generally accurate author asserted. In popular lists ι frequently is given as **Talitha.** Hyde strangely rendered the original words of Ulug Beg as the Vertebrae of the Greater Bear,— whence probably Smyth's statement,— or the Cavity of the Heel, which, from the star's position in the figure, is a much more likely translation.

In China these two stars were **Shang Tae,** the High Dignitary.

Holden says of ι that its "companion is suspected to be a planet." It is 12″ distant from the larger, and the orbital revolution is very slow.

λ, 3.7, and μ, 3.2, red.

These are our **Tania borealis** and **Tania australis;** and together were the Arabs' **Al Ḳafzah al Thāniyah,** the Second Spring (of the Gazelle), marking the Bear's left hind foot. Baily has them in his edition of Ulug Beg's *Tables*, from Hyde's Latin translation, as **Al Phikra al Thānia,**— in the original Al Fiḳrah, the Vertebra; but this, more probably, is entirely wrong, as these three pairs of stars have always marked three of the Bear's feet.

In China they were **Chung Tae,** the Middle Dignitary.

ν, Double, 3.5 and 12, orange and cerulean blue,

ξ, Binary, 3.9 and 5 5, subdued white and grayish white,

mark the right hind foot, and are the southern of the three noted pairs.

They were the Chinese **Hea Tae,** the Lower Dignitary.

The components of ξ are but 1″ apart, with a position angle of 300°.

ν, the northern one of the two stars, is **Alula borealis,** from **Al Ḳafzah al Ūla,** the First Spring.

ξ is **Alula australis,** the southern one in the combination,— Ulug Beg's **Al Fiḳrah al Ūla.** Ideler's **Awla,** and Burritt's **Acola,** are erroneous.

This, with ζ Herculis and γ Virginis, was the most prominent of the double stars discovered to be binary systems by Sir William Herschel in his investigations for stellar parallax, when (I quote from Professor Young),

to use his own expression, he "went out like Saul to seek his father's asses, and found a kingdom,"— the dominion of gravitation extended to the stars, unlimited by the bounds of the solar system.

ξ was the first binary of which the orbit was computed,— by Savary in 1828,— having a period of sixty-one years, and has already made more than a complete revolution since its discovery. The components are about 2″ apart, with a position angle in 1898 of 162°.7.

The foregoing three pairs, about 20° apart and the members of each pair 1½° or 2° apart, are beautifully grouped with others invisible to the naked eye. They were interesting to the Arabs, as they now are to us, and were collectively designated **Ḳafzah al Ṭhibā'**, the Springs of the Gazelle, each pair marking one spring; the **Gazelle** being imagined from the unformed stars since gathered up as Leo Minor, and the springing of the animal being due to its fear of the greater Lion's tail. Ideler adopted this from Al Tizini and the Cufic globe at Dresden; while the Borgian globe shows a Gazelle and her Young in the same location. Kazwini, however, described this group as extending over the eyes, eyebrows, ears, and muzzle of the figure of our Ursa Major.

According to Williams' the Chinese knew these six stars as **San Tae**, or **Shang Tae**; but Reeves limited this title to ι and κ. Their records mention a comet seen near by in 110 B. C.

ρ, Double, 3.5 and 15.2.

Bayer said that "the Barbarians" called this **Muscida**, a word apparently coined in the Middle Ages for the muzzle of an animal, the feature of the Bear that the star marks.

The components are 7″ apart, at a position angle of 191°.4.

π^1, 5.6, and π^2, 4.8.

Muscida has also been applied to these, although Heis locates them nearer the eyes.

σ^1, 5.2, and σ^2, Binary, 4.8 and 9.5, flushed white and sapphire,

with o, π, ρ, A, d, and some others in the eyes, ears, and muzzle of the Bear, were the asterism that Kazwini knew as **Al Ṭhibā'**, the Gazelle.

With ϕ and others they were the Chinese **San Tsze**, the Three Instructors.

The components of σ^2 are 3″ apart, with a position angle of 250°.

τ, a 5th-magnitude double, with other small stars near by, was the Chinese **Nuy Keae**, the Inner Steps.

χ, 4, red,

placed on the right foot by Burritt as **Al Kaphrah**, is wrong, for Heis puts the letter at a star on the rear of the right hind quarter, and has no letter at