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. Monsters of Mighty Japiter.

Possibilities and Wonders of Life on the Great great distance of the sun, the light that the inhabitants of Jupiter receive Planet-Men Sixty Feet Tall and Heavy in Proportion.

starry heavens in these balmy April evenings must be struck by the appearance of the great planet Jupiter, outshining all the fixed stars, and glowing with a rich yellow light, high in the southwest, near the twin stars Castor and Pollux, of the constellation Gemini. Happy the man who has a telescope with which to view the giant planet and to behold its immense belts of alternate rosy and golden clouds, and its broad polar regions, shading to the color of blued steel.

Put the earth up there in the place of Jupiter and the naked eye would with difficulty be able to see it. Jupiter is 1,300 times larger than the earth in bulk or volume, and its surface area in the surface area in bulk or volume, and its surface area in the exceeds that of the earth about 120

It would seem as if the ancients must have had some inkling of the fact that that planet is the targest of all the worlds that revolve around the sun when they bestowed upon it the name of the greatest of the gods. JUPITER AN UNFINISHED WORLD

For many years the opinion has been generally received as probable among estronomers that Jupiter is a world not yet cooled and solidified like the condition to contain inhabitants. I think myself that the chances favor such a view, and yet it should not be regarded as an established fact. The strongest argument used to prove that Jupiter is still an uncooled ball, mostly composed of heated gas and vapor, is based upon the fact that the great planet is, bulk for bulk, only onequarter as heavy as the earth; that is to say, if you should take a bushed basket full of soil, or whatever it is, from Jupiter and another bushel basket full of soil from the earth, the latter would weigh four times as much as the former.

Now, according to the argument, this slighter density of everything in Jupiter as compared with the earth can most easily be accounted for upon the supposition that Jupiter is yet extanded by heat, and so it comes about that while it would take 1,300 earths to equal Jupiter in bulk, yet the quantity of matter in Jupiter is only a little more than 800 times as much as the quantity of matter contained in the earth.

THE PLANET'S COMPOSITION. Instead, however, of considering Ju-piter as being composed of matter kept in a gaseous condition by heat, we might suppose it to consist of substances intrinsically lighter than those of which the earth is made. Or, another supposition which would account for the facts is that in the center of Supiter there may be a globe as solid as the earth, surrounded with an enormous atmosphere filled with

We have almost no evidence whatcannot aid us, because Jupiter does not shine by its own light, and the sunlight reflected from it comes from the upper surface of its dense clouds, and consequently makes no revelations concerning what lies beneath. WONDERFUL CLOUD FORMA-

TIONS. But the telescope shows that Jupiter is covered with wonderful clouds continually changing in shape, and more or less in color; that these clouds float in an atmosphere of great depth, and that they form, perhaps, successive layers of varying density, which may be separated by comparatively clear spaces. Appearances have been noticed on Jupiter such as would be produced by the shadows of great clouds, as broad as some of our confalling upon other clouds floating hundreds of miles beneath

If these appearances are not deceptive Jupiter's clouds evidently float at, proportionately, a far greater elevation than those of the earth. The highest of our clouds are, perhaps, ten miles above the earth; the loftiest clouds on Jupiter may be a thousand

FIERCE WINDS EVER BLOW. And these tremendous clouds are swept along by belts of wind that are no less wonderful. Jupiter turns very fast on its axis, motwithstanding its enormous size. It takes less than ten hours to make a complete rotation, while the little earth requires twentyfour hours. On the equator of Jupiter and bones. everything is flying around at the rate of 450 miles in a minute! The resulting centrifugal strain is so great equatorial parts of the vast planet bulge and swell out thousands of miles. Jupiter is more than 5,000 miles broader through its equator than through its poles!

All things must there experience a powerful and resistless tendency urging them toward the equator. If the planet turned about three times faster than it does, objects would weigh nothing at all along the equator.

EFFECTS OF WIND VELOCITY. The effect of this fearful velocity of rotation is shown by the streaks and lines of clouds that the telescope reveals surrounding Jupiter. At one place in the southern hemisphere there is an immense, mysterious, fiery-looking mass, as large in extent as the whole surface of the earth, which during the past eighteen years has been



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tumbling clouds in one of the great, equally uncomfortable to try to read, trade-wind belts of Jupiter. By actual or to pursue our daily occupations

ward currents. Through the compara- feet tall. tively clear spaces glimpses are obtained of other cloudlands deep beneath, filled with other strange, hurther strange, hurth

IS JUPITER INHABITED? as Jupiter is? It depends entirely upon ted world, like the seven heavens of what we mean by inhabitants. It is the Mohammedans, rising and increasevident that such beings as we are ing in wonder and beauty, from height could not live there, unless it be true to height.

The great many-storied dome of just what they needed in order to obtain a comfortable degree of heat in ture included within human ken. their far-away planet. For we must remember that Jupiter is about five times as far from the sun as the earth thus venturing into the fields of imis, and that, consequently, the sumlight agination that lie glittering just beand the sun heat on Jupiter are 25 youd the farthest outposts of science, times less effective than on the earth. quote what one of the This is because the intensities of modern science has said about the pos-light and heat vary inversely as the sible inhabitants of another great square of the distance.

cloudless atmosphere like ours the heat ning skies, Saturn. These are the from the sun would quickly be lost words of Sir Humphrey Davy, in the by being radiated away into space, and chapter called "The Vision," in his by being radiated away into space, and chapter called "The Vision," in his the inhabitants of Jupiter would shiv- beautiful "Consolations in Travel, or er and freeze in a worse than Arctic

pensated by the capacity of the atmosphere itself to retain and, so to speak, entrap the heat for the benefit of the

THE PROBLEM OF LIGHT. But, still assuming the possibility of inhabitants, how about the light they have to see with? It is 25 times less brilliant than our daylight, That, however, is really not quite as bad as it sounds, because the sunlight on Jupiter, while 25 times less intense than it as the light of the full moon on the earth. But it would be still further ever touching the nature of the ma- the circling floors of cloud above, it globe beneath with at least six thousand times the brilliancy of full moon-

WEIGHTS ON THE PLANET. And now that we are launched on * * * * Buth those beings who apthe sea of speculation we come to another point concerning these suppositions as the zoophytes of tious inhabitants of Jupiter. The the polar sea, have a sphere of sensi-weight of bodies on that planet, even bility and intellectual enjoyment far smaller than the cloudy part that we see, must be much greater in proportion than the weight of bodies having a similar size on the earth.
At the surface of Jupiter's cloud

belts a man weighing 200 pounds on the earth would tip the beam at 500 pounds, which would be rather uncomfortable. to say the least. Now, for the sake of simplicity in

the calculation, we may assume that in descending to the solid globe, which lay exist a thousand miles or more eneath the cloud-surface of Jupiter, the weight of bodies would retain about the same proportion to those on the earth, i.e., 2 1-2 to 1.

Upon this supposition it has been generally argued that if Jupiter has inhabitants they must be smaller than the earth you would call exalted virtue. those on the earth, for the reason * * * * If I were to show you the hinted at above, namely, that if they were as large as we are, they would be clumsy and uncomfortable on acount of their own great weight, while if they were as much larger than we, as their world is larger than the earth, would actually be crushed to death by the ponderosity of their flesh

LIFE THERE UNLIKE OURS. But all this argument proceeds upon the assumption that such inhabitants must be framed of just such materials, possessing just such density as compose our bodies. Manifestly that assumption is purely gratuitous. As we | the earth? have already seen, the average density of things in Jupiter is much less than upon the earth, and we are not certain that its constituent materials may not be as widely variant in nature from

those of our planet. We have perfect justification, then, for assuming, if we choose, that the inhabitants of Jupiter are shaped from substances very different from, and much more etherial than, those that compose our bodies. That argument clearly would not in any manner affect the spiritual or intellectual side of eason why an intelligent being might not be made out of something else than the water and carbon and other elements comprised in the human

If we accept the view that the spirit of man, which is the real essence of his being, is of a nature and composition so fine as to transcend all the coarser laws that govern the visible world, then there is any reason why upon a planet like Jupiter such a spirit may not be enclosed in a body as tenuous as vapor even, and as light as

Grant that, and it is easy to see that, o matter how much greater the force of gravity may be upon Jupiter than ipon the earth, mortal beings could be formed even out of the range of matural elements known to us, who might be suitably proportioned to gravita-tion, even though thy should attain a comparative stature as gigantic in relation to ours as the stature of Jupiter himself is when placed side by side with the little earth.

GIANTS OF JUPITER. Not only is there something far more satisfactory to the imagination in conceiving of gigantic inhabitants dwelling upon so stupendous a world, rather than in thinking of them as mere pigmies, but in thus considering them as giants, amid gigantic surroundings, we do less violence to the general order

There is yet another way in which fight unvictorious .- Schiller.

we may reach the conclusion that if-Jupiter has inhabitants they are prob-ably comparable with their grand world in magnitude. I have spoken of the defect of light upon Jupiter. Let us assume that, in consequence of absorption in the cloudy atmos-phere, combined with the effect of the is a hundred times less intense than that which the sun floods on our land-

JUPITERIANS SIXT FEET TALL Whoever lifts up his eyes to the thrust up among the rushing and 500 pounds instead of 200, it would be observation the clouds are hurled with 1 1-100th of the light we are acagainst the western end of that mys-terious obstacle until they offe up there in vast glowing masses, and are quantity of light, and thus the balance swept past it in gyrating currents would be restored. Make the pupil of and eddies infinitely wilder and grand- the eye two inches in diameter instead er than the leaping waters in the Ni- of one-fifth of an inch, as in man, and the retina would receive one hundred agara whirlpool gorge. the retina would receive one hundred swifter and swifter fly the streaming times as much light as that of the clouds as the equator of the planet smaller eye. Now, arguing upon this is approached. Great globe-shaped basis, and supposing our inhabitants of masses, gleaming in the sunlight, roll Jupiter to be proportioned like men, and pitch and toss in the mighty on- they ought to be, on the average, 60

> rying shapes, all whirling madly on and they would float upon the giant world of clouds and winds and tem- itants, the marvelous atmosphere of Jupiter, whose strange spectacles and imposing system of circulation, are Can we, then, imagine inhabitants in just beginning to be unfolded to the such a world of turmoil and unrest telescope, would become a multi-stor-

that deep beneath Jupiter's world of In the marvelous architecture of the clouds and cyclones is hidden another heavens can such things be? People globe resembling the earth. On such who think that the Almighty Creator a globe, so placed, inhabitants more exhausted his powers of origination in or less like those of this earth could forming this petty globe and its overboastful inhabitants will believe nothine of the sart. Less presumptuous peoclouds above them would, perhaps, be ple, however, will not undertake to limit omnipotence to the range of na-HUMPHREY DAVY'S VISION.

Let me, as a kind of apology founders world, only less in size than Jupiter, With a comparatively open and and which now also adorns our evethe Last Days of a Philosopher." Conducted by a guiding genius, he is But with such an atmosphere as hovering about the planet Saturn:

they have surrounding them it is not improbable that the effect of the greater distance of the sun may be compensated by the capacity of the atmospheric for local transfer for local tr They had systems for locomotion simto those of the morse or sea-borse, but I saw with great surprise that they moved from place to place by six extremely thin membranes, which they used as wings. Their colors were varied and beautiful, but principally azure and rose color.

"I saw numerous convolutions of tubes more analogous to the trunk of per day. an elephant than to anything else I there, is yet 25,000 times as bright the light of the full moon on the body, and my feeling of astonishment almost became one of disgust atmosphere. Yet, if it lost three-quarters, of its intensity in passing through saw one of them mounting upward, all the elements of knowledge to

comprehend the scene before

though its solid portion may be much superior to that of the inhabitants of your earth. Each of these tubes which appear like the trunk of elephant is an organ of peculiar motion or sensation. They have many modes of perception of which you are wholly norant, and at the same time their sphere of vision is infinitely more extended than yours, and their organs of touch far more perfect and exquisite. * * * * Their sources of pleasure are of the highest intellectual nature. * * * * As I cannot describe to you the organs of these wonderful beings, so neither can I show you their modes of life. But as their nighest pleasures depend upon intelectual pursuits, so you may conclude that these modes of life bear the strictest analogy to that which on different parts of the surface of this planet you would see marvelous reults of the powers possessed by these highly intellectual beings and of the wonderful manner in which they have applied and modified matter."

Inspired by the enthusiasm of Sir Humphrey, may we not imagine that the inhabitants of Jupiter might surpass even those of Saturn on their inellectual side, shedding a spiritual illumination among their aerial manshions, which would be the greatest of all Jupiter's marvels to the wandering visitor from our dim speck,

GARRETT P. SERVISS.

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From the Union Signal. Born in a poor home in Yorkshire, might have been seen in a loose blouse, washing and sorting wool. It was lirty work, but the faithful young man did not despise labor. He had excellent habits, saved his time and his money, was always early at work, and punctual to the minute. I have never known a man to be a great uccess who failed in punctuality. He was always economical. After he had

of paper, and lay them aside for futers, was to be shipped to Peru, from nor need you do so either, my whence it came. He took some in loved brethren." dvised against it, but his energy and rible faces, would early and late in experiments with ren" machinery and cloth, and after some years made a great success. Laborers

pounds of alpaca v in three years.
Ten years after this Mr. Salt was made mayor of he large city of Bradford, and ten years later was a member of Parliament. He determined to build a town for his four of five not enter. He selected an attractive place on the banks of the River Aire, and built in the center of the town his great six-story mill, well ventilated, well lighted, and well warmed, costing half a million dollars. His shed for weaving covered two acres, and held twelve hundred looms, which made eighteen miles of fabric

He determined now to build houses some of the mill owners in America. tions. These, mind you, are wellfrom the peculiar characters of the Titus Salt knew what it was to work ity into the business. He built scores and vegetable gardens in the rear of the houses. Health was regarded in

drainage, water and sewerage. Not satisfied to furnish homes alone, Mr. Salt provided school buildings at a cost of \$200,000. He built a church costing \$80,000, a model Sunday school building costing \$50,000, a hospital for sick or injured, and 44 pretty houses where the aged and infirm could have homes. After a man had spent his life working for Mr. Salt, he was not turned out like a horse, to die by the roadside. The workman had not spent his money for liquor, as he had no saloon to go to. If he had selfrespect, he saved as much as he was able, rather than depend on charity at last. If circumstances were the against him as he grew old, he had a

home to go to. Mr. Salt built 24 baths at a cost of \$35,000, that his people might preserve health by keeping clean. He built public washhouses such as one sees in Sweden and France, so that the washing with its steam, and danger of taking cold, should not be done in the home. Each person bringing clothes was provided with a rubbing and boiling tub. The clothes were dried by hot air, and could be washed, dried,

mangled and folded in an hour. This man set the world another example worth following. He knew that men and women could not work always without some play. He therefore built an institute and called it after the name of the town, the Saltaire Club and Institute, costing \$125,000. This contained a library, a reading-room, with daily papers and magazines, a lecture hall for eight hundred persons, an art department, where drawing and the like could be taught, a laboratory where young men and women could study science, a gymnasium, an armory for rifle practice, a billiard room with four tables, and a smoking room, though Mr. Salt never smoked. nembership fee for all this was \$1 a year. He made another valuable gift his workmen; a park of fourteen acres, with croquet and archery grounds, places for boating and swim-

ning, walks with beautiful flower beds, and a music pavilion. I saw another thing at Saltaire which I wish were copied elsewhere. posite the great mill is a dining hall, where a plate of meat can be purchased for four cents, a bowl of hot soup for two cents, and a cup of tea coffee for one cent. If employers do not care enough about their workpeople to provide these things it cannot be expected that outside persons will do so. At this dining-hall, the men can bring their own food, and it is cooked free of charge. The manager has a fixed salary, so that there is no emptation to cheat the buyers. Titus Salt was knighted by Queen ictoria for his noble deeds, and reeived the Cross of the Legion of Honor from Napoleon III. After he became Sir Titus Salt he was no different in his manner or heart from the boy of 19 who worked in the blouse. bought all she was carrying.

When Sir Titus Salt died 40,000 persons came to his burial. He had not lived to himself, but had been his "brother's keeper." He set a worthy example to the rich and all employers ear, cabinet photo of the Queen, and of labor, in the old world, and the

> Hall's Vegetable Sicilian Hair Renewer is, unquestionably, the best Did you cut yourself while shaving? preservative of the hair. It is also Zibley—Not exactly.Perhaps it would curative of dandruff, tetter, and all be better to say that I shaved myself scalp affections.

A Disagreeable Habit Hard to Get Rid Of When Once Acquired.

James Payn writes in the Illustrated London News: Some people are alm ways "making faces"-not in scorn but involuntarily-and, in extreme cases, even scowling. One of the bestnatured men I know scowls like a England, at 19 years of age Titus Salt | Grand Inquisitor at a Jew. The facial lines caused in this way appear before middle-age, and, of coures, are indelible. It is not a thing we care to speak of to our friends, and if we did it would probably be of no use; but the habit is certainly the reverse of attractive, and renders the science of physiognomy useless. The only chance of its extirpation is to catch the patient young and rap his knuckles and spank him whenever the symptoms appear; but in "the drawing-rooms and the clubs" these remebecome worth millions of dollars, he dies would, of course, be out of the would save blank leaves and scraps question, even if they were not too who used to make the most dreadful When he was 33, happening to be in faces in the pulpit, so that after every Liverpool, he saw on the docks quan-titles of dirty alpaca wool, which, to say: "I am obliged to state this, having become a nuisance to the own- but I don't believe one word of it, He was quite una his hands, cleaned it, and thought ware of it, and looking round upon he could make cloth of it. His friends his numerous family all making horpathetically rewill carried him forward. He worked mark, "I can't think where my children" (here he looked like an ogre) "get these ridiculous tricks from." He had an additional gift of nodding his were hired from all over Great Brit- head with much earnestness; and I ain and Germany. Two millions of once saw a splendid set of curtains, pounds of alpaca wol were imported costing half his stipend, knocked down to him at an auction in consequence Nothing stopped him, however, Death, at whom (for he was an cellent fellow, and had no cause to fear him), he doubtless nedded and grinned as at everybody else.

CHAIN ARMOR.

Its Use Is Rapidly Increasing Among Officers of the British Army,

London Tit-Bits. Setting aside at once all talk about protections that are perfectly bulletrroof. I give you my assurance than an immense number of the officers of our army and navy who go on foreign service, especially when one of our "little wars" is expected, provide themselve with certain easily recognized protec known articles of trade to the services. The commonest and most useful type of these protections consists of fine but beautifully tempered single chains, inapparently flying towards those opaque clouds which I have before mentioned. It know what your feelings are, said the Genius. 'You want analogies and Theorem below were in every front yard, all the elements of knowledge to a particular tunic, or they can be adjusted separately and put on like harness. Take it absolutely that hundreds upon hundreds of sets are sold. The most valuable of all chains, in connec tion with accoutrements, are those which guard the head, and in cases where the regulation cap or helmet is not sufficiently protected in this way specially made chains are sewn inside the same and covered by the lining.

Only those who have been in actual conflict know how valuable all the chains mentioned are in minimizing the effect of sword cuts. As regards protection from sword and bullet, the general belief of officers nowadays seems to be in thoroughly tanned leather, and great quantities of tight-fitting leather under-tunics are made for officers, the favorite patterns-said to be the invention of the late Sir Richard Burtonbeing that which forms a not too prominent ridge down the center of I have heard innumerable stories from officers of bullets which have been diverted in some degree by these leather tunics, some of which are lined with woven steel wire. Of course none of these things are supposed to be an absolute protection, but only sort of palliative.

AN INVALID SIX YEARS

First Few Doses Gave Great Relief.

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Words of a Grateful Wife and Mother.

Under recent date, Mrs. R. Armstrong of Orillia, Ont., writes: "I have suf fered for over six years with nervous prostration, weakness, indigestion and dyspepsia, and have had several doctors attending me. I have taken number of proprietary medicines, bu found very little relief from any o them. I was influenced to give South American Nervine a trial, and I must confess that it has done me more good than any other medicine I have eve taken, or medical treatment of ever kind received. From the first fev doses I found great relief. In all I have taken six bottles, and can truth fully say that South American Ner vine is the one medicine that has ef fected a cure in my case. It would be strange if I did not cheerfully recommend it to all who have suffered as I have." Would the thousands of suffering women in all parts of this Domin It was no uncommon thing to see a ion be relieved of all this trouble?poor woman and her baby in the car- then seek South American Nervine riage beside him, or a tired workman. To the discouraged mother it will giv A gypsy once asked him to buy a broom. To her astonishment he much desired health and return to her the much desired health and strength Working immediately upon the nerv centers, as science has demonstrated it cannot fail to cure. In this import ant respect it differs altogether from every other medicine-it is not any mere experiment to use it.

> OTHERS THERE ARE. Bizmog-Zibley, your face is a sight. while cutting,

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vents tan and sunburn. 75c. Electrolysis—For the permanent removal of superfluous hair, moles, warts, etc. Electri-cal Treatment for Falling and Gray Hair. 140 MAPLE STREET, LONDON.

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