material of a yellowish-brownish or grey colour, rich in diatomacea, and polythalamia, annelids, crustace and mollusca were found at these depths. —*Ib.*

—Animals of small stature are by no means proportionally the weakest. Pliny in his "Natural History," asserts that, in strength, the ant is superior to all other creatures. *The length and height of the flea's leap* also appear quite out of proportion to its weight. No very definite conclusion, however, had hitherto been arrived at. M. Plateau has settled the question by employing exact science as the test Insects belonging to different species, placed on a plane surface, have been compelled to draw gradually increasing weights.

A man of thirty, weighing on an average a hundred and thirty pounds, can drag, according to Regnier, only a hundred and twenty pounds. The proportion of the weight drawn to the weight of his body is no more than as twelve to thirteen. A draught horse can exert, only for a few instants, an effort equal to about two-thirds of his own proper weight. The man, therefore, is stronger than the horse.

But, according to M. Plateau, the smallest insect drags without difficulty five, six, ten, twenty times its own weight, and more The cockchafer draws fourteen times its own weight. Other coleoptera are able to put themselves into equilibrium with a force of traction reaching as high as forty-two times their own weight. *Insects, therefore, when compared* with the vertebrate which we employ as beasts of draught, have enormous muscular power. If a horse had the same relative strength as a donacia, the traction it could exercise would be equivalent to some sixty thousand pounds.

To ascertain its pushing power, M. Plateau introduced the insect into a card-paper tube whose inner surface had been slightly roughened The creature, perceiving the light at the end through a transparent plate which barred its passage, advanced by pushing the latter forward with all its might and main, especially if excited a little. The plate, pushed forward, acted on a lever connected with an apparatus for measuring the effort made. In this case also it turned out that the comparative power of pushing, like that of traction, is greater in proportion as the size and weight of the insect are small. Experiments to determine the weight which a flying insect can carry were performed by means of a thread with a ball of putty at the end, whose mass could be augmended or reduced at will The result is, that during flight, an insect cannot carry a weight sensibly greater than that of its own body.

Consequently, man, less heavy than the horse, has a greater relative muscular power. The dog, less heavier than man, drags a comparatively heavier burden. Insects, as their weight grows less and less, are able to drag more and more. It would appear, therefore, that the muscular force of living creatures is in inverse proportion to their mass.— *All the Year Round.*

—M. Terrell, who visited Palestine in 1825, has addressed a note to the French Academy of Sciences, on the chemical composition of the waters of the inland salt lake. It has generally been believed there were no living creatures in it, but the author says he saw, in one spot near Sodom, a number of small fish that seemed to thrive well. The following is a brief of his observations:—

1. The density of the waters of the Dead Sea increases with their depth.
2. Their composition and concentration are likewise variable; thus samples taken five miles east of Waddy Mrabba contain four times more calcium than those five miles east of Ras Teshka, which contain twice as much soda as the former.
3. Samples of water from north of Sodom, in that part which forms a lagoon, contain more chloride of sodium (common salt) than chloride of magnesium, which explains why fish may live there.
4. The bromides alone seem to be concentrated much more in depths exceeding 300 metres.
5. The lake contains no iodine or traces of phosphoric acid, and but small portions of sulphates.
6. The residue, after evaporation, examined with the spectroscope does not show the presence of the rarer alkaline metals, lithium, cœsium or rubidum.— *Exchange.*

—Mr. Grove's doctrine of the Continuity of the Universe has received a brilliant illustration during the past month, in the presence of many thousands of astonished witnesses. The "worlddust," which, he says, fills up the vast deserts of interplanetary space, revealed itself in unexpected splendour in the wonderful meteoric display of the night of the 14th of November. Astronomers had foretold the apparition, but few persons had any notion beforehand of the wealth of glory in which it actually manifested itself. The sky was happily clear at the proper moment—a rare and choice coincidence for an event that happens on a November night once only in thirty-three years—and for more than two hours the heaven was alive with fiery messengers. According to the most careful reckoning—that of Greenwich Observatory—seven thousand shooting-stars were counted between eleven and five o'clock, and of these four thousand were observed between one and two. It is not possible as yet to collect the scientific results of this display. The existing theory with regard to these bodies, it is perhaps needless to say, is that, besides the planets, the sun is surrounded by a multitude of small bodies, which are gathered into several distinct rings revolving round him by the force of gravitation. The well-known appearance of Saturn's rings may help the imagination to conceive this condition of things; bearing in mind that Saturn's rings lie all nearly in the same plane, and thus expose a large mass of surface for the reflection of light, while those of the sun are inclined to one another at different angles, and are only visible to us when our planet in its annual course intersects one of them. For then their speed is arrested by contact with the upper regions of an atmosphere, which, thin as it is at that distance, from fifty to eighty miles high, is yet able to oppose a sensible resistance to their motion. The consequence is, that this motion—by the law of the correlation of forces—is transformed, wholly or partially, into light and heat. And as these bodies enter our atmosphere with an average velocity of thirty-five miles per second, it is easy to see that an enormous quantity of light and heat will be generated by its arrest and destruction.—*Educational Times.*

—The *Reader* draws attention to a remarkable opinion and theory of Sir John Herschel's with regard to the nature of those curious objects discovered by Mr. Nasmyth on the surface of the sun, and generally called, from their peculiar shape, "willow leaves." We believe Sir John first propounded this theory in an article on the sun, published in *Good Words*, but it does not seem to have been noticed by many astronomers. However wild the hypothesis may appear, it has just received a further sanction from its eminent author, by its republication in his new book of *Familiar Lectures.* Sir John says, "Nothing remains but to consider them [the so-called willow-leaves] as separate and independent sheets, flakes, or scales, having some sort of solidity. And these flakes, be they what they may, and whatever may be said about the dashing of meteoric stones into the sun's atmosphere, &c, are evidently the *immediate sources of the solar light and heat*, by whatever mechanism or whatever processes they may be enabled to develope, and as it were elaborate these elements from the bosom of the non-luminous fluid in which they appear to float. Looked at in this point of view, we cannot refuse to regard them as *organisms* of some peculiar and amazing kind, and though it would be too daring to speak of such organization as partaking of the nature of life, yet we do know that vital action is competent to develope both heat, light, and electricity." *Strange and startling as is such an explanation*, yet scientific men will remember, that when we knew as little about the cause of the black lines seen in the spectrum of the sun, as we now know about these appearances on the sun itself, Sir John Herschel suggested in 1833, that very explanation which was the foundation of the memorable law announced by the German philosopher, Kirchoff, in 1859, a law now universally accepted as affording a perfect solution to the long-standing puzzle of Fraunhofer's lines.—*Ib.*

—The constantly increasing price of rags has led papers-makers, for some years past, to turn their attention to the discovery of other materials suitable for paper stock. All kinds of plants, from those which grow near our own door to the luxuriant growths of tropical regions, have been experimented on with but partial success; but it now appears probable that for the future our main source of supply will be the forest. It is at least a century, and we do not know how much longer ago, since paper was made experimentally from wood, and, notwithstanding repeated improvements, the requirements of cost and quality have not until recently been met. The manufacture of wood paper is now, however, an accomplished fact. There are two large establishments near Philadelphia where it is carried on. In one of these a paper containing 60 per cent of wood pulp is turned out; and in the other, which is on an immense scale, an excellent paper for printing purposes, composed of 80 per cent. wood and 20 per cent straw, is made. The larger and more successful establishment is capable of turning out from 24,000 to 30,000 lbs. of pulp daily.—*Ib.*

—A correspondent of the London *Builder* says: "From several years' observations in rooms of various sizes, used as manufacturing rooms, and occupied by females for twelve hours per day, I found that the workers who occupied those rooms which had large windows with large panes of glass in the four sides of the room, so that the sun's rays penetrated through the room during the whole day, were much more healthy than the workers who occupied rooms lighted from one side only, or rooms lighted through very small panes of glass. I observed another very singular fact, viz: that the workers who occupied one room were very cheerful and healthy, while the occupants of another similar room, who were employed on the same kind of work, were all inclined to melancholy, and complained of pain in the forehead and eyes, and were often ill and unable to work.

Upon examining the rooms in question, I found they were both equally well ventilated and lighted. I could not discover anything about the drainage of the premises that could affect the one room more than the other; but I observed that the room occupied by the cheerful workers was wholly whitewashed, and the room occupied by the melancholy workers was colored with yellow ochre. I had the yellow ochre washed off, and the walls and ceilings whitewashed. The workers ever after felt