

roar of tempests can be heard. The huge wave, crested with elemental fury, rolls on, but makes no stir in the stillness and stagnation of the abysmal realm.

When we crossed the borders of this dark and silent abyss, our feet sank in a white pasty slime which has been designated "*Globigerina ooze*." The dredges of the *Challenger* and the *Albatross* have been down here, hung by a piano wire over the stern of the vessel, and samples of this ooze have been studied. We find it composed chiefly of microscopic dead shells called *Fo-ram-i-nif'-e-ra*, together with others called *Pter'-o-pods*. The little creatures which formed the shells do not live here; they dwell in calm zones of water far above. When the conscious animal ceases to live, its tiny house sinks down into this dark world. And thus, as the ages roll by, the fine chalky rain slowly accumulates upon the bottom. When this ooze is dried and hardened, it resembles the chalk of Europe; and when that is microscopically examined, we find in it the same little *Foraminifera*. These are important geological facts, which, though they come out of an abyss of darkness, throw a vivid light on equally dark chapters of the world's long-past history.

We have groped our way down three and four miles beneath daylight. A sort of ooze still overspreads the bottom; but it is not the *Globigerina* and Pteropod ooze. It is a fine rusty clay. But the white shells are not wanting because the tiny creatures which secrete them are not overhead. They swarm there as elsewhere, far from land with other *pelagic* forms. But the fragile matter of the shell is dissolved before it reaches this great depth. Only the aluminous and insoluble constituent reaches the bottom. This clay ooze possesses other interest. Disseminated through it are minute crystals of such minerals as escape through the throats of volcanoes into the upper air. Here are the dust particles which have imparted a ruddy glow to many a past sunset. Once the source of the roseate glory of the twilight hour, they lie now, in impenetrable darkness and the repose of death. How changed the fortune of the little particle. It floated for months in the