

A Science Service Feature

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? WHY THE WEATHER ? Mailed May 12, 1933

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EXPLORERS' IGNORANCE OF OPTICS

There is hardly a narrative of arctic or antarctic exploration that does not tell of striking, weird, beautiful optical phenomena; halos, parhelia, fogbows, mirage, and what-not. And there is hardly one of these narratives the scientific value of which would not have been vastly enhanced if the narrator had possessed a competent knowledge of atmospheric optics before undertaking his polar journey! The descriptions are generally vague; accurate measurements are lacking; the altitude of the luminous source (sun or moon) is not stated; and so on. Nearly always the writers ignore absolutely the established terminology of the photometeors. As often as not, awkward circumlocutory descriptions of the phenomena are substituted for their names.

This is very much as if a traveler, on returning from a visit to the Sahara, should mention having seen "a large, brown quadruped with a hump on its back," instead of saving words and avoiding ambiguity by recording that he had seen a camel. Every known optical phenomenon of the atmosphere has a scientific name. There are halos of definite radii (22 degrees, 46 degrees, etc.); upper and lower (and other) tangent arcs; the parhelic circle; parhelia; paranthelia; the anthelion; the arcs of Lowitz; light-pillars; coronas (including Bishop's ring); primary, secondary, supernumerary, and intersecting rainbows; superior, inferior and lateral mirage; and scores of other phenomena, all duly described, discussed, and named in such works as those of Bravais, Pernter, Besson, Mascart, and, among American works, Humphreys' "Physics of the Air."

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