

their distance from us. Taking the teaching of our science just as it stands, we should say that all this heat continues to move on through infinite space forever. In a few thousand years it reaches the probable confines of our great universe. But we know of no reason why it should stop there. During the hundreds of millions of years since all our stars began to shine has the first ray of light and heat kept on through space at the rate of 180,000 miles a second, and will it continue to go on for ages to come? If so, think of its distance now, and think of its still going on, to be forever wasted! Rather say that the problem, What becomes of it? is as yet unsolved.

Thus far I have described the greatest of problems; those which we may suppose to concern the inhabitants of millions of worlds revolving round the stars as much as they concern us. Let us now come down from starry heights to this little colony where we live, the solar system. Here we have the great advantage of being better able to see what is going on, owing to the comparative nearness of the planets. When we learn that these bodies are like our earth in form, size, and motions, the first question we ask is, Could we fly from planet to planet and light on the surface of each, what sort of scenery would meet our eyes? Mountain, forest, and field, a dreary waste, or a seething caldron larger than our earth? If solid land is there, would we find on it the homes of intelligent beings, the lairs of wild beasts, or no living thing at all? Could we breathe the air, or would we choke for breath, or be poisoned by the fumes of some noxious gas?

To most of these questions science cannot as yet give a positive answer, except in the case of the moon. Our satellite is so near us that we can see it has no atmosphere and no water, and therefore cannot be the abode of life like ours. The contrast of its

eternal deadness with the active around us is great indeed. Here we have weather of so many kinds that we never tire of talking about it. But on the moon there is no weather at all. On our globe so many things are constantly happening that our thousands of daily journals cannot begin to record them. But on the dreary rocky wastes of the moon nothing ever happens. So far as we can determine, every stone that lies loose on its surface has lain there through untold ages, unchanged and unmoved.

We cannot speak so confidently of the planets. The most powerful telescopes yet made, the most powerful we can ever hope to make, would scarcely show us mountains, or lakes, rivers, or fields at a distance of fifty millions of miles. Much less would they show us any works of man. Pointed at the two nearest planets, Venus and Mars, they whet our curiosity more than they gratify it. Especially is this the case with Venus. Ever since the telescope was invented observers have tried to find the time of rotation of this planet on its axis. Some have reached one conclusion, some another, while the wisest have only doubted. The great Herschel claimed that the planet was so enveloped in vapor or clouds that no permanent features could be seen on its surface. Some recent observers think they see faint, shadowy patches, which remain the same from day to day, and which show that the planet always presents the same face to the sun, as the moon does to the earth. Others see differently, and the best opinion probably is that these patches are simply variations of light, shade, and color, caused by the reflection of the sun's light at various angles from different parts of the planet.

There is also some mystery about the atmosphere of this planet. When Venus passes nearly between us and the sun, her dark hemisphere is turned