standing on the Scorpion and holding the Serpent in his hands; and the *Hyginus* of 1488 has a somewhat similar representation.

Bayer added to his titles for Ophiuchus **Grus** *aut* **Ciconia** *Serpenti cum inscriptione, Elhague, insistens*, which he said was from the Moors, but Ideler asserted was from a drawing of a Crane, or Stork, on a Turkish planisphere instead of the customary figure; and the *Almagest* of 1551 alludes to Ciconia as if it were a well-known title. All this, perhaps, may be traced to ancient India, whose mythology was largely astronomical, and the Adjutant-bird, *Ciconia argala*, prominent in worship as typifying the moon-god Soma, so that its devotees would only be following custom in locating it among the stars.

Although this is not one of the zodiac twelve, Mr. Royal Hill writes:

> Out of the twenty-five days, from the 21st of November to the 16th of December, which the sun spends in passing from *Libra* to *Sagittarius*, only nine are spent in the *Scorpion*, the other sixteen being occupied in passing through *Ophiuchus*.

Thus, according to his idea of the boundaries, this actually is more of a zodiacal constellation than is the Scorpion. But the boundaries are very variously given by uranographers.

Argelander enumerates in it 73 naked-eye stars, and Heis 113.

It was in Ophiuchus that appeared, A. D. 123, the second *nova* of which we have reliable record, the first having been that of Hipparchos, 134 B. C., in Scorpio. At least three other such have appeared in Ophiuchus: one in 1230; another, the so-called **Kepler's Star**, discovered by Kepler's pupil Brunowski, on the 10th of October, 1604, in the eastern foot near θ, which gave Galileo opportunity for his "onslaught upon the Aristotelian axiom of the incorruptibility of the heavens"; and a third, discovered on the 28th of April, 1848, by Hind as of the 4th magnitude, and still visible as of the 11th or 12th.

Citing Firmicus as authority, La Lande wrote:

> Il met le **Renard** au nord du Scorpion avec Ophiuchus;

but I do not find this Fox elsewhere alluded to.

α, 2.2, sapphire.

Ras alhague, or **Rasalague**, is from **Rās al Ḥawwā'**, the Head of the Serpent-charmer, the Moorish **El Hauwe**, the first being its only title with Bayer. The *Alfonsine Tables* of 1521 have **Rasalauge**, and the original has

been variously altered into **Ras Alhagas, Ras Alhagus, Rasalange, Ras al Hangue, Rasalangue, Ras Alaghue, Rasalhagh, Alhague,** and **Alangue.** The occasional **Azalange** has been traced to the Turkish title for the constellation; but "a universal star-name from that nation does not seem probable," and it is more likely that the Turks adopted and altered the Arabic. **Ras al Hayro** also has been seen for the star; and the *Century Cyclopedia* mentions **Hawwa** as rarely used.

Kazwini cited Al Rā'i, the Shepherd, from the early Arabs, which, although now a title for γ Cephei, may have come here from the adjacent Raudah, or Pasture; the near-by α Herculis, 6° to the west, being Kalb al Rā'i, the Shepherd's Dog; while neighboring stars, the present Club of Hercules, marked the Flock.

In China α was **How,** the Duke; and the small surrounding stars, **Hwan Chay,** a title duplicated at those in the hand.

Its spectrum is Sirian, and the star is receding from us about twelve miles a second. It culminates on the 28th of July.

β, 3.3, yellow.

Cebalrai, Celbalrai, and **Cheleb** are from **Kalb al Rā'i.** "The Heart of the Shepherd," which Brown gives as the meaning of his **Celabrai,** is erroneous, doubtless from confusion of the Arabic Ḳalb, Heart, and Kalb, Dog.

The star is 9° southeast of α, and 5° west of Taurus Poniatovii, the Polish Bull, now included in Ophiuchus.

γ, 4.3,

has been called **Muliphen,** but I cannot trace it here, although this title is famous in other parts of the sky.

β and γ were **Tsung Ching** in China.

70 Ophiuchi, east of β and γ in the stars of the Polish Bull, now discarded, is a most interesting binary system, with a period of about eighty-eight years. The component stars are of 4.1 and 6.1 magnitudes, yellow and purple in color, their distance varying from 1″.7 to 6″.7; in 1898 it was 2″.05, and the position angle 280°. Its parallax, 0″.16, indicates a distance of twenty light years, and certain irregularities in motion show that there may be an invisible companion.