

In the Hercules cluster the stars are perhaps very little denser than the streams of nebulous matter in which they are situated, and hence their density is [*i. e.* may be] only something a thousand millionth part of that of the sun.

Bailey finds no variables in it.

In the early days of Arab astronomy a space in the heavens, coinciding with parts of Hercules, Ophiuchus, and Serpens, was the **Raudah**, or Pasture, the Northern Boundary of which, the **Nasak Shāmiyy**, was marked by the stars  $\beta$  and  $\gamma$  Herculis, the Syrians' **Bow of Pearls**, with  $\beta$  and  $\gamma$  Serpentis in continuation of the Pasture line; while  $\delta$ ,  $\alpha$ , and  $\epsilon$  Serpentis, with  $\delta$ ,  $\epsilon$ ,  $\zeta$ , and  $\eta$  Ophiuchi, formed the Southern Boundary, the **Nasak Yamaniyyah**. The group of stars now known as the **Club of Hercules** was the **Sheep within the Pasture**.

$\alpha$ , Double and both irregularly variable, 3.1 to 3.9 and 5 to 7,  
orange red and bluish green.

**Ras Algethi**, also **Ras Algathi**, on Malby's globe **Ras Algothi**, is from **Al Rās al Jāthiyy**, the Kneeler's Head; but it often is **Ras Algoti**, sometimes **Ras Algiatha**, and the *Standard Dictionary* has **Ras Algetta**. It was **Rasacheti** with Chilmead. Riccioli's **Ras Elhhathi** and **Ras Alhathi** probably came from **Ras Alheti** of the first three editions of the *Alfonsine Tables*; but in the 4th edition very incorrectly appeared **Rasaben** for both the star and the constellation, probably taken from the neighboring **Al Rās al Thu'bān** of Draco;—all Arabian translations of the Greek names.

The nomads' title for it was **Al Kalb al Rāi**, the Shepherd's Dog, that our  $\alpha$  shared with the adjoining *lucida* of Ophiuchus,  $5^\circ$  distant.

The Chinese called it **Ti Tso**, the Emperor's Seat; and **Tsin**.

Some small stars in Hercules, near  $\alpha$ , were included with  $\iota$  and  $\kappa$  Ophiuchi in the asterism **Ho**, one of the measures of China.

This is a beautiful pair, but apparently not binary, for there has been no certain change in the last century. The components are  $4''.8$  apart, at a position angle of  $119^\circ$ . Its variability, discovered by Sir William Herschel in 1795, is now described by Chandler as shown by "very irregular oscillations in periods of two to four months." It is one of the most noted of Secchi's 3d type with banded spectra.

$\alpha$  culminates on the 23d of July.

$\beta$ , 2.8, pale yellow.

**Korneforos** and **Kornephoros** are from the *Κορννηφόρος* which we have seen applied to the whole figure. Burritt has **Kornephorus** *vel* **Rutilicus**,

perhaps the diminutive of *rutilus*, "golden red," or "glittering," an adjective applied to Arcturus; but this term is by no means appropriate for  $\beta$ . The *Arabo-Latin Almagest* of 1515 reads *rutillico*, adding *propinque cillitico*, this last unintelligible unless explained by the Basel edition of 1551 as *pene axillam seu scapulam*; so that we may perhaps consider the alternative title to be from the barbarism used to show the star's position on the shoulder of the figure. Indeed, Bayer said of it, *Rutilicum barbari dicunt*. Ideler, however, asserted his belief that it was from *rutellum*, the diminutive of *rutrum*, a sharp instrument of husbandry or war, in Roman times, that Hercules in some early representations, especially on the Arabic globes, is carrying. The *Century Cyclopedia* gives **Rutilico** as a rarely used name.

$\beta$  was the Chinese **Ho Chung**, In the River, while the 4th-magnitude  $\gamma$  was **Ho Keen**, Between the River.

Its spectrum is like that of the sun, and the star is approaching our system at the rate of about 22 miles a second.

$\zeta$ , 3.1 and 6.5, is a remarkable binary with a period of only  $34\frac{1}{2}$  years, the distance between the stars ranging from  $0''.6$  to  $1''.7$ . According to Belopolsky, it is approaching us at the rate of nearly forty-four miles a second,—the greatest velocity of approach or recession so far ascertained.

$\theta$ , 4.1, with adjacent small stars, was **Tien Ke**, Heaven's Record.

$\chi$ , Double, 4.8 and 7, light yellow and pale garnet.

**Marfak**, **Mirfak**, **Marsia**, **Marfic**, and **Marsic** are all found for this star,—as for  $\lambda$  Ophiuchi; but it properly is **Marfik**, from **Al Marfik**, the Elbow; the titles written with the letter *s* probably coming from early confusion with the letter *f*. The Dorians similarly called it *Kύβιτον*, the Elbow.

In China, with two other stars near by, it was **Tsung Tsing**, an Ancestral Star.

Ptolemy and the Arabian astronomers located it on the right elbow, but Smyth on the left; Heis places it in the right hand, as did Bayer; while Burritt has Marsic in the proper place, but letters it  $\chi$ .

$\lambda$ , 4.8, deep yellow.

**Masym**, **Maasym**, **Maasim**, **Mazym**, **Mazim**, and **Masini** are from the Arabic **Misam**, the Wrist, although Ptolemy as well as most of the stellar map-makers located  $\sigma$  on that part of the figure; but Bayer, probably by an oversight, gave the title to  $\lambda$ , not far from the left shoulder, and hence the mistake which still survives. Burritt applied Masym to this lettered