

solstice, which was formerly here and gave name to the tropic, is now about 33° to the westward, near η Geminorum.

The celebrated Halley comet first appeared here in 1531; and in June, 1895, all the planets, except Neptune, were in this quarter of the heavens, an unusual and most interesting occurrence. Argelander catalogues 47 stars in the constellation in addition to Praesaepe; and Heis, 91.

α , Double, 4.4 and 11, white and red.

Acubens, from the *Chelae quas Acubenae Chaldaei vocant* of the *Alfonsine Tables*, is not Chaldaean, but from the Arabic **Al Zubanāh**, the Claws, on the southern one of which this star lies, near the head of Hydra. Bayer repeated this in his **Acubene** and **Azubene**, adding Pliny's names for it—**Acetabula**, the Arm Sockets of a crab, and **Cirros**,—properly **Cirrus**,—the Arms themselves, equivalent to Ovid's **Flagella**, which Bayer wrongly translated Scourge; others similarly saying **Branchiae** and **Ungulae**. Bayer also cited the "Barbarians'" **Grivenescos**, unintelligible unless it be their form of *Γραψαῖος*, a Crab. **Sartan** and **Sertan** are from the Arabic word for the whole figure. The star ι , marking the other claw, shares in many of these titles.

Some assign **Al Hamarein** to α ,—an undoubted error, as **Al Hīmārain** was the common Arabian term for the Aselli, γ and δ , that the Arabic signifies.

Acubens culminates on the 18th of March. The companion is $11^{\circ}.4$ distant, at a position angle of $325^{\circ}.5$.

β , a 4th-magnitude, is **Al Tarf**, the End, *i. e.* of the southern foot on which it lies.

Sunt in signo Cancri duae stellae parvae, aselli appellati.

Pliny's *Historia Naturalis*.

γ , 4.6, and δ , 4.3, straw color.

Asellus borealis and **Asellus australis**, the Northern and the Southern Ass Colt, were the *Ὀνοι*, or Asses, of Ptolemy and the Greeks; the **Aselli**, or **Asini**, of the Latins, distinguished by their position as here given, even to the present day, and now popularly known as the **Donkeys**. The Basel *Latin Almagest* of 1551 says **Asinus** for γ only, but the *Alfonsine Tables* and the *Almagest* of 1515 have **Duo Asini**; and the Arabians similarly knew them as **Al Hīmārain**, the Two Asses. Bailey, in his *Mystic* of 1858, calls them the **Aselline Starlets**.

Manilius is supposed to allude to these outstretched stars as the **Jugulae**, taken indirectly from *Jugum*, a Yoke, which became *Jugulum*, the Collar-

bone,—in the plural *Jugula* and *Jugulae*; but Ideler asserted that this originated from an erroneous statement of Firmicus, and that reference was really made by the poet to the well-known Belt of Orion.

Riccioli's strange title, **Elnatret**, doubtless was from that of the lunar mansion **Al Nathrah**, which the Aselli and Praesaepe constituted.

In astrology they were portents of violent death to such as came under their influence; while to the weather-wise their dimness was an infallible precursor of rain, on which Pliny thus enlarges:

If fog conceals the Asellus to the northeast high winds from the south may be expected, but if the southern star is concealed the wind will be from the northeast.

Our modern Weather Bureau would probably tell us that if one of these stars were thus concealed, the other also would be. Pliny mentioned them with Praesaepe as forming a constellation by themselves; but he was given to multiplying the stellar groups.

Inconspicuous though it be, the Babylonians used δ to mark their 13th ecliptic constellation **Arkū-sha-nangaru-sha-shūtu**, the Southeast Star in the Crab; and Brown says that the Aselli, with η , θ , and Praesaepe, were the Akkadian **Gu-shir-kes-da**, the Yoke of the Enclosure. They also marked the junction of the *nakshatras* **Pushya** and **Āqleshā**.

The following passage from Hind's *Solar System* in regard to δ will be found interesting:

The most ancient observation of Jupiter¹ which we are acquainted with is that reported by Ptolemy in Book X, chap. iii, of the *Almagest*, and considered by him free from all doubt. It is dated in the 83d year after the death of Alexander the Great, on the 18th of the Egyptian month *Epiphi*, in the morning, when the planet eclipsed the star now known as δ Cancrī. This observation was made on September 3, B. C. 240, about 18^h on the meridian of Alexandria.

ε

was applied by Bayer to the coarse extended cluster, N. G. C. 2632, 44 M., on the head of the Crab, composed of about 150 stars of magnitudes from $6\frac{1}{2}$ to 10, with two noticeable triangles among them.

With us it is the well-known **Beehive**, but its history as such I have not been able to learn, although it undoubtedly is a recent designation, for nowhere is it *Apiarium*.

Scientifically it was the *Νεφέλιον*, or Little Cloud, of Hipparchos; the *Ἀχλύς*, or Little Mist, of Aratos; the *Νεφελοειδής*, Cloudy One, Σιστροφῆ, Whirling Cloud, and **Nubilum**, literally a Cloudy Sky, of Bayer;

¹ This planet was known to the Greeks as *Ζεύς*, and as *Φαίδων*, the Shining One.

but the *Almagests* and astronomers generally of the 16th and 17th centuries referred to it as the *Nebula*, and *Nebulosa*, in *pectore Cancri*, for before the invention of the telescope this was the only universally recognized nebula, its components not being separately distinguishable by ordinary vision. But it seems to have been strangely regarded as three nebulous objects. Galileo, of course, was the first to resolve it, and wrote in the *Nuncius Sidereus* :¹

The nebula called Praesepe, which is not one star, only, but a mass of more than forty small stars. I have noticed thirty stars, besides the Aselli.

Popularly it also is the **Manger**, or **Crib**, the $\Phi\acute{\alpha}\tau\eta$ of Aratos and Eratosthenes ; the $\Phi\acute{\alpha}\tau\eta\varsigma$ of Ptolemy ; and with the Latins, **Praesaepes**, **Praesaepes**, **Praesaepis**, **Praesaepia**, **Praesaepium**, the Alfonsine **Presepe** and Bayer's **Pesebre**,—also the modern Spanish,—flanked by the Aselli, for whose accommodation it perhaps was invented. Bayer cited for it **Melleff**, which Chilmead followed with **Mellef**, and Riccioli with **Meeleph** ; these from the Arabians' **Al Ma'laf**, the Stall ; and this, in turn, derived from the Greek astronomy, for their indigenous Ma'laf was in Crater. Schickard had this as **Mallephon**.

Brown includes ϵ with γ , δ , η , and θ in the Persian lunar station **Avra-k**, the Cloud, and the Coptic **Ermelia**, Nurturing.

Tyrtæus Theophrastus, the first botanist-author, about 300 B. C., and Aratos, described its dimness and disappearance in the progressive condensation of the atmosphere as a sure token of approaching rain ; Pliny said,

If Praesaepes is not visible in a clear sky it is a presage of a violent storm ;

and Aratos in the $\Delta\iota\omicron\sigma\eta\mu\epsilon\iota\alpha$ (the *Prognostica*):

A murky Manger with both stars
Shining unaltered is a sign of rain.
If while the northern Ass is dimmed
By vaporous shroud, he of the south gleam radiant,
Expect a south wind: the vaporous shroud and radiance
Exchanging stars harbinger Boreas.

Weigel used it in the 17th century, in his set of heraldic signs, as the **Manger**, a fancied coat of arms for the farmers.

In astrology, like all clusters, it threatened mischief and blindness.

In China it was known by the unsavory title **Tseih She Ke**, Exhalation of Piled-up Corpses ; and within 1° of it Mercury was observed from that

¹ This *Nuncius Sidereus*, published at Venice by Galileo in 1610, first gave to the world the results of his telescopic observations.

country, on the 9th of June, A. D. 118, one of the early records of that planet.

ζ, Ternary, 5.6, 6.3, and 6, yellow, orange, yellowish,—changing.

This lies on the rear edge of the Crab's shell, and is known as **Tegmine**, In the Covering; but, if the word be allowable at all, it should be **Tegmen**, as Avienus is supposed to have had it. Ideler, however, said that Avienus was referring to the covering shell of the marine object, and not to the stellar.

This is a system of great interest to astronomers from the singular changes in color, the probable existence of a fourth and invisible component, and for the short period of orbital revolution—sixty years—of the two closer stars. The maximum of interval between these is but 1'', the minimum 0''.2; yet they never close up as one star. The third member is 5'' away, and its orbital period must be at least 500 years.

ζ and θ, according to Peters' investigations, probably are the objects announced by Watson as two intra-Mercurial planets, discovered (?) during the total eclipse of the sun on the 29th of July, 1878.

λ, of the 6th magnitude, with adjacent stars, was in China **Kwan Wei**, the Bright Fire.

μ, a 5½-magnitude, with χ Geminorum, was **Tsih Tsin**, a Heap of Fuel.

ξ, another 5½-magnitude, with λ Leonis, formed the seventh *manzil* **Al Tarf**, the End, or, as some translate it, the Glance, *i. e.* of the Lion's Eye, the ancient Asad, which occupied so large a portion of the sky in this neighborhood. They also were the Persian **Nahn**, the Nose, and the Coptic **Piantos**, the Eye, both lunar asterisms.

ξ, with κ and stars in Leo, was the Chinese **Tsu Ke**, one of the flags of that country.



Boötes hath unleash'd his fiery hounds.

Owen Meredith's *Clytemnestra*.

Canes Venatici, the Hunting Dogs,

are the French **Chiens du Chasse**, or **Levriers**; the German **Jagdhunde**, and the Italian **Levrieri**, lying between Boötes and Ursa Major. Ptolemy entered their stars among the ἀμόρφωτοι of the latter constellation, and the