

first star observed through the telescope in the daytime, although Smyth made this claim for Arcturus. Ptolemy lettered it as of the 2d magnitude, so that in his day it may have been inferior in brilliancy to the now very much fainter  $\beta$  Librae.

Antares belongs to Secchi's third type of suns, which Lockyer says are "in the last visible stage of cooling," and nearly extinct as self-luminous bodies; although this is a theory by no means universally accepted.

The companion is  $3''.5$  away, and suspected of revolution around its principal; their present position angle is  $270^\circ$ .

A photograph by Barnard in 1895 first showed the vast and intricate **Cloud Nebula** stretching to a great distance around Antares and the star  $\sigma$ . It was here, two or three degrees north of Antares, that was discovered, on the 9th of June, Coddington's comet,  $\epsilon$  of 1898, the third comet made known by the camera.

$\beta$ , Triple, 2, 10, and 4, pale white, —, and lilac.

**Graffias** generally is said to be of unknown derivation; but since *Γραψαῖος* signifies "Crab," it may be that here lies the origin of the title, for it is well known that the ideas and words for crab and scorpion were almost interchangeable in early days, from the belief that the latter creature was generated from the former.<sup>1</sup> It was thought by Grotius to be a "Barbarian" designation for the Claws of the double constellation; and Bayer said the same, although he used the word for  $\xi$  Scorpii in the modern northern claw. In Burritt's *Atlas* of 1835 it appears for  $\xi$  of the northern Scale, the ancient northern Claw; but in the edition of 1856 he applied it to our  $\beta$  Scorpii, and in both editions he has a second  $\beta$  at the base of the tail, west of  $\epsilon$ . The *Century Dictionary* prints it **Grassias**, probably from erroneously reading the early type for the letter *f*.  $\beta$  is near the junction of the left claw with the body, or in the arch of the Kite bow,  $8^\circ$  or  $9^\circ$  northwest of Antares. In some modern lists it is **Acrab**,—Riccioli's **Aakrab schemali**.

It was included in the 15th *manzil*, **Iklil al Jabhah**, the Crown of the Forehead, just north of which feature it lies, taking in with this, however, the other stars to  $\delta$  and  $\pi$ ; some authorities occasionally adding  $\nu$  and  $\rho$ . This was one of the fortunate stations, and from this *manzil* title comes the occasional **Ielil**. The Hindus knew the group as their 15th *nakshatra*, **Anurādhā**, Propitious or Successful,—Mitra, the Friend, one of the Adityas, being the presiding divinity; and they figured it as a **Row** or **Ridge**, which

<sup>1</sup> This was held even by the learned Saints Augustine and Basil of the 4th century, and confidently expressed by Saint Isidore in his *Origines et Etymologiae*.

the line of component stars well indicates. The corresponding *sieu*, **Fang**, a Room or House, anciently **Fong**, consisted of  $\beta$  with  $\delta$ ,  $\pi$ , and  $\rho$ , although Professor Whitney thought it limited to the determinant  $\pi$ , the faintest of the group and farthest to the south. It shared with Antares the title **Ta Who**, and was the central one of the seven lunar asterisms making up the Azure Dragon, **Tsing Lung**. But individually  $\beta$  seems to have been known as **Tien Sze**, the Four-horse Chariot of Heaven, and was worshiped by all horsemen. It probably also was **Fu Kwang**, the Basket with Handles, and highly regarded as presiding over the rearing of silkworms, and as indicating the commencement of the season of that great industry of China.

Timochares saw  $\beta$  occulted by the moon in the year 295 B. C.; and Hind repeats a statement by Ptolemy, from Chaldaean records, that the planet Mars almost occulted it on the 17th of January, 272 B. C.; Smyth, however, substituted  $\beta$  Librae in this phenomenon and 271 B. C. as the date.

The two largest components are 14" apart, at a position angle of  $25^\circ$ ; the third being  $0''.9$  from the first, with a position angle of  $89^\circ$ .

Half-way from  $\beta$  to Antares lies the fine cluster N. G. C. 6093, 80 M., on the western edge of a starless opening  $4^\circ$  broad. It was this that called forth Sir William Herschel's exclamation:

Hier ist wahrhaftig ein Loch im Himmel!

although powerful telescopes reveal in it many minute stars. His son afterwards described forty-nine such spots in various parts of the sky. This cluster, that Sir William thought might perhaps have been formed by stars drawn from that vacancy, "was lit up in 1860 for a short time by the outburst of a temporary star."

$\gamma$ , 3.25, red,

lies, in Bayer's map, on the tip of the southern claw, and is the same star as Flamsteed's 20 Librae; but Smyth strangely alluded to it as being at the end of the sting and nebulous; and Burritt placed Bayer's letter at the object mentioned by Smyth. Indeed for at least three hundred years there has been disagreement among astronomers as to this star; for although Argelander and Heis follow Bayer, Gould writes:

Since it appears out of the question that it should ever again be regarded as belonging to Scorpious, I have ventured to designate it by the letter  $\sigma$  [Librae].

Bayer cited for it **Brachium**, the Arm, as from Vergil, but this was erroneous in so far as being a title for this star, the original *brachia* in the *Georgics*