

he can entirely accommodate his constitution to such altered circumstances and before the successive generations of parents can acquire and transmit to their off-spring the new and requisite physiological peculiarities."

### SURVEY OF THE PHYSICAL SCIENCES.

Man was early led to the study and contemplation of Nature. The day and night-heavens the varied surface of the earth, the deep forests and the beautiful and somewhat mysterious succession of the seasons could not fail to awaken thought. The free winds and the boundless extent that every where met his eye, agitated his soul with strange wonder and awe.

The cradle of the human race favored all this, and by a sweet necessity drew man to the embrace of Nature. That cradle was undoubtedly in Southern Asia. On all sides rose parapedted hills, broad streams hurried to the sea, and a genial climate fostered budlings of thought. The soul of man turned to Nature, as the flower turns to the sun. Admiration cheered the birth-place of the race, and in it appeared the early leafage of the physical sciences.

The *Physical Sciences embrace all the facts of Nature, class'fied on the principle of resemblance.* These facts have been accumulating through ages, and now form distinct branches of knowledge, such as Mechanics, Astronomy, Optics, Electricity, Magnetism, and Chemistry proper. These, and all their auxiliaries of implements, constitute the Physical Sciences.

The birth of these sciences is undoubtedly found in the Cosmogony of the Orient. Traditions of the creation are sown in all languages, and lie at the basis of all enquiries into the wonderful spectacle of Nature.

The birth of the physical sciences was succeeded by a strange religious observation. The shepherd, as he tended his flock, watched the fires of heaven as "they burned on their quiet way," till thoughts of worship stole into his heart; the caravan and travelling merchant, as they crossed the vast plateaus of Asia, saw and felt more than the wandering pedlar of Wordsworth, "A something that disturbed them with the joy of elevated thought." They observed

the forces and motions of heaven and earth, and laid up the rude materials of the physical sciences,

The religious element soon became predominant. The boundlessness of Nature excited awe. Mystery waited on her inexplicable and infinite diversity, and nursed into gigantic vigor the mystic superstition of the East.

This element was doomed to divide its power, and in some degree become the servant of a degrading selfishness. The love of *power* and *gain*, assisted by a subtle policy, invested the observations of Nature with imaginary awe. Superstition became a pampered thing, and the deformed *out-croppings* of the physical sciences appeared in *astrology* and the arts of *divination*.

From this oppressive thralldom, thought, after the lapse of ages, began to awaken. Minds here and there, stirred by the love of knowledge, brooded over the known facts of Nature, and warmed them into order and life. Travelling merchants brought new facts to view; caravans were induced to carry freights of knowledge as well as wares.

The banks of *INDUS*, favoured by Nature and Providence, became not only the nursery of the race, but also of the first civilization. W. Von Humboldt is justified in tracing up all the streams of philosophy that irrigate the world to that fountain.

*Chaldea*, we are certain, was the seat of early astronomical observations. As early as 720 B. C., eclipses of the moon were noticed and chronicled. Egypt, we have good reason to believe, made observations on the eclipses of the sun and moon about the time of the Exodus, 1491 B. C. The Chaldeans divided the day into twelve hours. The *sun-dial* of Ahaz is brought to view in the old Testament.

Mechanics were brought into notice at an early period in the history of the world. The forces of Nature were turned into the service of man. The ruins of Southern India and the pyramids of Egypt are indications of gigantic labor. Their construction must have required machines of no ordinary power. The labors of Archimedes in this department of physical science are familiar. The ancients ascribe