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? WHY THE WEATHER ?

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SEEING YOUR BREATH

Seeing your breath is such a common phenomenon in winter that it excites little attention. This breath fog, however, is a sample of a common type of winter fog, on which leads to street and train accidents or to marine disasters. At times it also has prognostic value when there is breath fog on a mild afternoon with the sun shining.

Our breath of warm humid air on mixing with the colder air becomes so chilled that part of the vapor condenses. Further mixture usually quickly dissipates the exhaled air and the fog evaporates. When the warm south wind blows its humid breath onto the cold northern landscape it is likewise chilled by mixture with the cold air over the surface, and some of the vapor is condensed either in the form of a low cloud sheet, stratus cloud, or a fog. When the warm wind penetrates to the ground it is chilled not only by the mixture with colder air but also by conduction to the cold surface. Fogs of this origin often become very dense.

When on a mild sunny afternoon one makes breath fog there is something unusual in the condition of the air. Normally, unless the air is very much colder than the breath, the mixing with the air is so rapid that a breath fog is either not formed or so slight as not to be seen. When, however, the air is nearly saturated even a small amount of chilling can make a fog before the mixture can dissipate the breath sufficiently to distribute its excess vapor. It is evident that such conditions must precede the formation of a general fog, or at least of stratus clouds, shortly after the sun has withdrawn his warming rays and the air temperature has begun its nocturnal fall.

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