Varahamihira, the Meteorologist

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Varahamihira belonged to the galaxy of Indidan scientists that included Dhanvantari, Chakara, Susruta, Aryabhata, and Bhaskaracharya whose fields of specialisation ranged from medicine to surgery, mathematics, and meteorology. Varahamihira was unique in that he had astonishing knowledge of a variety of subjects like hydrology, meteorolopgy, astrology, astronomy, and seismology. His magnum opus is *Brihat Samhita*, which deals with all these ssubjects. Alberuni, the Arabian scholar, translated another work os Varahamihira, *Brihat Jataka* into Arabic and he eulogised Varahamihira for his *Brihat Samhita* for its richness in detail. Varahamihira belonged to Ujjain (AD 505-587). He respected learning wherever it was found and was intimately acquainted with astrological literature of the Greeks to whom he made reference in his works. His other works included Pancha Siddhantika, Vivahapatala, Laghujataka, Yatra, possibly written in that order 9Sarma, 1976).

The *Brihat Samhita*, a work on Samhita consists of 106 characters with a totla of nearly 4000 slokas (verses in Sanskrit). The range of subjects dealt with is very large, including the effects of movements of the planets and natural phenomena on human life, geography, characteristics of Khadga (sword), Angavidya, architecture, iconography, auspicious and inauspicious characteristics of people and animals, omens, manufacture of cosmetics, botany, and science of precious stones (gemmology). Chapters XXI to XXXIX are geophysical in nature and mainly deal with meteorology. The subjects dealt with are cloud formation, rainfall and its quantity, the appropriate planetary conjuctions, signs of immediate rain, hurricanes, etc.

Sloka 5 says: the symptoms of pregnancy of clouds are to be determined when the moon transits the star Parvashadha commnencing from the first day of Margasira (approximately December). Sloka 6: the foetus formed during the moon's stay in a particular asterism will be born 195 days hence, thew moon standing again in the same asterism according to the laws of her revolution. Slokas 9-12: these point out that clouds formed in the first half of Chaitra (March – April) will yield water in the latter half of Aswayuja (October) and those that are formed in the latter half of Chaitra will rain in the first half of Kartika (November). These concepts seem to have been in vogue during the Rg Veda period too (JRAS, 1871). Rain-gauging appears to have been prevalent in India from very early times and the earliest reference to it is to be found in Panini's Astadhyayi. According to Varahamihira, rain should be measured after the fool moon day of the month of Jyestha (May – June) when it has rained in the asterism commencing with Purvasadha.

In Varahamihira's time, the commonest measures of rainfall were pala, adhaka, and drona: 50 palas made one adhaka and four adhakas constituted one drona. The rainfall was measured by means of a specially prepared round gauge with a diameter of one hasta or cubit (460 mm or 18 inches) and marked off in pala; when filled to capacity it indicated one adhaka of rainfall. It is believed that the Maurya and Gupta emperors introduced and popularized this system throughout the length and breadth of their extensive empires and consequently it became an all-Indian measurement. Many maxims and proverbs current amongst farmers and those close to the soil have their roots in the observations made by Indians millennia ago.

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