



For the Torch of Reason.

Strike for Liberty.

BY JOHN PRESCOTT GUILD.

HAIL! ye who strike for liberty!
A cheer for each and all
Who risk their lives or shed their
blood

To break the tyrant's thrall.
Why should you live and suffer on,
The support of a knave?
Far better rise and war with wrong,
To die, than be a slave!

But who shall strike for liberty?
Shall those of lordly blood,
Alone, be fit to thus redeem
Themselves from master's rod?
Who gave them blood that they might
boast

They should have better weal?
Why should their shoulders suffer most?
Don't all flesh equal feel?

Who shall be struck for liberty?
Some second-rated crew?
Shall first in strength presume to break,
That they may take anew?
O boasting ones! What is their dower,
That they the earth should rule?
If that's their trade, then curse the hour
They ever went to school!

Oh, strike, each one, for liberty!
No matter who ye be;
Oh, strike at those who make you slaves,
No matter their degree:
The sighing saints, the kneeling knaves,
Alike, some day, shall see
That there is dug for them deep graves,
By sons of liberty!

The Constitution of Nature.

BY JOHN TYNDALL.

WE can not think of space as finite, for wherever in imagination we erect a boundary, we are compelled to think of space as existing beyond it. Thus by the incessant dissolution of limits we arrive at a more or less adequate idea of the infinity of space. But though compelled to think of space as unbounded, there is no mental necessity compelling us to think of it either as filled or empty; whether it is so or not must be decided by experiment and observation. That it is not entirely void the starry heavens declare; but the question still remains, are the stars themselves hung in vacuo? Are the vast regions which surround them, and across which their light is propagated, absolutely empty? A century ago, the answer to this question, founded on the Newtonian theory, would have been, "No, for particles of light are continually shot through space." The reply of modern science also negative, but on different grounds. It has the best possible reason for rejecting the idea of luminiferous particles; but in support of the conclusion that the celestial spaces are filled with matter, it is able to offer proofs almost as cogent as those which can be adduced of the existence of an atmosphere round the

earth. Men's minds, indeed, rose to a conception of the celestial and universal atmosphere through the study of the terrestrial and local one. From the phenomena of sound, as displayed in the air, they ascended to the phenomena of light, as displayed in the ether; which is the name given to the interstellar medium.

The notion of this medium must not be considered as a vague or fanciful conception on the part of scientific men. Of its reality most of them are as convinced as they are of the existence of the sun and moon. The luminiferous ether has definite mechanical properties. It is almost infinitely more attenuated than any known gas, but its properties are those of a solid rather than those of a gas. It resembles jelly rather than air. This was not the first conception of the ether, but it is that forced upon us by a more complete knowledge of its phenomena. A body thus constituted may have its boundaries; but although the ether may not be co-extensive with space, it must at all events extend as far as the most distant visible stars. In fact, it is the vehicle of their light, and without it they could not be seen. This all-pervading substance takes up their molecular tremors, and conveys them with inconceivable rapidity to our organs of vision. It is the transported shiver of bodies countless millions of miles distant, which translates itself in human consciousness into the splendor of the firmament at night.

If the ether have a boundary, masses of ponderable matter might be conceived to exist beyond it, but they could emit no light. Beyond the ether dark suns might burn; there, under proper conditions, combustion might be carried on; fuel might consume unseen, and metals be fused in invisible fires. A body, moreover, once heated there would continue forever heated; a sun or planet once molten would continue forever molten. For, the loss of heat being simply the abstraction of molecular motion by the ether, where this medium is absent no cooling could occur. A sentient being, on approaching a heated body in this region, would be conscious of no augmentation of temperature. The gradations of warmth dependent on the laws of radiation would not exist, and actual contact would first reveal the heat of an extra ethereal sun.

Imagine a paddle wheel placed in water and caused to rotate.

From it, as a center, waves would issue in all directions, and a wader as he approached the place of disturbance would be met by stronger and stronger waves. This gradual augmentation of the impression made upon the wader is exactly analagous to the augmentation of light when we approach a luminous source. In the one case, however, the coarse common nerves of the body suffice; for the other we must have the finer optic nerve. But suppose the water withdrawn; the action at a distance would then cease, and, as far as the sense of touch is concerned, the wader would first be rendered conscious of the motion of the wheel by the blow of the paddles. The transference of motion from the paddles to the water is mechanically similar to the transference of molecular motion from the heated body to the ether; and the propagation of waves through the liquid is mechanically similar to the propagation of light and radiant heat.

As far as our knowledge of space extends, we are to conceive it as the holder of the luminous ether, through which are interspersed, at enormous distances apart, the ponderous nuclei of the stars. Associated with the star that most concerns us we have a group of dark planetary masses revolving at various distances around it, each again rotating on its own axis; and finally, associated with some of these planets we have dark bodies of minor note—the moons. Whether the other fixed stars have similar planetary companions or not is to us a matter of pure conjecture, which may or may not enter into our conception of the universe. But probably every thoughtful person believes, with regard to those distant suns, that there is, in space, something besides our system on which they shine.

From this general view of the present condition of space, we pass to the inquiry whether things were so created at the beginning. Was space furnished at once, by the fiat of Omnipotence, with these burning orbs? In presence of the revelations of science this view is fading more and more. Behind the orbs we now discern the nebulae from which they have been condensed. And without going so far back as the nebulae, the man of science can prove that out of common non-luminous matter this whole pomp of stars might have been evolved.—

[Fragments of Science.]

The Uselessness of Religion.

BY JEAN MESLIER.

THE world is a necessary agent; all the beings which compose it are united to each other, and cannot do otherwise than they do, so long as they are moved by the same causes and possessed of the same qualities. If they lose these qualities, they will act necessarily in a different way. God himself (admitting his existence a moment) can not be regarded as a free agent; if there existed a god, his manner of acting would necessarily be determined by the qualities inherent in his nature; nothing would be able to alter or to oppose his wishes. This considered, neither our actions nor our prayers nor our sacrifices could suspend or change his invariable progress and his immutable designs, from which we are compelled to conclude that all religion would be entirely useless.

If theologians were not constantly contradicting each other, they would know from their own hypotheses, that man can not be called free for an instant. Is not man supposed to be in a continual dependence upon God? Is one free, when one could not have existed or can not live without God, and when one ceases to exist at the pleasure of his supreme will? If God created man of nothing, if the preservation of man is continual creation, if God can not lose sight of his creature for an instant, if all that happens to him is a result of the divine will, if man is nothing of himself, if all the events which he experiences are the effects of divine decrees, if he can not do any good without help from above, how can it be pretended that man enjoys liberty during one moment of his life? If God did not save him in the moment when he sins, how could man sin? If God preserves him, God, therefore, forces him to live in order to sin.

If pain is sent by God's ordinance as a schooling either to its victims or to its witnesses, is it not blasphemous presumption to try to relieve it? Much danger, according to this theory, is to be apprehended from the everlasting painlessness of heaven. And, even on earth, might it not be prudent in the government to torture for our benefit a few clergymen at stated intervals, that they may not merely excite our sympathy by their suffering, but also set us an example of Christian resignation?—Tollemache.