

afford the inhabitants of the earth the means of dividing and determining time. The long enduring darkness of the polar zone, in winter, is, in some degree, alleviated by the steady shining of the moon; and with us also, and even in the most highly favoured climate of the warmer zones, the mild light of the moon gives to the night a special charm. In those lands, whose skies, almost always clear, are much more transparent than ours, the moonlight is so bright that we may read by it without difficulty. Yet it is calculated, and, by direct admeasurement of the strength of the light, ascertained, that the light of the moon is 800,000 times weaker than that of the sun. The light of the moon is only the reflection of the sun's light, which must certainly find upon the moon's surface a substance highly capable of reflection, for the moon's light is like the brightness of a snowy mountain-top, or glacier seen from a distance.

If the surface of the moon were of a whitish stone similar to our limestone, one would think that we here on the earth must feel something of the heat of the sun's reflected light. But the moonlight communicates no perceptible heat to the earth, and even a thermometer, placed in the focus of the most powerful burning glass or reflecting mirror, shows no measurable increase of heat. One might, indeed, almost be inclined to attach weight to certain, as yet indeed only isolated observations of Lichtenberg's, and consider the moon a cold-diffusing body. When this celebrated philosopher observed with special attention the average temperature of those days on which our earth in the path of its orbit occupied the exact place where the moon had been a few hours before, he found that once (in June) it was a time of unusual cold, and another time, in autumn, that the weather was very stormy. Nevertheless, since the use of such instruments for the measuring of heat as have been described in the chapter on the importance of heat to magnetism and electricity, it has been ascertained that the light of the moon is not wholly without the power of producing heat.

The light of the moon, as well as that of the sun, may be separated in a similar way into the colours of the rainbow, although the colours are a great deal weaker; the pale, scarcely distinguishable red and the violet of the lunar rainbow and of the spectrum, cast by the prism, are as little capable of chemical influence, as of producing heat.

The whole character of the moon, so far as the telescope brings us acquainted with it, gives us no great idea either of its heat or of its power to communicate the same. On our earth, water discharges the beneficent office of equalizing the extremes of temperature; the warmer currents flowing towards the northern hemisphere from the south and southwest, and at the north, from the north and north-west, carry a portion of their heat to regions remote from the equator; and at the same time the heat of the tropics is moderated by the currents of cool air from the colder zones. What a useful covering our atmosphere forms for our planet, so that it does not lose by radiation the heat received from the sun, is seen from the cold, prevailing at those heights where the air is rare, and by the cold of those nights in the winter and early spring when the sky is cloudless, and no warm air-current from the south prevents the temperature's falling. In enumerating the advantages which our fair earth has over the moon, if we wish to go any further, we may note the no inconsiderable fact, that, with the exception of the polar zones, in all climates, in the short space of 24 hours, the sun rises and sets once, once midnight alternates with midday, and the inhabitants of the temperate zones, the most numerous among the denizens of the earth, and the most vigorous in body and mind, experience every year the wholesome influence of the changes of the seasons.

What a quite different lot, in these respects, is appointed to the companion of our earth, the moon! There, there is neither sea nor wind, no morning nor evening red, but according to our measure of time, every month has a summer of 14 days, when the sun, mounting to the zenith of the equator, or descending to the lower position at the polar regions, neither rises nor sets once, and then follows just as long as a winter night. Were there upon the moon an ocean or a sea of the size of one of our inland seas, it would have been distinguished by the telescope, but though art has multiplied the power of our vision a thousand fold, nothing meets the eye in the moon but a mass of heights and depths, mountains rising high above the measure of our Alps and Cordilleras, and abyssal cavities, so broad and deep that a Mount Blanc or Chimborasso would hardly suffice to fill them. Not only is there no sea, not a drop of water exists on the moon. If a single stream flowed there, or if springs gushed from the declivities of mountains, as with us, then here and there those fearful caverns would have been filled; water, if it existed there, or even the snow, would have risen in vapour under the influence of the sun, and formed an atmosphere round the moon, which, although it originated on the other side of the moon, would

immediately, by the law of gravity, be diffused over all parts of the surface of the moon. Such an atmosphere would be visible to us through the telescope, not only by its changes arising from changes of temperature, but also by other consequences of the refraction of light; were there any kind of atmosphere, like ours, there would be at least a brief twilight; but the latest observations have discovered nothing of the kind. The idea of a very rare atmosphere around the moon, lacks confirmation. The poor moon, in a higher degree almost, than a mountain 8 or 9 miles high on the earth would be, is exposed without protection to the sun's rays during its long day, and to the escape of the heat during its equally long night.

The heavens as seen from the moon are of course clear enough, never overcast by cloud or mist, no storms rage there, but one day is like another—and what profound silence reigns there on that little neighbouring world!

Aye indeed, a stillness like that of the grave, the deep, unbroken stillness of nature. There no bird sings, no flute, nor organ nor Æolian harp sounds; air is wanting for music as for breathing. When in ascending a lofty mountain, or in mounting in a balloon, we reach a region, in which there is still air, but very much rarefied, the strongest tone of the human voice sounds like a faint, muffled noise; even the discharge of a musket is inaudible at the distance of a few hundred feet. But where there is no atmosphere whatever, the fall of a mountain could be perceived only by the shaking of the solid ground; the corpse, buried deep in the grave, would be more sensible of it than the erect, living man. And with the ear, the eye also, and all the senses, were they like ours, would suffer the consequences of the absence of air, for without air there would be no flame here on the earth, without oxygen gas and its access to the oxydisable metals, or to a combustible element, there would be no green of the plant or the emerald, no red on the cheek or of the ruby, no decorative colours of the blossoms or insects, indeed, with few exceptions, no coloured stone. If water and air were withdrawn, our earth would have neither animals nor plants, nor even a particle of mould, in which the seed might germinate and unfold; the mountains would not indeed crumble by the action of air or water, but naked or dry they would, like a bleached skeleton, reflect the sunlight.

But we may spare ourselves the vain endeavour of portraying the moon in the colours which our human understanding furnishes us with. These colours are like those which we let fall through a prism upon a heap of baker's flour. In the light of these colours the wholesome flour appears as a strange mass of red, yellow, blue and violet dust, whose conversion into bread would be beyond the scope of our imagination. We lay aside the prism and lo! the brightly coloured dust is nothing but a well known, useful meal. Our human judgment separates the light of knowledge that falls within the circle of its comprehension, into the coloured rays of its own sensuous experience; and these colours do as little belong to the real nature of the objects which we contemplate as the colouring thrown by the prism on the flour. Before the investigation of travellers had disclosed it, who could have surmised the existence of that unmeasurable fulness of animalcula rejoicing in life in the icy masses and the never-melting snow of the polar region? Although we can conjecture but little, and know with certainty still less of the moon, one thing we know that heavenly body, with all that is thereon and therein, is made the care of the same creative power which everywhere generates motion and vitality, because it is itself life. That there on the white, field of death, as it appears of the moon's surface, transformations and vicissitudes of decay and birth are going on, seems to be the case even from some observations of science. But to what purposes and for whom those cavernous depths, so frightful to our eyes, are there, by which the surface of the moon is broken; upon what beings falls the blinding brilliancy of the sun, and the pale ash-gray light, that comes from the huge disk of the earth, standing immovable in one place in the moon's sky—these things, so long as we are bound to this terrestrial world, we can never know.—*Id.*

OFFICIAL NOTICES.



ERECTION OF SCHOOL MUNICIPALITIES.

His Excellency, the Governor General, has been pleased: 1o. To erect into a separate school municipality, the township of Messy, in the county of Chicoutimi, as comprised within its present boundaries.