves would thrive better on milk that is not rich in butter than on what is commonly called very rich milk. The nutritive elements of milk reside chiefly in the casine. If you have a cow that gives particularly rich milk, and one that gives a quality poorer in butter, it is better to feed the calf on milk of the latter. The calf will thrive better, and you will get more butter from the milk of the first cow.

THE WANDERING MINSTREL.

BY KATE HILLARD.

He sang beneath my window-pane
A song that up to heaven might soar,
A wild and sweet heart-piercing strain.
When shall I hear that song again?
Ah, never, never more!

It breathed of summer's golden days,
Of balmy noons, serene and clear;
'Twas mellow as an autumn haze,
Warm as a lover's glowing praise
Of all he holds most dear.

I knew not was it joy or dole
That filled me with delicious woe;
It wrapt my senses and my soul,
Into my very life it stole—
Ah, me! when will it go?

He sang beneath my window-pane;
It seemed the world stood still to hear;
The thrush within the leafy lane
Listened to catch the blithe refrain
That rang so crystal-clear.

Beneath his mantle torn and old
Shone like a star his ivory bow,
And through the clinging envious fold
Bright gleamed his strange potent gilded gold—
Ah, Love, those signs I know!

The singer left my window-pane;
His song's sweet witchery was o'er.
When will that strange resistless strain
Ring through my longing heart again?
Ah, me! for evermore,
Sweet Love!
Ah, me! for evermore!

COMETARY.

A Little Popular Science About Coggia's and Other Comets.

The second comet of 1874, in which the popular interest is daily deepening, appears to have defied astronomic computation till very recently. For some weeks in June it was approaching the earth in so direct a line that the calculations were very difficult. The Berlin ephemeris of its position, brilliancy and future pathway, so freely published last month, because so confidently trusted in this country, proved to be decidedly fallacious in some points. In the last few days the meteor has altered its course and is now more easily studied; but very precise predictions are as yet premature. It now appears that its greatest brilliancy will occur from July 31 to the 3d of August, and the degree of luminosity will be between that of Jupiter and that of Venus. The nucleus will be then seen to the best advantage about twilight, the comet being so near the sun that it will not be observed two or three hours after the latter sinks behind the western horizon. The brightness of the meteor stream will then be three times as great as it is now.

On Tuesday, the 9th of June, from micrometrical comparisons with a star in the Bonn catalogues, the distinguished astronomer, J. R. Hind, of Mr. Bishop's observatory, Twickenham, England, found that Coggia's comet was then rather brighter than Argelander's stars of the sixth magnitude, and the tail was traceable about two degrees from the nucleus, which still presented a very stellar appearance. Mr. Hind also determined that its perihelion passage would take place on the 8th of July, when its distance from the sun would be sixty-seven minutes of the earth's mean distance—*i. e.*, about sixty-one million miles. This seems to be very near the central orb of fire; but there are instances of much nearer approach, as in the comet of 1860, which swept within six hundred thousand miles of the sun. It did not, however, merge into the sun, as comets have never been known to do, contrary to a vague theory that has been largely entertained, as if the nebulous matter was fuel for its mighty furnaces. So far from this rash venturer upon the sun's domains effecting a lodgment on his incandescent and tumultuous surface, it was subjected to an enormous repulsion, and from the point of perihelion was shot out into space with an inconceivable force, far greater than that with which the solar heat acted upon and controlled the head of the comet itself. The amount of this force may be faintly indicated when we reflect that the cometary matter was then glowing with a heat twenty-five thousand six hundred times as intense as that which rages at noon-day on our equator—a heat in which any terrestrial substance known to us would instantly be converted into vapor.

The condition of a comet, after it has passed the perihelion, must be very different from what it was before; but that difference is yet to be ascertained, except in the mere fact that from disunion by action of heat the meteor has undergone great attenuation and analysis. The comet of 1680, to which we have alluded, and that of 1843, after their immersion in the sun's rays emerged from them in augmented splendor and with vastly enlarged tails, as if they had caught up new supplies of light and fire from the great luminary. It would not be, therefore, a great surprise of Coggia's comet should do the same, though instances are recorded in which immersion in the solar rays has stripped the flying meteor of much of its glory. The idea has been expressed that the present comet will intersect the earth's orbit and come in collision with us. The opinion prevailed with Sir John Herschel and others that if ever the earth swallowed up a comet it would be on the 30th of November, when Biela's comet approached very near. But there is great doubt whether, in the event of actual collision, any harm would ensue or even any one be cognizant of it. The comet is a material substance, since it has been proved that it shines by reflected light; but its tenuousness is almost inconceivable. The cometic particles form a cosmical fog or vapor so light that, through Donati's comet, where the tail was ninety thousand miles thick, the stars clearly shone. Arcturus was in no degree eclipsed, as it beamed directly through this enormous band of mist. We may, therefore, safely dismiss the long standing superstition of—

A pathless comet and a curse
The menace of like man.

Various theories have been offered as to the purpose for which comets were created and sent flying about through illimitable space. By some it is thought they may be the scavengers of the universe, sweeping up the impurities that accumulate from the countless worlds of an infinite creation. They have been regularly appearing in our solar system as long as astronomy can recollect, and mayhap if they did not put in an appearance at intervals some dreadful explosion of electricity might occur that might blow our globe to pieces. Those of a religious turn will have it that they come to remind man of his contemptible helplessness, of the little account he could possibly be in the struggle with the tail of a comet, and to drive the ruinous and sinful passions of pride, avarice and ambition from his heart. Again, there are those who believe that comets may act as a balance wheel in the vast machinery of the universe. No serious thought can be given the notion that comets are rebels who have declined to submit to established authority and broken loose from their allegiance. Nor will it do to contend that they are sent around the universe to inspect the condition of the regular old stagers, such as we happen to have in our solar system. Certain it is, they are the mystery of the skies, and when we think we know most we know perhaps least about them.

Sir Isaac Newton gave some attention to the subject, and the conclusion he reached was that the course of a comet was as regular as the course of our own planet. He contended that the orbit of the comet was an eclipse, but since his day the idea appears to be taking possession of the minds of astronomers that the comet describes an eccentric parabola so intricate as to baffle calculation. Many comets have come and gone and have never been heard of since, though, according to astronomical calculations, they should have turned up long since and obliged the observatories. Donati's comet was said to have visited this earth about 3,000 years before its discovery by Donati, and that it would come 3,000 years hence on another visit, when Donati and all of us are dead and buried. It is clear that astronomy has not yet reached that perfection of calculation which can furnish the precise travels of a comet. If a comet comes from the depth of space, as it has been said, and returns thereto, the journey is not ended. She must keep forever on the move to fulfill her evident destiny, and she cannot stop here or there for refreshments, cannot turn down a lane to see a friend, but must hold on to an allotted track as evenly as a locomotive.

Now, as to the tail of the present comet, it streams, according to Prof. Parkhurst, 3,000,000 miles across space like an enormous mantle of Brussels lace. It resembles the Milky Way, with more milk in it—that is to say, it is more condensed. It spreads like a fan, and in that respect resembles the comet of 1811.

People ignorant of astronomy and little given to the study of the heavens, except when they want to find out when it is about to rain, have an idea that the tail of a comet is like the tail of a cow, whisking around in warm weather when coming rather close to the sun, moon and earth, and hanging down straight and quickly when passing through the milky way. If the tail of this comet had anything like the solidity of a cow's tail and were to whisk around ever so playfully at this moment it would take the top off the north pole, the Bunker Hill monument, and relieve the goddess of liberty from duty on the summit of the capitol at Washington.

Another erroneous idea, that must be corrected, is that comets are a sort of celestial maniacs or fanatical reformers, bucking against the established order of the universe and racing around space to frighten conservatism and earn a cheap notoriety. Prof. Chapman says that a comet is merely a collection of small particles of matter, about the size of meteorites, from an ounce to a pound in weight. His reason for this statement is that you can see the stars through the matter radiating from the comet, even close to the nucleus. He even thinks you might see the star through the nucleus, only that the light of the nucleus destroys it. It would be curious to observe an enormous cobblestone pavement a million miles long, hung up in the sky ever so high, and science levelling the spectroscope on the singular phenomenon. The tail of the comet, according to the professor, is little more than this, and perhaps he is right, for is there not a "path-way of light through the sky?" as the poets express it.

This will hardly prove as beautiful or as large a comet as many that have preceded it. The one of 1811 was esteemed by astronomers as a most magnificent comet. Its nucleus was 400 and its head 112,000 miles in diameter. Its tail was a beautiful fan shape, extending 112,000,000 miles. It is right to say that among the numerous comets observed up to the present time, either with the naked eye or by means of telescopes, the majority are distinguished by a nebulosity surrounding the nucleus, and a great number, especially of the most brilliant ones, possess a luminous train or tail.

The diversity of aspect will perhaps some day enable astronomers to class comets into genera, species and varieties, and will doubtless facilitate the perfection of the theory of the phenomena which these bodies present, and which is still so obscure. According to Prof. Spoor, of Rochester, comets are controlled by the same specific law which governs planets of the solar system. When in their orbits thousands of millions of miles away from the sun they move very slow in the arc of an eclipse almost immeasurable. The sun being positive and they deeply negative, it begins to exert a controlling influence over them, and as that attraction increases continually in proportion as the squares of the distance decrease, they move swifter and swifter until, as they approach the sun, they sometimes fly more than 800,000 miles per hour.

At their perihelion they are very near the sun, and become highly positive, and hence are propelled back again into fields of space with the same lightning speed they were attracted towards the great fountain of all motion. The reason comets pass out of sight so rapidly after passing their perihelion is because they move around the sun in orbits, much more elongated than that of the earth, and when they cross the plane of the orbit of the earth on their flight to regions of space they are then moving in one direction and the earth in another, and as the earth moves at the rate of 68,000 miles an hour and the comets at the rate of 1,000,000 miles an hour, they seem to move much faster, as they soon disappear, while their motion is slower and slower till they arrive at their aphelion point.

Prof. Chapman believes that there was an attempt to use the spectroscope upon Donati's comet, and the lines were believed to indicate carbon. But the use of the instrument was not very well understood in those days. However, with the experience we have since gained not only in regard to the magnificent development of the instrument itself, but also in regard to the lines of the various chemical elements, we are in an immensely better position for observations—that is, if the comet shines by a light of its own. If it merely reflects the light of the sun we shall get a continuous spectrum without lines at all.

In a recent interview Prof. Parkhurst said, in reference to the comet of 1843, that in that year the Millerites were in a state of great excitement, as one of their prophets had predicted that the end of the world was at hand, and the appearance of the great comet in that year seemed to justify all that they had said, and a great many good and sensible people who were not Millerites began to be seriously alarmed. The comet of 1848 was a most brilliant one, and was perfectly visible in the day-time. You had only to hold up your hand to shield off the sun and the comet could be plainly seen. Some of my friends who felt a little uneasy about these matters came to me, knowing that I was a bit of an astronomer, to ask me whether I thought the comet was really going to strike the earth and destroy it. I was then serving my apprenticeship to a jeweler in Portland, Me. I went out of doors and made an observation of the motion of the comet. I did not observe it more than fifteen minutes and I had no instruments, but what I saw convinced me that the comet would not come near the earth. So I told my friends that they need not feel no more anxiety on that account, for whatever else might destroy the earth it certainly would not be the comet.

Vary the Feed of Swine.

The hog is accustomed to a great variety of food. He will eat animal and herbaceous food alike—there is nothing that comes amiss to him, and he thrives upon all. To select food for him, then, is not the thing. Though you can fatten him on one kind of food, you can not do it economically. Take what breed you like, and it is economy in producing the greatest result from a given amount of food; that is the point that gives the greatest profit in hog husbandry. The cheapest food, then, is to be sought, if it answers the purpose. By the cheapest we mean that which also accords with his nature, and which he relishes and thrives upon. Corn, alone, though the great hog feed—must be a specialty—is not the most advantageous. The exception to this is in the west, where corn is very cheap. But even here, other grain and feed added will produce a better growth of muscle and fat. All animals require a variety of food, and the hog is no exception. His appetite then will be satisfied, and all the wants of his system supplied. Grass in summer suits him; he revels in a clover field. Milk suits him all the year round, and assists rapid growth. Milk contains a great variety of elements in solution, and is an aid to the digestion of more solid food. He likes vegetables—they stimulate his appetite, not only for the vegetables but for the more concentrated and richer food. Though a "hog" he is governed by the same physiological principles as other animals, and is, therefore, liable to disease—to many ailments; but most of these are caused by abuses in management. Where he is well attended to and supplied with a variety of food he seldom suffers from disease.

Queen Victoria has had twenty-five grandchildren. The Princess Imperial of Prussia has had four sons and four daughters (one son has died); the Princess Louis of Hesse-Darmstadt, two sons and five daughters (one son has died); the Princess Christian, two sons and two daughters; the Prince of Wales, three sons and three daughters (one son has died).

A Forgotten Mission.

A writer in the London Orchestra says: "How rarely have the obsequies of great men been associated with the composition of special grand music from the pens of foremost musicians! Heroes in their days of feverish exultations, in the hours commemorative of their triumphs, have had their glories made more transcendent—their memories made more dear—by the lustre of the new 'Te Deum,' the resplendent new setting of the 'Non nobbis Domino;' but when the chord of life has snapped, and the all that remains of the great hearts among the nations is transmitted to its last resting-place, how seldom has the aid of the musician, as creator of a newer, deeper, and more solemn feeling, been called into requisition! The great Duke of Marlborough when taken to his last home drew forth a certain kind of inspiration from Buononcini; and the wife of George II., Queen Caroline, was carried to the tomb accompanied by the loving sympathy and the triumph song of George Frederick Handel. Since Handel's day nothing of note has marked, in this country, the last homeward journey of any crowned, sainted, or foremost personage, male or female. The musician even seems to have forgotten his mission and his brotherhood, when leaving his friend and fellow-worker in that silent house of which death keeps the key, and to which no one living seeks access. Bach was placed in that secluded spot, where earth upon earth the bodies lie, but no son, no Handel, no pupil, sent forth the song of consolation, 'Safe home, safe home in port.' Handel, more thoughtful and more experienced in the ways of his fellowmen, *paid for his tomb, his monument*, and was buried with his *own music*. When the angel's message came to Haydn he fell gently asleep, and the soul-searching strains of his loving admirer, and in some sense grateful pupil, Amadeus Mozart, were heard at his obsequies. Mozart—poor sufferer—when his ministries were over, was taken to the grave mid wind and storm, and neither tear nor ice struck a chord or breathed a tone at the setting of the greatest musical lights the world has ever seen. Somebody arranged something from some of his works when the disconsolate Beethoven was left to wait the reunion of body and soul in the last ages. The like ceremony happened to Spohr, to Mendelssohn, and to Rossini. Their tombs were canopied with some choice flowers of their own growing. The melodies that nourished in the spirit were the songs of their hearts, and had long before touched the hearts of all lovers of music throughout christendom. The congregations of the dead in the halls of harmony made room for each to pass to his own couch mid the inarticulate echoes of their own tender thoughts. But in all these cases there was no distinctive special music of peace and love, of faith and hope, of warning or benediction, of prayer or thanksgiving, left by any one of these composers to illuminate the darkened scene or stay the lamentations of the mourners."

The Lee Estate.

By a decision rendered in the United States district court for the eastern district of Virginia, Judge Hughes presiding, in an action of ejectmint, brought by Gen. W. C. Lee vs. Azro Chase, the mill property on Four-mile Run, in Fairfax county, was ordered to be restored to said Lee, the devisee of the late G. W. Parke Custis.

The significance of this decision lies in the fact that the tract in question is a part of the old Arlington estate, belonging to the late Mrs. Robert Lee, with remainder over to George W. C. Lee, and was sold by the government for alleged non-payment of taxes, under the direct tax act of 1862. The government holds the Arlington property by the same title precisely as the estate just adjudged to Gen. Lee. Payment of the tax in question, which was very small, was tendered at the time by a friend of Mrs. Lee, and was refused under a rule adopted by the tax commissioner, not to receive the tax from any one but the owner in person. Other estates were sold under similar circumstances. In two of these cases, where suits of ejectment were brought, the United States supreme court have held, without any division of opinion, in the last two years—

First, the tenders of payment of tax by a friend or relative of the owner was good, and a subsequent tax sold void. Secondly, that the publication of the rule adopted by the commissioners, refusing to receive the tax from any one but the owner, vitiated all sales for nonpayment of taxes, and dispensed with the necessity of a tender.—*Cor. Courier-Journal.*

Germination.

The interesting observation of Uloth that grains of wheat accidentally inclosed in ice will germinate, and send their rootlets into it, has been found corroborated on a large scale in the Alps by Kerner. His investigation of the vegetation on the margins of the snow fields clearly prove not only that germination can take place at thirty-two degrees but that stalks and flowers may also be developed at that temperature. Water formed by the melting of the snow, sinking into the earth, serves to excite organic changes in small plants buried beneath the snow and ice, and the heat liberated by the respiration of the plant melts the ice in contact with it, and the growing portions force themselves into the cavities thus formed. The small stems thus frequently force their way up through one or two inches of ice, and finally perforate it, and appear, with their blossoms, above it. Alpine flowers were even found in full blossom incased in ice, just as insects are in amber, although, as a rule, the complete development of the flower only takes place above the ice. Not unfrequently the margins of the snow fields, converted into ice and granular snow, are diversified by hundreds of Alpine flowers, among them, at times, the soldanella.

Farmers' Boots and Shoes.

A farmer who has been accustomed to wearing thick boots for more than forty years past says that, before wearing the boots, give the bottoms a good coating of tallow or coal tar, and dry it in; then oil the "uppers" with caster oil, about one tablespoonful to each boot, then oil them twice a week with the castor oil, when one teaspoonful will be sufficient. If the weather should be rainy, or you are compelled to work in water during the day, wash your boots clean at night, hold them by the fire until quite warm, and oil them while wet, and you will have no trouble about your boots getting hard and shrinking up so that you cannot get them on. If the leather should become red, give a coat of ordinary shoe blacking before oiling. The effect of castor oil is to soften the leather, while it fills the pores and prevents the water from entering. I have stood in mud and water two or three inches deep for ten hours a day for a week, without feeling any dampness or having any difficulty in getting my boots on or off.

The Mania for Relics.

A Boston correspondent tells the following: "Mark Twain, in one of his articles, speaks of the lady who treasures a precious slice of bread from which Dickens had taken a bite. This sounds like the broadest burlesque, but the following anecdote, which is literally true, and illustrates many peoples' foolish desire for relics, shows that Twain was hardly burlesquing in his essay. The last time that Mr. Dickens was in this country he happened one morning to breakfast at the common table of the hotel where he was stopping. When he had eaten his egg, he dropped the empty shell into his egg-cup, and, after finishing his breakfast, he left the table. As soon as he had gone, a lady who had sat next to him arose, and, taking up the cup, went to the hotel proprietor and offered to purchase it of him at any price; and the unwashed egg-cup, containing the broken shell, is now kept by her as a souvenir of the great novelist."

"The leaves were for the healing of the nations."

A Valuable Medicinal Herb.

By R. V. Pierce M. D., of the World's Dispensary, Buffalo, New York.

Smart Weed, sometimes called Water Pepper, but known by botanists as *Polygonum Punctatum*, is a well known, very common and modest little plant found growing in ditches, low grounds, among rubbish and about brooks and water courses, flowering in August and September. In many sections of this country it is a deservedly highly esteemed family remedy. The Indians also make great use of this plant for the cure of various diseases. But neither the Indians nor the whites learned one-tenth of the value of this modest little weed, as they had no method of extracting its virtues without the application of heat, which destroys most of its properties, and usually made a tea from the dried herb, that had been kept on hand for a long-time until it had lost most of its medical properties. No educated chemist had ever tried to make an analysis of the plant and produce an extract from it upon scientific principles, by a cold process, until I, having become convinced of the wonderful medical virtues of this little weed, investigated its properties and made an extract from the fresh herb, by a cold process—using no heat at all, but bringing out its juices, oils volatile properties complete and unimpaired. If this remedy had heretofore been valuable, when prepared in the most crude manner, from the long dried herb, and by the application of heat, that destroyed so much of its virtues, I reasoned that it must, when properly prepared by a cold process, and from the freshly dried herb, prove a wonderfully efficacious and potent remedy for human suffering. And I can assure the people upon my honor as a physician and chemist, that, when I am thus preparing it, my most sanguine expectations have been more than realized. I have found it to contain medicinal properties which I have not yet found in any other one plant, as they are resinous principles. With my Extract, containing all these medical properties unimpaired, I have been enabled to produce most astonishing remedial effects. By much study, a large experience in prescribing this and other medicines and very close observation, I have been enabled to compound and combine with the simple Extract of Smart Weed extracts of other medicinal herbs and roots, that greatly improve its power and usefulness, both as an internal and external remedy—besides they so flavor and modify it as to remove its pungent, smarty taste, and render it a pleasant remedy for both adults and children. The greatest difficulty that I experience in the way of introducing this most valuable remedy to the public is the fact that Smart Weed is such a common and unpretending looking little herb that people are apt to think that it cannot possess any great or valuable medical properties. Had I prepared my Extract of Smart Weed, put it up and labeled it with some great name, and told the people that the herbs of which it was composed were collected in Africa by the Arabs, carried across the Sahara desert on the backs of camels, and brought across the Atlantic ocean for my special use, and that its ingredients were therefore very expensive, I have no doubt that some would have been thereby inspired with greater confidence in it. But I prefer to have confidence in the people and tell them that the chief ingredient of my Compound Extract is the modest little plant seen growing by the roadside, in all parts of America, and known as Smart Weed. I believe that God has caused to grow in each climate and region, those medicinal plants best calculated for the cure of the diseases that prevail in that section of country where those plants are found—that "the leaves were for the healing of the nations," and that the fewer far-fetched remedies we employ the better, if we would thoroughly investigate and understand those we have at home. So far as Smart Weed has been employed by the medical profession it has proved a valuable remedy, withstanding the fact that heretofore they have had only a very imperfect preparation of it to use, owing to their being always employed in extracting its properties, the combined medical author says: "A friend of ours had an only child dangerously ill with summer complaint. He had employed a great variety of the usual means for relief but all appeared unavailing. The child was finally given Smart Weed and it was entirely successful. It arrested the vomiting and purging in a short time and without the aid of other medicine entirely restored the little patient." As a remedy for dysentery (or bloody flux) I have never seen my Extract of Smart Weed equaled, yet I have used it alone in connection with approved medicines usually employed in that disease. The Smart Weed is rendered still more efficacious in all bowel complaints, cramps and pains in the stomach, by adding of 25z Jamaica ginger, which, with other valuable ingredients, is compounded with the Smart Weed in making my Extract—hence the name Compound Extract of Smart Weed. The ginger and other ingredients not only add greatly to the value of the Smart Weed as a remedy for internal administration and render it more pleasant to take by imparting an agreeable flavor to it, but also increase its value as an external application. In all cases of diarrhœa, whether acute or chronic, in bowel complaint, as well as in cholera and cholera infantum, with symptoms of which are severe vomiting and purging, feeble pulse, with cold or clammy skin, my Extract of Smart Weed will give almost immediate relief and speedily effect a cure. All authors writing upon Smart Weed speak particularly about a dose of it producing a warmth and peculiar tingling sensation throughout the system. This is especially the case when my Extract is given and indicates a perfect arousing of the whole system, as if from inaction and sleep, and resembles a shock of electricity only that it is more lasting in effect. The whole system and its various functions are aroused to perform their normal functions by its electrical effect upon the nervous system. Hence, too, its great and speedy control over rheumatic and neuralgic affections, for which it is particularly advised by medical authors and in which it has performed remarkable cures. It should be used in these cases both externally and internally. Being a great diaphoretic, or sweating medicine, aids greatly in relieving pain, but, independently of that, it possesses great anodyne or pain-killing properties, that render it far ahead of any "pain killer," (so called), "instant relief," "golden relief," or any other pain remedy that has ever been offered to the public. Besides, it is perfectly harmless, which is not the case with many of the preparations patented and put up for sale by quacks, "Indian doctors, and those knowing nothing of the delicate and intricate structure of the human system, nor the action of medicines upon it. My Extract of Smart Weed is not a secret patent medicine, no patent having been sought for or obtained for it, and its ingredients are no secret—all that I claim is that, as an educated and skilled analytical and practical chemist, I have devised a superior process for extracting and obtaining the most valuable properties of the plants from which my Compound Extract is made. This I have done only after great expense in erecting machinery for grinding, pressing and percolating. I wish particularly to call public attention to my Extract of Smart Weed as a remedy for all colds, febrile and inflammatory attacks. Nor can I too highly extol it as a remedy for inflammation of the kidneys and bladder, gravel, and to break up the cold stage of fever and ague or chills and fever.

As an external application it is a perfect panacea, if there ever was one. No family can afford to be one day without it in the house. Besides it is equally as good for the horse as for the man. It suffices for prevention of all kinds. Used as a gargle and applied freely externally to the throat, it is a sovereign remedy in diphtheria and quinsy or inflammation of the tonsil glands. For all sprains, bruises, sprains, burns, bee stings, insect and snake bites, chilblains, caked breast, swollen glands, rheumatism, and, in short, to any and all ailments, whether affecting man or beast, requiring a direct external application, either to allay inflammation or soothe pain, or both. Extract of Smart Weed cannot be excelled. I do not extol this medicine as a cure-all, nor is it necessary to mention all the diseases wherein it will be found to effect cures, as I have said enough to indicate its properties and the intelligent will at once see wherein its use may properly be extended. Recollect it is sold under a positive guarantee. If, after using two-thirds of the contents of the bottle, you are not satisfied with it, return the bottle to me and your money will be promptly refunded. Allow me to say, in conclusion, that my Compound Extract of Smart Weed, is a safe remedy in all cases, which cannot be said of many medicines put up for sale to the people. So harmless is it, that it may be given in small doses of five or ten drops in milk to infants for colic, and will be far more effective and much safer than any "soothing syrup" or "cordial" ever put up, and will not injure the child as they do. My Extract of Smart Weed is now sold by most druggists, both in this and many foreign countries.

Good Tidings for the Slaves of King Alcohol.—How many a manly form is palsied; how many a noble mind is destroyed; how many a priceless soul lost through the curse of strong drink! To the despairing victims of the Satanic tyrant, Al