

Educational Department.

Teachers, school officers and friends of Education from all parts of the Pacific Coast are invited to contribute to this Department; discussions, essays, proceedings of educational meetings, queries, &c. Address, Monmouth, Oregon.

Daylight.

The established doctrine is that heat and light are propelled from the solar orb equally into all parts of surrounding space, and fall upon the earth and other planets just as they do upon any waste part of the sky. And these rays of heat and light, we are told decrease rapidly alike in number and in power, diminishing with the square of the distance from their source, the sun. But is it so? Ascend in a balloon and what do we find? Do heat and light increase in intensity as we rise in the air nearer the sun? By no means. Six miles up, all heat is gone. The thermometer is at zero, and hoarfrost gathers on every cord of the airship. How can this be, if heat comes down on us in diminishing force from the sun? If that were true, heat ought to increase rapidly as we ascend nearer the sun, the source of it. Even light, though exceedingly pure, the air being free from the aqueous element—is less intense in those airy attitudes. Look up from the car of the balloon into the abyss of the sky above, and what do we see? A bright dazzle comes from the spot in the heavens where the sun is; but he is shorn of his rays.

All around, the sky overhead is of a deep azure, like the color of Prussian blue—a well known sign of light imperfectly developed: just as we see in the flame of a candle or gas jet, at the part of imperfect combustion, or just as the blue flash of the electric machine becomes yellow or white light, when the power of the machine is increased. There is light in the air at those altitudes; the moment the prism, by the gyrations of the cart, is inclined away from the direct rays of the sun, there is no spectrum at all.

Manifestly, then, neither heat nor light comes to us from the sun in the manner supposed,—namely, traveling down to us through the empty waste of space, and decreasing with the square of the distance. For if this were the fact, both heat and light would increase rapidly with the lessening distance as we ascend, whereas light diminishes, and heat wholly disappears.

Calmly considered, these facts of themselves not only upset the common theory, but suggest the true one. Heat and light are generated within the sphere of our own planet. No heat or light in the wastes of space. Heat there can be none seeing that the thermometer falls to zero only six miles above the earth's surface. And light, too, evidently fades away into a thin blue luminosity in those upper regions where the terrestrial gases, the exhalations of the solid earth become attenuated,—where probably they gradually merge into pure hydrogen, and into that most subtle sublimation of matter which we call ether, which is present even in the vacuum of an air pump.—*Ex.*

The Zuni Pueblo.

High up on the western slope of the Sierra Madre, in New Mexico, nearly a mile and a half above the sea level, and but a few miles beyond the divide, where scanty waters begin their timid and uncertain way down toward the Pacific, stands ancient Zuni, the father of the pueblos. When Coronado made his famous march into the unknown North, the Zunis, or Shi-winas, as they call themselves, were the first, and also the most numerous and powerful, of the pueblo encountered by him. Their towns covered a great territory, almost deserving the name of "kingdom"—term so lavishly and loosely used by Coronado and his contemporary explorers. Oppression and pestilence have so diminished their numbers, and their strict exclusiveness has so impoverished their physical condition, that the once mighty nation has now been reduced to a handful of people. These inhabit a single pueblo. But the country around is dotted with ruined towns upon whose walls is graven the symbol of the shi-wi-na, the sacred water-spider, whose figure forms the Zuni coat of arms. Here surrounded by the forsaken homes of their kindred and ancestry—crumbling heaps which in antiquity rival the storied stones of the Old World—the Zunis live as their fathers lived, and jealously treasure their proud history.

Zuni is still the largest of the pueblos of New Mexico and Arizona, and is looked up to by the others, which differ entirely in language, with the veneration and homage belonging to the elder members of their family, the source whence come their religion and in-

stitutions. By the census of 1880, under an accurate count, the population of Zuni numbered 1602, nearly 500 more than that of Isleta the next pueblo in size. Therefore it is still a considerable town. It is only a few years since the Zunis numbered several thousand, but an epidemic of the small-pox decimated them terribly.

With the exception of the Moquis and the Java Supais, or Ku'h-nis, in Arizona—the latter an almost unknown pueblo in Cataract Creek Canon, one of the "box canons" of the Colorado—the Zunis are the most isolated of all the pueblo tribes. They have therefore been little influenced by contact either with Spanish or Anglo-American civilization, and to-day live substantially the life they led when Coronado first started out in search of the seven cities of Cibola. The river pueblos, as they are called—those ranging along the Rio Grande from Taos to Isleta—have monopolized the attention of travellers and writers, being the most convenient of access. But these, surrounded by the towns of the Mexicans on every hand, and latterly having come in contact with the more pushing American, who leaves his own indelible impress upon all whom he meets, they have naturally been materially influenced by the alien life around them, and their manners have been considerably changed thereby.

However good a copy may be, however faithful as a reproduction, the most of us have a strong preference for originals. So Zuni, as the oldest of the pueblo families, as the father of their *Kultur*, as the Germans would say, and possessing the most distinctive characteristics, is decidedly the representative pueblo of New Mexico.—SYLVESTER BAXTER, in *Harper's Magazine* for June.

Living On the Moon.

Professor Proctor in a lecture stated that the moon did not revolve around the earth, but that the two circles about each other and the real center of revolution of each is the sun. If there were a railway sufficiently "elevated" to reach the moon, which is 238,818 miles distant from us, we should be fifteen months making the journey at ordinary railroad speed. Upon arriving, we should observe several interesting phenomena. First, it is a very respectable luminary of a diameter of 2,081 miles

with a surface of 14,000,000 square miles, a volume on forty-ninth of that of the earth, and a mass one-eighty-first of it. Then, the force of gravity being one-sixth of that of the earth, we could be thirty-six feet high, and still quite as active as we are here. Our extremities, however, would certainly suffer after sunset, or the surface of the moon is 250 degrees below zero at midnight, and the reaction towards noon would try even our prolonged proportions, for at noon the surface would be thirty-eight degrees above the boiling point.

Still, as Professor Proctor has said that all planets pass through five stages, the last of which is death—a stage which the moon has reached—the apprehensive mind naturally inquires how soon the earth will probably reach it. The professor answers, that the earth is now about 500,000,000 years old, and that it took the moon 800,000,000 to reach its present state. He therefore concludes that it will take the earth 500,000,000 years more to reach the same condition.—*Ex.*

Hints to Writers.

1. Be brief. This is the age of telegraphs and stenography.

2. Be pointed. Don't write all around a subject without hitting it.

3. State facts, but don't stop to moralize. It's drowsy business. Let the reader do his own dreaming.

4. Eschew prefaces. Plunge at once into the subject, like a swimmer into cold water.

5. If you have written a sentence which you think particularly fine, delete it. A pet child is the worst in the family.

6. Condense. Make sure that you really have an idea, then record it briefly.

7. When the article is complete, strike out nine tenths of the adjectives. The English is a strong language, but it won't bear too much "reducing."

8. Avoid all high-flown language. Plain Anglo-Saxon words are the best.

9. Make your sentences short. Every period is a mile-stone at which the reader may halt and rest himself.

10. Write legibly. Don't let your manuscript look like the track of a spider half drowned in ink.—*Christian.*

Every member of the faculty at Amherst is an alumnus of that college.—*Ex.*