

CHAPITRE 4 - Camels Ethnology : Dromedary, Camel (*Camelus dromedarius* ; *Camelus bactrianus*) (2n= 37 pairs=74 chromosomes)

1. ORIGIN AND EVOLUTION

The dromedary (or a very close ancestor) is thought to have entered Africa through the Sinai into the Horn of Africa, then into North Africa as far as the Atlantic, **2 or 3 million** years ago. However, it is believed to have disappeared from the African continent, only to be reintroduced much later through domestication. It is thought that the first use of the dromedary for pulling the plow dates back to the Roman period in North Africa (Anonymous 1: Cirad 1999; Fay, 1997).

Some authors report that camel dung was found at the "predynastic Napatian site of Qsar Ibrim" at the beginning of the 1st millennium BCE, but the species only became widespread in the Nile Valley a thousand years later.

Dromedaries dated from **1300 to 1600 CE** were found at "Laga Oda" in the Horn of Africa. The genetics of the species in sub-Saharan Africa remains poorly studied except in Kenya.

For ***Camelus bactrianus***, molecular genetic analyses based on complete mitochondrial genome sequences have indicated that the subspeciation of the two camel lineages began in the early Pleistocene, about **700 thousand years** ago.

The dromedary is raised by humans in an environment with scarce resources and limited possibilities for agricultural development. Thus, among the **210 species** of **ungulates**, only **16** have been **domesticated**, and only one family (the camelids) has proven ideally suited to farming conditions in desert environments. The dromedary (with 1 hump) belongs, along with the Bactrian camel (with 2 humps), to the genus *Camelus* and to the camelid family. The genus *Camelus* occupies the desert regions of the Old World, while the genus *Lama* is specific to the high-altitude deserts of the New World, where it has

given rise to 4 distinct species: the llama in the strict sense (*Lama glama*), the guanaco (*Lama guanacoe*), the alpaca (*Lama pacos*), and the vicuña (*Lama vicugna*), the only non-domesticated camelid.

DOMESTICATION

According to the archaeological dating of the first known domestication of the camel (5,000 to 6,000 years ago).

According to Faye (1997), it was domesticated around -3000 to -2600 in Iran and Turkmenistan.

•Hybrid Camel

The cross between a camel and a dromedary gives birth to the so-called "Turkoman" camel, obtained in Asian countries where camels and dromedaries coexist. The two species have the same number of chromosomes (**35 pairs**). The hybrid has a single hump, but slightly subdivided. It is a robust animal, used for carrying loads and for draft farming. The **female F1** hybrid is **always fertile**, but the **male is sterile** or scarcely fertile. The hybrid between a dromedary and a llama is called a cama.

• CLASSIFICATIONS

classification of camelids in the animal world is reported in the table number 1 . These are vertebrate mammal animals and even-toed ungulates,

Tableau1 : Classification of camelin (Linnaeus, 1758 ; Nick & Romero, 2023)

| | |
|--|---|
| Kingdom | Animalia |
| Phylum | Vertebra |
| Class | Mammalia |
| Order | Artiodactila |
| Family | Camelidae |
| Genus | <ul style="list-style-type: none"> • <i>Camelus</i> • <i>Lama</i> • <i>Vacugna</i> |
| Species | <ul style="list-style-type: none"> • <i>Camelus bactrianus</i>, <i>Camelus dromedarius</i> • <i>Lama glama</i> • <i>Vicugna pacos</i>, <i>Vicugna vicugna</i>. |
| <p><u>Physiological parameters</u></p> <p>RT: 34⁰C-42⁰C depending on ambient temperature / Heart Rate : 45.6 beats / min (30–57). Cycle with seasonal aspect; Ovulation induced; RR: 6-9 at rest. Gestation: 12.5-13 months (Fay, 2011; cirad.fr)</p> | |

In the figure number 1 photos of some species of this family (Cited by : Bella and Assal, 2017)



Camelus dromedarius



Camelus bactrianus



Lama pacos



Lama glama



Lama guanacoe



Lama vicugna

Figure 1 : Different species of camelids family (Faye, 1997 cited by Bella and Assal, 2017).

2. GENERALE CAMELIN ETHNOLOGIE

2.1. VARIATIONS OF THE PLASTIC

2.1.1. Variations of shape or format

New World species (**Lama**) weigh between approximately **35 - 100 kg**, while Old World species (**Dromedaries and camels**) have a higher weight, ranging from about **450 to 650 kg**. Height (HW) varies according to the breed, it can reach: **2 m** for the **Targui, Reguibi, and Somali breeds**, **1.85 m** for the Sahrawi breed, while it is **1.80-1.83 m** for the Ouled Sidi Cheikh breed. For the Châambi breed, it is **1.65 m**. Three types of build are distinguished:

- **Eumetric**: an average build. HW: **1.80-1.85 m** & an average weight between **450 - 650 kg**.

Example: Ouled Sidi Cheikh breed.

- **Hypermetric**: a breed with a weight above the average values of the species (heavy breed).

Example: Almajahim dromedary, Targui, and Somali breeds.

- **Ellipometric**: a breed with a weight below the average values of the species (light breed).

Example: Steppe breed, Ait Khebbach breed, Châambi breed.

2.1.2. Variations in Body Proportions

These variations stem from the harmonies that exist between length elements and width (thickness) elements. There can be three types of animals:

- **Medioline** type: normal animals where the length elements are in harmony with the width elements. Example: **Arbi** (Adjmani), **Gandiol** (Senegal)

- **Longiline** type: animals with dominant length elements. Example: The **Mehari** dromedary (see below), From the **Sahel** (West Africa)
- **Breviline** type: animals with dominant width elements. Example: The **Aftout** breed (see below)

2.1.3. Variations of the Phaneroptic

It includes variations of the skin and its appendages (wool, hooves, and nails). Among camel herders, the color of the dromedary's hair is considered a basic criterion for the classification and identification of fundamentals concerning the animal's physiology and productivity. These are extrinsic factors encompassing factors that change over time under the influence of the environment, and constant factors that are hereditarily transmitted to the offspring.

The **most dominant color** among the camel population of the Northern Sahara is **red**, or other mixed colors **tend toward red**. The work of the latter, along with that of Arif and Reggab, 1995 cited by Dehane, 2010, is summarized in table (01). Table (02) illustrates the colors of camel breeds in the Arab world.

Table 02: The different colors of dromedaries in the Northern Sahara (cited by Dehane, 2010)

| Colors of the coat | In Algeria | |
|--------------------|---|---|
| | Bouregba and Lounis (1993) | Arif and Reggab (1995) |
| Hadjla | The limbs tend towards white. The rest of the body tends towards red. | The body is red, and the limbs tend toward white. |
| Zarka | Red with black-tipped hairs. | |
| Chahba (Chaala) | Dark yellow. | Between the red and the yellow. |
| Zaghma (Samernar) | The color resembles that of flames. | White and yellow. |
| Dakhna | Of dark color but not black. | |
| Chakra | Mix between yellow and red. | |
| Zarkaf | It is an alternation of white with other colors and white eyes. | |
| Harcha | Yellow color with wavy hair. | |
| Aatra | Bright Yellow | |
| Ranbi | Take color of h a r s e (wild rabbits) with hooves soles regs. | |
| Khouar | Hair wavy or zarga or chahba. | Chahba tend tend towards the gray color. |
| El baidi | | Dark red color. |
| El hmami | | Between white color and black color. |

Tableau 03 : Different colors of dromadaries in the arabs world

| Colors of the coat | In Arab world | |
|--------------------|--|---|
| | Adnan and Zohir (1990), Iraq | Chariha (1990), Libya |
| Chaala | Color is between white and red. | Mix between brown and red. |
| Zarka | Dark blue that tends toward black. | Gray color (a mix between white and black). |
| Hadjla | Light red with a very noticeable white color on the limbs. | |
| Saouda | Dark black except for the limbs. | |
| Zaghba | Light brown, the hind limbs white and with the lower parts of the forelimbs white. | |
| Safra | Bronzed yellow takes on the color of desert sand. | Takes the yellow color and the color concentration. It is heterogeneous over the entire body. |
| Hamra | Color reddish brown . | The red she-camels are the most sought after. |
| Baida | Color extra white. | |
| Chkeha | | Mix between red and white, and sometimes the limbs take on the white color. |
| Ouadhha-magatir | | Color extra white. |
| Malha-medjahim | | Color black a littel dark. |

2.1.5. Variations of the energetics (aptitudes)

Camelids are characterized by their suitability for: meat, dairy, work, riding, followed by other uses such as hair and leather.

Table 04: Classification of camel breeds according to their use (Ouled Heddar B, 2006 cited by Dehane, 2010)

| Catégories | Chariha (1990) | Ouarda et al., (1990) |
|--------------|--|---|
| Dairy breeds | <p>Large and slanted belly. Large body (height from 1.50 to 1.70 m). Long neck with a long head. Regular neck with a very noticeable distance. The length of the limbs is average, with large hooves. Hump inclined to the left and a rounded top. Lower lip bent downward in most cases. Voluminous and slanted udders. They are characterized by:</p> | <p>Breed characterized by:</p> <ul style="list-style-type: none"> • Its medium size. • Very developed udders. • Regular nipples. • Milk production exceeds 2005 kg/year under natural conditions. |
| | <ul style="list-style-type: none"> • A depth of 13.5 to 16 cm. • A width of 17 to 20 cm. • A length of dry rear teats of 2 to 3 cm. • A length of dry front teats of 3 to 3.5 cm. • A length of milk-filled teats ranging from 5 to 6 cm. • The distance between the rear teats ranging from 15 to 18 cm. • The circumference of milk-filled rear teats ranges from 7 to 18 cm. • The circumference of milk-filled front teats ranges from 8 to 9 cm. <p>9- The average production is on the order of 6 to 12 l/day.</p> | |

Meat and Racing breeds

| | | |
|---------------|---|---|
| Meat breeds | <p>1- Well-muscled rounded body (abdominal circumference approximately between 120 to 140 cm). 2- Regular ribs. And the distance between them is very small. 3- The abdominal circumference at the hump varies between 250 to 270 cm. 4- Small and broad neck, with a wide head. 5- Limbs and hooves are of medium length. 6- The hump takes the shape of a pyramid and is well developed. 7- The front limbs are muscular. 8- Milk production varies between 1.5 to 3 liters/day. 9- The udders are small. 10- The purity rate varies between 50 to 56 %.</p> | <p>-A large body. - A big head with a long neck. - Broad and strong bone structure. - Rapid growth. - A large hump and very developed forelimbs, with a very high capacity for fattening if forage is available.</p> |
| Mixed breeds | | <p>-The average milk production. -Growth is rapid. -Size is average. -The majority of working dromedaries can be included in this category.</p> |
| Racing breeds | | <ul style="list-style-type: none"> •A long body, •Long limbs •A thin neck with a small head, small ears, deep chest, fine bones. •The hind limbs are straight and the distance between them is not large. •The front limbs are straight but the distance between the two hocks is very significant, with a tail oriented upwards. •The round-shaped hoof is of medium size. |

Working breeds camels

| | | |
|----------------|--|--|
| Working breeds | <ul style="list-style-type: none"> •The head and neck are very large. •The body is large, strong, and heavy with broad shoulders. •The limbs are developed and wide. •The hump is very high. •The hoof is large and wide. •The trunk is full and voluminous. •Its behavior is calm (it is not aggressive). •Its carrying capacity ranges between 250 to 300 kg for long distances. <p>Used for transport, plowing, threshing grain, and water hauling.</p> | |
| Saddled breeds | <ul style="list-style-type: none"> •Small triangular-shaped body, upright at the level of the pelvis with a hump circumference ranging between 110 to 130 cm. •The distance between the shoulders and the hump is greater than that between the hump and the pelvis. <p>Long and thin limbs (170 to 190 cm.</p> <ul style="list-style-type: none"> • The hooves of the hind limbs are long or medium, whereas those of the forelimbs are small. • Large eyes with long eyebrows. • The head has pointed and erect ears. • The muscles of the forelimbs and the shoulders are very developed. • Udder too small, and milk production is only sufficient for the calves. • Pointed hump and not wide. <p>Fast and can cover a distance of 90 to 120 km/day</p> | <ul style="list-style-type: none"> • Small breeds used as saddle and racing animals. • A uniform body, with the ability to move quickly. |

3. BREEDS OF CAMELS

The notion of 'Race' depends on criteria closely guided by humans according to the objectives set for the animal. Breed names are assigned to groups of animals from a particular region, which may vary depending on the countries and ethnicities sharing the area. A synthesis of bibliographic data allows for an inventory of 51 main dromedary breeds and nearly a hundred related breeds, for which the exhaustive list is attached.

3.1. CAMELID BREEDS IN THE WORLD

Table 5 shows the different camelid breeds existing in the world.

Table 05: The main dromedary breeds in the World (Faye, 1997).

| Localisation | Principals (Main) breeds | Assimilated breeds |
|-----------------------------|--------------------------|--|
| • Corne de l'Afrique | | |
| Kenya | 1. Turkana | |
| | 2. Gabra | Rendile |
| Somalia, Kenya | 3. Benair | Bimal, Fili, Garre, Helai, Sidfar, Gherra |
| Somalia | 4. Mudugh | Eidime, Eydimma, Galjoal, GHELIMedu, Mijertein, Nogal, Galgial, Golgial |
| | 5. Guban | |
| | 6. Hoor | Hor |
| Somalia, Ethiopie | 7. Somali | Elai, Ogaden |
| Ethiopia, Djibouti | 8. Dankali | Artho, Danakil, Issa, Gurba, Ayub. |
| Ethiopia | 9. Grain | Cajeh, Chamaeu cotier. |
| Sudan, Ethiopia | 10. Arabi | Deaili, Dgasrin, Djabali, Shagali, Airi, Admani |
| Eriteria | 11. Rashaidi | Bahl-el Arab, Zibedi |
| | 12. Anafi | Tzadi, Tzodi, Eact |
| Sudan, Eriteria | 13. Bishari | Adendoa, Amarar, Asharaf, Beni Amir Haboab, Beja, Read Sea Hills, Keih, Hadendoa |

- Sahelian africa**

| | | |
|------------------|--------------------------|--|
| Chad, Sudan | 14. Arab | Kordofan, Kababish, Soudani, Sudanese Pack |
| Chad, Niger | 15. Maga | Mohamid, Borno, Sokoto, Batha, Bat de l'Imanan |
| | 16. Tibesti | Ennedi, Gorane, Kanem, Borcou, Selle de l'Imanan |
| Niger | 17. Air | Azbin, Touareg |
| Niger, Mali | 18. Azaouak | Dogondoutchi, Oullemeden |
| Mali | 19. Adrar | |
| | 20. Fleuve (River breed) | |
| Mali, Mauritania | 21. Berabiche | Kounta |
| | 22. Sahel Hodh, Reguibi | |
| Senegal | 23. Gand | |

- North afriaca**

| | | |
|---------------------|--------------------------|--|
| Algeria, Mauritania | 24. Reguibi | |
| Algeria, Morocco | 25. Saharaoui | Ouled Sidi Cheikh |
| Algeria | 26. Chambi of Beni Abbes | |
| | 27. Targui | |
| | 28. Ajjer | |
| Morocco | 29. Ait Khebbach | Aftouth |
| | 30. Maghreb | Chambi d'El Golea, Camel of south, Camel of Highplateaux |
| | 31. Chameau of steppe | |
| Tunisia | 32. Chameau of Sahel | |
| Libya | 33. Urfilla | Oulad Busaif |
| Libya, Egypte | 34. Soudani | |
| Egypte | 35. Mowalled-36. Fellahi | |

- **Near & middle east**

| | | |
|--------------------|--------------------|---------------------------------|
| Proche-Orient | 37. Chami | |
| Arabia | 38. Azmiyah | Magattir, Mojhim |
| | 39. Umaniyah | Batiniyah |
| Irak, Syria | 40. Khuwar | |
| Irak | 41. Indi | Beni-teir |
| Iran, Pakistan | 42. Mekrani | Brohi, Kaches, Peshin, Powindah |
| Afghanistan | 43. Camel of north | |
| Iran, Central Asia | 44. Khiva | Turkestan, Nar, Irkek |

- **Peninsula indian**

| | | |
|-----------------------|----------------------|---|
| India , Pakistan | 45. Riverine | Bahawalpuri, Thari |
| | 46. Bikaneri | |
| | 47. Jaisalmeri | |
| | 48. Kachchhi | |
| Pakistan, Afghanistan | 49. Bari (P8) | Bagri, Gainda, Hazara, Sohawan, Kala Chitta |
| Pakistan | 50. Deshi | |
| | 51. Dera Ismail Khan | |

3.1.2. CERTAIN ASIAN BREEDS

3.1.2.1. DAIRY BREEDS

a. The Almajahim Dromedary

•**Origin** from Saudi Arabia



Figure 2 : Almajahim dromedary breed (Anonyme1)

•Characteristics

Powerful, **large-sized** animal. This breed is recognized by its **black, dark coat** and **short**, very smooth **hair**. Initially used for transport (it is a caravan animal), its selection for milk potential makes it a highly **sought-after** breed by **dairy** producers.

•Performance

It is a breed of excellent dairy quality. Some females can produce **20 - 25 L / day**.

b. The Al-Chaelae Dromedary (good milker and is valued for packing)

•Origin

Saudi Arabia, United Arab Emirates

•Characteristics

It is a breed recognizable by its **reddish-brown** coat. There are many breed names in Saudi Arabia and the Emirates, essentially distinguished by coat color, but it is likely, as everywhere else, that the genetic distances are small between these types of animals.

- **Performance**

The Al-Chaelae dromedary is quite a good milker and is valued for packing.



Figure 3: Al-Chaelae breed dromedary (Anonyme 1)

c. The EL-Khawar Dromedary

- **Origin**

It originates from the United Arab Emirates

- **Characteristics**

It is a **long-legged breed** adapted to racing and also raised for its **milk**. There are dairy farms with mechanical milking, for example in Al-Ain. Animals intended for racing have a special diet to provide them with high-quality proteins and quickly usable energy. Its coat is light, sometimes almost white.



Figure 4: Alkhawar (Anonymel)

3.1.2.2. MIXED BREEDS

a- The Arvana Dromedary

•Origin

Turkmenistan, Kazakhstan. Its original cradle is the Karakum Desert in Turkmenistan.



Figure 6 : Arvana breed (Anonyme1)

• Caractéristiques

This is the **northernmost** dromedary in the species' range. It is also often hybridized with the Bactrian camel. It is a robust animal, selected for milk production (records of **5,000 L per lactation** are mentioned), and the male can weigh more than a ton (see the giants of Turkmenistan).

3.1.2.3. Meat breeds

a. Kazakhs camel breed (Kazakhstan)

- **Origin**

The Kazakh camel breed inhabits the steppes of Kazakhstan. There are three types depending on the region: Uralobukeevskii (I), in the Caspian Sea region and along the Ural; Kzylordinskii (II) in the central part of the country around Kzylorda; and Yuzhnokazakhstanskii (III), in the southern part of the country, in the Almaty region.

- **Characteristics**

It is a very rustic, robust, known for its **wool** and **meat**.



Type Uralobukeevskii



Type Yuzhnokazakhstanskii



Type Kzylordinskii

Figure7 : Kazakhs breed (Anonyme 1)

3.1.2. AFRICAN BREEDS

3.1.2.1. Dairy Breeds

a. The Somali Camel

- **Origin**

Originating from Ethiopia, Somalia, Kenya

- **Characteristics**

It is a very large camel, the male reaching up to **2.10 m** at the **withers** and **well-**

fattened animals reaching up to **900 kg**. It is a robust animal adapted for carrying loads.

•Performance

The female is a good milker (**1800 L / lactation** with maximums reaching up to **2,500 liters**). Somali camel meat is appreciated in Middle Eastern markets.



Figure 8 : Somalia breed (Anonyme1)

b. The Rgueïbi Dromedary (Mauritania, Morocco, Mali, Algeria): saddle or pack camel.

•Origin

It originates from northern Mauritania and has now spread widely throughout the Western Sahara.

In Algeria: It is distributed in the Western Sahara, South Oranais (Béchar, Tindouf). Its cradle: Oum El Assel (Reguibet).

•Characteristics

It is a fairly **large animal (1.95 m-2 m at the withers)** with pointed ears. Long and slender. **Light coat, coffee with milk color**. Very good for riding (méhari), it is built for **racing** and **long-distance travel**. The head is elongated with a flat forehead. The ears are small. The head is held high on a long, slender neck. The hump is relatively developed, high and well-spread at the base. The limbs are long, strong, and muscular.

The hair is short and fine. It is longer on the shoulders of males. The coat is light, **coffee with milk color**. It thus differs from the Sahel dromedary, which is fawn-colored.

•Performance

It is a well-suited for racing but with good milk potential (between **1,200** and **1,500 liters per lactation**), which explains its presence in peri-urban dairy farms

c. The Dankali Dromedary

•Origin

It is mainly found in Ethiopia, Eritrea, and Djibouti. It is the dromedary of the Afar.

•Characteristics

It is a rather **dairy** animal, of **medium size**.

•Performance

It is mainly used for milk production and as a pack animal. Its milk production is about **1,200 L per 12-month lactation**.



Figure 9 : Dankali dromedary breed (Meyer, 2024 ; Cirad.)

3.1.2.2. MIXTED BREEDS

a. The Aftout dromedary breed (kh-al = black) : Pack, draft & transport

•Origin

It originates from Mauritania (Anonymous1). The term Aftout is a generic term that encompasses several types of dromedaries from the Western Sahara region.

It is found in the Western Sahara, Morocco, Mauritania, Algeria.

In Algeria: It is also found in the Reguibet region (Tindouf, Bechar). The Aftout dromedary inhabits the central and southern parts of the territory.

•Characteristics

It is characterized by a wide variety of coat colors ranging from **light yellow**, **brownish** to **almost black**, and its long hair. It is an animal called "kh-al" because of its black coat. It is rather **short-legged**, robust, **HW = 185-190 cm**, live weight = **450-600 kg**. Used as a draft and pack animal. It is characterized by its compact shape, its D-shaped neck. It has tufts on the thighs and croup. The female of the Aftout dromedary is considered the **best milker** in the country. The Aftout dromedary thus has a good **carcass yield** of the order of **55%** and its meat is highly appreciated. It is used in the transport of goods and by the Mauritanian army in hard-to-reach areas.

• Performance

Both dairy and meat. Milk production **1100kg/240 days** (**4.5kg/day** on average, **fat content = 3%**).

3.1.2.3. MEAT BREEDS

a. Châambi Dromedary breed: pack and saddle



Figure 10 : Châambi dromedary breed (Faye B.)

- **Origin**

It is found throughout North Africa but mainly in Tunisia and eastern Algeria, Tunisia, in Algeria; its distribution ranges from the great Western Erg to the great Eastern Erg. It is also found in the Metlili of the Châambas.

- **Characteristics**

The Chaâmbi is small and stocky. The height is **small: 165 cm**. The **coat is short and dark**. Of a short-legged, corpulent type, robust in **pack transport**. It is the farmer's animal, the assistant of the oasis dwellers. It is commonly used for agricultural work and water drawing. It is **valued** for its **meat**.

3.1.3. LOCAL BREEDS

In the addition of the **Châambi**, **L'Aftout**, and **Reguibi** breeds, which have been developed (above), there are 3 other main breeds: **Targui**, **Sahraoui**, **L'Ouled Sidi Cheikh**, and 4 assimilated breeds: **Ajjer**, **Berberi**, **Steppe**, and **Ait Khebbache**. In the following figure, the distribution of the main camel breeds in Algeria.

Figure 5. Localisation des principales races de dromadaires en Algérie.

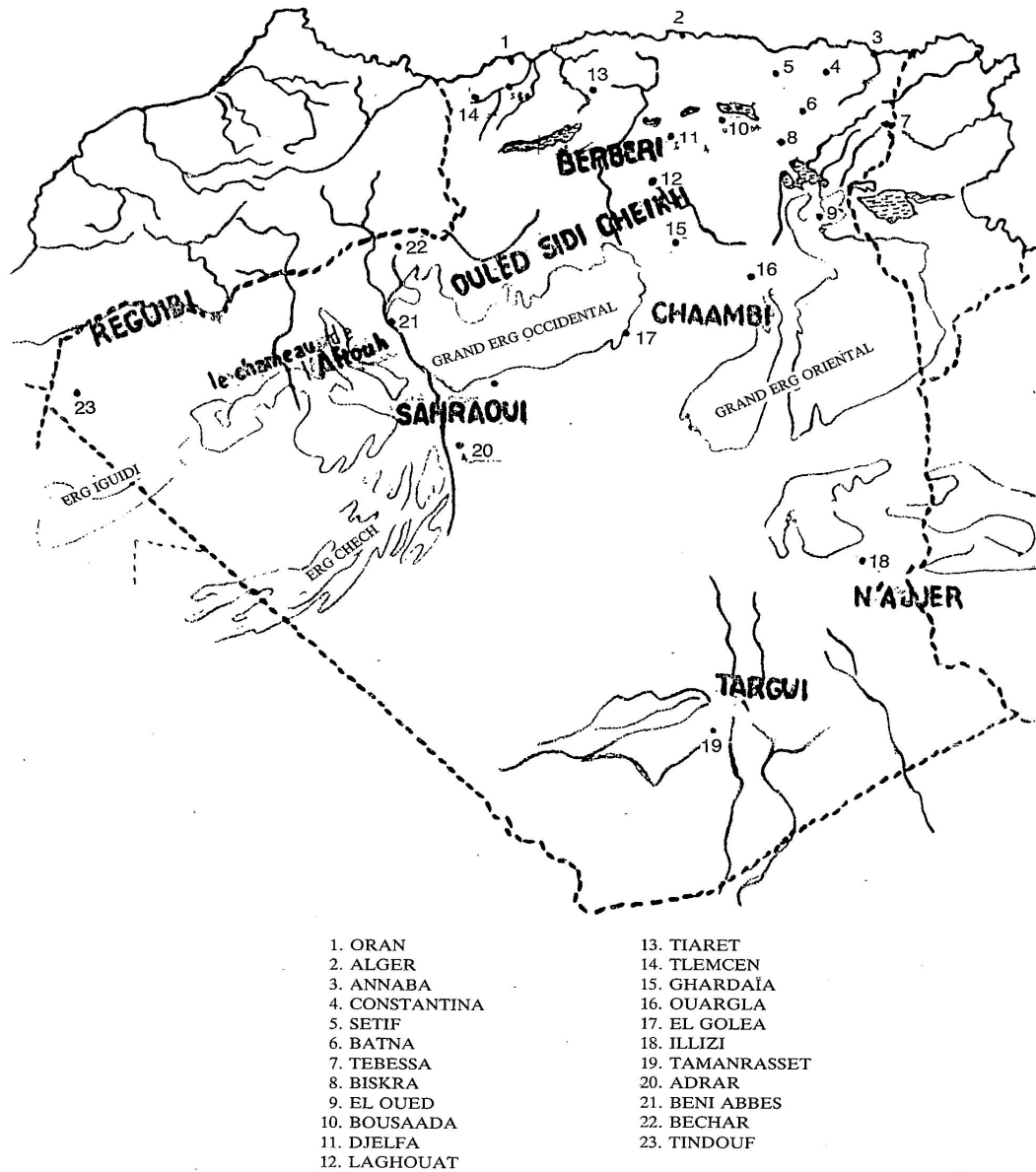


Figure 11 :Distribution of the different camel races in Algeria (Benaissa, 1989)

a- Targui Dromedary Breed : mainly the race and also the saddle and the pack.

- **Origin**

It is found throughout the central Sahara region in various countries where it has different names, but its place of origin remains the central and southern Sahara of Algeria.



Figure 12 : Mehari breed (Babelhadj et al., 2017 on the left ; on the right Chekima and Keddouda, 2018)

- **Charactéristiques**

It is the noble animal par excellence, because of its color, its bearing, its slender morphology. It is a **saddle** animal, suited for **racing** and **raids** in the Saharan desert. It is the animal of the nomad par excellence. It measures on average **188 cm** but males can reach **195 cm**. Light despite its size, it **weighs** on average **466 kg** but a male can reach **526 kg** at the age of **7-8 years** (Anonymous1). It is very tall on thin, dry limbs, with a gray coat of very short and fine hair. The **carcass** (slaughter) yield is **48%**.

c. Saharan Dromedary breed: (Meat, milky, hair and working)

- **Origin**

It is the result of a cross between **Chaambi** and **L'Ouled Sidi Cheikh**.

- **Caractéristiques**

It is an excellent dromedary. Its territory extends from the great Western Erg to the Center of the Sahara. The average values of the adult Sahrawi breed are around **460 kg** with a **height** at the withers of a little over **182 cm**.

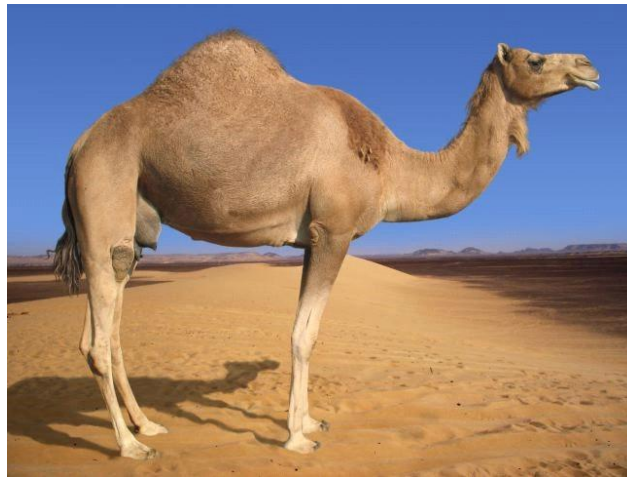


Figure 13 : Sahraoui breed (Babelhadj et al., 2017)

d. Ouled Sidi Cheikh Dromedary breed: Saddle, pack and riding

- **Origin**

It is found in the high plateaus of the great Western Erg.

- **Characteristics**

It is a riding animal. This dromedary is quite tall (**180-185 cm**), **medium-lined**, sturdy, with **medium-length, dark hair**.



Figure 14 : Ouled sidi Cheikh breed (Chekima and Keddouda, 2018)

e. Ait Khebbach dromedary Breed: Pack, meat and milky

- **Origin**

It's an animal of pack, it's found in the western - South area

- **Charactéristiques**

It's a little size animal (Small size), **breviline**, very compacted . **Hair is shaved** et la robe est très foncée. Dromedary of mountain with a small size (HW of males 1,7 m, females 1,63 m).

f. The steppe Dromedary Breed : Pack and Nomadism

- **Origin**

It is found in the southern borders (limits) of the steppe.

- **Charactéristiques**

It's **small size** , **short-legged**, narrow and rough, **long hair**, thick, coarse and **dark**. These animals are used in **close nomadism**.

g. L'Ajjer Dromedary Breed : Pack and also saddle

- **Origin**

It is Found in the Tassili n'Ajjer region

- **Charactéristiques**

He is a good **walker** and **carrier** (Benaissa, 1989). An animal of **medium** size (**180-190 cm** at the withers), **short-legged**, harmonious (**450 kg**). The coat is **smoky gray** or **light wheat**, sometimes piebald, with **short hair**. Rustic animal. It is adapted to rough terrain.

h. Berber breed

- **Origin**

This type of dromedaries still mainly found between Saharan and tellian zones . Very close to the Chaambi and Oued Sidi Cheik breeds

- **Caractéristiques**

Animal of fine build, with a muscular hindquarters,



Figure 15 : Berber breed (Photo Schwartz cited by Ghedir and Arwa, 2007; Chekima et Keddouda, 2018)

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