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A Science Service Feature

? WHY THE WEATHER ?

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Authority on Meteorology

ABOUT AIR

One of the most curious things about air is that it is nearly always discussed, even in scientific literature, as if it were a simple, elementary substance, though it is actually a jumble of gases differing greatly from one another in their characteristics. Thus you will find in reference books statistics concerning its density, viscosity, electric and thermal properties, optical and acoustic qualities, and so on. Air is not, like water, a definite chemical compound, but merely a mixture of unlike substances.

What substances enter into the composition of air? In various authoritative works you will find somewhat different answers to this question. The list always begins with nitrogen and oxygen, but as almost any gas may occur locally and occasionally in the atmosphere authorities differ as to how far the list of constituents should be extended. The following is comprehensive enough for most scientific purposes: Nitrogen, oxygen, water vapor, argon, carbon dioxide, helium, neon, krypton, xenon, radium emanation, ozone, hydrogen dioxide, ammonia and certain other compounds of nitrogen. The minute particles of solid matter that are collectively called "dust", though usually regarded as "impurities" in the atmosphere, have a good claim to be included in our list, since dust-free air does not exist anywhere near the earth's surface outside of the laboratory. Shall we add the widespread liquid and solid particles that constitute clouds, fog and water-haze? Where shall we draw the line between the constituents and the contents of the atmosphere?

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