

back through the ages to Egypt and Phoenicia. And the Scotch have a story that on New Year's eve the **Candlemas Bull** is seen rising in the twilight and sailing across the sky,—a matter-of-fact statement, after all.

The Anglo-Saxon *Manual of Astronomy* four centuries ago gave it as **Fearr**.

Astrologers made this sign the lord of man's neck, throat, and shoulders; Shakespeare having an amusing passage in *Twelfth Night*, in the dialogue between Sirs Toby Belch and Andrew Aguecheek, when both blunder as to this character of Taurus. And it was considered under the guardianship of Venus, sharing this distinction with the body of Scorpio,—some said with Libra,—whence it was known as **Veneris Sidus, Domus Veneris nocturna**, and **Gaudium Veneris**: an idea also perhaps influenced by its containing the *Πελειάδες*, the Doves, the favorite birds of that goddess. It ruled over Ireland, Greater Poland, part of Russia, Holland, Persia, Asia Minor, the Archipelago, Mantua, and Leipzig in modern astrology, as it did over Arabia, Asia, and Scythia in ancient; Ampelius assigned to it the care of the much dreaded west-northwest wind, Pliny's Argestes. White and lemon were the colors allotted to it. On the whole, it was an unfortunate constellation, although a manuscript almanac of 1386 had "whoso is born in yat syne schal have grace in bestis"; and thunder, when the sun was here, "brought a plentiful supply of victuals."

The extent and density of the stars in Taurus are shown by the fact that, according to Argelander, it contains 121 visible to the naked eye; 188, according to Heis.

. . . go forth at night,
And talk with Aldebaran, where he flames
In the cold forehead of the wintry sky.

Mrs. Sigourney's *The Stars*.

α , 1.2, pale rose.

Aldebaran is from **Al Dabarān**, the Follower, *i. e.* of the Pleiades, or, as Professor Whitney suggested, because it marked the 2d *manzil* that followed the first.

The name, now monopolized by this star, originally was given to the entire group of the Hyades and the lunar mansion which, as **Nā'ir al Dabarān**, the Bright One of the Follower, our star marked; yet there was diversity of opinion as to this, for the first edition of the *Alfonsine Tables* applied it solely to α , while that of 1483, and Al Sufi, did not recognize α as included in the title. Riccioli usually wrote it **Aldebara**, occasionally

Aldebaram, adopted in the French edition of Flamsteed's *Atlas* of 1776: Spenser, in the *Faerie Queen* wrote **Aldeboran**, which occasionally still appears; Chaucer, in the *Hous of Fame*, and even the modern La Lande, had **Aldeberan**; Schickard gave the word as **Addebiris** and **Debiron**; and Costard, in his *History of Astronomy*, cited **Aldebaron**.

Al Birūni quoted, as titles indigenous to Arabia, **Al Fanik**, the Stallion Camel; **Al Fatik**, the Fat Camel; and **Al Muḥdij**, the Female Camel.—the smaller adjacent stars of the Hyades being the **Little Camels**; and it was **Tāli al Najm** and **Hādī al Najm**, equivalents of the **Stella Dominatrix** of classical ages, as if driving the Pleiades before it. Indeed in the last century Niebuhr heard the synonymous **Sāik al Thurayya** on the Arabian shores of the Persian Gulf. A later name was **'Ain al Thaur**,—which Western astronomers corrupted to **Atin** and **Hain Altor**,—identical with **Ὠψα Βούς**, **Oculus Tauri**, and the early English **Bull's Eye**, even now a common title. Riccioli gave this more definitely as **Oculus australis**, and Aben Ezra as the **Left Eye**.

The *Alfonsine Tables*, however, said **Cor Tauri**, the Bull's Heart, which is far out of the way; and it has borne the constellation's Arabic title, changed to **El Taur**.

Aldebaran was the divine star in the worship of the tribe Misām, who thought that it brought rain, and that its heliacal rising unattended by showers portended a barren year.

The Hindu **Robini**, a Red Deer, used also for the *nakshatra* in Scorpio marked by Antares, was unquestionably from the star's ruddy hue, Leonard Digges writing, in his *Prognostication* for 1555, that it is "ever a meate rodde [red]"; and the *Alfonsine Tables* had *quae trahit ad aerem clarum valde — est ut cerea*.

Palilicium,¹ in various orthography, but correctly **Parilicium**, used for the whole group of the Hyades, descended as a special designation for Aldebaran through all the catalogues to Flamsteed's, where it is exclusively used. Columella called it **Sucula** as chief of the peasants' *Suculae*. Ptolemy's **Λαμπαδίας**, Torch-bearer, was **Λαμπαύρας** in Proclus' *Paraphrase*.

The 1603 and 1720 editions of Bayer's *Uranometria* distinctly terminate their lists of Aldebaran's titles with the words **Subruffa** and **Aben Ezra**; but Bayer's star-names are often by no means clear, and here incorrect. The latter of these is merely the name of the famous Jewish commentator to whom he often refers; and the former a designation of the light red color (*Subrufa*)

¹ This word is from Palilia, or Parilia, the feast of Pales,—the Latin shepherds' divinity and their feminine form of Pan,—which marked the birthday of Rome the 21st of April, when this star vanished in the twilight.

of the star which we all recognize. Some poet has written "red Aldebaran¹ burns"; and William Roscoe Thayer, in his *Halid*:

I saw on a minaret's tip
Aldébaran¹ like a ruby aflame, then leisurely slip
Into the black horizon's bowl.

In all astrology it has been thought eminently fortunate, portending riches and honor; and was one of the four Royal Stars, or Guardians of the Sky, of Persia, 5000 years ago, when it marked the vernal equinox. As such Flammarion quoted its title **Taschter**, which Lenormant said signified the Creator Spirit that caused rain and deluge; but a different conception of these Guardian Stars among the Hindus is noted under Argo, and still another is given by Edkins, who makes Aldebaran **Sataves**, the leader of the western stars.

Flammarion has assigned to it the Hebrew **Āleph** that we have seen for Taurus, rendering it **God's Eye**; and Aben Ezra identified it with the biblical **Kimāh**, probably in connection with all the Hyades and as being directly opposed on the sphere to **K'ail** which he claimed for Antares.

Sharing everywhere in the prominence given to its constellation, this was especially the case in Babylonian astronomy, where it marked the 5th ecliptic asterism **Pidnu-sha-Shame**, the Furrow of Heaven, perhaps representing the whole zodiac, and analogous to the Hebrew and Arabic Padan and Fadan, the Furrow. So that, before the Ram had taken the Bull's place as Leader of the Signs, Aldebaran was **Ku**, **I-ku**, or **I-ku-u**, the Leading Star of Stars. Still more anciently it was the Akkadian **Gis-da**, also rendered the "Furrow of Heaven"; and **Dil-gan**, the Messenger of Light, — this, as we have seen, being applied to Hamal, Capella, Wega, and perhaps to other bright stars, as their positions changed with respect to the equinox. In the same way the Syriac word **Iyūthā**, which we have seen for the star Capella, seems to have been used also for Aldebaran.

As marking the lunar station it was the Persian **Paha** and the Khoras-mian-Sogdian **Baharu**, signifying the Follower.

Riccioli cited, from Coptic Egypt, Πῶπτων, *Statio Hori*; and Renouf identified Aldebaran with the indigenous Nile figure **Sarit**.

An old Bohemian title is **Hrusa**.

The Hervey Islanders associated it, as **Aumea**, with Sirius in their legend of the Pleiades.

Al Birūnī quoted strange Arabic titles for the comparatively vacant space

¹ Thus the pronunciation of the word seems to be in doubt, although the best usage follows the original Arabic in Aldebaran.

westward towards the Pleiades,— **Al Daikā**, Growing Small, *i. e.* from its rapid setting, and **Kalb al Dabarān**, the Dog of Aldebaran,—asserting that it was considered a place of evil omen. But there seems to have been dispute as to its location, for he added that those authors were wrong who marked this Dog by the 21st and 22d stars of Taurus,— κ and ν .

Aldebaran is but slightly south of the ecliptic, and, lying in the moon's path, is frequently occulted, thus often showing the optical illusion of projection. As one of the lunar stars it is much used in navigation. It is the only star in the *Harvard Photometry* which is exactly of the 1st magnitude, although by the Estimates of that catalogue it is 1.2. It thus has three times the brilliancy of Polaris.

The parallax is given by Elkin as $0''.101$, showing a distance from us of twenty-eight light years; or, if the interval between the earth and the sun, the astronomers' unit of stellar measurement, be considered as one inch, that between the sun and this star would be twenty-seven miles. It is receding from our system at the rate of thirty miles a second, and, next to ζ Herculis, seems to have the greatest velocity in the line of sight of any of the bright stars yet determined. The spectrum is Solar, and a beautiful example of the type.

Aldebaran comes to the meridian on the 10th of January. It has a 10th-magnitude companion, $109''$ away, which has long been known, but Burnham recently divided this into 11 and 13.5, $1''.8$ apart, at a position angle of 279° ; and, in 1888, discovered a 14th-magnitude companion $31''.4$ distant, at a position angle of 109° .

The **Taurids** of the 20th of November radiate from a point north of, and preceding, this star. These meteors "are slow, and fireballs occasionally appear among them."

★

The Hyades marked by the sailor.

Potter's translation of Euripides' *Ion*.

As when the seaman sees the Hyades
Gather an army of Cimmerian clouds,
Auster and Aquilon with winged steeds.

Christopher Marlowe's *History of Doctor Faustus*.

The Hyades,

α , θ^1 , θ^2 , γ , δ , and ϵ Tauri, 10° southeast of the Pleiades,

Whitening all the Bull's broad forehead,

form one of the most beautiful objects in the sky, and have been famous for ages, especially with the classical authors.