

equatorial and polar regions engenders two opposite currents in the upper strata of the atmosphere and on the Earth's surface. Owing to the difference between the rotatory velocity at the poles and at the equator, the polar current is deflected eastward, and the equatorial current westward. The great phenomena of atmospheric pressure, the warming and cooling of the strata of air, the aqueous deposits, and even, as Dove has correctly represented, the formation and appearance of clouds, alike depend on the opposition of these two currents, on the place where the upper one descends, and on the displacement of the one by the other. Thus the figures of the clouds, which form an animated part of the charms of a landscape, announce the processes at work in the upper regions of the atmosphere, and, when the air is calm, the clouds will often present, on a bright summer sky, the "projected image" of the radiating soil below.

Where this influence of radiation is modified by the relative position of large continental and oceanic surfaces, as between the eastern shore of Africa and the western part of the Indian peninsula, its effects are manifested in the Indian monsoons, which change with the periodic variations in the sun's declination,* and which were known to the Greek navigators under the name of *Hippalos*. In the knowledge of the monsoons, which undoubtedly dates back thousands of years among the inhabitants of Hindostan and China, of the eastern parts of the Arabian Gulf and of the western shores of the Malayan

the excellent observations of Kämtz on the descent of the west wind of the upper current in high latitudes, and the general phenomena of the direction of the wind, in his *Vorlesungen über Meteorologie*, 1840, s. 58-66, 196-200, 327-336, 353-364; and in Schumacher's *Jahrbuch für* 1838, s. 291-302. A very satisfactory and vivid representation of meteorological phenomena is given by Dove, in his small work entitled *Witterungsverhältnisse von Berlin*, 1842. On the knowledge of the earlier navigators of the rotation of the wind, see Churruca, *Viage at Magellanes*, 1793, p. 15; and on a remarkable expression of Columbus, which his son Don Fernando Colon has presented to us in his *Vida del Almirante*, cap. 55, see Humboldt, *Examen Critique de l'Hist. de Géographie*, t. iv., p. 253.

* *Monsun* (Malayan *musim*, the *hippalos* of the Greeks) is derived from the Arabic word *mausim*, a set time or season of the year, the time of the assemblage of pilgrims at Mecca. The word has been applied to the seasons at which certain winds prevail, which are, besides, named from places lying in the direction from whence they come; thus, for instance, there is the *mausim* of Aden, of Guzerat, Malabar, &c. (Lassen, *Indische Alterthumskunde*, bd. i., 1843, s. 211). On the contrasts between the solid or fluid substrata of the atmosphere, see Dove, in *Der Abhandl. der Akad. der Wiss. zu Berlin aus dem Jahr* 1842, s. 239