its base star was plainly visible. Still it would seem that some early knowledge of the Cross was the foundation of this idea of a southern Wain. .

Pliny strangely blundered in some of his allusions to Ursa Major, asserting in one its invisibility in Egypt, and, again, describing the visit to Rome of ambassadors from Ceylon,— Milton's "utmost Indian isle Taprobane,"— wrote of them:

Septentriones Vergiliasque apud nos veluti novo coelo mirabantur.

α, β, γ, δ, ϵ, ζ, and η, in this order, as one follows the line of seven stars from the north, form the familiar Dipper, of which Mr. B. F. Taylor writes in his *World on Wheels:*

From that celestial Dipper,— or so I thought,— the dews were poured out gently upon the summer world.

All these stars, unless possibly δ, which is too faint for the Potsdam observers, are approaching our system at various rates of speed. Flammarion has a page, on this so-called star-drift, in his *l'Astronomie Populaire*, concluding that from their proper motions they will form an exaggerated Steamer Chair 50,000 years hence, as they did a magnificent Cross 50,000 years ago.

α, Binary, 2 and 11, yellow.

Dubb, more generally **Dubhe,** the Bear, is the abbreviation of the Arabians' **Ṭhahr al Dubb al Akbar,** the Back of the Greater Bear, Dubb being first found in the *Alfonsine Tables.*

Al Bīrūnī said that it was the Hindu **Kratu,** the Rishi or Sage.

Lockyer asserts that it was **Âk,** the Eye, *i. e.* the prominent one of the constellation, utilized in the alignment of the walls of the temple of Hathor at Denderah, and the orientation point of that structure perhaps before 5000 B. C.; at all events, before the Thigh became circumpolar, about 4000 B. C. This was in the times of the Hor-she-shu, the worshipers of Horus, before the reign of Mena,[1] when the star had a declination of over 64°,— now about 62° 24′. And he finds two other temples also so oriented.

As typifying a goddess of Egypt, it was **Bast Isis** and **Taurt Isis.**

The Chinese know it as **Tien Choo,** Heaven's Pivot, and as **Kow Ching.**

α is 5° from β and 10° from δ, and, being always visible, these stars afford a ready means of accurate eye measurement of others adjacent.

[1] Mena, Menes, or Min was the first historic king of Egypt, his date being variously given from 5867 B. C. to 3892 B. C., Flinders Petrie making it, from astronomical data, 4777 B. C.

The **Keepers** was Arago's name for them; while, as the **Pointers,** they indicate to beginners in astronomy the pole-star, 28¾° distant from *α*, and Regulus, 45° away towards the south; and they have been called the **Two Stars.**

They are circumpolar north of about 32° 45′; and, with Polaris, received much attention in the first almanac[1] that was printed in London, in 1473.

Klein surmised, in 1867, that Dubhe shows remarkable, although irregular, variations in color,— not in light,— from red to yellow, in a period of 54½ days; but this is still in doubt. Its spectrum is Solar, and it is approaching our system at the rate of twelve miles a second.

The 11th-magnitude companion, .97 of a second away, was discovered by Burnham in 1889, and is thought to be in rapid revolution around it.

β, 2.5, greenish white.

Merak, or **Mirak,** is from **Al Marāḳḳ,** the Loin (of the Bear); but Chilmead said **Miraë,** and Scaliger, **Mizar.** It may have been known by the Greeks as **Helike,** one of their names for the whole.

The Chinese called it **Tien Seuen,** an Armillary Sphere, and the Hindus, **Pulaha,** one of the Rishis.

Its spectrum is Sirian, and it is moving toward us about 18½ miles a second.

Close to it, on the west, lies the **Owl Nebula,** N. G. C. 3587, 97 M., discovered by Mechain in 1781, and so called from the two interior circular spaces, each with a central star representing the eye; although one of these stars seems to have disappeared since 1850. The angular diameter of this nebula — 2′ 40″ — indicates a magnitude sufficient to contain thousands of solar systems.

γ, 2.5, topaz yellow.

Phacd and **Phachd, Phad, Phaed, Phecda, Phekda,** and **Phegda,** are all from **Al Faḫidh,** the Thigh, where this star is located in the figure.

Al Bīrūnī said that it was **Pulastya,** one of the Hindu Seven Sages.

The Chinese knew it as **Ke Seuen Ke,** and as **Tien Ke,** another Armillary Sphere.

Its spectrum is similar to that of *β*, and the star is approaching us at the rate of 16.6 miles a second. It is 8° distant from *β*, and 4½° from *δ*.

[1] This is said to have been the second of such works; the first being variously given as published in Vienna by Purbach, or in Buda, or in Poland a few years previously.