THE CANADA

TEMPERANCE ADVOCATE,

DEVOTED TO TEMPERANCE, EDUCATION, AGRICULTURE & NEWS.

PLEDGE.—We, the undersigned, do agree, that we will not use Intoxicating Liquors as a Beverage, nor Traffic in them; that we will not provide them as an article of Entertainment, nor for persons in our Employment, and that in all suitable ways we will discountenance their use throughout the community.

VOL. XVII.] MONTREAL, JUNE 2, 1851. No. 12

Water, a Vital Agent.

'Fire, air, earth, and water,' for many an age, were regarded as the fundamental elements of all material things.—In the hey-day of Grecian and Roman greatness, when human thinking had reached the limit of its pagan enlightenment, and spent the energy of its inventive and inquisitorial power in attempting to 'look through nature up to nature's God,' the issue of its analysis was 'fire, air, earth, and water.' The transmutation, combination, and endlessly diversified commingling of these elementary forms built up this fair universe, fixed the sun in the heavens, and kindled the glowworm's evening taper; begirt the world with its moving atmosphere, and sustained the bubble on the ocean brim; laid the foundations of the earth; built up the ribs of the giant mountains, and scattered the small dust in a thousand wilds; poured forth into their appropriate bed the boundless seas, and caused to trickle from the eye of man 'the dew drop' of his sorrow. However mighty or mean, majestic or contemptible; however diversified with life, or imbruted in dead matter, it was still but a little fire, or a little air, or a little earth or a little water. Out of these, in all their grandeur and glory, or in all their filth and fetor, arose this human frame and the 'cosmos' that sustains it—this marvellously constructed world!

Three quarters of a century have not yet rolled away since the simple elementary nature of water began to be excluded from the articles of faith maintained by philosophic men. Water is now no longer regarded as simple, elemental, or indivisible. It is a compound body. After it has been freed from everything extraneous, in the shape of air, coloring matter, or earthy saline impregnation; after it has been rendered by the most careful process of human art absolute water, still it remains a substance compound. To those who are unacquainted with this fact, developed as it has been by the chemical science of modern times, it appears scarcely credible. That a thing so limpid, clear, colorless, and tasteless as pure water, should not in itself be simple and uncompounded, sounds at first as if it were a contradiction of sense. The thing that is distilled from the heavens in the gentlest dew, which stands before us in the crystal vase, sparkling with diamond purity—what, it may be asked, could be demanded as a specimen of absolute simplicity, unity, or homogeneousness, in preference to that? To the eye, to the finger, to the taste, it is absolutely one and simple. And, indeed, so far, it might be designated a simple element.—But the moment it is placed under the influence of agencies regulated by chemical manipulation—especially the boundless might of the galvano-electricity—water is instantly resolved into what are, at present at least, regarded as its constituent elements. It is found to be made up of two aeriform bodies, two gases or air-like substances, named respectively oxygen and hydrogen. The former of these, mixed in the proportion of about one-fifth part of the whole, forms the life-sustaining element in the common atmospheric air; the latter is known in its terribly-destructive power, when fired accidentally in coal-mining operations. Oxygen diluted in the air we breathe is necessary to the life of all whether animal or vegetable beings; without its presence they droop and die; whereas, hydrogen, taken alone, becomes destructive to every living thing.

These two gaseous elements, then, are viewed at present as the simple components of water—a body totally different from both; whose sensible qualities place it apparently between the solid earth and the invisible air; whose fluidity fits it for motion, whether in the rill, the river or the ocean-wave; and whose capacity to rise and become vapour, loading the atmosphere with moisture, fits it for being carried over all lands, and for pouring down the watery treasures of the clouds on a thirsty world. Whether, in the progress of science, everything is to be finally reduced to one or two simple elements, or whether threescore or threescore and ten uncombined principles are to stand on the boundary of human investigation, and limit the analysis of all material things, futurity alone can tell. But as to the marvellous simplicity of Nature in thus fashioning *water* out of elements so utterly different and apparently so incompatible; in reducing, by an energy of her own, the fire supporting oxygen and the inflammable hydrogen to a fluid, which in itself neither burns nor sustains burning in ordinary circumstances, no one can witness and not admire. The vast mass of water, covering so large a portion of the earth's surface, and of such unutterable moment to the life and progress of all living things, thus contains in itself the fiery elements of universal conflagration. Let but some current of the electric fluid, sufficiently mighty, be brought to bear on the watery mass encircling the globe, and it is instantly etherealized—reduced to its gaseous elements in one vast sphere of ignitible materials, ready to become a terrestrial vestment of devouring fire; and ready to fulfil the decree that is written from of old, "The earth and all that is therein shall be burnt up."

At present, however, the ocean reservoir, filled with its almost boundless expanse of water, may be regarded as the terraqueous source of physical life, occupying the surface of our planet. Life under any form, is nowhere seen but as dependent on water. The tissues and organisation of every vegetable and of every animal demand the presence of the aqueous fluid, if life is to be sustained and prolonged. Take away this naturally simple, tasteless, inodorous liquid—this dewy, rainy, streamy ocean-born moistener of the earth—and not only shall 'flesh and blood' no longer find a living habitation on its soil, but not even shall the simplest lichen, the most attenuated moss-root, or the feeblest vegetable being find a home on the bosom of the waste and arid world. Witness in dreary monumental evidence the terrible deserts of the African continent. The Sahara, or sea of sand, at least a thousand miles across, and more than two thousand long, is one of the most appalling, gloomy and dismal tracts of earth ever trod by the footsteps of men. At times a moving sea, whose waves are suffocating billows of the finest sand, and at