



## BĀD

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**BĀD** (wind), phenomenon at ground level resulting from modifications of general airflows by local topographic factors. On the plateau of Iran and Afghanistan winds depend on a general regime of atmospheric pressures characterized, in the course of the year, by the succession of markedly distinct seasons with relatively stable barometric gradients. Local winds, channeled and strengthened by relief trends or regularly alternating under the influence of mountain blocks (up-valley and down-valley breezes) or sea coasts (on-shore and off-shore breezes), acquire particular importance under such a stable barometric régime and are often individually identified in popular speech. Thus the usual wind names referring to the four cardinal points are supplemented with an exceptionally rich stock of more vividly descriptive terms.

*Winter winds.* The entire Irano-Afghan plateau normally falls within the influence of the Asiatic high pressure center and consequently experiences fine, dry weather with a general airflow from the north and northeast. Resultant winds are in many places known simply as “north wind” (*šamāl*), in the Kermānšāh (Bāktarān) region as “black wind” (*bād-e sīāh*). This stable situation is more or less regularly interrupted by the passage of cyclonic depressions coming from the west, mainly along a northern track through Transcaucasia across the Caspian Sea to the north flank of the Khorasan and Hindu Kush mountains and a southern track down to the Persian Gulf. Their arrival gives rise to various types of unsettled weather. On the Caspian coast a wind called *sartūk* or *saltūk* blows straight from the northeast when such



depressions pass in the autumn, but in mid-winter it bends around the depressions then occupying the southern basin of the sea and reaches the coast of Gīlān either directly from the sea as a north-northwest wind (known as *kazarī*) or along the shore as a northwest wind (known as *dašt-vā* or in districts further east as *vāreš-vā*, i.e., “rain wind”). On the Persian Gulf coast passage of depressions is followed by cool spells when a cold catabatic wind, similar to the Mediterranean mistral or bora, blows down from the Iranian plateau; in Fārs it is named the *gohra*. A similar phenomenon sometimes occurs on the plateau south of the Alborz when a depression moves along the southern flank of that range. On the other hand, föhn-type winds, reheated after crossing mountains, blow down the northern slopes of highland massifs when depressions pass. This phenomenon occurs at various plateau localities on the northeast side of the Zagros with winds which have already been reheated over Syria and Iraq, e.g., the *garmīš* at Mīāna and the *garmīj* at Ardabīl; it is particularly striking on the very steep north side of the Alborz, where the “hot wind” (*bād-e garm*, *garmeš*, *garmīš*) can cause forest-fires and sudden snow-melts with floods, whence its other name “snow-eater” (*barf-<sup>v</sup>or*).

*Summer winds.* The weather in summer is generally hot, dry, and stable, in consequence of the extension of the subtropical high pressures. Barometric readings show a very regular gradient from the north and northwest down to the low-pressure center in the northwest of the Indian subcontinent. Thus in Kūzestān and on the Persian Gulf coast, the northwest wind called the *šamāl* blows throughout the hot season. In the east and southeast of the plateau (Sīstān, southern Khorasan, Lūt desert), the “wind of 120 days” (*bād-e sad-o-bīst-rūza*) blows from late in May to late in September with extraordinary regularity, at first only in the afternoon but in mid-season throughout the day and night; sometimes it is very violent, though it seldom exceeds 100-110 km per hour and often drops to 30-40 km per hour or less. The ruin-like buttes (*kalūts*) which this wind has sculpted from the soft sandstones of the southern Lūt have the same north-northwest-south-southeast alignment and give impressive testimony of its constancy and strength. Human use of it as an energy source began long ago, southern Khorasan and Sīstān having been important centers of windmill technology development. In the stable summer weather regime, local occurrences of regularly alternating up-valley and down-valley breezes or winds are important. Among these is the celebrated wind of Manjīl, on the Rašt-Qazvīn road in the Safīdrūd valley; it blows from northeast to southwest in the afternoon during the summer, often with



enough force to make crossing the bridge over the river dangerous, as many travelers have found. In the Tehran district, the uphill breeze which blows in the afternoon from late March onward is supposed to make flowers bud and bloom more vigorously and known as the “rose wind” (*bād-e gol-e sork*). The only regions not subject to the stable summer regime are the Caspian side of the Alborz and the southeastern parts of Afghanistan which are touched by the tail end of the Indian monsoon. Summer storms emanating from the monsoon can occur in southeastern Iran and even in Fārs, but are exceptional. Normally the coastlands of southeastern Iran and the Persian Gulf are exposed in summer only to a sea breeze from the east (*šarqī*), which being moisture-laden makes the weather very oppressive but does not deliver any rainfall.

*Spring winds.* Unstable weather prevails only in the interval between the end of the winter régime and the start of the summer régime, i.e., in springtime. Local centers of low pressure then develop in basins on the Iranian plateau and in western Central Asia, giving rise to convectional rainstorms, duststorms, and sandstorms. This is the season of the greatest frequency of dustladen whirlwinds, which arise in the afternoon in basins subject to differential heating and in popular belief are stirred by the devil. They may also occur from time to time throughout the summer. On the other hand, Iran suffers relatively little from hot, dry south winds of the type of the khamsin which often afflicts Mediterranean countries in spring when a deep depression passes along that sea. The same phenomenon can occur in Kūzestān and even in Baluchistan, but the wind, having crossed the Persian Gulf or open sea, always carries some moisture.

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(v) Use of winds. See āsīāb, bādḡīr.

*Search terms:*

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