

me! That gold, so useless to him, would be a prize to me. It shall be mine—mine!"

An instant more, and he had crossed the threshold. The door creaked and betrayed his presence.

"Ha! who's there!" cried Huntley, not even turning his head to see in his eagerness to hide his gold from prying eyes. "Is that you, girl? No—are ye thieves? Away, I've nought for you to steal. Begone!"

The intruder took a step forward. His victim now suddenly faced him.

"Help!—thieves!" cried Huntley.

The burly vagabond clutched him by the throat, and in an instant the old man's cries were stifled by suffocation.

"Silence, you whining old fool, or I'll silence you forever," he hissed.

At this moment, Jack, the idiot boy, who had climbed up to the faulight between the two rooms, looked over at the struggle, and his eye dilated with terror. With an impulse purely idiotic, he remained silent, but reaching for his cousin's cane, and bending over the wall, he adroitly lifted the cap from off the thief's head, and transferred it to his own.

Barr started up at the first cry of alarm from Huntley, and did not observe the movements of the idiot.

"I heard a cry of distress in the next room," he said. "Then again; whoever you are, you shall not call in vain while I have life and strength to aid you." And without hesitation he passed into the hall.

The man who was assaulting Huntley heard his approaching footsteps, and dropped the insensible form of the old man to the ground. Then he seized part of the gold with one hand, and grasped a knife from his pocket with the other; but dropping the knife accidentally, he did not wait to recover it. Hastily opening the door, he placed himself behind it just as young Barr rushed into the room.

The student crossed the floor to where old Huntley lay, and while his back was turned the adroit thief escaped through the doorway, but as he did so he could not resist the temptation to peer back. Barr fell on his knees by Huntley's side, and raised the prostrate man's head in his arms.

The thief's eyes glistened with fiendish exultation as a devilish device crossed his mind. A moment more, and he disappeared in the gloom of the street.

Barr's first thought was that his neighbor had fallen into an apopleptic fit; his next that he had attempted suicide. He raised the bag of coin in his hand. The golden contents fell scattering over the floor.

"Heavens! it is gold!" he almost shouted. "What mystery is this?"

Why should he start and turn pale? Was this a temptation? If it was, his heart-resented it.

Old Huntley groaned in his struggle for life. Barr recovered his presence of mind, and loosened the stricken man's cravat.

There were hurried footsteps along the sidewalk. A moment more, and the doorway was thronged with people. The actual culprit had caused an alarm to be given to the police. Two officers entered hastily. Jennie came rushing through the throng. She instinctively hurried toward her father's prostrate form on the floor, and with a shriek fell across him as he lay.

"O father! speak to me!" she cried.

Barr regained his feet. He was bewildered—confused. Why did all these people stare at him with such threatening looks?

"You are my prisoner," said one of the officers, placing his hand on Barr's shoulder. "We are too late, I fear, to save life, but not to secure the guilty one. I arrest you."

"For what?" demanded Barr, for the moment stupefied.

"For robbery and murder," returned the officer.

"No—no; my father lives! Heaven be praised!" exclaimed Jennie.

The law-student could only stammer,— "I—a—prisoner. I—"

The party present did not look up; they were too intently gazing on the stricken group below. Had they done so, they would have seen the idiot boy peering over the partition with an insane grin oversprading his face, while on his head he had grotesquely placed the cap of the really innocent one.

A physician was soon called in. Jennie, assured of her father's safety, essayed to look at the person accused of the assault. As her eye caught Barr's she involuntarily started back with amazement.

"You are mistaken, friends," she exclaimed; "that gentleman is innocent." And then, abashed at what might seem an act of boldness on her part, she shrank back from the gaze of the crowd, and placed her whole attention on her father.

During the progress of this scene the subtle shrewdness of one man's mind, following and using a train of circumstances, had ferreted out the cause even before he had learned the effect. The sergeant of police instinctively detected the boy who gave the alarm, and through him, within a very few moments, had in his custody the very thief, though the officer knew not at the time the form of crime which had been committed, nor that he had the real culprit; but holding the man to await developments, he took him at once to the scene of the assault.

The miscreant's evident reluctance to proceed in that direction confirmed the sergeant's suspicions, and warned him to be vigilant. When they arrived at the house, the man made a desperate attempt to escape. He was

quickly conquered, and confronted by his victim.

Old Huntley, now partially recovered, could not recognize his assailant. So far then the fellow's chances for eluding justice were favorable. It was now noticed that his hat was missing, and he could give no reasonable account of its loss; but this told nothing.

Suddenly, the assembled crowd were startled by a wild cry overhead. Looking up, they beheld Jack, the idiot boy, peering in at the faulight. Hitherto a silent witness of the whole scene, he now appeared to convict the guilty, for on his head he wore the strange cap.

"That cap is not yours, Jack," exclaimed Barr; "where did you get it?"

The idiot's only answer was a senseless grin, while with one hand he pointed to the sergeant's prisoner. The fellow was self-convicted, and stood confounded. They searched him and found the gold. His guilt, so plainly exposed, confirmed Barr's innocence.

It need only be added that old Huntley recovered his health and his dollars, and that this inauspicious beginning of an acquaintance between Richmond Barr and Jennie Huntley was followed by a year of mutual love, and ended in a joyous wedding.

TIME AROUND THE WORLD.

We have received of late sundry queries from correspondent relative to the gain or loss of time in circumnavigating the globe. Those who have not found answers in the columns devoted to such purpose will receive a general response in the following rather amusing discussion recently carried on between two grave and learned French savants on the same rather paradoxical topic. M. Jules Verne, of the French Geographical Society, has written a book entitled a "Tour around the World in Twenty-four Hours." What the nature of the contents of the volume is, we know not; but at all events it excited M. J. Bertrand, of the Academy of Sciences, to attempt to pose M. Verne with the following conundrum: "A person, supposed to be furnished with the necessary means of transportation, leaves Paris at noon on Thursday; he travels to Brest, thence to New York, San Francisco, Jeddo, etc., returning to his starting point after twenty-four hours, that is, encircling the globe at the rate of 15° of longitude per hour. At every station, as he passes on his journey, he asks: "What time is it?" and he is invariably answered: "Noon." He then enquires "what day of the week is it?" At Brest, "Thursday" is the reply, at New York the same; but on his return, supposing he passes Paris from the east and stops at Pontoise, a town some 19 miles to the northwest of that city, he will be answered "Friday." Where does the transition happen? Or when, if our traveler is a good Catholic, should he consider Friday's abstinence from meat to begin? "It is evident," continues the questioner, "that the transition must be sudden, may be considered to take place at sea or in a country where the names of week days are unknown; but," he continues "suppose the parallel at which it happens should fall on a continent habited by civilized people speaking the same language, and that there should be two neighbors separated by a fence, on this very parallel. Then would not one say it was Thursday, at noon, while at the same moment the other would assert it to be Friday, at the like hour?"

M. Verne answers as follows: It is true that whenever a person makes the tour of the globe to the east, he gains a day, and similarly when travelling to the west he loses a like period, that is to say, the twenty-four hours which the sun in his apparent motion occupies in describing a circle around the earth. This is so real and well recognized that the administration of the French navy gives a supplementary day's ration to vessels which, leaving Europe, double the Cape of Good Hope, while it retains on the contrary a similar provision from ships rounding the Horn. It is also true that, if a parallel existed, such as above described, across an inhabited region, there would be complete disagreement between the people adjacent thereto; but this parallel does not exist, for Nature has placed oceans and deserts in our path where transition is made and a day gained or lost unconsciously. Through an international convention, the point for making the days agree has been fixed at the Meridian of Manila. Captains of vessels, under the same rule, change the dates of their log books when they pass the 18th meridian.

Edgar A. Poe, if we are not mistaken, avails himself of this apparent puzzle, in one of his desultory sketches, to point the story of an individual whose would-be father-in-law refuses him the hand of his adored, with her concomitant of an agreeable large dowry, until the time shall happen when "two Sundays fall in a week." The luckless lover in despair goes to sea, sails round the world, and returns to renew his suit exactly one year from his departure. In the course of event a discussion takes place between himself and the stern parent relative to the present day of the week, in which he insists that it is Monday, and the old gentleman is equally positive that it is Sunday. The one produces his diary, kept since his departure; the other falls back upon the calendar. Finally it transpires that the traveler in sailing round the globe to the east has gained a day in his reckoning; hence both disputants are right, two Sundays have come together, and the happy denouement follows.—*Scientific American.*

THE SMALL AND GREAT OF THE UNIVERSE.

The whole earth is filled with living beings, from the eternal snow on the mountain summits to the deepest recesses in the bosom of the ocean, and from the pole polar sea to the other; and in every place there is a throng of innumerable forms and developments, visible and invisible to our naked eye. The microscopic animals which were collected during the voyage of Sir John Ross in the southern Polar Sea, exhibited a theretofore unknown beauty and development in structure; and in latitude seventy-eight degrees south, in the remains of a melting iceberg, were found more than fifty different kinds of infusories with silicious shells, and at a depth of from two hundred and twenty-two to two hundred and eighty-nine fathoms, more than fifty-five different kinds of those have been fished up.

The open polar seas are to that degree filled with innumerable millions of these small animals, and for these great quantities serve as food for the largest known animals on the earth, the whales, which for that reason have selected the polar regions for their home. In the warm seas, the animal life is not less, as the water therein might be considered as to every drop animalized, a throng of fossilized infusories, which often in innumerable swarms are brought to the surface, and changes every wave to a shining scum. In the hot springs of the earth, as upon Iceland and other places, are yet found a few algae and infusoria in a heat of one hundred and fifty-eight degrees Fahrenheit, which is evidence that no space is exempt from the common strife, to cover the earth with a web of living beings.

The wealth of the earth of such animals and plants cannot but excite our wonder over the myriads of insects, and of the already known phanerogamous plants, exceeding one hundred thousand, over the mass of spears of grass found upon one square foot of surface, but all this must appear insignificant compared with the infinite small spears which we cannot see, and therefore escape our observation. The world of infusories and the smaller shield and shell animals is an infinite world in itself, which only can be studied under the strongest microscope; only in a single drop of water the number of infusories are innumerable.

The renowned astronomer, Sir John Herschel, let a drop of water fall upon a piece of crystal, when in an inclined position it was placed in focus of the large sun telescope, whereby the drop of water was magnified to that degree that it had a diameter of twelve feet, this drop was found to be so entirely filled with moving infusories that there was not even room for the point of a pin between them. The number of those infusoria is so great that a million of them, in compact form, which is found in a single drop of water, would not, according to the calculation of Leuonhace, occupy a larger space than a grain of sand; and yet Ehrenberg, who with the minutest accuracy has studied these in form, found that the common infusoria are also provided with yet smaller beings, who live upon them as parasites, and that there are still smaller animals living on the latter; and that a cubic inch of tripoli contains one billion eight hundred million individuals, provided with shells of iron texture. This would appear fabulous, were it not the result of scientific investigations.

Flammarion, the celebrated French astronomer, says: "When we in a few grains of dust find fossils remains of more animals which have lived therein than there have been, or ever will be, human beings on the earth, what can be said of the gigantic chalk formations which to a great extent are found along the coasts to the highest of several thousand feet, and every ounce of these masses contain millions of foraminifera; and what as to the polypus with their arms and branches, who, in a space of a hundred times hundreds of years, have built islands in the Pacific Ocean of this microscopic plant, and animals which alone have built for themselves vast mountains, and which have contributed more in building and forming the earth than the whales and elephants, which are the largest animals known to exist at the present time; or of the extensive plains consisting of nothing but silicious shells of infusories, which in bygone times have existed on the earth in such great masses that no man could count their number in a single cubic inch? The extent of those masses of animals are easily to be accounted for, when we know that they increase with wonderful rapidity, for it is calculated that a single diatome will increase to one hundred and fifty millions of individuals in the space of four days. And when the most of these infusories are only children of the moment, brooding into existence to live but for a few minutes, and that the life of an hour should to them be an eternity, when this power of reproduction in a moment can fill a drop of water with a whole world of these microscopic beings.

This is the infinite small in the world, but to a certain extent also the infinite great in nature; insignificant as to their individuals, but great as to their extent, and spreading over the whole surface of the earth.

But it is not only the water which is thus thronged with the (for our eyes) invisible life, but the air is filled with numberless masses of vegetable spores of such subtle fineness that they can hardly be discovered under the strongest microscope. These spores or atoms are carried about by the air, and penetrate everywhere, develop in every favorable plant into sponges, not only upon plants and de-

cayed objects, but on animal organisms, so that mould may be found both on the human tongue, lungs, and in the hair; besides this spores bring about miasms and diseases, they also develop themselves on unhealthy organs and organisms with the like destructive influence, and produce intestinities. In the same manner as water is analyzed, it can be said that the air is animalized, from which it may be seen that the whole nature is filled with life, and the seeds for life, place, in the air, water and the sun-rays, to distribute life to such infinite extent, and infinite varieties and changes.

Let us now turn our attention from the earth, air and water, to the ocean of the eternal ether and the boundless space; we are met by a spectacle of such gigantic magnitude that our earth compared therewith is lost in the space, and no greater in proportion than the infusoria in the glass of water; the millions of stars which glitter on the canopy of heaven in the darkness of the night, are not only suns, but many of them much larger than our sun, which is one million four hundred thousand times larger than the earth, and besides being at such distances from each other as is for human standard and calculation nearly unmeasurable. These stars appear to be grouped each in certain order, in forms of wheels or spirals, and are called nebulae, a world's eye, composed of millions of sparkling suns; and the nebulae to which our solar system belongs, is said to contain more than one million of fixed stars on suns, of which the greatest number are encircled by many planets with their moons, which are impossible to discover with the human eye. The nebulae to which this solar system belong is bounded by an infinite grouping of stars in the outer milky way.

To view the unmeasurable distance of the fixed stars from the earth, we commonly take the mean radius of the earth's orbit, which is calculated to be fifty-seven million, two hundred and twenty-six thousand, one hundred and twenty miles, as a unit, and say that the distance is so and so many radii of the earth from us, or the speed of light, which is one hundred and fourteen thousand eight hundred miles in a second, as standard, and say the distance is so many years lightway; as for example, the sun is eight minutes, the nearest fixed star a centaur, three years and eight months, Vega twelve and one-half years, Sirius twenty-two years, and the polar star thirty-one years lightway from the earth, which, in other words, means that if the sun should be lighted in the instant, it would first be visible to us after eight minutes, the polar star first after a time of thirty-one years had elapsed; and there are still a great number of stars which are many thousand years lightway from this earth, and it is calculated that the light occupies fifteen thousand years to run through the radius of this nebulae, from the one outer edge to the other. The unfathomable fields of the heavens occupied by our nebulae alone is so vast, that its radius, much less the circumference, could in miles be enumerated by our ciphers, nor yet expressed, as we have no words to convey such mathematical magnitudes.

This nebula is not the only one, but in the great universe only like a drop of water, or a grain of sand in the ocean, compared with the infinite magnitude of the heavens. Under the telescope of the scientific inquirer, a number of these nebulae are visible in the distance, each one of them probably not less in magnitude than the one to which this earth belongs, but so distant in the infinite space that in them no stars can be discovered, the most distant with its high glimmers, which reaching the human eye appear like a white shining cloud disappearing in the infinite space. The nebula nearest to us is supposed to be more than five millions of years lightway from us, and the one farthest off not less than ninety millions of years lightway from this earth, or in other words that the light, with a speed of one hundred and fourteen thousand eight hundred miles in a second, would require a term of ninety millions of years to reach this earth, and consequently we cannot see them as they are at the present time, but that they existed ninety millions of years ago; and still there are probably thousands—yea, millions of those nebulae beyond all these clusters of stars, whose light never can reach us. This world of stars is an infinite world without bounds, which we are only permitted to discern with marvelous amazement and with the highest admiration of the Infinite Power which has brought forth the small as well as the great in the infinite creation.

As a finite being, man cannot comprehend the infinite, a time without beginning or close, a boundless space which is unmeasurable for human standard, which only belong to the infinite.

But we can imagine that a life of a minute or a million of centuries is but a moment in eternity, or a journey from one nebula to the other continued forever, as one step in the boundless space of the heavens, and minuteness as well as greatness we must calculate after human standard or by our established dimensions, as the great and the small are only relative proportions with us, as every other thing in the finite world. If, then, our earth with all which is in it, should in an instant be changed to the dimensions of the sun, or diminished to the smallest ball, we could not observe the change, as the great and the small on the earth should assume the same relative proportional dimensions in relation to our

selves and the standard of weights and measures, and hence the relative proportions between all which is upon the earth would not be changed. The absolute only belongs to God, but within the creation all things are only relative.

COMETS—THEIR CHARACTER AND SOURCE.

The spectroscope shows us that comets consist of a mass of carbon dust, so diffused as to make them bulky with little weight, and this explains at once the cause of the total absence of refraction of the light freely passing between those minute dust particles.

In regard to the question "whence these masses of dust particles came," Zollner, whose observations and calculations we mentioned in a former article on the sun, holds that the solar eruptions throw up masses, consisting chiefly of hydrogen, ejected from the sun with a velocity of 133 miles per second. He comes to the conclusion that as thrice this velocity would carry material entirely beyond the limits of solar attraction, a somewhat less velocity would it to distances corresponding to those of the comets. He thinks, therefore that comets originate from the sun, and are thrown out from that body finally to return thereto, just as volcanic material is thrown out from the earth and carried through our atmosphere, eventually coming down at remote spots.

Any doubt in regard to the possibility of the existence of such enormous projectile forces is removed by the actual observations of Janssen, Lockyer, and Respighi. The latter says: "The solar surface is the seat of movements of which no terrestrial phenomenon can afford any idea; masses of matter, the volume of which is many hundred times greater than that of our earth, completely change their position and form in the space of a few minutes, showing motion of which the velocity is measured by hundreds of miles in a single-second." Professor Young has observed a solar exposition of which the mean velocity, between the altitude of 100,000 and 200,000 miles above the solar surface, was 166 miles per second; as this indicates an initial velocity; of 200 miles per second, it is sufficient to carry the projected matter beyond the orbit of the earth.

Schiaparelli, in the *Astronomische Nachrichten*, calls the comets "cosmical clouds." He says: "Cosmical clouds will always appear to us as comets when they pass near enough to the earth to become visible." The comparison is indeed striking; as watery clouds ascend in our atmosphere and float around the earth, so the fiery clouds from the solar surface ascend into planetary space and float around as comets. Both are raised by solar heat and are afterwards cooled.

It is possible that the hydrogen in the solar protuberances is at first so abundant that its spectrum overcomes the spectra of the other materials which it may hold, as it were, in solution; and that whilst being projected, it expands by its gaseous nature in the planetary space, leaving the carbon and other materials, as a mass of dust which slowly disintegrates by the disturbing influence of the solar heat, planetary attraction, and adhesion of the different particles, forming finally great numbers of small and dense masses, which will fly around the sun in the form of a belt; and when some of them at last come down upon the earth, we call them meteors. Schiaparelli further says: "Gradually the products of disintegration are distributed along the comet's orbit; and if the earth's orbit cuts this, the phenomena of shooting stars are produced."

Two interesting facts are connected with these views; one is that the position of some well determined meteor streams coincides with the orbit of a comet; the other fact is that recently chemists have extracted hydrocarbon from meteoric masses: indicating the hydrogen which the spectroscope shows to exist in excess in the solar protuberances, and the carbon which the same instrument shows to exist in excess in the comets.—*Scientific American.*

AN ARTFUL TRICK.

A man having the appearance of a countryman, and laden with a bundle of hay, managed, one day last week, to fall through a pane of glass, value £30, which adorned the establishment of a large mercer in the Edgeware Road, London. The shopkeeper quickly seized upon the fellow, who protested he had no money, and pleaded the weight of his load as an excuse. Two gentlemen, lookers on, testified to their having watched the "stupid clown," and just before remarked that his gross carelessness would lead to some mischief, and they suggested that the "booby" should be searched. This was promptly done, and the production of a £50 note was the result. Vainly did the countryman, with tears in his eyes, proclaim the note to be his "master's," the proceeds of his journey to market. The mercer paid himself the £30, by giving the poor £20 in Bank of England notes, and retaining possession of the one found upon him. The wight said he would go and get a policeman, that he might "have the law" upon the shopkeeper, and left the premises, and the two gentlemen blandly took their leave, after congratulating the tradesman on the fortunate result which had attended their suggestion of a search. Of course, the reader guesses the upshot—The £50 note was a forgery, and the whole proceeding a trick.