

## VEGETATION CHANGES OF THE TAIHANG MOUNTAINS SINCE THE LAST GLACIAL

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**ABSTRACT:** The vegetation of the Taihang Mountains was dominated by grass with less than 10% forested area during the last pleniglacial. During the period of 17 000 – 10 000 a B. P. the forested area reached to 20% – 30%, and reached to 20% – 40% during the Early Holocene in the period of 10 000 – 8 000 a B. P. followed by the temperature increasing rapidly. But the northern part had more forested area than that of the southern part. During the period of 8000 – 5000 a B. P. forests developed further to 50% or more. It was the highest period of the forest cover degree. After then, the forests began to be destroyed first in the southern part of the Taihang Mountains by people. Since 2500 a B. P. the forests were destroyed dead. The forest cover decreased to less than 5% before 1949. Since 1949, although the government hold the policy of close hillsides to facilitate afforestation, the forest cover of Taihang Mountains could not exceed 11.6%. So afforestation is an important work to keep economic and ecological sustainable development.

**KEY WORDS:** last pleniglacial; Taihang Mountains; vegetation change

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### 1 BACKGROUND

The Taihang Mountains is located in the western part of Hebei Province. It is bounded by the North China Plain to the east, the Shanxi Plateau to the west and the Yanshan Mountain to the north; the southern boundary is formed by the Huanghe (Yellow) River. It has an area about 30 000 km<sup>2</sup>, occupies about 17% of the total area of Hebei Province.

The Taihang Mountains has a continental monsoon climate, with the mean annual temperature between – 1.7°C to 13°C and mean annual precipitation be-

tween 550 mm to 700 mm.

All virgin forests had been destroyed by people as there has been a long history of human activities. Only secondary forests are present on the Xiaowutai Mountain and Tuoliang Mountain. A forest of *Quercus*, including *Pinus*, *Cupressus*, *Carpinus*, *Ailanthus*, *Tilia*, *Ulmus*, *Betula*, *Juglans*, grows at elevations below 1400 m. Bushes are dominated by *Vitex negundo* var. *heterophylla*, *Zizyphus jujuba*, *Ostryopsis*, *Rhamnus*, *Prunus armeniaca* var. *ansu*, *Syringia*. *Betula* and *Populus* forests grow between 1400 m and 1700 m elevations. Between 1700 m and 2000

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